Evaluation Department

Norad

Norwegian Environmental Action Plan
Baseline Study

Study 4/2009

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Photos:
Large picture: Ring debarking in eucalyptus plantation within Mulanje Mountain Forest Reserve, Malawi. (Photo: Scanteam)
Small picture: Maize plantation within Mulanje Mountain Forest Reserve, Malawi. (Photo: Scanteam)
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Norwegian Environmental Action Plan Baseline Study

August 2009

Scanteam

Acknowledgement

Norad's Evaluation Department decided in April 2008 to carry out baseline studies in order to better measure the results of the developmental and environmental efforts supported, in the context of Norway's Environmental Action Plan. It contracted Scanteam to implement studies in Malawi, Tanzania and Papua, Indonesia.

The baseline study consists of three country cases and the present general report, which is based upon the country case material.

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Scanteam is responsible for the scope and contents of this report. The views and opinions do not necessarily correspond with those of Norad or the Evaluation Department in Norad.

Contents

Case studies for Malawi, Tanzania and Indonesia are available as downloads at www.norad.no/en/Tools+and+publications/Publications

Acronyms and Abbreviations

ADP	Agricultural Development Programme (Malawi)
CBA	Counterfactual Based Approach
CIFOR	Centre for Forestry Research (Indonesia)
DPSIR	Driving forces, Pressures, State-environment, Impact, Response
EPA	Extension Planning Area (Malawi)
FAO	Food and Agricultural Organisation of the UN
IHS	Integrated Household Survey
LIFDC	Low-Income and Food Deficit Countries
MACC	Management for Adaptation to Climate Change
MMCT	Mount Mulanje Conservancy Trust (Malawi)
NAFOBEDA	National Forestry and Beekeeping Database (Tanzania)
NAPA	Malawi's Adaptation to Climate Change programme
NGO	Non-governmental Organisation
PRSP	Poverty Reduction Strategy Paper (Tanzania)
RFN	Rainforest Foundation, Norway
REDD	Reduced Emissions from Deforestation and Land Deg (Tanzania)
TASAF	Tanzania Social Action Fund
TaTEDO	Tanzania Traditional Energy Development Organization
TCFMP	Tanzania Forest Conservation and Management Project
TLC	Total Land Care
UNEP	UN Environment Programme
UNFCCC	UN Framework Convention on Climate Change

Executive Summary

Executive Summary

The Baseline Study, prepared in conjunction with the Norwegian Environmental Action Plan for its development assistance, aims to (a) assess the relevance of existing data and reporting systems regarding the state of the environment and socio-economic conditions at the national level; (b) to supplement data that already exist or soon will be collected, with emphasis on case studies of socio-economic effects of environmental related assistance at the local level, and (c) clarify data and interpretation problems and identify other factors that are likely to influence developments in the targeted areas during the implementation period.

This baseline study has attempted to establish relevant data and indicators to be used to assess changes in the environment and household livelihoods that are expected due to the Norwegian development supported interventions. Thus, the baseline information will provide a basis for monitoring changes over the life of the projects and beyond.

The local studies in Tanzania and Malawi covered the i) socio-economic situation for the inhabitants on household level and the relationship with the state of the environment; ii) the asset values that the environment represent for the inhabitants measured primarily in economic, but also in other terms; iii) effects of key instruments, and iv) good governance and especially corruption. One particular aspect of the baseline study was to assess the degree to which "environment as a cross-cutting issue" is being integrated into non-specific environmental programmes in Norwegian aided programmes.

The objective of the study in Papua, Indonesia was to assess and systemize existing data on the state of the environment for and also present relevant data sources on the socio-economic and environmental situation for the population.

The baseline studies utilize a DPSIR Framework for organizing information and reporting on the state of the environment and its socio-economic impacts, covering Driving (basic) forces (for environmental destruction), Pressures on and State of the environment and Impacts and Responses by the stakeholders (DPSIR). This comprises factors like population increase, agricultural production, expansion of arable land by cutting forests, the market demand for wood and timber products, community needs for fuel and protein, the short term financial gains of hunting traditions by lighting fires in the forest, etc.

Another key approach is the interrelationships between the environment and socio-economic conditions. This includes farmers' tenure of, or access to productive land and common property resources; the use of adapted plants and other species, farming and forestry practices/techniques, strength of and strategies of farmers' organizations, management of and strategies to fight pests and drought/flood, water harvesting techniques, efforts to reduce/prevent effects of floods/hurricanes/ land-slides and more.

The overall methodology prescribed for the study is a counterfactual based approach (CBA), which consists of comparing the results "before" and "after" and "with" and "without" the Norwegian (or also other) interventions. This requires that data on both beneficiary and control (non-beneficiary) groups are available before (baseline) and after (end line) the intervention. In Tanzania, the CBA approach has been used for the baseline study in TaTEDO's programme around the Ruvu South Forest Reserve, with Namakutwa-Namuete in Rufiji constituting a "comparison area", since the team did not succeed in finding an area similar enough to term it "control" area.

The team found the conditions less amenable for a counterfactual based approach (CBA) in Malawi. All areas around the very unique Mulanje Mountain were included in the Mulanje Mountain Conservation Trust (MMCT) programme area. The Total Land Care's (TLC) programme in Malawi will be spread to 5 districts covering the central watersheds west of Lake Malawi. It was not deemed feasible to find "control areas" which could match either the MMCT or TLC programme areas on most geographic and social characteristics. However, in Malawi the team has been systematically comparing all data from the four areas covered by the two NGOs. This seems to yield useful insights, since the socio-economic situation in the areas is fairly similar, but the environmental conditions and the composition of the interventions are quite different.

It is generally recognized that a CBA by itself does not readily demonstrate "attribution" – whether the failures/successes of a programme were due to its design, its specific components, mode of implementation or of a particular set of contextual factors. In addition to providing the baseline data, the report proposes a combination of a CBA and a theory-based approach (Logframe). The latter seeks to establish the adequacy of the logical links through which the programme effects operate, in the causal chain from inputs to outputs and outcomes/impacts.

The main data sources of the study are:

- Existing data and statistics from surveys or studies in the countries;
- Questionnaires and interviews with the implementing agency/organization;
- Village questionnaires, consisting of a group interview with persons who, due to their work or specific positions in public, private or non-governmental service, have a good overview and knowledge of the local context;
- Household questionnaires to a randomly selected representative sample. Since 4 districts were included in the survey in Malawi and 2 in Tanzania, the number of household interviews is 616 and 300 respectively in the two countries.

- An exact registration of the natural resources and environmental conditions through “audits” in transect lines from permanent village reference points through cultivated areas, rand zones and into neighbouring forest reserves.

As directed, the team has systematically perused the policy documents, relevant statistics and data sources on Tanzania and Malawi in order to identify how the data collected through the field work of the study could supplement the existing data. Both of the African countries had recently carried out Household Budget Surveys. In Tanzania the government has devised a planning and reporting system, Mkukuta, including annual reports (MAIR), which provides an overview of the performance, challenges, lessons learned, and the next steps within each area of key public administration. The National Bureau of Statistics has established the Tanzania Socio-Economic Database, while the Tanzania Forest Conservation and Management Project (TCFMP) has established its specific ecological M&E system, and is also linked to TASAF (Tanzania Social Action Fund) database. The National Forestry and Beekeeping Programme Monitoring Database could also be of interest in some districts.

In Malawi the Agricultural Development Programme (ADP) has developed a framework for national priorities and will be the basis for planning and the basis for monitoring the ADP and, as such, will be the main monitoring and evaluation instrument of the ministry.

These data bases and household surveys provided useful inputs to the baseline studies, mainly to corroborate the data collected through the baseline study field work. A key problem in using the existing data bases more fully as a substitute for the study’s own collected data was the disjointed levels of the existing data relative to the needs of the baseline study. The former presented the data at national or district level, while the baseline study needed data which more directly referred to the location or sub-location level, on which the baseline data collection took place. The team had meetings with the national statistics offices in both countries, and learnt that it would be impossible to find data at the location or sub-location level, on which the baseline studies operated.

The environmental data reveals noteworthy signs of distress on the natural resources in the areas studied in the three countries, contributing towards increased poverty of the adjacent villages, especially since land holdings have been subdivided to such a small size that they no longer can feed a family through an annual cycle. Increasingly, households are looking into other income sources, and forest reserves are under heavy pressure for encroachment and extraction of resources. The canopy cover and tree stocking vary considerably in accordance with illegal logging, fires, clearance for new farms and level of fuel collection. Most forests can regenerate if properly managed; others have been permanently damaged by erosion down to the bedrock.

Shortage of farm land constitutes limiting factors for agricultural production in most of the project areas. Furthermore, the yields are low, due to low soil fertility, droughts, vermin and pests. Since the households interviewed in Tanzania and

Malawi have almost no cattle, oxen are not used for ploughing or performing heavy tasks. The agricultural lands are still only worked with the hoe, and produce carried on heads or backs. Without cattle there is hardly any manure available. Neither could respondents afford to buy sufficient quantities of artificial fertilizers, nor afford to hire tractors.

Furthermore, a very high proportion of respondents (80 to 100%) does not have access to various government extension services and agricultural inputs, and are to an insufficient degree able to adopt new agricultural technologies and methods. Access to credit is limited and almost invariably provided by friends/relatives, NGOs and various government schemes. The few loans given are mostly used for buying food and agricultural inputs, while only a quarter is used for investments.

The households' own crops are insufficient to feed the members throughout the annual cycle; they mostly last for six months or less. For the remainder of the year, households are dependent on finding casual work or selling forest products, which are often collected or poached without permits. This situation aggravates the food insecurity as well as the environmental problems. About 90% of households in the sampled areas of Tanzania and Malawi responded that they felt food insecure. In none of the project areas were there functioning Joint Forest Management (JFM) system in place which could stipulate government and local community rights and responsibilities, respectively.

Data on the social sectors also illustrate serious problems. In the programme area in Tanzania more than 90% of respondents reported that their water supplies were unsafe for drinking and inadequate for irrigation. In Malawi about 50 % responded that they did not have safe drinking water.

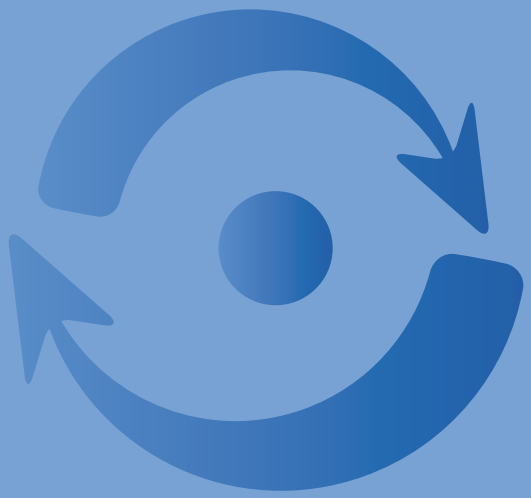
There are high incidences of diseases in all the countries, often resulting in premature deaths. The most common are malaria, eye diseases, airborne and waterborne diseases, HIV/AIDS and injuries, which constitute huge losses for the households, both emotionally and in socio-economic terms. This is coupled with the fact that most households remain largely helpless to fend off the continuous external shocks of health hazards that are often related to environmental hazards, which are perceived to be increasing.

Of the adult population in Tanzania 71.5% have received some formal education, while 52.4% have completed primary education. Malawi has recently made good progress in increasing school enrolment. In the districts that were included in this survey, 81 to 89% of in the school age population attended school. In the fourth district the proportion was about 10% lower.

As a side-assignment the team assessed the degree of integration of environmental concerns in the Norwegian aided portfolio in general (non-specific environmental projects). At annual meetings or project planning sessions, Norwegian heads of delegations/representatives pointed explicitly to the importance of mainstreaming environmental concern as a cross-cutting issue in the portfolio. However, these environmental policy matters were almost never reflected in subsequent follow-up

meetings, formal agreements, in budgets or activity planning. The environmental problems were often not acknowledged as such, and the solutions were often sought in technology and finance. One reason may be the consistent lack of environmental and social impact assessments as well as the absence of environmental indicators in programmes.

Main Report



1. Introduction

1.1 The Background

"The Norwegian Action Plan for Environment in Development Cooperation" (2006) provides for an evaluation of the results of the Action Plan when the implementation period ends around 2015. Norad's Evaluation Department has financed baseline studies in 2008-2009 related to Norwegian environmental assistance more in general. The baseline studies are, however, limited to case studies of significant environmental related assistance to Malawi and Tanzania, and to a more limited extent also Papua, Indonesia. The Norwegian embassies are responsible for organizing the chosen local assistance programs, using NGOs as implementing actors.

The original concept was be carry out local baseline studies in two areas affected by Norwegian assistance, as well as studies in two "control areas" not targeted by Norwegian assistance both in Malawi and Tanzania. This could facilitate comparative studies of changes in environmental and socio-economic parameters before and after the implementation of the assistance.

The Tanzania programme was to be implemented by the Tanzania Traditional Energy Development and Environment Organization (TaTEDO) in 8 regions of the country. At the time of the initiation of the baseline study, the assistance was being started in areas around the Ruvu South Forest Reserve in Kibaha and Kisarawe districts. After consultation with Norad, the consultant initiated one study connected to the programme around Ruvu South and another (control) study in Rufiji, also in the Coast Province. The second pair of local studies in Tanzania was dropped, since the other locations to be supported had not been decided by the Tanzania government and the Norwegian aid authorities by this time.

The Malawi baselines studies are linked to the activities of the two NGOs, the Mulanje Mountain Conservation Trust (MMCT) and Total Land Care (TLC), respectively in the south-eastern and central parts of the country. The problems of identifying two "representative control areas" in Malawi appeared difficult. This was firstly because the Mulanje Mountain Conservation Trust had initiated its support programme in all areas around the very unique Mulanje Mountain. The Total Land Care had already initiated planning of developmental and environmental activities in 5 districts covering the central and northern Watersheds of Malawi. It was regarded as quite complex to identify "control areas" outside the areas influenced by its activities in those regions. Hence, it was agreed that the baseline studies in Malawi would be located in Nkhotakota, Ntchisi, Mulanje and Phalombe districts, which were all areas affected by the Norwegian assistance. Comparative studies in all

these four areas were found relevant and scientifically justifiable under the circumstances.

In Papua, Indonesia the Norwegian support has been quite limited. The scope for the baseline study as described by the TOR would only assess and systematize existing environmental and socio-economic situation and relevant data sources.

1.2 Goal and Purpose of the Studies

The Terms of Reference (TOR) for the Impact Study is attached as Annex 7. In short, the TOR defines the primary goal as supplementing data and insight on:

- the environmental related behaviour of the most significant actors in the assistance system, including actions focusing on environment as a cross-cutting issue
- the state of the environment on national level in the three case countries and selected programmes, and
- the socio-economic situations of the inhabitants.

The second goal was to collect and systemize new data that can be used to assess the main drivers of change and results of the assistance both in nature protected and unprotected areas.

The third goal was to clarify data and interpretation problems, and especially try to identify other factors than the Norwegian action plan and programmes which would influence developments during the implementation period, such as other interventions financed by donors, short term business cycles and long term economic change, urbanisation, globalisation and climate change, and by different events such as nature disasters, social conflicts, etc.

It is presumed that the environmental action plan will both change the behaviours of the Norwegian assistance system, as well as other actors, although the cause-effect linkages are understood to be dependent on various feed-back mechanisms or casual loops. The TOR emphasises particularly that the local studies would cover the:

- Socio-economic situation for the inhabitants on household level and the relationship with the state of the environment at the beginning of the interventions (or early during the implementation phase),
- asset values that the environment represent for the inhabitants measured primarily in economic, but also in other terms;
- effects of key instruments, and
- good governance and especially corruption.

One particular aspect of the baseline study was to assess the degree to which "environment as a cross-cutting issue" is being integrated into non-specific environmental programmes in a random sample of 5-10% of the Norwegian aided programmes in Tanzania and Malawi.

1.3 Main Deforestation and Land Problems in Malawi and Tanzania

In Malawi[1] and Tanzania[2] agriculture contributes about three quarters of employment, more than a third of GDP and respectively 90% and 60% of foreign exchange earnings. More than 90 % of the population in both countries is estimated to rely on wood fuel for cooking and other energy needs.

The countries' population increase is 2.2 and 2.6 per cent respectively for Malawi and Tanzania (WDR, 2008). This is coupled with limited access to new jobs in the formal sector and diminishing size of farm lands available, especially for Malawi, where the average cropland holding per capita is between 0.17 and 0.26 Ha. The availability of new agricultural lands is higher in Tanzania, although new farmland areas are often less productive, due to poorer soil quality or pressures to adopt shorter fallow cycles than has traditionally been the case. This means a shorter period for depleted soils to regain its fertility.

In addition, there is high demand for wood-fuel in specific sectors in Malawi. Tea estates and tobacco-curing in Malawi account for about 30% of the country's total wood-fuel demand (Fisher 2004).

Over a 20-year period (1972-1992) Malawi's forest resources were reduced by more than half (57%) of their size, with an estimated annual deforestation rate of 2.8 %. The deforestation rate dropped to 2.4 % between 1990 and 2000. In Malawi the progressive alienation of natural resources from traditional authorities to the state has created an open access situation in which the state did not have the capacity to enforce the legislation and local communities had few incentives to conserve and manage natural resources sustainably (Spong and Walmsley, 2002). This has been coupled by legal actions against corrupt practices of government forestry officials. However, the legislation is still in many cases outdated, the legal provisions have not been upheld and the penalties have been inadequate to deter offenders.

In Tanzania cutting and other off-take in forests and woodlands have been difficult to control due to inadequate capacity in the designated institutions both in central government and District Councils (Environment Report, 2007). The average annual deforestation rate between 2000 and 2005 is 1.1%. Measuring the total rate of habitat conversion (defined as change in forest area plus change in woodland area minus net plantation expansion) for the 1990-2005 period, Tanzania lost 37.4% of its forest and woodland habitat (Tanzania Environmental Profile). A key challenge is the lack of implementation, enforcement and monitoring of existing policies. Key environmental challenges include land degradation, deforestation, degradation of aquatic ecosystems, lack of clean drinking water and sanitation, and loss of wildlife habitats and biodiversity. Environmental degradation and loss of ecosystem services particularly affect the poorest people and are strongly linked to health problems, vulnerability and malnutrition.

1 Malawi source: World Bank: World Development Report, 2008.
2 Tanzania figures: State of the Environment Report, 2007.

2. Methodology

2.1 Driving Forces, Pressures, State-environment, Impact, Response (DPSIR) Framework

The baseline studies utilizes a DPSIR Framework, for organizing information and reporting on the state of the environment and its socio-economic impacts, covering Driving (basic) forces (for environmental destruction), Pressures on and State of the environment, Impacts and Responses by the stakeholders (DPSIR). A general DPSIR framework is presented below.

Table 1 General example of a DPSIR framework

Driving force/ pressure	State of environment	Response	Impact
Population increase, cutting of forests, conversion	Natural ecosystems converted to man-influenced systems (Nos. of HA/year)	Legal and regulatory actions Land use planning	Loss of biodiversity. Loss of water retention
Market demand for wood and timber products (logging)	Degradation of forest lands.	Regulatory Financial	Temporary degraded forests, or conversion. Climate effects
Development pressure. (e.g. land trading). Prioritizing shorter term profits	Often lead to permanent loss of forest cover (Ha/year, or timber harvested (cu.m.)	Policy impacts Governance Regulation and control	Negative impacts on environmental services. Land degradation. Negative climate effects
Community needs for fuel and energy	Negative influence on the environment and biodiversity	Community organization. Education	Minor long term impacts if controlled by the communities
Community needs for protein, or financial gains (hunting)	Reduced biodiversity, if uncontrolled (threatened species)	Control. Provision of alternatives	Positive protein intake, destructive for biodiversity
Hunting traditions using fires Need for insect control	Destructive for eco-system (temporary or permanent). Carbon emission	Legal action. Public information and environmental education	Air pollution. Climate impacts. Ecosystem damage. Water impacts

2.2 The Environment-Poverty Nexus

The environment-poverty nexus is in many ways a two-way relationship. The environment affects poverty on three distinct dimensions by (i) providing sources of livelihoods; (ii) affecting health and other social matters, and (iii) influencing their vulnerability to external threats and damage. Examples of the connections are given in the table below.

Table 2 Examples of Environment-Poverty Connections

Poverty Issue	Potential Influence on Environmental and Natural Resource Issue.	Poverty Indicators Related to Environment
Income. economic status and opportunities	Access/tenure to productive land and common property resources; Robust farming and forestry practices/techniques. Strength of farmers' organizations Out or in-migration of population	Percent population suffering from hunger Foods derived from own lands, common lands, forest products and fisheries Population increase
Food Security	Drought or flood coping mechanisms, water harvesting. Use of adapted plants and other species Proper forest management and strategies to fight pests	Frequency of food insecurity. Percentage of rural children under five who are underweight, wasted, stunted
Health	Sufficiency of nutritious foods Access to improved water and sanitation, natural medicines Exposure to indoor smoke Environmental influence on mosquito attacks National environmental policies, standards, labelling (e.g. of toxins), Public access to environmental health information	Children under 5 mortality rate Maternal mortality rate HIV/AIDS prevalence State of water borne diseases Rate of respiratory and eye diseases Frequency of accidents and deaths related to environmental matters
Education	Time required to collect water and firewood	Proportion of boys and girls completing primary school
Natural disasters	Efforts to reduce/prevent effects of floods/hurricanes/ land-slides, etc	Rates of mortality and diseases, prevalence of homeless people

On the other hand, poverty at household and national levels also affects the environment, for example by (i) forcing individual poor people to use resources in a way that degrades the environment; (ii) inducing governments to downgrade/ overlook environmental concerns, including failing to budget sufficient resources to address such concerns, and (iii) encouraging countries to promote economic growth at the expense of the environment.

The HIV/AIDS pandemic is having severe effects on health, education and on agricultural production. Agricultural production in Malawi is highly labour intensive and with declining labour supply due to HIV/AIDS and other mortal diseases, it is increasingly difficult to manage the lands properly, prevent soil erosion and maintain food production.

2.3 Counterfactual Based Approaches: Advantages and Problems

In the evaluation discourse, it is generally accepted that robust evidence in impact evaluations requires, among other things, a comparison of the situation before and after the intervention. This has often entailed the measurement of the changes that have taken place compared to the "counterfactual", i.e. changes that would take place in the absence of the intervention.

The main methodology of this study is based on counterfactual based approaches (CBA), which consist of comparing the results "before" and "after" and "with" and "without" the Norwegian (or also other) interventions. This entails that data on both beneficiary and control (non-beneficiary) groups are available before (baseline) and after (end line) the intervention. Ideally the control group would at the outset have as identical socio-economic and environmental features to the beneficiary group as possible, and the only difference would be participation/non-participation in the Norwegian aided programme (with-without). However, if identical or very similar conditions cannot be located, a comparison between the affected and not-affected areas could still be possible through the 'double-difference' method, or at the very least, by some form of matching similar households in the two sample groups. CBA approaches require considerable time in identifying control/comparison areas, a very good overview of all the factors that affects environmental and socio-economic development and highly qualified skills to interpret various factors and understanding of how the various factors play out.

In Tanzania, the CBAs approach has been used for the baseline study in TaTEDO's programme around the Ruvu South Forest Reserve, with Namakutwa-Namuete in Rufiji constituting a "comparison area". Even if both areas are located in the Coast Province, there are some obvious environmental and socio-economic differences between the areas. The main differences are the degree of logging and charcoal production in forests, the distance to the main market (Dar es Salaam), the availability of cultivated areas for the households', the fertility of the soils, etc. For this reason the team prefers to refer to the Rufiji sample not as a "control", but a "comparison area".

Also in Malawi, the original idea was that the baseline study would comprise communities "affected" and others "not affected" by Norwegian assistance; the latter constituting „ control" areas. For geographical and other reasons this did not seem feasible, because of the large size of the affected areas and the lack of alternatives that could be considered as "control areas". All areas around the very unique Mulanje Mountain were included in the Mulanje Mountain Conservation Trust programme area. It was not deemed feasible to find a "control area" which could match the districts around Mulanje Mountain (Mulanje and Phalombe) in most geographic and social characteristics. The Total Land Care's programme in

Malawi will be spread to 5 districts covering the specific central and northern watersheds of Malawi, leaving it difficult to find a "control" area, at least in the vicinity of the areas where the TLC has initiated its programme in Nkhotakota and Ntchisi Districts. The households in the central and northern watersheds are generally better off in terms of access to agricultural lands and degree of food self-sufficiency than those in the two districts surrounding Mulanje Mountain. The latter are more dependent on non-agricultural incomes like working on tea-plantations and sale of forest products. In the southern area a much higher proportion of households is headed by women, particularly since the inheritance system traditionally is matrilinear.

In view of the situation, Norad's Evaluation Department and Scanteam concluded that it would make more sense to conduct baseline and end-line studies in the four areas that will be directly affected by the Norwegian aided interventions, without "control areas". The data from the two areas would still enable comparisons over time concerning key environmental and socio-economic factors.

2.4 Theory Based Approaches

The use of CBA approaches alone in impact evaluations have the inherent weakness of low scientific credibility in the attribution of measured changes (impacts of what?). A CBA cannot by itself determine whether the failures/successes of a programme were due to its design, its specific components, mode of implementation or of a particular set of contextual factors. It is therefore important that a counterfactual based approach is aided by other explanatory studies, especially one utilizing a theory-based approach, which seeks to establish the logical links through which the programme effects operate in the causal chain from project inputs to outputs and outcomes/impacts. The outputs-to-impacts theory of change requires in addition to the strength of the "impact drivers", thorough reviews of the project context, and especially the internal and external risks that could prevent the environmental benefits to be realized, even if the internal logic for its realization is strong. A theory based approach in projects (e.g. an LFA) often has a monitoring and mid-term evaluation system as a constituent part, which greatly increases its explanatory facility, particularly if monitoring or project reviews are recurring from the initial to the final stages of programme implementation. A generic Logical Framework for the programmes combining development and environmental conservation/sustainable use is presented in Table 3.

The programme theory/logical frameworks of the three projects are extracted from the programme documents and presented in Annexes 1-3. It is highly advisable that Interim and Mid-term evaluations are systematized in accordance with the logical framework, since this will be most useful in a combination with a CBA follow up study.

Table 3 Generic Output and Impact Framework

Objectives	Outputs: Activities and Participation	Outcomes: Knowledge Institutionalization	Impacts	Assumptions/ Risks
1. Increase knowledge about and appreciation of good functioning ecosystems 2. Reduce degradation through conservation and sustainable use 3. Increase yields and higher value sustainable production 4. Institutionalize improvements via legislation, enforcement and changing local norms	**Activities performed:** 1.Participatory studies/surveys 2. Demonstration for and coaching of local participants 3. Media-exposure of environmental/ development efforts to bolster support 4. Development of high value, tradable products or creation of other income streams 4. Involve new participants from various sectors	**Knowledge created:** Awareness/technical/ operational insights Bolstered motivation acceptance and support for changes **Institutionalization taken place:** Formalization of environmental efforts through agreements, permits, sign-ups for voluntary work, national and local budgets. Laws passed and enforced. Non-compliance punished	Behaviour change of local, national and international private and institutional actors which yields positive impacts of different kinds: • Environmental • Economic • Social • Civic • Technical • Cultural	Conducive national and local policies (see Annex 4) in line with national goals, plans and international agreements/ obligations and the Millennium Development Goals. International economic situation may worsen Consider various scenarios of climate change, etc.

3. Data Sources

3.1 Questionnaires and Data Formats

In addition to statistical data and documents on relevant issues in the three study countries which have been prepared as official publications or research documents, the study team has made use of four types of data sets. These comprise:

3.1.1 Questionnaires and interview with implementing agency/organization

The implementing organizations in Tanzania and Malawi were interviewed in accordance with structured questionnaires concerning goals, activities and progress of the interventions, as well as their project documents, including LFA Frameworks.

3.1.2 Village questionnaires

Village questionnaire were used for each village targeted (as well as the villages of the control group). The questionnaire was filled in on the basis of village meetings, consisting of about 10 persons in key positions, like the village headman, head teachers, agricultural field staff, religious leaders, traders and health workers. The group was diverse with respect to gender, age, religion, and ethnicity, with the goal of ensuring that it was representative of the key information holders of the village. The information sought was of a nature of the common situation to the households in the area, and was used jointly with the information gathered through the household survey. There are 10 village questionnaires in Malawi and 5 in Tanzania.

3.1.3 Household questionnaires

A household questionnaire was to be answered by the head of the household, or the spouse in case of absence of the household head in the targeted rural areas and the comparison area. The sample of households in each area is around 150. Since 4 districts were included in Malawi and 2 in Tanzania, the number of household interviews is 616 and 300 respectively. The questionnaire includes variables like:

- composition of the household and the internal and external relationships of household members,
- education and health standards, especially as to public/environmental health;
- the household's income -generating activities, food/cash production from farms and neighbouring forests, food sufficiency over time, and major expenditures;
- farming practices and use of forest products; type of work and incomes from their lands and the forests;
- the homestead, including housing standard and building material,
- the household's other main assets;

- access to, and collection of firewood/charcoal, fuel use, knowledge of/interest in energy-saving utilities.

All the statistical information of the household questionnaires is appended to the Tanzania and Malawi reports. The questionnaire formats are presented in Annexes to the Tanzania and Malawi reports.

3.1.4 Natural resources environmental audits

Natural resources and environmental audits were done on vegetation and soil conditions based on transect lines from permanent village reference points through cultivated areas, rand zones and into neighbouring forest reserves. An environmental baseline audit is less comprehensive than a full inventory, but provides a registration of natural phenomena along transects and thus provides a picture of the resource situation in the selected area at a specified time. This audit describes observable and significant changes of land use along the transect lines, even those that are outside the transect plot boundaries. Auditors returning to the sites after several years will easily be able to identify changes in land use and resources, by comparison with the original baseline data.

Their locations were selected by the study team and the implementing agencies after a scoping exercise, through the areas expected to be affected by the Norwegian aided programmes. The transect lines extend from cultivated lands, through community woodlands and end well inside the forest reserves. The team registered a gradient of human pressure through a cross-section of the landscapes. The study team undertook recordings of 7 transects in Tanzania and 4 in Malawi; each transect consisting of a number of plots in mostly straight lines. The number of transect plots are 33 in Tanzania and 28 in Malawi. There are slight modifications in size and shape, and also of the recording routines in the two countries. However, both methods are scientifically valid. The description of the inventory/audit methods are presented in the two country reports, and in Annex 5 of this report.

The elements registered were mainly:

- Altitude, climate, weather pattern, land tenure
- Types of crops and utilization of agriculture land
- Shifting cultivation areas, cycle of fallow or type of regeneration of fertility
- Livestock grazing, density and types of livestock
- Charcoal production; magnitude, evidence
- Fuel wood gathering; magnitude, evidence
- Water streams, volume of water, silt, pollution (cause), drainage
- Slope gradient in percent, relative to land use
- Signs of erosion, sedimentation and landslides, or propensity thereof
- Vegetation cover (canopy and ground cover) in per cent of the plot area
- Estimate of wood volume per area unit
- Birds and wildlife observations and marks
- Woodland, types, off-take and re-growth, seedling density, regenerants

4. Tanzania Data

4.1 National Policies

Since the late 1980s, Tanzania has adopted several national policies and strategic frameworks that seek to integrate national environmental and poverty action programmes. The most important frameworks include the "Poverty Reduction Strategy Paper (PRSP)" (2000), the "Tanzania Development Vision 2025" (2001), the draft "Rural Development Strategy" (2001), the "Agricultural Sector Development Strategy (ASDS)" (2001), the "National Environment Management Act" (2004), and the "National Strategy for Economic Growth and Reduction of Poverty" (2004). In addition, there are sector specific policies, strategies and laws that address issues of deforestation, land degradation and poverty reduction, e.g. in water resources management, rangeland management, energy resources, local government and mining.

According to "Environment Statistics 2005", 46% of the total land area of Tanzania is covered by forest and woodland. The rate of deforestation is estimated at 500,000 hectares per annum. Protected areas cover a total of 17,449 square kilometres. Nevertheless, in all natural-resource-based sectors, pervasive market and policy failures, as well as corruption lead to unsustainable extraction of resources (wildlife, forests, and fish), loss of much needed government revenues and opportunities for growth and poverty reduction. The many cases of mismanagement (e.g. illegal logging, illegal hunting and destructive fisheries) seriously risk undermining the implementation of policies for sustainable development.

Prior to trade liberalization the forest sector's contribution to total trade was three to four per cent of total exports, but after adoption of trade liberalization, the contribution has jumped to about 11 per cent of total exports[3], even if licences and fees were often not collected. Unclear roles and responsibilities, weak security at checkpoints, as well as lack of trained and motivated staff to monitor forestry activities constrain efforts to collect revenue. Other impediments include traders failing to register, the high incidence of illegal timber and charcoal trade, transportation of products. Apart from timber sales, the Government of Tanzania could be missing out on close to USD23.8 million per year in royalties from charcoal (USD6 or Tsh 600 per bag). Lost opportunities in current monetary terms may amount to USD1-2 billion per year.[4] The government has for a long time been using various command and control policy instruments to protect the environment. One of the

3 In 2004 the Tanzanian government imposed a ban on the export of timber and seized 157 containers of logs, many of which were harvested illegally.
4 Norconsult, 2002. The True Cost of Charcoal. Norconsult Ltd., May 2002.

major interventions was short-term ban on trade of exporting logs, sandalwood, charcoal and sleepers. Partly due to this measure, there was a decline in logging activities.

The Forest and Beekeeping Division, development partners and civil society have sponsored joint forest management in catchment forest areas over the past 10 years. participatory forest management is a core component of the forest policy, legislation and ownership of forest land remains with the government but, depending on the status of the forest reserve and the availability of a management plan, local communities can reap the benefits.

The government continued to support Participatory Forest Management initiatives in 29 districts in eight regions. Similar interventions in the protection and management of catchment forests and mangroves have shown clear gains in the Eastern Arc and Coastal Forest eco-region. Through these interventions, communities living adjacent to natural resources continue to enjoy the benefits such as fuel wood, fishing, eco-tourism, fishing, and hunting. Through these interventions, communities living adjacent to natural resources continue to enjoy the benefits such as fuel wood. Besides the communities play their role in the management of natural resources through Wild Management Areas, Beach Management Units, Community Based Forest Management and several development projects. (MKUKUTA Annual Implementation Report (2006-2007))

There is evidence that the approach is restoring forest quality, improving water discharge, and reducing disturbances such as fires. It is estimated that about a tenth of forest land are managed in this way. However, its effectiveness in reducing poverty is less obvious without valid documents and a poor history of record keeping (TFMCP, 2005). Experience shows that, during the initial stages, patrols generate revenue for villages when they apprehend and fine law breakers. However as they become more efficient, illegal activities decline along with revenues. In many communities, it appears that the cost of joint forest management outweighs the benefits so alternative non-forest based livelihood strategies are required. National legislation remains vague about sharing such costs and benefits (Marko Nokkala, 2004).

The Tanzania Household Budget Surveys provide key data related to education, health, nutrition, income and expenditure sources, fuel use and more. The poverty situation in its varying aspects is well demonstrated, including life expectancy, mortality rates, nutritional status and diseases related to public/environmental health factors: malaria, diarrhoea and respiratory diseases.

The reporting system of the comprehensive National Strategy for Growth and Reduction of Poverty (commonly referred to as MKUKUTA) for the period 2005–2010, has been of particular interest to the study team. As part of the programme's monitoring strategy, the second Annual Implementation Report (MAIR) covering 2006/2007 provides an overview of the performance, challenges, lessons learned, and the next steps within each cluster of key public administration issues:

(i) growth and reduction of poverty; (ii) improved quality of life and social wellbeing; and (iii) governance and accountability.

In collaboration with over 20 ministries and government Institutions in Tanzania, and supported by UNDP and UNICEF, the National Bureau of Statistics has established the Tanzania Socio-Economic Database (TSED). The main purpose of TSED is to allow an overall, up-to-date view of the socio-economic situation in Tanzania and to facilitate use of data for analysis by policy makers and other users. TSED is a web-enabled database, and provides a means of organizing, storing and displaying data in a uniform format, to facilitate sharing in Tanzania and outside of Tanzania. The National Bureau of Statistics is responsible for the general administration including overseeing the day to day operations of TSED, data provision, management, quality control and release of data. NBS provides technical support to the participating institutions using the database, and facilitates the dissemination of results of national surveys such as Household Budget Surveys (HBS).

Environment and natural resources management have been mainstreamed in the Tanzanian National Strategy for Growth and Reduction of Poverty (NSGRP). The NSGRP in combination with the new Environmental Management Act provide a fairly well developed policy framework for environment and natural resources management.

The Tanzania Forest Conservation and Management Project (TCFMP) has established its specific ecological M&E system, and is also linked to TASAF (Tanzania Social Action Fund) database. The National Forestry and Beekeeping Programme Monitoring Database is also of interest in some districts.

4.2 National Monitoring and Evaluation Systems

Tanzania has individually chosen to deviate from the list of Millenium Development Goals (MDG) and to create its own national list of monitoring indicators. There are several initiatives to establish and improve public reporting and monitoring systems. The devised reporting system of the comprehensive National Strategy for Growth and Reduction of Poverty of the government (commonly referred to as MKUKUTA) for the period 2005–2010, has been of particular interest to the study team. As part of the programme's monitoring strategy, the second Annual Implementation Report (MAIR) covering 2006/2007 provides an overview of the performance, challenges, lessons learned, and the next steps within each cluster of key public administration issues: (i) growth and reduction of poverty; (ii) improved quality of life and social wellbeing; and (iii) governance and accountability.

The production of the annual report (MAIR) as well as coordination of the MKUKUTA are done in collaboration with a wide range of stakeholders, including government ministries, departments, agencies, local government authorities, research and academic institutions, as well as non-state actors. This preparation involved information gathering from a range of sources, including studies for the public expenditure review, the MKUKUTA Status Report (2006), the Bank of Tanzania's Economic Survey, sector reviews, and reports by the ministries. The 2006-07 Household

Budget Survey, which is an integrated part of the MKUKUTA is expected to be published in 2008, but has so far been unavailable.

The MAIR highlights some of the major challenges ahead and identifies areas for improvements, including the need to strengthen monitoring and evaluation systems, sustain efforts to tackle corruption and improve governance and accountability, and focus efforts on drivers of broad-based economic growth, notably in the agricultural and natural resources sectors.

Several other processes related to this goal include, formulation of action plan for implementation of the Environmental Management Act; drafting of regulations related to land management including tree planting, and establishment of Village Land Forest Reserves. Others include regulations on Environment Impact Assessment, environmental inspectors and registration of environmental experts. The government also established Environmental Grant under Urban Development Programme to support initiatives on environmental conservation.

The Tanzania Forest Conservation and Management Project (TCFMP) has established its specific ecological M&E system, and is also linked to TASAF (Tanzania Social Action Fund) database.

The Tanzania study team has made good use of data in some of these documents, especially in order to corroborate the data that was collected in relation to TaTEDO's interventions. However, since the data in the above-cited surveys/studies were mostly confined to the national or provincial level, and the baseline study was related to the sub-district levels, the team found that it would not be scientifically valid to substitute its own field data at the local level for environmental or socio-economic data at these higher administrative levels.

4.3 Impact Study Case: Tanzanian Traditional Energy Development and Environmental Organization's(TaTEDO's) Modern Energy Services

Norway has for several years supported an NGO, the Tanzania Traditional Energy Development and Environmental Organization (TaTEDO). The baseline study was conducted in one of its project areas in the Coast Region, which is only one of the 8 regions in Tanzania that the current programme covers. A common characteristic in the programmes and projects conducted by TaTEDO is their emphasis on improved wood fuel technologies to reduce fuel consumption, while contributing to the process of reversing the current deforestation trends in Tanzania. The interventions are expected to bring about substantial effects in this chain, in terms of forest conservation, reduced drudgery for women, improved health conditions and income generation for local communities. Through these activities TaTEDO aims to contribute to achievement of various Millennium Development Goals (MDGs).

The baseline fieldwork for this report covered the Coast Region, because TaTEDO activities were initiated in this region. Secondary data, especially on charcoal demand and supply, covered more regions, including the city of Dar es Salaam.

The goal of the programme is to contribute to sustainable development and poverty reduction by enhancing access to sustainable modern energy technologies and services for consumptive and productive needs in households, small and medium-size enterprises (SMEs) and social service centres. The main objective is to facilitate the scaling-up of access to sustainable modern energy technologies and services. The modern energy technologies and practices earmarked for scaling up were already introduced in some districts through the previous programme which ended in the year 2006. Such technologies and practices include efficient wood fuels stoves, charcoal and firewood baking ovens, improved charcoal production kilns, solar PV and dryers, multifunctional platforms (MFPs), bio-gas and the cultivation of multipurpose energy-rich trees.

A future evaluation of TaTEDO's interventions might, in addition to covering the Ruvu South area, also have a broader scope and consider its results nationally by covering a sample of districts. For this reason, the team has included a systematic outline of objectives, outputs and results, in relation to its project document that was the basis for Norway's decision to support the programme. A constructed Logframe based on the project document is included in this report as Annex 1.

4.4 Environmental Data

This study entailed a detailed environmental audit of the forests adjacent to the "affected area" of Norwegian support: i) Ruvu South Forest Reserve, ii) Kipangege village land forest reserve (also in Ruvu South) and iii) the comparison area Namakutwa-Namuete Forest Reserve (Rufiji). The transect lines for the environmental audit were established in each of these three areas (see Fig. 1 a-c in the Tanzania baseline report). Most forested areas in Tanzania are owned by the state. In all about 91% of the survey plots were located on state forest reserves, while 9% were located in Kipangege village land forest reserve in Ruvu South.

The forests in all study areas were disturbed by human activities: charcoal making, firewood collection, as well as some encroachment/clearing for agriculture and hunting of wild animals, as well as fires. The forest reserve in Ruvu South was much more severely disturbed than Rufiji, presumably, due to (i) poor forest management and control systems and (ii) proximity to the main charcoal market in Dar es Salaam. Of the two, the most relevant was the fact that there was no functioning Joint Forest Management (JFM) system in Ruvu South, to stipulate government and local community rights and responsibilities.

Many plots in the surveyed sites had either high or average levels of disturbance. Only a few plots in Rufiji and Ruvu South, in the innermost cores of the forests were not disturbed at all. Ruvu South had an average of 18% canopy closure, while the mean for Kipangege VLFR was about 38% and for Rufiji about 54%. Charcoal making and forest fires were the two main types of disturbances recorded. Charcoal making was found to be a serious threat in Ruvu South and Kipangege, but less so in Rufiji. There were signs of wildlife in about 42% of the plots in Ruvu South, 87% of the plots in Rufiji and in all plots in the Kipangege VLFR.

Stocking in terms of basal area and volume of standing tree crop is generally poor in Kipangege VLFR and Ruvu South forest reserve (FR) compared to Namakutwa-Namuete FR (see table below). However, it is evident that there are patches of relatively untouched forest in the southern parts of Ruvu South FR, which are comparable to Namakutwa-Namuete FR. Poor stocking in basal area and volume of standing crop imply absence of trees with reasonable diameter at breast height (dbh).

Table 4 Tree stocking of the studied areas, Tanzania

Parameters	Mean values from the three sites		
	Ruvu South Forest Reserve	Kipangege VLFR	Rufiji site
Tree density (Stems/ha)	61.25	194.67	32.56
Basal Area (m^2/ha)	0.56	0.57	0.76
Volume (m^3/ha)	3.85	3.15	5.80
Seedling density (count/plot)	12.50	40.33	44.06

Several researchers have concluded that, based on the present economic forces, the majority of urban population in Tanzania will continue to depend on wood fuel for the foreseeable future (Moyo et al., 1993; URT, 1998; Luoga et al. 2000). Due to the anticipated steady increase in population (at an annual growth rate 2.8%) the rate of actual consumption of firewood and charcoal is expected to increase considerably. It is estimated that charcoal is consumed by 94% of the households, either alone or mixed with other fuels.

Most of the areas audited were relatively flat, and less threatened by erosion than forests in other provinces. However, minor sheet erosion was observed in about 30% of the plots in Ruvu South and 20% in Kipangege.

4.5 Socio-economic Data

The main data base for this paragraph is constituted by 5 village and 300 household interviews in the affected and the comparison area. The composition of the household heads in Ruvu South is about 81% male and 19% female. About 78 % of the heads of households had attended primary school, out of which about 14 % did not complete all years. About 21% did not have any formal education. The average household size for the three villages around Ruvu South was 4.85, while it was 5.61 in the comparison area. The population for both Ruvu South and Rufiji villages was dominated by young people under twenty years of age. Farming was the major activity practiced by all respondents. In Ruvu South charcoal making was also an important economic activity.

The amount of land cultivated was limited, primarily due to population pressure and the limitations intrinsic in working tools and manpower. Farmers from both study areas depended only on hand hoes, which limit agricultural production. In both areas over 90% of households depended solely on firewood as their source of

energy for cooking. Nearly 100% of the households both in Ruvu South and Rufiji depended on unprotected wells as their main source of water.

In Ruvu South, the crops cultivated included cassava (46%), maize (27%), cowpea (25%) and rice (2%). The farmers in Rufiji reported that they mainly cultivated maize (39%), cassava (29%) and rice (21%). A considerable proportion of the farmers in Rufiji characterized their lands as fertile, while the majority in Ruvu South found their soils to be of medium fertility. In both areas, but particularly in Ruvu South, agricultural production was very low – well below subsistence level. The average maize production in Ruvu South was 2.3 bags, compared to about 7 bags in Rufiji. In Rufiji, about 7% of households reported selling maize; but only 1-3 bags by each household. Incomes of crop-selling families in Rufiji were double those in Ruvu South. Only one percent of households in the Ruvu South had cattle, compared to two percent in Rufiji. Farmyard manure was therefore hardly available in either area. Around Ruvu South, only one village (Kipangenge) had a farmer's credit facility (SACCOS), which was operational, though with limited capital. There were no farmer credit facilities in Rufiji.

The average household around Ruvu South was 4.85, while it was 5.61 in the comparison area. About 87 % of households in both study areas perceived that they were food insecure. The main reasons cited were lack of good agricultural tools, frequent drought, and attack by vermin. Another reason was inadequate access to almost all input and extension services. Selling forest products, especially charcoal and firewood, was reported as one of the coping strategies, particularly in Ruvu South.

Malaria is the leading cause of out-patient medical attendances in both areas. The disease occurs throughout the year, but becomes more prevalent during the rainy seasons. Other diseases commonly affecting both under five and above five year olds are pneumonia, ARI, diarrhea, intestinal worms and anemia.

Most households in both Ruvu South and Rufiji live in traditional mud-and-wattle houses. About 60% use corrugated iron sheets as roofing materials. Few households have cement floors and glass windows. There are few households who have above the bare necessity of other household assets.

About 78% of respondents from Kipangege Village, Ruvu confirmed that they were aware of improved stoves. This is likely because TaTEDO had already initiated some awareness visits to this village, but not to the neighbouring village of Bokomnemela, where the awareness rate was only 35%. In the two study sites in Rufiji villages were unaware of improved stoves (93% in Nambunju and 60% for Mbwara were unaware of the stoves).

5. Malawi Data

5.1 National Policies

Some of the key relevant official economic and social documents are: “State of the Environment Report” (2002), the “Poverty Profile in Malawi”(1998), the “Malawian Growth and Development Strategy for 2006-2011”, “The Agricultural Development Program 2008-2012” (ADP), the “Malawi Vision 2020”, the “Integrated Household Survey 2004-2005” and “Malawi’s Adaptation to Climate Change “ (NAPA 2006).

In the NAPA document on climate change adaptation, which the government recently submitted to the UN Framework Convention on Climate Change (UNFCCC), fifteen prioritized needs for action are identified, of which five were recommended for immediate action: a) sustaining life and livelihoods for the most vulnerable communities, b) increasing resilience of food production systems to erratic rains by promoting sustainable irrigation to key crops; c) targeting reforestation programmes for control of siltation; d) provision of fuel, building materials and cash incomes; e) developing small dams and other water storage facilities for flood mitigation, water harvesting and fish farming

The “Malawi Vision 2020“ document refers to an increasing concern that, in spite of past economic growth rates, which compared favourably with other sub-Saharan countries, the progress on basic long-term development goals has been slow and somewhat disjointed. There has not been a significant social and human development. The Vision is based on a long-term multi-sectoral approach, since it holds that the past economistic approach to development is considered to have contributed to the failure to attain long-term development goals, which are perceived to be multi-faceted and multi sectoral and involve changes in the social, political, technological as well as economic realms.

The Malawi Growth and Development Strategy (MGDS 2006-11) builds on the Malawi 2020 Vision and is to serve as a single reference document for policy makers for the Malawi Government, civil society and donors. It identifies six priority areas which define the areas the country intends to emphasize during the period, which are: agriculture and food security, energy generation and supply, irrigation and water development, transport infrastructure development, prevention and management of nutritional disorders, HIV and AIDS.

These areas correspond well with the general development and environmental objectives of Norwegian assistance. The MGDS seeks to identify the current situation and the driving forces behind the current environmental and poverty problems,

and the future desirable goal attainment within these areas, including selection of a number of indicators at the national level. Since most of the „driving forces“ for environmental pressure are national, the study team proposes that the current baseline study should also use the same indicators to monitor national level evolution of the “driving forces” in addition to the local level data. projects selected for the baseline/impact study. A national baseline is presented in Annex 4.

The ADP 2008-2012 identifies five broad areas of focus as priority pillars in achieving sustainable agricultural growth and development. These pillars comprise food security and risk management; agri-business and market development; land and water management; research, technology and dissemination; and institutional development and capacity building. In addition, there are cross-cutting issues that interact with the five pillars of the ADP including gender, HIV and AIDS, information technology and development.

The ADP results' framework will provide a clear picture of national priorities and will be the basis for planning at all levels. It will also be the basis for monitoring the ADP and, as such, will be the main monitoring and evaluation instrument of the MoAFS. The structure of the Annual Work Plan and Budget (AWPB) will follow the programmatic approach as articulated in the various focal areas and sub-programmes. In addition, local level priorities will have to be incorporated in the annual work plan and budget. The identification of these local priorities will be done through a participatory planning methodology that will, when completed, allow districts to reflect some of the priorities of the farmers at grass-roots level. It is hoped that the baseline study for Malawi will contribute in this context.

5.2 Presentation of Programme Areas

The study focused on areas covered by the following two programmes in Malawi.

5.2.1 Total Land Care: Management for adaptation to climate change

The target area for the programme known as “Management for Adaptation to Climate Change”, implemented by Total Land Care (TLC), comprises 10 extension planning areas in 5 districts in central Malawi. However, the baseline surveys cover only two EPAs in central Malawi, respectively Kalira and Mwansambo in Ntchisi and Nkhotakota districts, where the Ntchisi Forest Reserve and the Nkhotakota Wildlife Reserve are located. The natural resources of the forest reserves, watersheds and streams originating in these two locations supply a large downstream population with water and many other kinds of natural products. An increasing population is exerting a pressure on the natural environment, causing serious environmental degradation in some parts.

TLC seeks to promote transition from aid-dependent subsistence to market-based livelihoods, through capacity building and small scale investments. Its modus operandi is to provide intensive support to villages for 1-2 years, after which the villages are expected to be able to sustain the project activities. TLC has a team of specialists covering project management, community-based natural resources management, fisheries, enterprise development, agri-business, and monitoring & evaluation. The programme will potentially affect more than 750 000 people. The

plan for Norwegian support is to scale up an ongoing pilot project which emphasises local community development more broadly, with environmental stewardship, sustainable land and water management being key elements of the project. The project will include a monitoring and evaluation system with natural resource indicators and village profiles. It may facilitate analyses of the relationships between inputs, outputs and impacts. Based on the project document, the team has put the central elements of its project into a Logframe framework (see Annex 3). This would be helpful for an impact evaluation around 2015, particularly if TLC's or other interim evaluations/monitoring efforts address the same issues.

5.2.2 Mulanje Mountain Conservation Trust biodiversity conservation

Mulanje Mountain is an isolated mountain plateau in the south-eastern part of Malawi with rich forest ecosystems and woodlands apart from the very steep mountain hillsides. For almost ten years, the Mulanje Mountain Conservation Trust (MMCT) has been seeking to improve the environmental and socio-economic situation in the area, in cooperation with the Forest Department (FD) and was aided, during the initial years by a number of external donors, including the Global Environment Facility, the World Bank, USAID, and more recently Norwegian aid. During recent years, MMCT has been working on registration and mapping of the natural resources on the mountain, and they have developed a local monitoring program, which partly satisfy the need for a natural resources baseline as defined for the Norwegian Environmental Action Plan.

The biodiversity is very rich on and around the mountain, particularly in the more inaccessible spots, where the ecosystems are still intact. It contains a vast number of trees, plants, as well as several (endemic) smaller mammals, reptiles and birds, as well as a small population of wild cats (leopard and serval) and a limited number of the Mulanje cedar (Widdringtonia whytei).

Apart from biodiversity conservation, MMCT is engaged in a number of activities, including development of alternative livelihoods to replace unsustainable forest extraction and making efforts to eradicate invasive species, mainly exotic pines. The project components include habitat management, forest protection, plantation management, environment awareness and education, pilot co-management (of particular zones), tourism development, research & monitoring and livelihood enhancement. Norway also supports the Forestry Department's infrastructure and general management. However, several other government departments are also involved in managing the multitude of activities that are ongoing at the peak, in the mountain slopes and in the villages below. The village livelihood component includes:

a) timber utilization, furniture making and curio manufacture;
b) ecotourism;
c) food preservation: mushrooms and fruits
d) commercial livestock: fowl and dairy animals;
e) fish farming;
f) hydro power production and irrigation;
g) water harvesting and bottling;
h) thatch grass, brush and broom making.

A logframe constructed on the basis of the programme document is attached as Annex 2.

5.3 Environmental Data for the Programmes of Total Land Care (TLC) and Mount Mulanje Conservancy Trust (MMCT)

The baseline study data for the two Malawi programmes are essentially the same. This enabled comparisons between the four programme locations.

About two thirds of the forest environmental audit/audit done in Malawi covered public land, while the remainder was conducted on village lands. More than 70% of the areas had no indication of forest management, because no co-management arrangements had been put in place between the Forest Department and the surrounding communities. For this reason there are increasing signs of distress on the natural resources in all the four study areas, contributing towards increased poverty of the adjacent villages. The Phalombe/Mulanje districts are under the heaviest pressure for commercial exploitation of the wood products. Illegal logging for woodfuel, construction poles and timber was rampant in Phalombe with more than 80% of the areas being cut. Encroachment, including logging, affected 50% of the studied areas in Mulanje. Most of the Mulanje plots were under eucalyptus plantation, whose crowns were touching, so that only a few shade-tolerant plants could survive. However, farmers clearing these areas for illegal cultivation were destroying any regenerant growth, while the density of regenerants in Phalombe, Ntchisi and the Nkhotakota plots were quite high; 850, 500 and 575, respectively.

The average canopy cover varied between the four sites with Phalombe having the highest cover (61%) constituted by the fairly homogeneous miombo woodlands. Ntchisi had the lowest canopy cover (28%), due to heavy disturbance by fire and fuel collection. In the lower parts of the forests all the four areas people have open access for fuel-wood collection in the forest reserve. There was pronounced evidence of human disturbance of natural resources in all the forest and community reserves. The most common human disturbance was unregulated fires. A high level of illegal logging for fuel-wood (especially charcoal and firewood) and construction materials was also observed. The forest parameters are presented in Table 5.

Table 5 Canopy closure, ground cover, regeneration and tree volume

Audit area	Canopy cover %	Ground cover %	Regenerants (number/ha)	Tree volume (m^3/ha)
1. Ntchisi	28	48	500	24
2. Nkhotakota	44	48	575	168
3. Phalombe	61	56	850	74
4. Mulanje	50	31	0	627

Standing tree volume computations were based on estimates rather than exact measurements, due to budget and time limitations (see country reports).

Erosion is currently a problem in the hilly regions of Malawi, exacerbated by inadequate land-use technology – bush clearing, frequent wildfires and a low level of

terracing. Erosion on the plots was classified as “high” (where deep gullies had formed and tree roots where exposed on steep slopes), “moderate” (in undulating terrain where there were signs of gully erosion created during rainy seasons); or “low” (in relatively flat terrain, represented by some sheet erosion).

It is estimated that more than 90% of urban dwellers rely on biomass energy. Charcoal trade is considered Malawi‘s most substantial, pro-poor forest industry, which employs about 93,000 people as producers, bicycle transporters and road-side or urban vendors. The scale of charcoal production, if regulated, could make it one of the country‘s top earners.

5.4 Socio-economic Data for the Programmes of Total Land Care (TLC) and Mount Mulanje Conservancy Trust (MMCT)

This baseline socio-economic survey was conducted in areas where Total Land Care (TLC) and Mulanje Mountain Conservation Trust (MMCT) are operating with Norwegian as well as other external support, in specific districts within Nkhotakota, Ntchisi (Central region) Mulanje and Phalombe (Southern region). In total, 616 households were surveyed, and 33 percent were female-headed households. Households were selected randomly from a complete listing done prior to the conduct of the survey. Besides, community surveys were undertaken in the 20 villages that were selected for the household survey (for details see the Malawi baseline report).

The sample has an average household size of 5, which is above the 2005 IHS rural average (4.6). The majority of households are headed by men, but the proportion of female-headed households in the sampled population is 33, which exceeds the national average. The education level of most household heads is generally low; 32% illiterate, 60% having attended primary school and 7% having been enrolled in secondary school. The reported overall school attendance rate in the four areas is between 70 and 80 at the primary school level, and much lower at kindergarten and secondary school levels. A focus on the key reasons for non-school attendance, particularly at primary school, seems important. Almost all households had at least one member who had been sick or injured/attacked during the last year. There are high incidences of such diseases as malaria, air/waterborne and eye diseases.

Most of the houses are traditional, consisting of mud walls (46%) and grass-thatched roofs (80%). However, some households have modern houses with walls made of burnt bricks (27%) and roofs of corrugated iron sheets (20%).

The two study areas in the central and southern provinces are dominated by agriculture as the dominant economic activity. Ownership of chicken was common, and more than one-third of households have goats. Cattle-owning households are extremely rare, and no households used draught animals or ploughs. All households work their fields with the hoe. Agricultural plot sizes were very small and the households were scarcely able to produce sufficient food for only 5 or 6 months of the year. Only about 5 % produced foods that would last them through the year. There were very few other productive assets or even much needed household durable goods in the homesteads.

Community members had inadequate access to credit. Friends/relatives, NGOs and Government were the major sources of the limited credit currently available. In terms of spending, the highest proportion of household income was spent on food. The second and third highest level of spending was on farm inputs and medicines, respectively.

The average size of land ownership was less than a hectare. This agricultural resources are by far is inadequate for farmers to produce enough food for their own needs. Most land was obtained through inheritance. Maize is the common staple crop in all districts. In Nkhotakota and Ntchisi, tobacco and groundnuts were also important crops, as were tea and cassava in Mulanje and Phalombe. Agricultural production was limited by a number of factors, including shortage of land - especially in Mulanje and Phalombe and relatively high agricultural input costs. Some farmers used compost and small quantities of manure as a strategy to deal with high input costs. A number of households used some soil and water conservation techniques, mainly box and contour ridges, to control soil erosion. However, an improvement and further spread of the methods is highly desirable.

Very few households had their own planted woodlots. Among those that had them; the average plot size was less than half a hectare. Acacia and Blue gum (Eucalyptus) were the most common species grown. The Forestry Department was the major source of tree seedlings. Households-use forest products were mainly obtained from the forest reserves and forest plantations (often illegally), village or community forests, their own woodlots, private markets and/or farms. Forest products used include firewood, timber/poles, thatch grass and wild food (e.g., game, fruits and mushrooms). Most of these products were collected for free at a distance of less than a kilometre from the homestead. In Mulanje and Phalombe, collection of timber occurred only at a greater distance. Phalombe had the highest number of households involved in the sale of forest products, particularly firewood and charcoal. Most of the forest products were collected by women.

Most households were found to run out of self-produced food well before the annual lean period (December to March). The situation was worse for female-headed households. The households in Mulanje were the most insecure, while on average households in Phalombe, Nkhotakota and Ntchisi were a little better off. Most households reported reducing meals during critical periods. Across all districts the most common coping mechanisms was piece-work or “ganyu”. Apart from insufficiency in foods, a large proportion of households were frequently traumatised by drought, floods and death of a household member. Households were often left completely helpless, in terms of coping mechanism for these external shocks. The government and NGOs have provided relief items in some instances, which by far do not reach all households in need.

Current efforts to build local or grassroots institutions include community-based natural resource management (CBNRM), formal credit clubs, informal credit clubs, farmers’ clubs, community-based organisations (CBO)/ home-based care organisations, bee–keeping clubs, village health committees, parents and teachers associations (PTA) and school committees. However, despite a high level of awareness,

most households were not members of the existing local institutions. Participation rates were high in CBNRM, with male dominance. Nonetheless, the principle of gender equality has become more entrenched in rural areas. Women participated actively in some of these local institutions, especially those dealing with family welfare, in which they took, at times, leadership positions, including that of the chairperson.

Agricultural incomes were very low in all districts due to small agricultural plots, incidences of crop failure, relatively high agricultural input prices, low access to agricultural credit and services, and impoverished soils. The key drivers of this change, as seen by the respondents of the study, included a high population increase and lack of land to open new farms. In the health sector most indicators have worsened due to several factors including the HIV/AIDS pandemic and increasing number of foster children. Long distances to hospital were also a critical factor for timely medical treatment.

The proportion of school-attending children has increased significantly, as have the quality of education. The primary recent drivers for this change were an increased awareness of the importance of education and favourable policies introduced by the government (like free primary education). However, due to shortage of teachers, adult education has been reduced during recent years.

Uncontrolled access to protected forests has enabled new land clearing for farming at a level which represents a serious threat to the conditions of the natural resources and the environment. Population increase was seen as the main cause of deforestation which, in turn, was the prime cause of firewood scarcity in all the districts. The increased occurrences of natural disasters and rainfall fluctuations were ascribed to climate change. The respondents perceived that there has been a worsening of their life situations over the years, especially related to corruption, employment opportunities and the general poverty levels.

Key public and private services were available or accessible in the districts, although a majority of the respondents in Mulanje, and partly in Ntchisi, stated that they do not have ready access to postal and telephone services, agricultural extension services, markets for input supplies and sales of crops. Otherwise, most services were rated as good. The services with highest demand by households included safe water taps/outlets, credit/lending institutions, agricultural markets and health care. Generally, the households were prepared to make their own contributions to the provision of these services in these areas, including through voluntary work, and forming savings and credit clubs, among others.

6. Papua, Indonesia

The objective of the baseline study for Papua, as defined in the TOR, is to assess and systemize existing data on the state of the environment for West-Papua and also data sources on the socio-economic situation for the population. In addition, this chapter will give a brief description of the research and review work that is being initiated by an NGO, the Rainforest Foundation, Norway (RFN).

6.1 Description of Environmental and Socio-economic Conditions

The Indonesian part of the New Guinea Island –Papua—consists of two provinces: West Papua and Papua Province. Around 85 per cent of this area is covered by intact forests (MODIS satellite imagery). Papua's deforestation rate has been very small to date. In the period 2000 to 2006 it constituted only around 1 per cent of the total Indonesian deforestation[5]. More than 95 per cent of Indonesia's deforestation occurred on the islands of Sumatra and Kalimantan.

This confirms the inference from ambiguous sectoral data that large-scale conversion of forest to oil palm and pulp wood, which appeard to have been about to occur in Papua at the end of the Soeharto Regime, was all but stalled and has since been left more or less in limbo. A similar situation exists for about 26 mining concessions that had been granted by the year 2000, and 56 large logging concessions that existed in 2003; many of which have become inactive since. This situation appears to be due in part to the difficulty of developing coherent policies in the present political context because of differences in interests between the central forestry authorities and the provincial government, and between the latter and local (kabupaten) governments, all of whom have a statutory say. It may also in part be due to companies already possessing concession licences being deterred from proceeding with their investments because of the political risk posed both by policy uncertainties and by potential conflicts with the local people, who claim customary rights to the areas concerned. Indeed, this has affected logging concessions, whose number and activities have drastically declined.

In many parts of the Central Highlands, where combined intensification and extension of cultivation onto increasingly marginal lands, agriculture is being destabilized and becoming increasingly vulnerable to crop failures and even starvation, because of frost or drought. Under Special Autonomy, Papuans are now to a very much greater extent than under the New Order Regime secure in their rights to their lands and resources.

5 South Dakota State University's Geographic Information Science Centre

The montane forests of the Central Highlands are being degraded and reduced because of overpopulation and unsustainable intensification of agriculture on increasingly marginal and very steep lands, which is ecologically destabilizing. Although the Papuan bodies of water are on the whole in a good shape, glaring exceptions to this characterization are the rivers affected by tailings from the giant Grasberg mine in Mimika.

This relatively benign state of Papua's environment could now be at the cusp of rapid transformation, which, however, may be ameliorated if certain policy priorities win through. This depends in no small part on how the relationships between the indigenous population and a large number of in-migrants work out.

Most Papuans remain poorly served by health facilities, something that contributes to a life expectancy that is the lowest in Indonesia. The difficulty of getting teachers with sufficient motivation in the remoter parts of Papua is the major reason for widespread low education levels.

6.2 Participation in Studies by Rainforest Foundation, Norway

From 2006 till 2008 the Rainforest Foundation, Norway (RFN) made a number of pilot assessments of local NGO capacity, threats against the Papuan rainforests, the conflict level, tribal relations and local political agendas in order to identify potential partners and sites for intervention. It is currently working with a number of local NGOs to conduct initial baseline studies on forest management, local livelihoods and indigenous people's land rights in Papua (with Foker LSM Papua), in the Mamberamo basin (with YALI), and on Tamrau and Arfak mountains (with Yayasan Paradisea).

RFN is also engaged in Reducing Emissions from Deforestation and Forest Degradation (REDD) in Indonesia. In a report on REDD in Indonesia, RFN highly recommends that Norway considers supporting REDD initiatives in Papua.

7. Conclusions

This report summarises collected data about the environmental and socio-economic situation in selected areas of Tanzania, Malawi and Papua, Indonesia, which will form baselines for impact evaluations of Norwegian assisted programmes in the countries. Even if firm conclusions can only be drawn when the impact studies are done around 2015, the current data illustrates the interrelatedness of issues: i) poverty leads to unsustainable utilization of the natural resources and ii) their overutilization leads to increased poverty.

The annual population growth respectively for Malawi and Tanzania is 2.2 and 2.6 per year (WDR, World Bank). The total population in Papua has increased from 1 million in 1971 to 2.6 million shortly after 2000 (Paull et. al. 2006). The share numbers this involves is rapidly changing the relationship between people and the environment. It would require major investments and societal alterations just to maintain the same quality of the environment and the level of living that existed 30 years ago.

The environmental data reveals noteworthy signs of distress on the natural resources in the areas studied in the three countries, contributing towards increased poverty of the adjacent villages, especially since land holdings have been subdivided to such a small size that they no longer can feed a family through an annual cycle. Increasingly, households are looking into other income sources. The Phalombe and Mulanje districts in Malawi and Ruvu South Forest Reserve in Tanzania are under the heaviest pressure for extraction of resources from forests, especially commercial charcoal production to supply urban centres like Blantyre and Dar es Salaam, or conversion of forests to agricultural land, even on steep slopes and infertile soils. One reason for this is that the prices of firewood and charcoal do not reflect the environmental and societal cost of deforestation and land degradation.

The forest policies of both Tanzania and Malawi promote local participation in forest management through Joint Forest Management (JFM). As demonstrated by the Ruvu South situation, the incomplete process of developing JFM agreements has left an institutional vacuum and a noticeable lack of operational norms. The natural resource issues in Papua under the “New Order” will to a much greater extent than before be decided at the local level. It is still too early to judge how this will affect the rights and concessions to extract lumber, operate mines, establish palm oil plantations or open up areas with new infrastructure, etc.

In the three countries very few households have their own planted woodlots. The implication is that household members around the protected areas will inevitably continue to encroach into these areas in search for farm land and other extractable resources, unless appropriate interventions are introduced to raise yields and alternative means of livelihood in existing lands. The montane forests of the Central Highlands of Papua are being degraded because of overpopulation and intensification of agriculture on increasingly marginal and very steep lands, which is ecologically destabilizing.

Shortage of farm land constitutes limiting factors for agricultural production in most of the project areas. Furthermore, the yields are low, due to low soil fertility, droughts, vermin and pests. Since the households interviewed in Tanzania and Malawi have almost no cattle, oxen are not used for ploughing or performing heavy tasks. The agricultural lands are still only worked with the hoe, and produce carried on heads or backs. Without cattle there is hardly any manure. Neither could respondents afford to buy sufficient quantities of artificial fertilizers, nor afford to hire tractors.

Furthermore, a very high proportion of respondents (80 to 100%) does not have access to various government extension services and agricultural inputs, and are to an insufficient degree able to adopt new agricultural technologies and methods. Access to credit is limited and almost invariably provided by friends/relatives, NGOs and various government schemes. The few loans given are mostly used for buying food and agricultural inputs, while only a quarter is used for investments.

The households' own crops are insufficient to feed the household throughout the annual cycle; they mostly last on average for six months, or less. For the remainder of the year, households have to buy food, and are dependent on finding casual work or selling forest products, which are often collected or poached without permits. This situation aggravates the food insecurity as well as the environmental problems. About 90% of households in the sampled areas of Tanzania and Malawi responded that they felt food insecure.

In the highlands of Papua population growth and agricultural intensification have reduced fallow periods, eventually to the point that forest cover is replaced by brush, bracken or grasses. This has reduced the number of pigs kept as well as game and the highlanders find themselves with insufficient animal protein.

Data on the social sectors also illustrate serious problems. In the programme area in Tanzania more than 90% of respondents reported that their water supplies were unsafe for drinking and inadequate for irrigation. In Malawi about 50 % responded that they did not have safe drinking water.

There are high incidences of diseases in all the three countries, often resulting in premature deaths. The most common are malaria, eye diseases, airborne and waterborne diseases, HIV/AIDS and injuries, which constitute huge losses for the households, both emotionally and in socio-economic terms. This is coupled with the fact that most households remain largely helpless to fend off perpetual external

shocks of the health hazards, as they are environmental hazards, which are perceived to be increasing.

Of the adult population in Tanzania 71.5% have received some formal education, while 52.4% have completed primary education (Household Budget Survey 2007). Currently in the 3 districts in Malawi, that was included in this survey, 81 to 89% of in the school age population attended school. In the fourth district (Ntchisi) the proportion was about 10% lower. The proportion is Papua is not known.

As a side-assignment the team was requested to assess the degree of integration of environmental concerns in the Norwegian aided portfolio in non-specific environmental projects. The sample of ten projects in Tanzania and Malawi is not large enough to draw absolute conclusions whether environmental aspects are integrated into assistance to all sectors where environmental concerns are or may be relevant. However, the findings in the two countries are quite similar and represent in any case a clear tendency in Norwegian assistance.

Whereas the Norwegian heads of delegations/representatives in annual meetings or project planning sessions in all projects studied had pointed explicitly to the importance of mainstreaming environmental concern as a cross-cutting issue in the portfolio, these statements were as a role noted in the minutes from the meetings. However, these environmental policy issues were almost never reflected in subsequent follow-up meetings, formal agreements, in budgets or activity planning.

Even if a number of problems in programme implementation/finalization where directly related to environmental issues, these were often not acknowledged as such, and the solutions were normally sought in technology and finance. One reason may be the consistent lack of environmental and social impact assessments as well as environmental indicators in programmes/projects.

Annexes

Annex 1: Logical Framework for Tanzania Traditional Energy Development Organization (TaTEDO) Programme, Tanzania

PURPOSE: UP-SCALE ACCESS TO ENERGY TECHNOLOGY

OUTPUTS:	MAIN INDICATORS	RISKS/ASSUMPTIONS
Facilitate energy info acquisition, processing, storage and dissemination	> 5000 rural households, 50 000 urban households, 100 institutions, 650 SMEs (of which 450 women) using improved stoves and ovens	Adoptation of modern energy technologies and information
Upscale uptake and use of modern biomass energy technologies and services		Access to credit for end-users and intermediaries
Mitigate health related environmental adverse effects of energy use (smoke, fumes)	No indicator selected	Adoption of modern energy technologies
Increase access to electricity, solar drying and motive power through decentralized energy systems	Access to electricity, solar drying and MEP services for >2000 households, 50SMEs, 10 schools and 5 dispensaries	Drought
Strengthen managerial, institution capacity and core support for TaTEDO and local partners	>4 TaTEDO partner institutions implementing CDM projects in year 4 > 500 charcoal burners using improved charcoal production methods in year 4	Continued commitment of staff and implementing agents Inflation

Annex 2: Mulanje Mountain Conservation Trust, Malawi

OBJECTIVES	OUTCOME/IMPACT INDICATORS	ASSUMPTIONS AND RISKS
Maintain Mulanje Mountain (MM) ecosystem, including biodiversity and ecological services	Mulanje Mountain Forest Reserve (MMFR) mgmt. plan under implementation; Ecosystem of MMFR maintained	Inadequate cooperation between MMCT and MMFD. Continued corruption in MMFD;
Increase awareness, understanding and appreciation of the value of MM ecosystem at local and national levels	Community knowledge and appreciation increased Decrease in Forest Department/community conflict relating to access and use of forest reserve	Conflict with neighbouring communities over reduction in access to resources.
Improve sustainability of resource use and enhance the value to local communities	Control with invasive species Control over purposely lit fires	Settling of disputes over control of resource extraction as new roads are opened
Establish long-term income stream and institutional capacity to achieve objectives	Allocation of Forest Fund or other income mechanism (e.g. water tax); Proportion of MMFR under co-management	Settling of rules for control over income mechanisms
MMCT appreciated and respected by various stakeholders	Endorsement of MMCT and contribution to operating costs	Recruitment of well motivated and law abiding staff. Effective law enforcement mechanisms in place
Positive demonstration of MMCT as financing mechanism	MMCT cited as positive example and model for conservation supporters	Incorporation of more diverse resource management expertise.

Annex 3: Total Land Care: Climate Change Adaptation, Malawi

EXTRACT OF LOGICAL FRAMEWORK

Adaptation Technologies and Practices	Expected impacts
AGRICULTURE	
Crop diversification with improved varieties	Increased/stable crop yield with lower risks in times of drought/floods
Winter production of high value horticultural crops, using cost irrigation systems	Improved food security, nutrition and incomes for self-reliance and growth
Value-added agro-processing using simple, low energy demanding methods/ equipment	Reduced demand on labour, allowing diversification. Beneficiaries include vulnerable groups
Improved farm integration livestock management	Reduced forest/soil degradation and related effects from siltation and pollution of water bodies.
Conservation agriculture tillage, soil & water conservation methods	
Crop/plant/soil sequestration of carbon, reducing water run-off and loss of topsoil.	Reduced emissions of CH4, N20 due to reduction in nitrogen fertilizer application and improved manure management. Increased storage of soil carbon.
IRRIGATION	
Construction of small and medium dams for irrigation and other uses	Sustainable increases in yields and area under irrigation
Small scale rainwater harvesting techniques	Improved water infiltration and retention with increased water uptake by crops/ vegetation and reduced risks for erosion and run-off
Irrigated watershed management with soil and water conservation techniques, conservation agriculture and reforestation	Groundwater recharge and maintenance
Enforcement of community based bye-laws on soil and stream bank protection	Reduced siltation of lakes and dams
Assessment of water quality and sediment loads in key rivers and lakes	Reduced incidents of diseases

Adaptation Technologies and Practices	Expected impacts
FORESTRY	
Reforestation using a wide range of fast growing indigenous and exotic species and improved management of natural forests	Increased biodiversity for resilience to climate change and natural disasters Improved abundance of wood
Use of remote sensing techniques to map and analyze changes in land use cover	Increase income from forest products
Evaluation of crop/plant/soil carbon sequestration	Increased carbon sequestration
Enforcement of bye-laws established by community/associations	Reduced forest/soil degradation and effects from siltation and pollution of water bodies Better understanding of eco-system dynamics, interactions and land use impacts.

Annex 4: Indicators on the Malawi Development Strategy

Sector/Indicator	Baseline value/source	Goal	Year
Agriculture:			
a) Value added ($ per agr. worker)	66 (WDR 2008)	> 66	2011
b) Equitable access to land	Insufficient land registry (MGDS)	Regularize title deed and land registry	2011
c) Increase smallholder share of GDB	23.6% (MDGS)	34.9%	2011
Forestry:			
Share of forestry in GDP	MGDS	4.0%	2011
Deforestation rate	2.4% (FAO)	Sustainable use of forests (0%).	2011
Forest land replanted	MGDS	Additional 200 000 HA	2011
Energy:			
Biomass/commercial energy mix	Nearly 96/04% (USAID)	75/25%	2011
Health:			
Life expectancy	40 years (MGDS)	45 years	2011
Annual population increase	2.2%	< 2.2 %	2011
Nutrition	49% of children <5 are stunted, 25% wasting (World Bank 2003)	< than 49 % stunted and < 25% wasting	2011
HIV Prevalence rate	14.1 (World Bank 2008)	Education and change in practices to lower rate	2011
Poverty:			
Decrease pop. rate below poverty line	66% MGD	< 66%	2011
Corruption:			
Reduce corruption and fraud	Malawi is no. 118 on Transparency International's List of Countries by Corrupt Practice Index	Move up on list	2011

Annex 5: Methods for Forest Inventory/Audits

The study employed slightly different methods for recording the conditions in forested areas adjacent to the sites of Norwegian assisted programmes.

Both the forest inventory along established transects as employed in Tanzania and the Environmental Audit applied in Malawi collected quantitative data on the status of the forests. A forest environmental audit/audit is normally defined as the procedure for obtaining information on the quantity and quality of the woodland resources and other characteristics of the land on which the trees and shrubs are growing. For this report, the forest environmental audit/audit was important in order to estimate the available stock in forests under the study. Both procedures were preceded by a reconnaissance survey which established the transects, based on the objectives of the study.

The forest inventory covered sample circular plots with radii of 15m corresponding to an area of 0.071 ha, using a low sampling intensity to assess the standing crop.

The starting point was selected so that the transect lines would include areas highly disturbed and some relatively untouched. The distances between transects and plots were the consistent. Measurements recorded in each plot include the following:

- diameter at breast height (DBH $\geq$ 5 cm);
- basal diameter (measured 20 cm above ground, for sample trees);
- tree height (sample trees, two in each plot);
- species name of each tree;
- relascope sweep (basal area);
- regenerants (count); and
- GPS readings (location).

Analysis of stocking parameters utilised the Microsoft Excel package, computing stem density (N), basal area (G) and volume (V). The following list identifies the models used for computation of stem density (Model 1), basal area (Model 2) and volume (Model 3 and 4) respectively:

Computation	Model
$N = \frac{i}{A}$ Where N = Stem density (stem count/ha); i = Stem count; A = Plot area (ha).	1
$G = \sum\left(\frac{g_i}{A * n}\right)$ $g_i = \frac{\pi d b h^2}{4}$ Where G = Basal area (inm^2/ha); dbh = Diameter at breast height (cm); Σ = Pi; A = Plot area (ha); n = Number of plots; and g_i = Basal area of a tree/shrub (m^2).	2
$V = 0.0001 d_i^{2.032} * h_i^{0.66}$ (Malimbwi et al. 1994)	3
$V = 0.5 * g_i * h_i$ Where V = Volume (in m^3/ha); d_i = Diameter at breast height (cm); h_i = Tree height	

The environmental audit employed on Malawi selected transects lines on compass courses from a coordinate-determined reference point, through customary village settlement/agricultural land and into the heart of the protected forest reserves, to ensure representation by both customary and protected areas. Plots of 100 by 10 metres are systematically laid out at a distance of approximately 500 metres along each transect.

Standing tree volume were only based on estimates and not exact measurements, because of budget and time limitations. The estimates within a plot were arrived at by firstly counting the number of trees with a diameter at breast height between 5 and 10 cm, followed by all trees between 10 and 20 cm, and finally 20 cm and above. The average useable height in each class was estimated, and the volume calculated based on simple volume calculations. The standing volume per plot was multiplied by 10 to obtain tree volume per hectare. For example, if there were n trees in the 10-20 cm diameter class on the plot (average 15cm), with an average useable height of h meters, the formula used was ($r \times r \times \pi \times h$) $\times$ n $\times$ 10. An alternative and easier method is to use a dendrometer or relascope to calculate the basal area, but none of these were available.

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Annex 7: Terms of Reference

ToR for a baseline study of results of the Norwegian environmental action plan limited to the bilateral assistance.

1 The challenge

The Norwegian action plan for Environment in Development Cooperation states that an evaluation of the results will take place when the implementation period ends in 2015. That assignment will be a challenging one since robust evidence of results requires a comparison of the situation before the start of the action plan with the situation afterwards, and a control for other factors that may influence the changes that are observed during the implementation period.

A key problem is the lack of information about the situation before the plan was developed. Such **baseline data** are needed to make before and after- comparisons possible. One option would of course be to leave it to the coming evaluation team to recreate the needed baseline data. But it will not be an easy task in 2015/16 to produce reliable data on the situation 10 years earlier. Norad's evaluation department have, therefore, decided to carry out a baseline study related to the Norwegian action plan in three case countries (Indonesia, Malawi and Tanzania) and a very limited number of programmes.

The consultants shall:

- assess the relevance of existing data and reporting systems on national level and for the selected programmes in the three case countries
- supplement data that already exists or soon will be collected, with emphasis on four case studies of socio-economic effects of environmental related assistance on local level (two in Malawi and two in Tanzania, and none in Indonesia at this stage)
- clarify data and interpretation problems, and especially try to identify other factors than the Norwegian action plan and programmes which will influence developments during the implementation period.

The main guidelines for this assignment are given in the following together with an overview of the background.

2 The background

The Norwegian action plan for Environment in Development Cooperation sets the direction for Norway's efforts during the ten year period 2006-2015, but the plan will be adjusted and improved along the way through dialogue with a variety of

actors both in Norway and in partner countries. The purpose is to contribute towards achieving the Millennium Development Goals (MDGs), making it possible for poor people to improve their living conditions and health, and reducing their vulnerability. The ultimate goal of Norway's efforts is for developing countries to acquire the capacity and competence necessary to safeguard their right to a clean environment and the ability to manage their natural resources in a sustainable manner. Norway aims also to play a leading role in making environmental concerns an integral part of all development cooperation.

The action plan states that the Ministry of Foreign Affairs (MFA) will ensure that a final evaluation is carried out soon after 2015 to assess the results achieved. Such an end-evaluation will cover both the four thematic priority areas and how successfully the environment has been integrated as a cross-cutting theme. The evaluation will be the final step in a reporting process which includes a yearly report to the Norwegian Parliament (the Storting) from MFA and a mid-term review.

The decision to implement an evaluation 10 years into the future, in addition to a mid-term review, raises some unique challenges, but also opportunities. To evaluate the results of an action plan will, however, nearly always be a challenging task. It is especially so in this case where the plan is an ambitious long-term endeavour, broadly formulated and so far in the operationalization phase, with few geographical limitations and based on many different channels, including multi- and bilateral partnerships and NGO's.

The task is not made easier by a lack of specification of what type of results that the final evaluation should cover. It seems, however, reasonable to assume - since the main objective for Norwegian development assistance in general is to reduce poverty - that the final evaluation should cover **both results for the environment and the socio-economic effects** in partner countries. The effect concept should then not only cover the degree of change over time, but also the value of the change in economic and other terms. It is in addition reasonable to assume that the final evaluation should not only document expected or unexpected positive or negative results, but also try to explain why results have been obtained or not. An important objective will in that case be to clarify **cause-effect relationships** between the action plan itself and the effects both on the environment and for the countries and local populations involved.

Robust evidence of results requires a comparison of the situation before and afterwards, and a control for other factors that may influence the changes that are observed during the implementation period. Such robust evaluation designs make it possible to define and measure the results as the difference between the observed changes and **the counterfactual**, i.e. the changes that would take place if the action plan was not developed and implemented.

A key challenge in the relation to the final evaluation of the action plan is the lack of information about the situation before the plan or early during the implementation phase (2006/07/08). Such **baseline data** can be used in comparisons with the situation after the planned finalizion in 2015 (**endline data**). If baseline data are

available it will most probably reduce the assessment problems that the final evaluation team will meet during its assignment.

3 The purpose, goals and objectives

The main purpose of the baseline study is to contribute to a relevant and reliable platform for future assessments of results both for the environment and the inhabitants, and clarify significant cause-effect relationships.

The **primary goal** is in other words to **supplement data and insight** which are already available or will be delivered through new monitoring and evaluation systems on :

- the environmental related behaviour of the most significant actors in the assistance system, including actions focusing on environment as a cross-cutting issue
- the state of the environment on national level in the three case countries and selected programmes, and
- the socio-economic situations of the inhabitants

The planning of this baseline study shows that the environmental situation in many of Norway's partner countries are documented by partner countries themselves, the World Bank, FAO and other actors. The available environmental data have varying relevance and reliability. It is, however, remarkably little data on how the level of living depends on the state of the environment and on the driving forces that influence human and environmental developments. Preliminary quality controls of new environmentally related programmes indicate such weaknesses also in the monitoring and evaluations (m&e)-systems that are under development. It is especially a need to supplement national data with local data about the relationship between the state of the environment and the socio-economic situation for the inhabitants, including the values different types of environment represent.

The **second goal** is to collect and systemize new data that can be used to assess the main drivers of change and results of the assistance both in nature protected and unprotected areas. A key issue for many partner countries is to identify efficient instruments for reducing negative changes in the state of the environment which influence the inhabitants' standard of living. Different forms of nature management and good governance are key instruments, but the uses of such instruments have socio-economic effects which are also influenced by changes in the environment (as for example climate change). Such factors will influence developments especially at local level, having directly effects on poverty development. Improved understandings of the driving forces that are involved require, therefore, also baseline data from local level. Such baseline data should contribute to improved understanding of the results of nature management and good governance both in areas;

- designated for nature protection (as national parks and nature reserves which includes minor parts of a country, but often the ecological important areas) and
- areas that are not protected by legal and administrative means (often 80-90% of the area).

A **third goal** of the baseline study is to clarify data and interpretation problems, and especially try to identify other factors than the Norwegian action plan and pro-

grammes which will influence developments during the implementation period. The interpretation of baseline and endline data is a general challenge. If the baseline and endline years or season is "not normal", for example by unusual low or high agricultural production, then the observed change in agricultural production - and living standard - will be much more positive or negative than in more "normal years". The timing of such studies can, therefore, influence conclusions in a very significant way which makes it necessary to assess to what degree the observed baseline or endline data is different from "normally". (Any baseline study should clarify the variability in environmental and socio-economic indicators).

The changes observed by 2015/16 will most probably be influenced by many other factors than Norwegian or joint assistance, including other interventions financed by the partner country itself or other bilateral donors, and by changes in the assistance system itself [6]. The observed developments over time and space will also be influenced by "heavy trends" as long term economic change, urbanisation, globalisation and climate change, and by different events as nature disasters, social conflicts and short term business cycles. Therefore, the observed change in partner countries between the time when the Norwegian action plan was created and up to 2015 will only partly (or marginally) be a result of actions initiated by the Norwegian actions plan. It will, however, be an advantage for the final evaluation team if baseline data identifies and covers some of most important other factors which are identified at the beginning of the implementation phase by participants in the planning and implementation processes.

This baseline study will not be able to cover all elements of the action plan, or all relevant processes. It is necessary to simplify and focus on very significant issues, and to strongly limit data collection to only a few case countries and programmes. But the sample of issues and cases should give information that are relevant for the action plan more in general and contribute to a platform for assessing strong or weak aspects of the action plan and the "programme theory" the plan builds on.

4 The action plan and the "program theory"

The action plan states that Norway in addition to emphasising environment as a cross-cutting issue will concentrate its efforts on four thematic priority areas:

- sustainable management of biological diversity and natural resources
- water resources management, water and sanitation
- climate change and access to clean energy
- hazardous substances

The plan states that the main efforts will be directed towards conservation of biological diversity and sustainable management of natural resources. Climate change has got top priority more recently.

6 The most important change recently in the Norwegian and international assistance system is the high emphasis on harmonization with other donors actions and alignment with partner countries priorities. These changes in the assistance system make it less relevant to compare the situation in 2015 with the situation before the action plan was created (2006/7), as the assistance system itself have changed significantly during the "start-up" period.

The action plan is not very explicit about the cause-effects relationships and mechanisms involved. The main thinking seems to be that the action plan, its guidelines and the implementation will:

- change **the behaviour** of the Norwegian assistance system and also influence the behaviour of other actors, including other donors and different authorities in partner countries. The intention is that these changes in the assistance system should
- influence the state of **the environment** in partner countries - and partly regionally and globally - in a positive way (or less negative way). The intended end-result is that
- the socio-economic **living standard** also of the population will be influenced positively, at least compared with the **counter-factual situation** where no Norwegian assistance was given.

Such simplified "linear programme theory" about the relationship between the action plan and its effects is not a realistic one since the cause-effect linkages in most cases are much more complex. The complexity will be a challenge for the final evaluation team, as changes in the living standard of partner countries most probably also will be influenced by changes in the environment. "Feed-back mechanisms or casual loops" are one reason why this baseline study includes programmes in areas where population pressure and market forces degrades the environment, which in turn reduce the socio-economic living standard and then adds to the environmental stress.

One challenge for the planning of this baseline study is that much of the Norwegian interventions are early in the planning phase or still unknown. In reality the total Norwegian input and activity will first be known after the implementation phase should be over in 2015. Only afterwards will it be possible to select a representative sample of actions for an evaluation and to give a holistic picture describing the input and activities which will be related to the action plan and other Norwegian actions in the environmental sector. Future descriptions of inputs should, however, be taken care of by Norad's normal statistical system. Performance and results will also be described in annual reports from the involved actors, including embassies, authorities in partner countries, multilateral organisations and NGO's. But the information on results in these reports will most probably be of very variable quality. Robust evidence of results will be a task mainly for the final evaluation. The robustness will depend on the relevance and reliability of existing data sources, and how it will be possible to supplement such data by a limited baseline study.

5 The need for supplementary baseline data

Parts of the needed baseline data will be available through recent or ongoing reviews and evaluations done partly by Norwegian actors, by multilateral organisations and by joint efforts with other donors and authorities in partner countries. Some of the multilateral environmental programmes have been covered by Norad-studies or done by the multilateral organisations themselves. A common finding is that the multilateral organisations need improved reporting systems which clarify long-term results of their activities. But some key baseline data for these types of

channels exist both for UNEP, UNDP's environmental assistance, a key World Bank fund, GEF related assistance and IUCN (even if the quality are varying).

Important baseline data do exist also for the bilateral sector since Norad and the embassies have recently produced or will produce several relevant studies of sectors that are closely related to the environment as energy and fishery (a forestry-evaluation is intended). There are also several relevant reviews of environmentally related actions by Norwegian embassies and NGOs. These reports include data on the existing situation. The relevance and reliability of these data vary strongly and indicate that the need for improved data is highest in the bilateral sector.

Significant parts of the needed baseline data on bilateral assistance will, however, be covered by new monitoring and evaluation (m&e) systems which have been or are under development in partner countries by joint efforts with other donors, both for new national sector programmes and major programmes on local level. Several of the new joint m&e-systems are results of the harmonization and alignment processes that now takes place among donors internationally, processes that require donors like Norway to use the common monitoring and evaluation system and not develop parallel systems.

In the cases that joint m&e-systems do not fully cover Norwegian needs, or it is a significant risk for data collection not to be implemented as planned, then it seems reasonable that Norway organise its own supplementing data collection. Key tasks in this baseline study are, therefore, to assess:

- the relevance and reliability of existing m&e-systems, before a finale decision is made on supplementary data collection.
- if general statistical surveys or reports on national level have produced data that can be used (at least partly) as baselines also for selected programmes on local level, both related to the socio-economic situation, the state of the environment and closely related sectors as agriculture and forestry.

6 The design of the baseline study

Resource constraints make it necessary to strongly limit the collection of baseline data and select only a few case examples of assistance that are very **significant** and identified by high political priority, high budgets, or having a potential for significant results. This includes new types of programmes with high learning potential (as pilot programmes or programmes being scaled up), highly significant processes and drivers of change, and significant types of partnerships or partners.

i. Sampling of case countries and programmes

Environment has more recently been a priority sector for Norwegian assistance in China, Ethiopia, Indonesia, South-Africa, Tanzania and Zambia. Most resources have been used in Ethiopia (desertification) and Tanzania (nature management) with more than 100 million NOK in each country during 2004-05. Relatively recent reviews and evaluations give overviews of the existing baseline data for these countries (except Ethiopia were Norwegian assistance are now sharply reduced). The reports indicate that most of the data needed for China are available. The review of the assistance to Tanzania shows good environmental results and few

(and partly negative) effects on poverty, but the lack of baseline data makes it difficult to assess the socio-economic situation for the inhabitants. The review of the environmental assistance to Indonesia showed that neither the results nor the baseline data were satisfactory (with the effect that Norwegian assistance has been sharply reorganised and put under leadership of DfiD).

The recent change in Norwegian priorities have made environmentally related issues a priority sector also in other partner countries; including Brazil, India, Malawi, Mozambique, Nicaragua (regionally) and Uganda. Climate, forestry and good governance of environmentally related sectors as energy, agriculture or fisheries are common issues in most of these "new" countries. The issues of most relevance (and significance) to all these countries seems to be related to land use, nature management and good governance of forestry, agriculture and nature protected areas.

It's not possible to select a representative sample of these countries, or to design a study based on advanced control group methodology. Limited resources make it necessary to select an **analytic sample of case countries and programmes** that can clarify long-term results or impacts of a diversity of programmes. The Norwegian assistance to each of the selected countries should have a significant size (and, therefore, have an impact at least sector wise). In addition the selected countries should together cover a diversity of programmes both according to levels (national/local), partnerships (public/NGO's), type of areas (protected/unprotected), type of activity or instrument (capacity building/technical assistance/community development) and geographical/political contexts.

This baseline study limits its data collection to only two countries in Africa (**Tanzania and Malawi**) and one country in Asia (**Indonesia or Papua New Guinea**). **Most of the resources will be used on 2-3 different programmes in each of the two African countries.** The baseline study in Indonesia/New Guinea will limit itself to only one limited task. But this very focused approach should not limit the possibilities for the finale evaluation to assess the results of the action plan in a broader sense, as much more data will be available through the normal Norwegian planning & reporting system and existing data sources (as baseline data on capacity building in China, and energy/fishery assistance in Nepal and Mozambique).

The baseline studies will in all three countries cover environment as a cross-cutting issue in general and a strictly limited number of pre-selected environmentally related programmes.

ii. Sampling of programmes with environment as a cross-cutting issue

Norad's statistics from 2004-05 indicates that only 15-20% of the budget for the Norwegian development cooperation in general relates to environmental assistance whether using a strict or broad definition of environment; i.e. "general environment (DAC-code 410) or assistance where environment is the main purpose or an important purpose.

Environment as a cross-cutting issue can only be covered by a baseline study focusing on the 80-85% of the assistance which do not have environment as the main or important issue, either being bilateral- or multilateral. Several recent studies both of joint and bilateral assistance[7] indicate that environment has not been treated properly as a cross-cutting issue, and it is reasonably to assume that the situation is similar in the case of Norwegian "non-environmental assistance". This issue will be clarified by ongoing reviews at Norwegian embassies by Norad which cover cross-cutting issues more broadly.

This baseline study will limit itself to a small random sample (5-10%) of "non-environmental programmes" implemented in each of case countries in 2007/08. Preliminary tests at two embassies indicate that very little resources are needed for collection of data from programme documents on the environment as cross-cutting issue since[8].

iii. Selection of programmes

Since harmonization and alignment have become a significant elements of the assistance system, priority is given to national sector programmes and more geographical limited programmes were Norway participate in joint efforts with high environmental relevance. The focus on "joint programmes" will probably reduce the identification problems for the finale evaluation team, in the way that interaction effects between the harmonization process and the implementation of the Norwegian action plan are prevented. In other words, this identification challenge is reduced by focusing the baseline study on programmes which already are "harmonized". (That reduces of course the possibility to identify the "partial effects" of only the Norwegian contribution, but "joint effects" should not be of less interest).

Priority is also given to programmes were Norway will be involved for several years, preferably at least five years. One reason is that that long-term assistance most often is needed to get results. These types of selection criteria may distort the final evaluation towards becoming an evaluation of "best cases", which the final team should be able to compensate for by also evaluate a more representative sample, including studies of "worst cases"[9].

Existing data will cover most of the need for baseline data on national level. Priority here is given to collect supplementary data on local level. **NB! All of the local studies will cover four key issues**:

- the socio-economic situation for the inhabitatnts on household level and the relationship with the state of the environment at the beginning of the interventions (or early during the implementation phase),

7 A joint Evaluation of General Budget Support 2006 and evaluations done by SIDA, DANIDA and the Dutch evaluation department have the same conclusion

8 The most recent year with statistics on bi- and multi-bilateral assistance to these three countries is 2006. A 5-10% sample means that data collection can be restricted to a ottery sample of 10 "non-environmental" programmes in each country. By sampling 5 large programmes (mostly public partnerships) and 5 less large programmes (mostly NGO's) such a sample should give a representative picture of environment as a cross-cutting issue at the beginning of the action plan period. Data collection for such a limited sample should be possible within 2-4 man-days.

9 A focus on long-term assistance will reduce the risk that changing political priorities in Norway and/or partner countries will influence the implementation in very significant ways. The risk for changes in political priorities explains why the baseline study also give priority to the collection of new data which should be of lasting significance for the partners on national and/or local level, even if the programmes are not implemented as planned (a "no-waste" criteria).

- the asset values the environment represent for the inhabitants **measured primarily in economic,** but also in other terms
- the effects of key instruments, and
- good governance (and corruption especially).

The data sources and m&e-systems to be assessed and programmes to be covered in the baseline studies include so far the following:

Tanzania

Tanzania has very recently published an updated State of the Environment-report which probably will be followed up with improved macro data also from FAO. Norway will during the next five years be involved in several environmental programmes on national level. One of them is a new joint sector programme for nature management, where the preparations are in the final phase. This sector programme is based on a new and joint monitoring and evaluation system which covers both national and local level. The baseline team should in the inception phase assess the quality of the state of the environment report and new m&e-system(s), including risks related to the system implementation.

One of the main bilateral programmes is a Forest for climate partnerships with a planned Norwegian support of up to 550 million NOK over a five year period. Reduced deforestation and increased aforestation are key elements and Tanzania will through this programme be a pilot country for testing mechanism for implementing for reduced carbon emissions from deforestation and land degradation (REDD). Deforestation is linked to several driving forces and it is important to get a better understanding of cause-effect relationships, especially at the local level. One of the baseline studies in Tanzania will, therefore, focus on the socio-economic effects of deforestation and the driving forces of changes on local level, **see the requirements mentioned above for all four local case studies**.

One significant cause of deforestation in many developing countries is the need for wood and charcoal as energy source for households and businesses. There is high potential to make such energy supply much more efficient, and one of the NGO's in Tanzania that has been assisted by Norway is working on this issue. A recent review[10] of the activities of this NGO indicates good results and it is plans to scale up its activities significantly with assistance from Norway. The review shows, however, that reliable baseline data are missing. One baseline study will, therefore, cover two local communities with and without new interventions by this NGO. (Norway contributes to the environmentally activities of several NGOs in Tanzania.A WWF-programme will give an overview for 2008).

Malawi

Malawi published in 2003 an updated State of the Environment-report and has from 2007 introduced a yearly review of the results in the environment sector as parts of the reporting on progress related to its development strategy. The most important environmental programme for Norwegian assistance during the next five

10 See Norad Collected Reviews 30/2007: TaTEDO Integrated Sustainable Energy Services for Poverty Reduction and Environmental Conservation Program

years is a new joint sector programme for agricultural development programme (ADP) where the World Bank is lead donor. Improved **nature and water management** are key objectives together with increased food security. The new sector programme includes a new monitoring and evaluation system which covers both national and local level. The baseline team should in the inception phase assess the quality of the reports on the state of the environment and the new m&e-system related to ADP, including risks related to the implementation of the m&e-system.

Norway will during the coming years contribute to four community (and environmentally) related programmes on local level. One of the most important ones focuses on management of the central watersheds of Lake Malawi and adaptation to climate change. That programme is operated by an experienced NGO (Total Land Care) and will cover an area with more than 750 000 inhabitants, including both nature protected and un-protected areas. The design is to scale up an ongoing pilot project which has emphases local community development more broadly, but where environmental stewardship and sustainable land and water management are key elements. The project plan includes a monitoring and evaluation system with both natural resource indicators and village profiles, and will (according to the plan) cover both input, output and impacts. But the existing socio-economic baseline data include very little data on household level and no gender or HIV/Aid related information. Since results most probably will vary much among local inhabitants, and depend on several factors, a more adequate baseline survey will be a clear advantage. Such baseline study should cover two new local communities that will be included in the programme in different phases (thereby introducing a "control-group"-element) and as mentioned above is required for all four local studies:

- the socio-economic situation for the inhabitatnts on household level and the relationship between the level of living and the state of the environment at the beginning of the interventions (or early during the implementation phase),
- the asset values the environment represent for the inhabitants **measured primarily in economic,** but also in other terms
- the effects of key instruments, and
- good governance (and corruption especially).

Norway will also join others donors in financing a five year management programme for a major nature protected area (Mulanje Mountain) which is claimed to be the most significant mountain in southern tropical Africa as a "biodiversity hotspot". Public/private partnership is a key element in the programme as the public budget for management is reduced (with corruption as a severe problem). The nature protected area is a significant timber, wood and water resource for the densely populated areas around with nearly 800 000 inhabitants, but also for commercial tea and coffee plantations. Most households living in the more adjacent areas depend on harvesting different resources from the nature protected area for their subsistence consumption (firewood, mushrooms etc), but there is no reliable data on the significance of such products. A study claims that available data (quote) " can not be used by anymore who needs reliable data on which to make operational decisions about projects…"[11]

11 (Joy Hecht. 2006. Valuing the resources of Mulanje Mountaind. p.6 in Occasional Paper No. 14, USAID/Malawi).

The programme plans include monitoring and evaluation systems, mostly of environmentally significant issues or related to different kinds of interventions or activities. The monitoring and evaluation systems do include village profiles based on participatory procedures. Better data on household level is required to assess the values of the nature protected area for the local inhabitants. The local baseline study of the relation between environment and socio-economic situation should in addition to the general requirements mentioned above look into good governance (and corruption) locally.

Indonesia and Papua New Guinea

New Guinea is the second largest island in the world and has the largest remaining rainforests in Asia. The most rapid deforestation takes place in the huge rainforest areas in the western parts (West-Papua in Indonesia), but deforestation is also a major problem in the eastern independent Papua New Guinea. Norway has given environmental related assistance through NGO's[12] for app. 10 years in the eastern parts of the island, and start now up assistance also to West-Papua. The objective of this baseline study is to **assess and systemize existing data** on the state of the environment for West-Papua and also data sources on the socio-economic situation for the population. The study may also cover a socio-economic study of a limited locality in East- or West Papua which can give insight of general interest, but that task will in case be organised as a separate project later on.

iv. Quality standards and the choice of indicators

The assessments of the quality of existing data sources and of monitoring and evaluation systems under establishment will be based on international standards created by DAC, UNEG or World Bank. The indicators should cover both the environmental indicators defined as the Millennium Development Goals, and be harmonized with national harmonized tool (as the Agriculture, Food Security & Nutrition M&E systems in Malawi), and to the degree possible with the key indicators of poverty-environment identified by the World Bank Environment Department (WB and Shyamsundar January 2002).

Sampling methods should secure representative data and be based on explicit assessments of seasonal and geographical variations locally.

7 Timeframe and implementation

Planning and decision processes of the Norwegian environmental related assistance in the three selected countries are in different phases, which makes it necessary to implement the baseline studies accordingly. The plan is to start the baseline studies in Malawi, followed by Tanzania and with work later on in Indonesia. The tentative time plan given in the tender document is that draft country reports from Malawi and Tanzania will be delivered before the end of 2008, with country report on Indonesia at the end of January and final report delivered early March 2009.

12 A Norwegian NGO (Rainforest Foundation Norway or RFN) is involved in both these areas with assistance related to sustainable forest management. A recent review of RFN in general recommends improvements of it's planning, monitoring and reporting system.

The baseline team will during the inception phase plan the local studies more in detail and in cooperation with the programme implementing partners, using adequate sampling methods and both quantitative and qualitative data collection methods. The inception report will be delivered within 7 weeks after the contract is signed with a more detailed plan for the work tasks in Malawi and tentative plans for Tanzania and Indonesia.

Some flexibility is required timewise, depending on challenges discovered during the inception phase, but local data collections should cover the same season, and be limited to summer and autumn 2008.

8 Budget and deliverables

The most time-consuming task will be the socio-economic baseline studies and the planning and field work they will require. Assuming that the four local case study areas will be within less than a one day travel distance from an international airport, the total assignment should be possible to do within a time-budget of 48 person-weeks, not including assistance from local data collecting teams.

The **Deliverables** in the consultancy consist of following outputs:

- Work-in-progress reporting **workshops** (maximum 2) in Oslo, arranged by the EVAL on need basis.
- **Inception Report** not exceeding 25 pages shall be prepared in accordance with EVAL's guidelines given in *Annex A-3 Guidelines for Report*s of this document. It will be discussed with the team before approval by EVAL.
- **Local debriefing.** The field studies will end with a debriefing of the authorities in partner countries, the Norwegian Embassy and other involved partners before leaving the case-study country.
- **Draft Final Country Reports** for feedback from stakeholders and EVAL. The feedback will include comments on structure, facts, content, and conclusions.
- **Final Study Report** prepared in accordance with EVAL's guidelines given in *Annex A-3 Guidelines for Report* of this document.
- **Seminar for dissemination** of the final report in Oslo or in the case countries, to be arranged by EVAL. Direct travel-cost related to dissemination in the case countries will be covered separately by EVAL on need basis, and are not to be included in the budget.

All presentations and reports are to be submitted in electronic form in accordance with the deadlines set in the time-schedule specified under *Section 2 Administrative Conditions* in *Part 1 Tender specification* of this document. EVAL retains the sole rights with respect to all **distribution, dissemination and publication** of the deliverables.

9 The international tender process and choice of baseline team

The tender process will be international and in accordance with EU rules. The main competition criteria will be the quality of team, the design and methods proposed, the availability of team members and price. The team needs a high level of competence in mixed methods approach, insight in the relationship between environment and socio-economic developments, nature management and environmental values,

and also in good governance. The team leader should have extensive experience from major evaluations or multidisciplinary research. The selection criteria are defined in the invitation for tender which have to be ordered from Norads Evaluation Department at post-eval@norad.no.

EVALUATION REPORTS

1.97 Evaluation of Norwegian Assistance to Prevent and Control HIV/AIDS
2.97 «Kultursjokk og Korrektiv» – Evaluering av UD/NORADs Studiereiser for Lærere
3.97 Evaluation of Decentralisation and Development
4.97 Evaluation of Norwegian Assistance to Peace, Reconciliation and Rehabilitation in Mozambique
5.97 Aid to Basic Education in Africa – Opportunities and Constraints
6.97 Norwegian Church Aid's Humanitarian and Peace-Making Work in Mali
7.97 Aid as a Tool for Promotion of Human Rights and Democracy: What can Norway do?
8.97 Evaluation of the Nordic Africa Institute, Uppsala
9.97 Evaluation of Norwegian Assistance to Worldview International Foundation
10.97 Review of Norwegian Assistance to IPS
11.97 Evaluation of Norwegian Humanitarian Assistance to the Sudan
12.97 Cooperation for Health DevelopmentWHO's Support to Programmes at Country Level

1.98 "Twinning for Development". Institutional Cooperation between Public Institutions in Norway and the South
2.98 Institutional Cooperation between Sokoine and Norwegian Agricultural Universities
3.98 Development through Institutions? Institutional Development Promoted by Norwegian Private Companies and Consulting Firms
4.98 Development through Institutions? Institutional Development Promoted by Norwegian Non-Governmental Organisations
5.98 Development through Institutions? Institutional Developmentin Norwegian Bilateral Assistance. Synthesis Report
6.98 Managing Good Fortune – Macroeconomic Management and the Role of Aid in Botswana
7.98 The World Bank and Poverty in Africa
8.98 Evaluation of the Norwegian Program for Indigenous Peoples
9.98 Evaluering av Informasjons støtten til RORGene
10.98 Strategy for Assistance to Children in Norwegian Development Cooperation
11.98 Norwegian Assistance to Countries in Conflict
12.98 Evaluation of the Development Cooperation between Norway and Nicaragua
13.98 UNICEF-komiteen i Norge
14.98 Relief Work in Complex Emergencies

1.99 WID/Gender Units and the Experience of Gender Mainstreaming in Multilateral Organisations
2.99 International Planned Parenthood Federation – Policy and Effectiveness at Country and Regional Levels
3.99 Evaluation of Norwegian Support to Psycho-Social Projects in Bosnia-Herzegovina and the Caucasus
4.99 Evaluation of the Tanzania-Norway Development Cooperation1994–1997
5.99 Building African Consulting Capacity
6.99 Aid and Conditionality
7.99 Policies and Strategies for Poverty Reduction in Norwegian Development Aid
8.99 Aid Coordination and Aid Effectiveness
9.99 Evaluation of the United Nations Capital Development Fund (UNCDF)
10.99 Evaluation of AWEPA, The Association of European Parliamentarians for Africa, and AEI, The African European Institute
1.00 Review of Norwegian Health-related Development Cooperation1988–1997
2.00 Norwegian Support to the Education Sector. Overview of Policies and Trends 1988–1998
3.00 The Project "Training for Peace in Southern Africa"
4.00 En kartlegging av erfaringer med norsk bistand gjennomfrivillige organisasjoner 1987–1999
5.00 Evaluation of the NUFU programme
6.00 Making Government Smaller and More Efficient.The Botswana Case
7.00 Evaluation of the Norwegian Plan of Action for Nuclear Safety Priorities, Organisation, Implementation
8.00 Evaluation of the Norwegian Mixed Credits Programme
9.00 "Norwegians? Who needs Norwegians?" Explaining the Oslo Back Channel: Norway's Political Past in the Middle East
10.00 Taken for Granted? An Evaluation of Norway's Special Grant for the Environment

1.01 Evaluation of the Norwegian Human Rights Fund
2.01 Economic Impacts on the Least Developed Countries of the Elimination of Import Tariffs on their Products
3.01 Evaluation of the Public Support to the Norwegian NGOs Working in Nicaragua 1994–1999
3A.01 Evaluación del Apoyo Público a las ONGs Noruegas que Trabajan en Nicaragua 1994–1999
4.01 The International Monetary Fund and the World Bank Cooperation on Poverty Reduction
5.01 Evaluation of Development Co-operation between Bangladesh and Norway, 1995–2000
6.01 Can democratisation prevent conflicts? Lessons from sub-Saharan Africa
7.01 Reconciliation Among Young People in the Balkans An Evaluation of the Post Pessimist Network

1.02 Evaluation of the Norwegian Resource Bank for Democracyand Human Rights (NORDEM)
2.02 Evaluation of the International Humanitarian Assistance of theNorwegian Red Cross
3.02 Evaluation of ACOPAMAn ILO program for "Cooperative and Organizational Support to Grassroots Initiatives" in Western Africa 1978 – 1999
3A.02 Évaluation du programme ACOPAMUn programme du BIT sur l'« Appui associatif et coopératif auxInitiatives de Développement à la Base » en Afrique del'Ouest de 1978 à 1999
4.02 Legal Aid Against the Odds Evaluation of the Civil Rights Project (CRP) of the Norwegian Refugee Council in former Yugoslavia

1.03 Evaluation of the Norwegian Investment Fund for Developing Countries (Norfund)
2.03 Evaluation of the Norwegian Education Trust Fund for Africain the World Bank
3.03 Evaluering av Bistandstorgets Evalueringsnettverk

1.04 Towards Strategic Framework for Peace-building: Getting Their Act Togheter.Overview Report of the Joint Utstein Study of the Peace-building.
2.04 Norwegian Peace-building policies: Lessons Learnt and Challenges Ahead
3.04 Evaluation of CESAR´s activities in the Middle East Funded by Norway
4.04 Evaluering av ordningen med støtte gjennom paraplyorganiasasjoner. Eksemplifisert ved støtte til Norsk Misjons Bistandsnemda og Atlas-alliansen
5.04 Study of the impact of the work of FORUT in Sri Lanka: Building CivilSociety
6.04 Study of the impact of the work of Save the Children Norway in Ethiopia: Building Civil Society

1.05 –Study: Study of the impact of the work of FORUT in Sri Lanka and Save the Children Norway in Ethiopia: Building Civil Society
1.05 –Evaluation: Evaluation of the Norad Fellowship Programme
2.05 –Evaluation: Women Can Do It – an evaluation of the WCDI programme in the Western Balkans
3.05 Gender and Development – a review of evaluation report 1997–2004
4.05 Evaluation of the Framework Agreement between the Government of Norway and the United Nations Environment Programme (UNEP)
5.05 Evaluation of the "Strategy for Women and Gender Equality in Development Cooperation (1997–2005)"

1.06 Inter-Ministerial Cooperation. An Effective Model for Capacity Development?
2.06 Evaluation of Fredskorpset
1.06 – Synthesis Report: Lessons from Evaluations of Women and Gender Equality in Development Cooperation

1.07 Evaluation of the Norwegian Petroleum-Related Assistance
1.07 – Synteserapport: Humanitær innsats ved naturkatastrofer:En syntese av evalueringsfunn
1.07 – Study: The Norwegian International Effort against Female Genital Mutilation
2.07 Evaluation of Norwegian Power-related Assistance
2.07 – Study Development Cooperation through Norwegian NGOs in South America
3.07 Evaluation of the Effects of the using M-621 Cargo Trucks in Humanitarian Transport Operations
4.07 Evaluation of Norwegian Development Support to Zambia (1991 - 2005)
5.07 Evaluation of the Development Cooperation to Norwegion NGOs in Guatemala

1.08 Evaluation: Evaluation of the Norwegian Emergency Preparedness System (NOREPS)
1.08 Study: The challenge of Assessing Aid Impact: A review of Norwegian Evaluation Practise
1.08 Synthesis Study: On Best Practise and Innovative Approaches to Capasity Development in Low Income African Countries
2.08 Evaluation: Joint Evaluation of the Trust Fund for Enviromentally and Socially Sustainable Development (TFESSD)
2.08 Synthesis Study: Cash Transfers Contributing to Social Protection: A Synthesis of Evaluation Findings
2.08 Study: Anti- Corruption Approaches. A Literature Review
3.08 Evaluation: Mid-term Evaluation the EEA Grants
4.08 Evaluation: Evaluation of Norwegian HIV/AIDS Responses
5.08 Evaluation: Evaluation of the Norwegian Reasearch and Development Activities in Conflict Prevention and Peace-building
6.08 Evaluation: Evaluation of Norwegian Development Cooperation in the Fisheries Sector

1.09 Evaluation: Joint Evaluation of Nepal´s Education for All 2004-2009 Sector Programme
1.09 Study Report: Global Aid Architecture and the Health Millenium Development Goals
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