

Danish Ministry of Foreign Affairs  
 The Research Unit  
 Technical Advisory Service, BFT  
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# Annual Report Form for research projects

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 1 Feb. 2008

The report must be in English and must not exceed 10 pages. The report must be submitted on 1 February the following year to the Ministry of Foreign Affairs, electronically to the address: FFU@um.dk. For projects with several partners, the reporting must be based on a mutually agreed text.

**Attachments:**

**List of publications**

For individual Ph.D. projects: Annual statement from the supervisor on the progress

Additional information, such as internal project reports etc., can be attached as it is found relevant.

**Guidelines for filling out the report are attached to the form.**

|                                                      |                                                                                                                                                   |                                             |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| <b>1. Project responsible</b><br>Per Moestrup Jensen | <b>Address</b><br>Institut for Økologi, Det Biovidenskabelige Fakultet.<br>Københavns Universitet, Thorvaldsensvej 40, opg. 2, 1871 Frb. C.       |                                             |
|                                                      | <b>Email</b><br>pmj@kvl.dk                                                                                                                        | <b>Telephone</b><br>3528 2660               |
| <b>2. Financially responsible institution</b>        | <b>Address</b><br>Institut for Økologi, Det Biovidenskabelige Fakultet.<br>Københavns Universitet,<br>Thorvaldsensvej 40, opg. 2,<br>1871 Frb. C. | 3528 2660                                   |
| <b>3. Project Title</b>                              | Monitoring Matters:<br>Comparative Analysis of Innovative Approaches (MOMA)                                                                       |                                             |
| <b>4. Homepage for the project, if any</b>           |                                                                                                                                                   |                                             |
| <b>5. Grant (DKK)</b>                                | <b>Total</b><br>DKK 7.988.793                                                                                                                     |                                             |
| <b>6. Project period as approved</b>                 | 1 Jan. 2006 – 31 Dec. 2008                                                                                                                        |                                             |
| <b>7. Reporting period</b>                           | 1 Jan. 2007 – 31 Dec. 2007                                                                                                                        |                                             |
| <b>8. Previous annual reports</b>                    | <b>Date of submission</b><br>1 Feb. 2007                                                                                                          | <b>Period</b><br>1 Jan. 2006 – 31 Dec. 2006 |

|                                                                                                                                                                                                                                     |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p><b>A. Does this report contain information that, according to the Guidelines, will require immediate action from the Ministry of Foreign Affairs?</b></p> <p>YES <input type="checkbox"/>      NO X <input type="checkbox"/></p> |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

|                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>B. During the year, have there been significant changes in the preconditions for the project (changed objectives, time frame, shift in the involved institutions and responsible partners etc.)?</b></p> <p>YES <input checked="" type="checkbox"/>      NO <input type="checkbox"/></p> | <p>Yes. Bhutan is no longer active in the project due to failure of timely initiation of memorandum of agreement and, accordingly, the country has been removed from all project activities and budgets (approved by FFU according to email from J. T. Karlsen in 2007). In addition, the project's 3-year lifetime have been expanded by 12 months within the existing budget (revised budget approved by FFU according to email from J. T. Karlsen of 15 Jan. 2008); new project period 1 Jan. 2006 – 31 Dec. 2009.</p> |
| <p><b>C. Were any specific conditions given for the approval or extension of the project (i.e. in the Letter of Grant):</b></p> <p>YES <input checked="" type="checkbox"/>      NO <input type="checkbox"/></p>                                                                                | <p>Yes (for the approval of the project). An assessment of the project management can be found in Section 8.</p>                                                                                                                                                                                                                                                                                                                                                                                                          |

### 1. Summary of the project status:

Overall, the project has progressed as planned during 2007. Key developments towards achieving the stated project objective include: (i) Advise on 'good practice' in natural resource monitoring provided to local, national, bilateral and multilateral stakeholders in many countries; (ii) Locally-based monitoring progressing on track and systematic fieldwork undertaken by researchers in five countries; (iii) Five national workshops successfully held with a total of about 200 participants; (iv) Database on natural resource monitoring schemes developed; (v) Methods for assessing management effectiveness of monitoring schemes and for inventorying schemes designed and pilot-tested; and (vi) Scientific papers on innovative approaches to natural resource monitoring published, e.g. in *Science*, *Ambio* and *Cambridge University Press*. The project is continuing to progress well towards the indicators and 'milestones' listed in the project document. The project assumption stated in the project document has been fulfilled. The project risk has materialised in two countries (hurricane/ Nicaragua; weak political conditions/Bhutan). Since the project activities are distributed over a wide area, the overall impact of these problems on the project is however minimal. No further significant assumptions or risks to the project have been identified.

#### Dansk resumé

Monitering af Naturressourcer: Komparativ Analyse af Innovative tilgange (MOMA).

Projektet går planmæssigt, og feltarbejdet er nu for alvor igang. Fem nationale konferencer er blevet afholdt, og her deltog c. 200 personer. På konferencerne blev der drøftet konkrete muligheder for at fremme lokalt relevant monitering og evidens-baseret forvaltning af naturressourcerne i de pågældende lande. Projektet har udviklet og afprøvet et sæt nye metoder til at evaluere omfanget og kvaliteten af den lokale deltagelse i naturressource monitering og til omkostningseffektivt at kortlægge naturressource moniteringssystemer. Projektet har desuden gennemgået over 2500 videnskabelige publikationer for kvantitativt at teste projektets forslag til typologi for klassificering af moniteringsinitiativer. En sådan typologi er vigtig for at forbedre det fælles referencegrundlag, når man drøfter moniteringssystemer. Projektet har endvidere etableret en database over moniterings-systemer. Endelig har projektet udarbejdet en række artikler - bl.a. en kort gennemgang af styrker og svagheder ved lokalt-baseret monitering, som er blevet publiceret i det internationale førende tidsskrift *Science*. Projektet har også samlet vigtige erfaringer fra de fire ældste lokalt-baserede naturressource moniteringssystemer i en bog udgivet af Cambridge University Press. Projektet er fortsat godt på vej til at opfylde indikatorerne og 'milepælene', som er anført i projektbeskrivelsen. Det øgede fokus på afskovningens betydning for de globale klimaændringer i forbindelse med Klimakonferencen på Bali har yderligere øget projektets relevans. Lokalt-baseret monitering kan være med til at sikre, at initiativer til at reducere afskovning kommer fra tegnebrættet ud i den virkelige verden og samtidig opnår lokal forankring og 'ejerskab'. Der er internationalt betydelig interesse for projektets resultater, som ønskes anvendt i et stort antal udviklings-, klima- og miljøinitiativer. Selvom feltarbejdet skrider fint fremad, vil en forøget data-mængde til projektets analyse være hensigtsmæssig; dette kunne sikres, hvis de økonomiske midler, der oprindeligt var tiltænkt Bhutan, kunne anvendes til at øge feltindsatsen i de øvrige lande. Projektets engagement i både engelsk-, spansk- og fransktalende udviklingslande er en udfordring for kommunikationen, som dog indtil videre forløber uden problemer. Projektets forudsætninger er stort set alle blevet opfyldt, og der er ingen væsentlige risici forbundet med projektgennemførelsen.

### 2. Status – project objectives:

**Objectives.** The project is progressing well towards the objectives stated in the project document. The objectives are still highly valid. The project objectives are: (i) ‘Sustainable use of natural resources’ (the overall objective); (ii) ‘Local communities and national agencies have access to the most reliable methods for monitoring resource use trends’ (the intermediate objective); and (iii) ‘Improved understanding of the reliability of locally-based monitoring vis-à-vis conventional monitoring’ (the immediate, specific objective). The detailed progress towards reaching these objectives is described in Section 3 and 5 and Annex 1 and 2.

**Indicators, assumptions and risks.** All the project indicators and milestones are still relevant. In Bhutan, government staff rotation and political conditions associated with the recent change of king delayed formal approval of project activities, and the country is therefore no longer part of the project. This is however unlikely to compromise the project’s overall achievements as - to compensate for lack of effort here - field data collection can be increased correspondingly in the other five case study countries, if the funds intended for Bhutan can be made available to the other countries. The main assumption associated with the project (that ‘staff changes in the governments do not significantly negatively affect’ the work) has been fulfilled in 5 of the 6 countries where the project involves work in the field. The exception is Bhutan, as already mentioned. The only major risk to the project (‘unforeseen climatic, infrastructural or political conditions which e.g. may prevent access to the field sites’) has materialised in Nicaragua. In Nicaragua, hurricane Felix prevented field access and caused delay for about three months. The overall impact on the project of the delay in Nicaragua is however minimal. The high profile of new climate change initiatives such as Reduced Emissions for Deforestation and Forest Degradation (REDD) at the UNFCCC Conference on Bali (COP 13) has led to increased interest among decisionmakers in realistic approaches to monitoring of forest degradation to increase accountability, local ownership and generate social capital in carbon emission reduction initiatives. No further major assumptions or risks have been identified. The inputs of all institutions are well on track.

### 3. Status – activities and results:

The achievement of project ‘milestones’ stated in the project document is assessed in Table 1. All applicable milestones have been met.

Table 1. Status of MOMA project ‘milestones’ after the first 24 months.

| # | Milestone (as presented in the project application of Feb. 2005; excl. Bhutan)                         | Status of milestone by the end of Mth. 24 (Dec 2007)                                          | Comments                                                                                           |
|---|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| 1 | Locally-based monitoring established and in operation in Nicaragua (<Mth 6)                            | Locally-based monitoring is in operation Nicaragua.                                           | Some delay of fieldwork in Nicaragua because of hurricane and slow transfer of funds.              |
| 2 | Conventional monitoring started alongside the locally based monitoring in all five countries (<Mth 10) | Conventional monitoring started alongside the locally based monitoring in all five countries. | As above.                                                                                          |
| 3 | First national workshop in each country (<Mth 16)                                                      | First national workshop held in all five countries.                                           | In the Philippines, two national workshops were held already.                                      |
| 4 | International workshop convened (< Mth 20)                                                             | International workshop scheduled for October 2008.                                            | The timing of the international workshop was discussed and decided upon in the Steering Committee. |
| 5 | Second national workshop in each country (<Mth 28)                                                     | Milestone not yet applicable                                                                  |                                                                                                    |
| 6 | Project fieldwork finalized (<Mth 33)                                                                  | Milestone not yet applicable                                                                  |                                                                                                    |
| 7 | Draft report (<Mth 34)                                                                                 | Milestone not yet applicable                                                                  |                                                                                                    |
| 8 | Final report (By the end of the Project)                                                               | Milestone not yet applicable                                                                  |                                                                                                    |

Many publications have already emanated from the project, ranging from workshop reports to scientific papers in high-profile journals (Annex 1). In 2007, the most prominent papers were: (i) A paper on the international potential of locally based approaches to monitoring published in *Science*; (ii) a quantitative cost-effectiveness analysis of management decisions emanating from monitoring in the Philippines in *Ambio*; (iii) A proposed typology of monitoring schemes accepted for publication in *Conservation Biology*; and (iv) Key lessons from the four longest running locally based natural resource monitoring schemes in developing countries published by *Cambridge University Press*.

Fieldwork is progressing well. All five case study countries adhere to the MOMA Sampling Strategy of January 2007 which is the main document guiding the field activities. In most countries, village patrol records of natural resources and resource use are being compared with conventional, scientist-based monitoring methods (line transect surveys). In the Philippines and Nicaragua, however, one additional local method, community assessments (focus group discussions), are also being compared. In Ghana, ranger patrol records are used as the locally-based method instead of village patrol records. Six categories of natural resources/resource uses are being assessed: (i) land use/vegetation; (ii) resource use of plants, mushrooms or fish; (iii) resource use of fauna; (iv) large mammals; (v) small mammals, reptiles or amphibians; and (vi) birds. Forest habitats are studied in four countries, and savannah habitats in two. An overview of the survey effort in each country is provided in Annex 1. One key challenge shared by several countries is to ensure that scientists' records cover the same area and the same time period as the locally-based records. Linked to this, it is a challenge in some areas to ensure that local people's data are written down and to obtain copies of these data.

During the year, project staff have undertaken Principal Components and Cluster Analyses of published papers on monitoring schemes, based on a database established upon a literature review of >2500 papers. In addition, the project has developed a tool for assessment of the level of participation in monitoring schemes and a rapid method for inventorying monitoring schemes. Both these new tools have been pilot-tested in Ghana by a Cameroonian student of Aalborg University, Denmark, and the tools have subsequently been modified for use in both Tanzania and the Philippines.

#### **4. Changes concerning the relevance to Danish development Co-operation and to partner country development.**

An assessment is required of the relevance of the research and of the project's interaction with bilateral projects and programmes.

Relevance of research. During 2007, the relevance of the research to partner country development and Danish development cooperation has substantially increased. An estimated 20% of the global emissions of CO<sub>2</sub>, a important greenhouse gas, come from deforestation and forest degradation in developing countries. In some years, the greenhouse gas emissions from forest degradation in just one country, Indonesia, has been higher than from all use of fossil fuel on Earth. At the UNFCCC Conference on Bali, it was therefore decided to strengthen efforts to curb forest degradation. With the increased attention to climate change and deforestation, locally appropriate monitoring of forest degradation has increasingly become part of the agenda of many bilateral and multilateral initiatives, e.g. in the discussions on the establishment of a Forest Carbon Partnership Facility (FCPF) in the World Bank, which is supported by many countries, including Denmark. Locally-based monitoring has potential to become a key tool for establishing accountability of carbon emission reduction efforts as well as for creating local ownership and generating social capital in support of sustainable forest management.

Interaction with bilateral programmes. The project has interacted with Danida-supported initiatives in six countries: Tanzania, Nicaragua, Vietnam, Indonesia, Philippines, Cambodia and Denmark.

In Tanzania, the project's national level activities (national workshops, meetings of a natural resource management reference group) are organized and facilitated by the Forest and Beekeeping Division (FBD) as an integrated part of the national Danida-supported Participatory Forest Management (PFM) Programme. Project staff have also had discussions with staff of the Danida-supported Tanzania wetlands programme who are keen on integrating locally based resource monitoring approaches into their capacity-building activities. MOMA partners from Namibia have also built capacity in local monitoring among government staff and villagers in Mnazi Bay-Ruvuma Marine Park and the Terrat community on the Simjario plains adjacent to Tarangire National Park. In addition, FBD support students from Sokoine University of Agriculture to join this research project in order to undertake fieldwork for their masters theses funded through the PFM Programme.

In Nicaragua, the research is implemented through an NGO, Centro Humboldt, which is involved with

related activities in the Danida-supported national environment programme, thereby promoting synergy and sustainability. MARENA staff participated in the national workshop of the project.

In Vietnam, Danida was involved in the preparatory work for the Forest Sector Support Programme, and, in 2007, MOMA project staff have been involved in integrating low cost, bottom-up approaches to monitoring in this programme with funds from the World Bank and Global Environment Facility.

In Indonesia, Danida is supporting the Green Kecamatan Development Project in Sumatra as part of Danida Environment Programme. The monitoring and evaluation procedures for this nascent World Bank-managed project have been developed by MOMA project staff, building on lessons from the MOMA project so far.

In the Philippines, the MOMA activities continue to work through the same institutions as previous Danish-funded activities on biodiversity and natural resource management, contributing to the sustainability of the previous investments.

In Cambodia, the Namibian MOMA partners have helped build capacity in locally-based natural resource monitoring in villages that are also involved in Danida-funded environment activities.

In Madagascar and Ghana, the MOMA research fits well into the country's development strategies but the direct linkage to Danish development cooperation is limited. In Madagascar, a special ecological monitoring service has recently been established within the Ministry of Environment, Water & Forests and Tourism, so the project activities are particularly timely.

In Southern Africa, our MOMA partners from Namibia have established a working group on locally-based monitoring for the Southern African Region. This working group held a mini-conference in December to discuss innovative approaches to monitoring of natural resources and resource use with participants from Zimbabwe, Malawi, Mozambique, Botswana, Zambia and Namibia.

In Denmark, at Danida Development Days in 2007, a presentation was held on ecosystem services and disaster mitigation in coastal areas. Discussions have also regularly been held with other Danida-funded research initiatives, e.g. at DIIS, the Institute of Geography and in meetings of RENED/DRRN. In addition, the project has facilitated applications from prospective candidate participants for a course on mainstreaming of the environment to be held at Danida Fellowship Centre.

#### **5. Co-operation with users at all levels concerning the dissemination and application of the project's results:**

The following activities have been undertaken to promote dissemination and application of the project's results:

- Web Site. A website with background materials and guidelines on locally-based monitoring has been established and maintained. During 2007, this site was visited 4,400 times by 3,620 unique users, doubling the the number of visits and unique users compared to 2006 ([www.monitoringmatters.org](http://www.monitoringmatters.org)).

- Meetings with Danish embassies and environment programmes. The national environment programmes in Mozambique, Tanzania (both the Participatory Forest Management and the Wetlands Management programmes) and Indonesia have expressed strong interest in applying the project results in their work. Project staff also provided advice to the technical advisor of the Wetlands Management programme in Tanzania.

- Meetings with other Danish government institutions. The Greenland Home Rule, Department of Agriculture and Fisheries are seeking funds from Nordisk Ministerråd for piloting and testing locally-based monitoring as a means of strengthening the dialogue between hunters and the government institutions and thereby improving capacity for resource management in the Arctic (see also joint paper with staff of the Greenland Home Rule in *Science*).

- Direct assistance to bilaterals and multilaterals. MOMA project staff have assisted Canadian CIDA and the World Bank with developing locally-based monitoring in a community-based natural resource management programme in Sulawesi, Indonesia; this is later expected to be scaled up and replicated in other parts of Indonesia. The Philippine Government has expressed interest in obtaining assistance from the programme for capacity building in a large coastal area management initiative supported by the Asian Development Bank. In addition, staff of the Global Environment Facility and the World Bank have continued to express strong interest in obtaining assistance from the researchers of this project for building capacity in locally-based monitoring in a number of concrete GEF initiatives in Africa, Asia and Latin America as well as for the entire World Bank and UNDP-managed GEF portfolio, comprising >300 environment programmes/projects worldwide.

- Discussions with other government agencies and NGOs. The Government of China has asked the project for assistance to build capacity in locally-based natural resource monitoring among Forestry Staff in Guangxi Autonomous Province as a potential model for later scaling-up in other parts of China. The Government of Vietnam has asked for assistance in supervising development of locally-based monitoring in Vietnamese Special Use Forest areas. International NGOs active in Sudan have also expressed interest in obtaining assistance from MOMA project researchers for building capacity in locally-based monitoring.

- Media coverage. There has been coverage of activities related to the project in the written and broadcast media (e.g. on tourism, climate change and environmental impacts in 'Miljømagasinet', DR P1, Dec. 2007)

- Lectures and other activities. A number of lectures on natural resource monitoring have been undertaken, particularly at the 7 university institutions which are directly involved in the project. The manual of the project has been adapted by a Philippine NGO for use by honey harvesters to guide sustainable resource management in Palawan.

#### **6. Co-operation with other researchers, international networks and research initiatives within the field**

The project has continued its close cooperation with institutions/researchers working on topics that are complementary but closely related to the project. In 2007, this has particularly involved contacts on an almost weekly basis with researchers at the Environmental Change Institute of Oxford University (e.g. through joint development of the book 'Taking Stock of Nature', Cambridge University Press), Imperial College London, University of Wales in Bangor, University of the Philippines (Philippines), and University of Florida (USA). Moreover, many of the visitors to the website (see Section 5) are probably other researchers, particularly from developing countries, where access to scientific literature remains difficult.

Meetings have also been held with Danish institutions and scientists involved in other research (e.g. in Tanzania, Ghana, Nicaragua) to improve coordination and exchange experiences. As part of this, the project participated in and made a presentation on ecosystem services at the Danida Development Days in June 2007. In addition, students from Copenhagen and Aalborg University have participated in MOMA research activities as part of their M.Sc. courses and e.g. pilot-tested survey tools for the project in Ghana.

#### **7. Obtaining of the necessary permits and authorizations according to current legislation in Denmark and partner country**

All the necessary permits and agreements are in place. In addition, to our knowledge the project adheres to all local and international rules pertaining to the research.

#### **8. Progress in relation to the specific requirements for each project type as given in the application and project document:**

For collective research projects, an assessment is required of the scientific progress and of the project management.

Scientific progress. The progress of the research activities is assessed in Sections 2 and 3 and Annex 1. Annex 2 provides a list of publications emanating from the project so far, with an indication of their publication status.

Project management. The management of the project, including activity planning, has been undertaken largely in line with the description in the project document. See also Section 10.

In 2007, the Steering Committee of the project held one meeting. To save resources, the meeting was kept as a Google Discussion Forum over a two-week period (minutes available). The minutes have been disseminated to all MOMA participants.

National planning and experience exchange workshops have been held in each participating developing country. At these workshops, key institutions and persons involved with natural resource monitoring in each country presented their activities and experiences with monitoring: what worked, how and why? The workshops have been successful not only in improving project management/planning but also in contributing themselves directly towards meeting the intermediate objective of the project ('Local communities and national agencies have access to the most reliable methods for monitoring resource use trends') through experience exchange and awareness-raising.

**9. Status concerning the sustainability of the results achieved**

The status concerning the sustainability is unchanged and the following text therefore duplicates last year's progress report. The project is examining whether locally-based monitoring can address the shortfalls of conventional monitoring, or compliment them. Locally-based monitoring is monitoring carried out on a local scale and by individuals with no or only limited formal training. This kind of monitoring requires only limited equipment and human professional resources. If well-established, the recurrent costs of locally-based monitoring are usually also minimal. The technical and financial sustainability of the project's results are therefore expected to be high. Preliminary indications from the first 2 years of project activities suggest that there is a very high likelihood that the institutions and researchers involved will be able to continue the activities initiated, and make use of the increased knowledge after termination of the project.

The project attempts to secure maximum possible sustainability in relation to the capacity created, by (i) using a participatory approach to project activity planning, thus encouraging 'ownership' of the project findings; and (ii) working through well-established institutions that have a long history of working with natural resource monitoring and management at the field level, and who will continue to work in this field beyond the project, thereby enhancing the organizational sustainability of the project results.

**10. "Others":**

There have been no major deviations or problems in the project. It is however foreseen that the merge of KVL and Copenhagen University may lead to future delays in e.g. the disbursement of project funds, because of the new structure and operations of the central accounting office at the university. The operations of the accounting office are to a large extent beyond the control of the project, nevertheless project management will do whatever is possible to avoid this happens.

**11. Lessons learnt**

One lesson has been identified in relation to the dissemination and application of the project's findings: Establishing effective dialogue between scientists and natural resource managers to strengthen approaches to natural resource monitoring is a challenge which needs to be addressed in different ways from country to country as the local contexts differ substantially.

Signatures:

(Responsible project leader as well as responsible institute)