



Annual Report 1999

The Cooperation between the Norwegian
Agency for Development Cooperation (NORAD)
and the Norwegian Water Resources and
Energy Directorate (NVE)



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Publisher: Norwegian Water Resources and Energy Directorate
Editor: Morten Svelle
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Print: NVEs printing office
Number printed: 100
Cover photo: Egil Skofteland, NVE
ISBN: 82-410-0407-9

Subject index: NVE, NORAD, energy, water resources, institutional cooperation

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March 2000

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Summary

Background

The current Cooperation Agreement between NORAD and NVE is dated 2 November 1994. The agreement is expected to be revised in 2000. NVE's commitments according to the agreement are to assist and advice NORAD in their work within the framework of NVE's competence within management of water and energy resources. The agreement covers both assignments for NORAD directly, and activities connected with institutional agreements between NVE and institutions in cooperating countries. According to the agreement, NVE shall present an annual report to NORAD in connection with the annual meeting to be held between the two parties.

Staff and Participants

In NVE, the work under the Cooperation Agreement is co-ordinated by the International Office. By March 2000, the staff includes seven full time professionals and one administrative officer. A staff of this size has been found necessary to meet the increasing number of assignments, especially the increasing number of institutional agreements.

In March 2000 the staff also includes four full time resident advisers, working permanently at cooperating institutions as part of the institutional agreements. The four advisers are posted in the National Directorate of Energy in Mozambique, the Ministry of Mines and Energy in Namibia, the Palestinian Water Authority in Palestine and the Electricity of Vietnam.

The services of NVE under the Agreement covers a wide range of activities, and the International Office draws on the full staff of NVE in order to carry out the assignments. More than 35 professionals from other NVE departments have been engaged in 1999, producing about 32 % of the man-hours recorded¹. In addition, several private consultants and professionals from other directorates, research institutions and consultants have been sub-contracted in certain specific areas and to compensate for lack of NVE capacity in certain periods.

Activity Level and Time Consumption

The volume of activities has increased also in 1999. In 1996 a total volume of 5.9 man-years was recorded, increasing to 10.1 man-years in 1998. The total volume in 1999 was recorded at 11.7 man-years, an increase of 1.6 man-years from 1998. 77 % of the hours worked were used on institutional co-operation. The man-hours spent on direct assignments for NORAD have decreased from about 3 man-years in 1998 to less than 2 man-years in 1999, giving an increase in institutional cooperation from 1998 to 1999 of about 2.7 man-years.

¹ Excluding the hours recorded for long-term resident advisers.

The expected time consumption for 2000 is 18.1 man-years¹, and is based on existing commitments laid down in the running institutional agreements, and information provided by NORAD in a planning meeting on 21 December 1999. The expected further increase of activities is mainly a consequence of an increased activity in institutional co-operation and increased use of resident advisors. Experience from the previous years indicates that the planning routine gives a higher estimation of future work than what is actually recorded during the year. This is due to *inter alia* delay in the initiation of planned work from the co-operating institutions. It is therefore reason to believe that time consumption for 2000 will be in the range of 15-16 man-years.

Achievements

NVE and NORAD have agreed that hours charged to the general administrative activity shall be reduced by directing more of the administrative time directly on the institutional cooperation. This has been successful, and NVE has used approximately one man-year in 1999, which is according to the agreed plans. This reduction is expected to continue in 2000, with a further reduction to about 1000 man-hours for the general administrative activity.

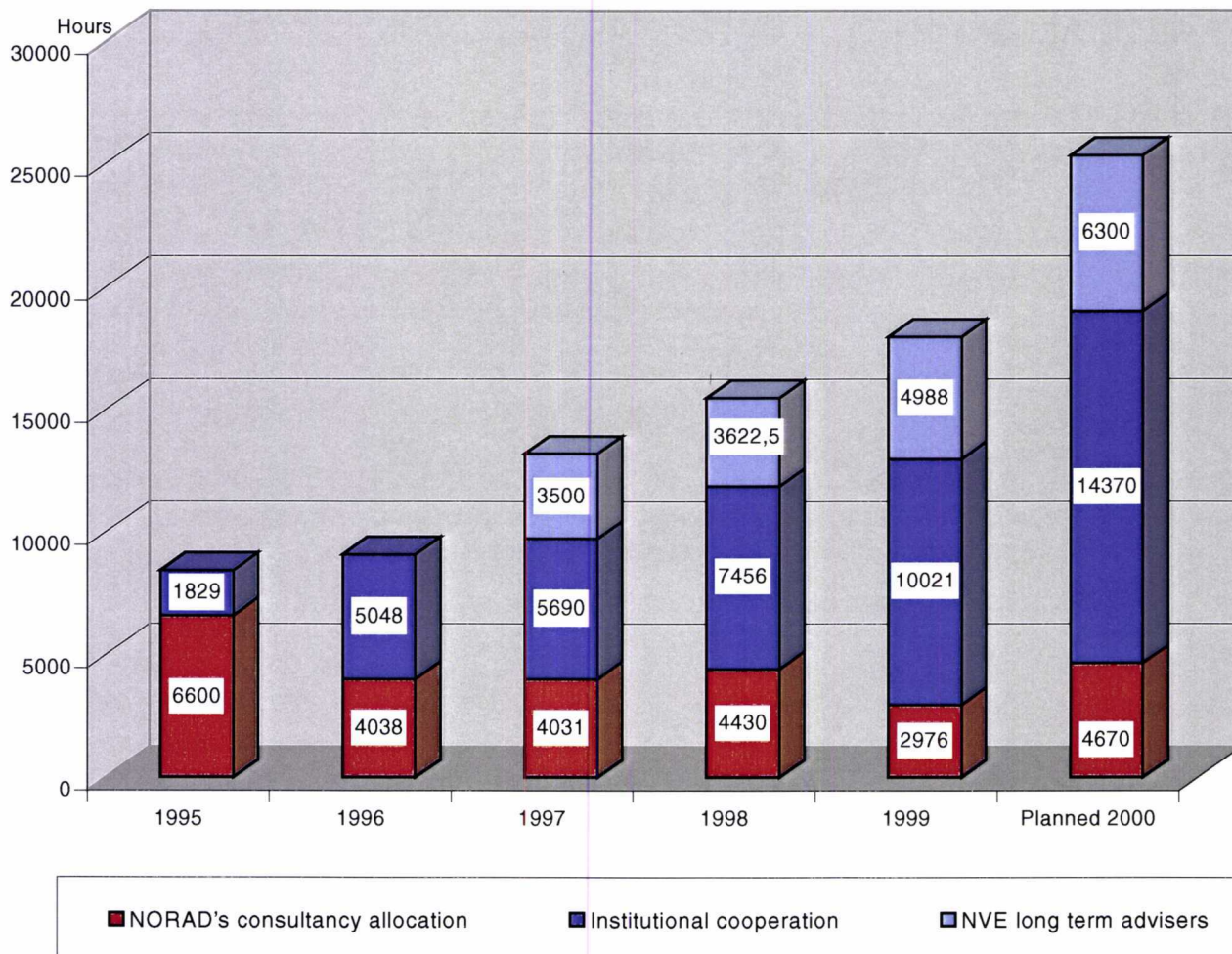
The majority of the institutional cooperation has been running broadly according to the plans. In Ethiopia the activity has been stopped for most of 1999 due to the war activities. In Palestine the use of NVE experts to assist in such fields as legislation, management and water policy issues have been discussed between PWA and NVE, but no activity has been initiated by PWA. In Mozambique the planned use of experts from NVE has also been very low.

Several examples of the activity within the framework of the Cooperation Agreement between NORAD and NVE have been presented in 7 articles in "Vann og Energi" in order to disseminate information about NVE's international cooperation.

¹ One man-year = 1400 hours

1. Overview of Activities and Time Consumption in 1999

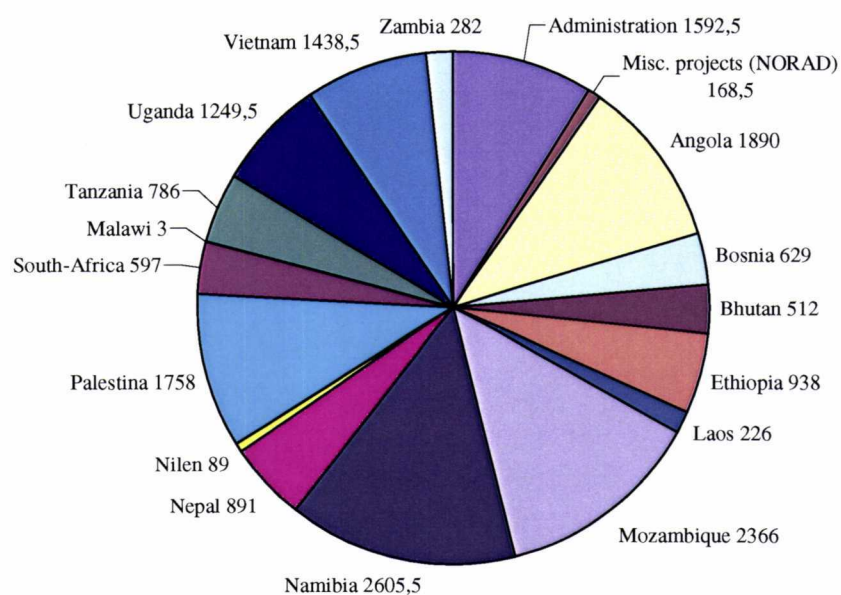
The following figure shows the development of NVE's international cooperation over the last five years and the planned level of activity for 2000:



The activity has increased significantly from 1995 to 1999, with an average annual increase of 28 %. As can be seen from the bars the increase in activity is mainly connected to a higher level of activity on institutional cooperation and long term advisers. The increase is expected to continue in 2000, resulting in total estimated man-hours of 25 340.

Although the NORAD consultancy allocation was lower in 1999 than in the previous years, this allocation seems to have stabilized on a level of about 4000 man-hours per year. The total growth is mainly due to increasing demand for NVE's services within the area of institutional cooperation.

The following figure shows the distribution on countries of NVE's recorded man-hours (including long term advisors) under the Cooperation Agreement in 1999:



In 1999 the cooperation with Namibia on the energy sector has been the project with the highest recorded man-hours, followed by Mozambique, Angola, Palestina, Vietnam and Uganda. New activities were launched in 1999 in Bosnia and the Nile Basin.

2. Assignments for NORAD

An overview of the time consumption and cost for all engagements for NORAD is given in Appendix A, Table A-1. It shows that a total of NOK 3.3 mill. was invoiced NORAD.

A considerable number of assignments have been carried out in 1999, either on direct request from NORAD, or on request from institutions via NORAD. Only the more time consuming assignments are reported in the following.

Adm-01/26 Rural Electrification

NVE has assisted NORAD to launch a study on rural electrification. Nordic Consulting Group (NCG) was selected after an evaluation process.

Achievements:

The NCG study was accomplished in 1999. NVE has assisted in commenting on the study and to arrange for a seminar 28 October 99 where important issues related to the study were highlight.

Adm-01/28 Seminar SIDA/NORAD

NORAD requested NVE to perform a seminar to give a briefing for SIDA and NORAD staff on the status of the Energy sector in Norway and Sweden.

Achievements

Seminar that covered the objectives was conducted 20 January 1999.

Laos-04 Conference on Hydropower, Development and Environment.

NVE was in December 1997 requested to assist the Ministry of Industry and Handicraft in arranging a conference on Hydropower, Development and Environment. The aim was to focus on environmental aspects of hydropower in a development perspective, and with a view to the new legal framework in Lao PDR.

Achievements

The conference was successfully arranged in Vientiane 8-10 December 1998, with 80 participants, whereof half were representatives from the different provinces in Lao PDR.

The Proceedings from the Conference were completed by the first quarter 1999.

Nile-01 Nile Basin Initiative

The Nile Basin Initiative (NBI) is a cooperation between the ten countries in the Nile Basin with the vision of a cooperation leading to a sustainable development based on sharing the resources of the Nile. NVE was invited by the Ministry of Foreign Affairs to cooperate on the development of a possible contribution from Norway to the Nile Basin Initiative. In 1999 NVE participated in several meetings and also met with the World Bank (WB), who is

coordinating the donor contributions to the NBI. The discussions with the WB made it clear that the WB would like NVE to be involved in particular within the energy sector and hydropower. The cooperation will continue in 2000.

Achievements

NVE contributed to the initial discussions in the Ministry of Foreign Affairs on how Norway could contribute to NBI.

Nepa-10 Overview of the power sector in Nepal

NVE was asked by NORAD to work out a short report of the status of the energy sector in Nepal, with emphasis on the hydropower potential, the organizing of the sector, the legal framework, the licensing procedure, development plans and priorities and the possibilities for export to other countries.

Achievements

The report was completed and delivered to NORAD in January 2000.



NVE at work.

*Cooperation between NVE and NORAD
in practice.*

Tanz-05 Lower Kihansi Hydropower Project

This is a high head hydropower project located around 440 km south-west of Dar es Salaam. The project will utilize a net head of 853 m, up to now the highest head in Africa for hydropower projects, and the first phase currently under construction will include 3 turbines with a total capacity of 180 MW. The main consultant is Norplan.

The project is in good progress, and the first turbine was started before Christmas 1999, more than a month ahead of schedule! The two next turbines will be in operation from around 1 April 2000.

The advantage of having the first turbine in operation ahead of schedule was that some thermal units for production of electricity could be shut down, and expenses for diesel could then be saved. This also gained the environment, because of less emission from the thermal units.

In March and September respectively, NVE attended the semi-annual meetings for the project. NVE also assisted in preparation of documents regarding the meetings and the follow up documents after the meetings, and participated in the site visits. Advisory services were provided during the discussions and the site visits. NVE also participated in other meetings with the World Bank, Ministry of Energy and Minerals, and Tanesco in Dar es Salaam concerning this project and the energy situation and policy in general.

Achievements

All the necessary documents for the meetings and site visits were prepared in due time before the semi-annual meetings, and all documents for the follow up of the project were prepared. Necessary contact with institutions involved in the energy sector was maintained.

Tanz-11 Conference on Licencing Procedures for Electric Power Development and Environmental Management in Tanzania

Together with the Ministry of Energy and Minerals, NVE arranged a conference on licencing procedures for electric power development and environmental management in Iringa 4th to 7th October 1999. 31 persons attended the conference.

The participants came from Tanzania, Uganda, Zambia and Norway, and represented the Ministry of Energy and Minerals, Tanesco, Vice Presidents Office/Department of Environment, Ministry of Finance, Attorney General, Ministry of Water, Ministry of Lands, Ministry of Natural Resources & Tourism, NEMC, CEEST, TATEDO, University of Dar es Salaam, Pangani Basin Water Office and Rufiji Basin Water Office, all from Tanzania. From Uganda the National Environmental Management Authority, NEMA, and from Zambia the Zambia Electric Supply Corporation, ZESCO, were present. From Norway, NORAD, NVE and Arendals Water Management Assosiation were present.

The participants were informed of the licensing procedures in the different countries, and the legal framework for the process. Special effort was also given to the EIA process, and how to introduce the system in the licensing procedure in Tanzania. The existing energy policy in Tanzania was discussed.

A one day site visit was made to Lower Kihansi Hydropower Project, where the participants could see a modern plant under construction, and also how the Environmental Impact Assessment was incorporated in the plans. Many of the participants had never been to a hydropower plant before.

The conference was finalized with a one day group work and discussions.

The topics discussed during the conference were important for the future decision on the licencing procedure in Tanzania. The laws are to a certain extent existing, but they need to be harmonized and updated to the present situation.

Achievements

The conference was carried out successfully as planned, and the participants received impressions from the system both in Tanzania and in other countries. There are still many possibilities to improve the coordination of the licensing procedures, and it was expressed that the four participating countries could continue to exchange experience within this field in the future. NORAD and NVE were asked for further assistance within the topics that had been discussed during the conference.

The proceedings from the conference will be completed the first quarter of year 2000.



NVE-representatives having a break from the conference.

Tanz-13 Power Sector Restructuring Workshop

NVE participated at the workshop "Power Sector Restructuring Workshop" in Bagamoyo at the end of March 1999, arranged by the Presidential Parastatal Sector Reform Commission (PSRC) in Tanzania. PSRC is in the midst of implementing reforms involving almost all sectors of the economy. The Government has decided to allow private sector participation in the ownership and/or operation of some of the main utility and infrastructure industries. For the power sector, several decisions pertaining to a power policy, sector structure, legal and regulatory framework etc. need to be made before private sector participation can be invited. The workshop discussed the future restructuring policy framework and other relevant issues

pertaining to the power sector. Participants came from different sectors within Tanzania, the World Bank, Bolivia and from donor countries.

Achievements

NVE gave input by an introduction of the Norwegian power sector, and our licensing system.

Zamb-10 NVE assistance to ZESCO

NORAD has requested NVE for some consultancy assistance to ZESCO in 1999 on economy management issues.

Achievements

Preparation for a seminar for ZESCO senior accountants and auditors was carried out in Norway in October 1999

Course in Water Resources Management in Development Cooperation

NORAD has initiated a discussion with NVE on how Norwegian water institutions could improve the relevance and quality of their assistance to developing countries. This has been followed up by NVE with meetings with the State Pollution Control Authority (SFT) and the Directorate for Nature Management (DN) with the objective of identifying means to better cooperate and thus increase the relevance and quality of the contributions to water resources management in cooperating countries. The cooperation has been very successful with very positive approach from all three institutions.

Achievements

Several means to improve the cooperation and the quality and relevance of our services have been identified, the most concrete and demanding one is the development of a course on Cooperation on Water Management in Developing countries. NVE has undertaken the responsibility to take the lead in developing and implementing the course in 2000.

3. Institutional Cooperation

The following institutional agreements have been in force in 1999:

Country	Cooperating institution	Period	Budget NOK
Angola	Ministry of Energy and Water Affairs, Energy Sector	1996-1999	13,800,000 ¹
Bhutan	Ministry of Trade and Industry, Division of Power	1997-1999	1,000,000
Bosnia	Federal Ministry of Energy, Mining and Industry/ Ministry of Energy and Mining	1999	2,000,000
Ethiopia	Ministry of Mines and Energy, Energy Department	1996-2000	3,780,000
Ethiopia	Ministry of Water Resources	1996-1999	6,300,000
Ethiopia	Ethiopian Electric Power Corporation (EEPCO)	1998-1999	420,000
Laos	Ministry of Industry and Handicraft	1997-1999	2,000,000
Mozambique	National Directorate of Energy	1998-2000	16,700,000 ¹
Mozambique	Electricidade de Mozambique (Alto Molocue -Gurue)	1998-1999	155,000
Mozambique	Electricidade de Mozambique (Gurue-Lichinga)	1998-1999	170,000
Mozambique	Technical Unit for Implementation of Hydropower Projects	1999-2000	155,000
Namibia	Ministry of Mines and Energy	1999-2002	13,600,000 ¹
Nepal	Melamchi Water Supply Development Board	1998-2000	2,500,000
Palestine	Palestinian Water Authority	1995-1998	14,000,000 ¹
South Africa	National Electricity Regulator	1999-2000	4,500,000
Uganda	Ministry of Energy and Mineral Development	1997-2000	5,600,000
Uganda	Assistance to Uganda Electricity Board	1999-2000	2,200,000
Vietnam	Electricity of Vietnam	1999-2001	4,000,000
Zambia	Zambia Electricity Supply Corporation (ZESCO)	1997-1999	300,000
Zambia	Training Program for ZESCO	1999-2001	1,000,000

Furthermore, a new institutional agreement with the Ministry of Energy and Water Affairs, National Directorate of Water in Angola has been under preparation in 1999. This agreement has an estimated budget of about 16 million NOK for the period 2000-2003.

¹Including sub-projects implemented by consulting firms.

3.1 Angola

Ango-06 Institutional Cooperation with the Ministry of Energy and Water Affairs (MINEA)

An Agreement on Institutional Cooperation between MINEA and NVE for the period 1996-1998 was started in 1996. The goal of the Agreement was to promote economic development of the country through sustainable and efficient use of the country's energy resources. The purpose is to strengthen the competence and decision making basis at MINEA and Luanda Electric Utility (EDEL) through transfer of know-how to the staff in technical, economic and administrative fields and to assist in the development of legislation for the sector. The work under the said Agreement continued throughout 1999, based on remaining budgets. The Agreement included four main projects:

- National Energy Sector Management (NESMA)

Assistance in preparing the documentation for the proposed new Energy Co-operation Programme 2000-2002 and the Annual Meeting in October, and work on a strategy plan for institutional strengthening of MINEA/DNE, based on its proposed new statutes was other important activities in 1999.

- Institutional strengthening of Luanda Electric Utility (EDEL)

The Consultant's final report was completed in the first quarter of 1998. It contains a diagnostic study of EDEL and a strategy and action plan for strengthening of the utility. EDEL and MINEA have approved the action plan (total budget NOK 25 mill.) and financing has been sought from the World Bank and others.

- Management Information System (MIS)

The Consultant presented an action plan for a MIS system at MINEA in a phase 1 final report in 1998. Budget estimate for implementation of the plan exceeded the allocated funds by NOK 1.3 mill. MINEA and NORAD agreed to go ahead with implementation and to cover the deficit by available funds from other projects and from the contingency fund. The implementation phase was completed in the fourth quarter of 1999.

- Rural electrification

The project was completed with the Consultant's final report in the third quarter 1998.

The Programme for the period 1996-98 was completed during 1999 according to plans and within budgets.

- New Program 2000-2002.

MINEA submitted a proposed program extension of the institutional co-operation with NVE to the Norwegian Embassy in Luanda in July 1999. The proposed new Program 2000-2002 include seven new projects and a total budget of NOK 52 million:

Achievements

NVE personnel conducted four short-term missions to Angola in 1999. Activities included assistance in preparing and implementing a Workshop on Private Investments in the

Electricity Sector and Concessions to Protect Angolan Interests, held in Luanda in October 1999.

Final transactions for the Workshop in October (in Portuguese) were edited by MINEA, printed in NVE and distributed to all participants. The proposed Addendum 1 to the Agreement between Norway and Angola, referred to above, includes budgets for implementation of the strategy plan.

The final report on EDEL strengthening strategy was completed in English and Portuguese in 1998. The conclusions of the study have been formulated following discussions and several workshops on important issues between the top management of EDEL, MINEA and the Consultant. The Strategy Plan has been adopted by EDEL and MINEA as the basis for the restructuring and strengthening plan of the utility. A final report on the MIS project, phase 1 (strategy plan) was completed in 1998. Implementation was completed in 1999.

Major Difficulties

The renewed outbreak of the civil war in late 1998 is a problem because of reduced motivation and enthusiasm on the part of the Angolan counterparts of the program. All the activities have taken place in Luanda, where security so far has been satisfactory. The war effort also has delayed important decisions by the Council of Ministers on important issues in the energy sector, such as the appointment of a commission to supervise development of energy policy.

The lack of capacity of qualified personnel at MINEA and the electric utilities to follow up the Program on the Angolan side is a major problem. Training programmes should be preceded by capacity building.

Ango-08 Preparatory work for institutional cooperation, DNA (NAWASMA)

The NAWASMA programme will be implemented through a separate agreement between the National Directorate of Water and NVE. A visit by DNA to Oslo was carried out in June and the draft Project Document was subsequently completed. By the end of the year comments to the PD were received from the embassy in Luanda. Sickness of the DNA director and uncertainties with respect to availability of counterpart personnel caused the process to stop until it has resumed in early 2000.

Achievements

A Project Document for the proposed new co-operation programme in the water sector has been drafted.

3.2 Bosnia

NVE was asked by NORAD in May 1999 to assist in developing a new energy act for Bosnia Herzegovina. After a fact finding mission in July 1999, two contracts for the cooperation were signed between the Ministry of Energy and Mining on Republic Sprska and the Ministry of Energy, Mining and Industry in the Federation of Bosnia and Herzegovina in August 1999. NVE has arranged four workshops with the two Task Forces that have been established as our counterparts in Republic Sprska and the Federation of Bosnia and Herzegovina. The NVE team has also met once with the committee that has been

established for the drafting of a state act on energy. According to the work plan and the contracts the draft acts were supposed to be completed by the end of 1999. This target could be met, and we discussed final drafts at a workshop in December. The World Bank, however, decided in November 1999 to invite a UK company, NERA, to develop an energy policy. It was therefore agreed to postpone the final discussions of the draft acts until after the completion of the policy. The final date is therefore set to May 2000.



Achievements

NVE has assisted the Task Forces in Republic Srpska and the Federation of Bosnia and Herzegovina to arrive at a draft electricity law according to the plans. Due to new initiatives by the World Bank the finalization is delayed until May 2000.

Remnants of the old bridge from the 15th century in Mostar.

3.3 Bhutan

NVE has an institutional cooperation agreement with the Department of Power (DoP) in Bhutan in connection with the Feasibility study of the Mangdechhu Hydropower plant. The draft report for the technical/economical study was presented in May 1999, and NVE examined and commented on the draft study. NVE took part in the presentation of the Feasibility Study in Bhutan in August and provided advice on the need for update of the Environmental Impact Assessment in light of the final technical/economical report. A hydrologist from NVE visited Bhutan in October in order to make an assessment of the hydrological station network in Bhutan. DoP has expressed interest in continuation of the cooperation, and the content of the cooperation is under discussion with NORAD.

Achievements

A study trip by four officers from DoP to Norway took place in June. NVE has made a review of the draft Technical/Economical Report of the Feasibility Study and provided DoP with comments. NVE has also given input to the discussion of the content of the updating of the Environmental Impact Assessment. A hydrologist from NVE has made an assessment of the hydrological network in Bhutan.

3.4 Ethiopia

Ethi-07 Institutional Cooperation with the Ministry of Water Resources (MoWR)

The Institutional Agreement between the Ministry of Water Resources of Ethiopia (MoWR) and NVE was signed on 22 May 1996, with an Addendum of 24 February 1997. The objective of the project is to improve quality and efficiency of data collection, handling and analysis in the hydrology sector.

NVE participated in the second annual meeting for the project on 25 January 1999 in Addis Ababa. The meeting concluded that the project seemed to have been a successful project compared to the objectives, but it has been too many delays, especially concerning the procurement services.

A hydrologist from NVE, with special data skills, performed in August/September a one week review of the Hydrological Department's present computer set-up and data collection procedures. He also identified necessary equipment to be purchased for installation of a wide-area network, and prepared a cost estimate for the purchase and installation.

The report from his mission is sent MoWR.

According to the present plans, the wide-area network will be installed in March 2000.

NVE has approached Institute of Hydrology in England, to have an offer for purchase, installation and training on the HYDATA database system, and to Danish Hydraulic Institute for purchase, installation and training on the NAM Mike 11 flood forecasting model.

These models will be installed when the wide-area network is completed.

Delays in purchase and delivery of equipment have created problems for the project, and an Addendum to prolong the Agreement to the end of year 2000 has been worked out. The project will be terminated within the end of 2000.

Payment of invoices for the project has been delayed, and NVE has outstanding invoices for considerable amount. The matter has been discussed at Vice-Minister level, but still payments are too late.

Achievements

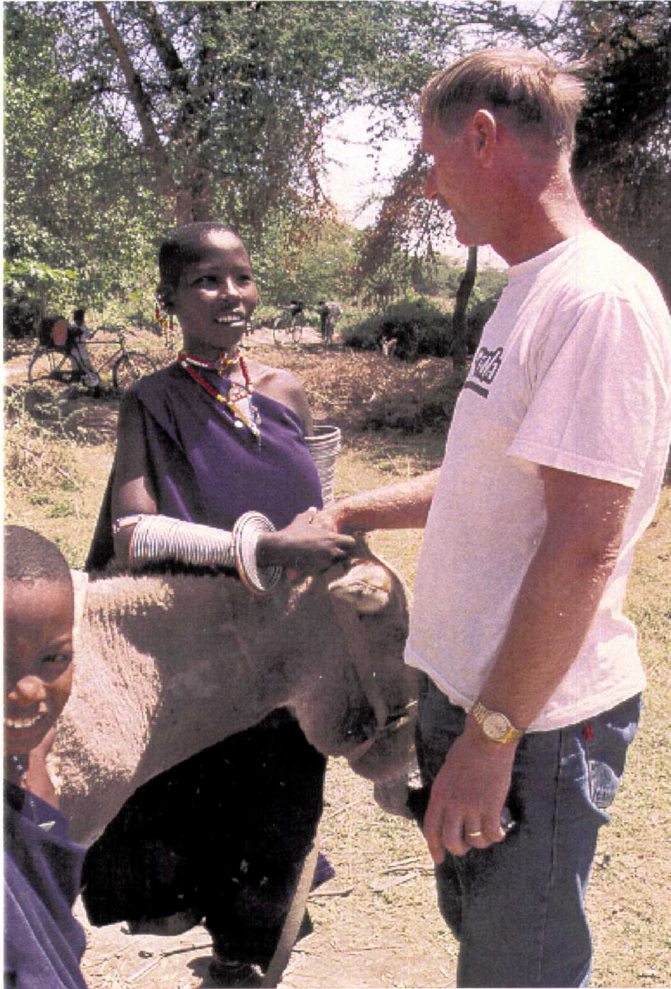
Standards and procedures for collecting hydrological data have been completed.

Training for more than 20 people for discharge measurement by salt dilution method has been completed.

Tentatively 50 new gauging stations have been constructed and approximately 50 damaged stations have been repaired. Operation and maintenance programs for the stations have been developed.

Manuals on Procedures in Operational Hydrology have been supplied to the project.

Offers for purchase, installation and training of the data systems HYDATA and NAM Mike 11 have been received.



Speaking Swahili helps in getting contact. Here NVE's Alf Adeler (after a long introduction) finds out where the girl has collected water.

Ethi-08 Institutional Cooperation with the Energy Department (ED) of Ministry of Mines and Energy (MME)

The Institutional Agreement between ED and NVE was signed in June 1996 with the ultimate objective to strengthen the institutional capability of ED, and to transfer knowledge and experience to the Ethiopian electricity subsector through the preparation of an enabling legislation, appropriate regulations, and licencing procedures.

An Addendum to the Agreement, that prolonged the project to the end of year 2000, was signed 20 August 1999.

NVE visited Ethiopia in January to discuss the progress of the project. NVE also participated at the annual meeting that was arranged 14 September 1999.

The project will be terminated with a summing up workshop in year 2000.

Achievements

Two workshops and on-the-job training were successfully carried out within the topics Tariff Setting Methods and Electricity Standards. Reports are worked out and sent to the Ministry of Mines and Energy.

A desk study concerning Power Purchase Agreements (PPA) and Implementing Agreements is worked out, and the report is sent to MME.

Through this project, a new Electricity Act has been developed, and NVE has also given input to the proposed regulations for this new Act. Many people have had important training within the energy field in Ethiopia and abroad.

A draft Institutional Agreement and a revised draft Terms of Reference for the consulting services for the project Energy Sector Developing Perspective have been worked out and sent Ministry of Mines and Energy in Ethiopia.

Ethi-09 Power Distribution Master Plan for Addis Ababa, Nazareth, Dire Dawa and Bahir Dar.

NVE was in September 1998 requested to assist the Ethiopian Electric Power Corporation (EEPCO) in preparing the Project Document for a Power Distribution Master Plan for Addis Ababa, Nazareth, Dire Dawa and Bahir Dar.

A team from NVE worked in Ethiopia October/ November 1998 to collect information for the Project Document.

Achievements

The Project Document and the Terms of Reference for the consulting services were completed and sent EEPCO the first quarter 1999.

3.5 Laos

Laos-02 Institutional cooperation with the Ministry of Industry and Handicraft (MIH)

The present agreement between Norway and Lao PDR on phase II of the legal framework project for the hydropower sector was signed in April 1997. The following four aspects have been given priority:

1. Regulations for a licensing system according to the new laws on water and electricity.
2. Education and training of personnel to understand the implications of a licensing system.
3. Training for commercial negotiations.
4. Consulting work for the Ministry of Industry and Handicraft on the commercial and legal aspects of new hydropower projects.

Norwegian experts visited Vientiane two times during 1999 for consultations with the Lao Task Force on the development of the Regulations for Hydropower Development. During these visits several seminars and talks were held for personnel from the Ministry of Industry

and Handicrafts (MIH), the Foreign Investments Managements Cabinet (FIMC), the Ministry of Justice (MIJ) and other governmental agencies. These seminars and talks were mainly related to important points in commercial contracts related to hydropower development, and to the development of the regulations.

Achievements

During workshops and seminars a better understanding and knowledge of commercial negotiations and the implications of a licensing system have been further developed.

Discussions between the involved ministries on the content of the regulations for hydropower development and electricity have been an important process that has taken place during 1998 and the first part of 1999. The Government decided to make the regulations in the form of a decree from the Prime Minister. It is anticipated that this process will be finalised during year 2000.

3.6 Mozambique

Moza-09 Institutional Cooperation with the National Energy Directorate

An agreement on institutional cooperation between the National Energy Directorate (DNE) and NVE was signed in March 1998. The project is intended to last for three years. Through this cooperation, NVE will assist DNE in strengthening its administrative routines, effectiveness and skills connected to regulation of the Mozambican energy sector. The following main areas of support have been identified:

- Organizational set-up and manning of DNE.
- Management procedures and routines.
- Training of DNE-personnel.
- Regulations and guidelines adapted to the existing Electricity Law.
- Energy master planning.
- Rural electrification strategy planning.

Achievements

The project includes a NVE long-term adviser to be posted in DNE in Maputo. The adviser has been recruited and took up his position on 1 March.

Implementation of parts of the short-term training programme has taken place. DNE-personnel have participated in seminars abroad on different aspects of regulation of the power sector, and in English courses in Maputo. The DNE-staff has improved their skills in English considerably during this year.

Terms of Reference for purchase of consultancy services for preparation of the Rural Electrification Strategy Plan was prepared. Evaluation of proposals and negotiations with the consultants took place in Oslo in November. The successful bidder, Norplan/KanEnergi, will commence the assignment in the beginning of 2000.

Detailed workplans for activities connected to organisation and management procedures and routines were prepared in October/November. Some initial work on collection of information and analysis is done. However, the current activities have not been finalised.

Challenges

The extent of activities carried out in the project is lagging somewhat behind what was intended according to the plans, due to different reasons connected to both parties, and partly reasons beyond any of the parties control. Due to lack of manning of DNE, it has not been regarded as appropriate to implement long-term training. Further, due to lack of appropriate office facilities, it is difficult to increase the staff at present. DNE is expected to get more space in new offices during 2000.

Involvement of NVE short-term advisers has also been somewhat limited. NVE will try to improve the project performance by increasing the communication between NVE, NVE's long-term adviser and DNE to identify needs for current support from NVE. Further, NVE intends to improve the internal reporting routines to improve the follow-up of the project.

Moza-10 Assistance to Electricidade de Mozambique (EDM). Alto Molocue - Gurue Transmission Line. Contracting of "The Engineer"

The project concerns the construction of a 110 kV transmission line from Alto Molocue to Gurue (length 72 km) and a 33 kV line in the Gurue area (length 25 km) and a 110/33 kV substation in Gurue. NVE was contracted by EDM in 1998 to assist in contracting a Norwegian firm to supervise the implementation of the project. Tendering, evaluation of proposals and contracting took place as planned and were completed during the first quarter.

Achievements

Firm contracted to carry out the supervision of the project.

Moza-11 Assistance to Electricidade de Mozambique (EDM). Gurue – Lichinga Transmission Line. Preparation of Terms of Reference and Assistance in Contracting of Consultant

The project involves construction of a 110 kV transmission line from Gurue via Cuamba to Lichinga, a length of 230 km plus distribution branches to 8-10 villages along the route.

In late 1998, NVE was contracted by EDM to assist in contracting a Consultant to prepare a feasibility study for the project with option to increase the contract to include detailed design and construction supervision. This was carried out as planned and was completed by the end of the second quarter.

Achievements

The contract is now established with Consultant.

3.7 Namibia

Nami-05 Institutional Cooperation with the Ministry of Mines and Energy (MME)

The cooperation between MME and NVE has been going on since 1994. A new 3-year agreement was signed in June 1999. An adviser from NVE has been posted to MME since 1997 and a new resident adviser replaced him by the middle of 1999.

The new agreement includes altogether 16 activities covering a wide variety of topics (from development of public information skills to technology on solar water heaters).

Achievements

Restructuring study: Ongoing, third workshop held.

Electricity act: Ratified by parliament.

Regulations to the Electricity Act: Ongoing, harmonisation of technical, economic and administrative parts nearly completed.

Project Document for new 3-year period and new agreement MME/NVE signed.

New resident adviser recruited.

Public information skills: Study visit to NVE and Norwegian Petroleum Directorate by MMEs Director of Administration. Preparation of development programme, completion of workshop in Namibia for key personnel of MME.

Training on bilateral agreements in power development: Workshop completed.

Rationalisation of tariffs: Background material collected and document on basic principles prepared.

Waste to energy project: Draft report completed.

Hydropower resources study: Draft report completed.

Challenges

MME is losing personnel. Some personnel receiving further education financed by the programme are taking other jobs upon completion.

3.8 Nepal

Nepa-09 Melamchi Water Supply Project

Melamchi Diversion Scheme is the first of altogether four components in the project for a new water supply to Kathmandu. The Melamchi Diversion Scheme (MDS) will divert water from the Melamchi River through a 30 km long tunnel to the north-eastern edge of Kathmandu. Before delivering the water to the treatment plant (component no. 2), the available head of about 300m will be utilised for production of electricity. Installed capacity of the station will be approx. 25 MW.

NORAD agreed to finance the study on component no. 1 that was necessary before final decision regarding implementation could be taken. NVE was engaged in an institutional cooperation agreement with the newly created Melamchi Water Supply Development Board (MWSDB) to assist in the engagement of Consultant and to provide advisory service afterwards. NVE has subsequently assisted in preparing Terms of Reference, collecting proposals and negotiating contract with the selected Consultant. The draft report was submitted in September. The report was reviewed and commented upon by i.a. NVE and a revised report was submitted at the end of the year.

The Melamchi project is a large and technically and organizationally complicated project with many parties involved. In addition to the advisory services from NVE, there are management consultants, advisors and Consultants working on the project in Kathmandu on a full time basis. In the upcoming implementation phase NVE is supposed to assist on an “on-call, as needed” basis. It is therefore expected that the input from NVE will decline once the financing of MDS is completed and the implementation starts.

Achievements

Contract with Consultant signed.

Comments to draft report on MDS prepared and discussed with Client and Consultant.

3.9 Palestine

Pale-01 Institutional Cooperation with the Palestinian Water Authority

The former Institutional Agreement between the Palestinian Water Authority (PWA) and the NVE was replaced by a new agreement signed by the parties on 3 September 1998. The ultimate goal of the assistance is to enable the PWA to be fully operational within the Palestinian territory.

NVE has been involved in the following activities:

- Development of a wastewater Policy, Strategy, Objectives and connected Action Plan. Followed up the Action Plan
- Development of a Management System for the sections and departments (objectives, strategies, actions, annual plans including result documentation and performance indicators)
- Development of a licensing system for wastewater discharges in co-operation with six Ministries
- Followed up the Water Management Plan, identified needed actions and started the work on the Policy and Strategy for the Water sector
- Contributed in the Strategic Planning Study (Development of the Water sector, including defining priorities for investments)
- Followed development projects, among others the Abu Dis wastewater treatment plant (Norwegian funded)
- Commenting on draft Technical Guidelines and Specifications

- Commenting on drafts and advising on the elaboration of the draft Palestinian Water Law. Contribution to the drafting of the law and advising on organisation of work
- Initiated and contributed to the development of the Water Tariff Guidelines
- Advice to the departments on management issues

Achievements

The Strategy for Water Management in Palestine has been elaborated and implemented in the water and wastewater Policy, Strategy etc.

Policy, Strategy and Goals for the water and wastewater sector have been developed in close co-operation with the relevant staff members.

The work on the Water Tariff Guidelines has started based on PWA resources.

A Management System for all the section is developed and partly implemented

A licensing system for wastewater is developed, but need to be implemented

An adviser for PWA was employed for 1999.

Challenges

The achievements from last year have not been fully followed up, in particular the Day to Day Management Manual. This is also the situation for the Management system and the policies developed both in the Strategic Planning Study and the Wastewater Master Plan. The most effective way of solving this problem will probably be to identify the most important achievements and activities and ask for documentation of how the management has followed up recommendations and results.

3.10 South Africa

S.Afr-06 Inst. cooperation NER

A contract for institutional cooperation with the Regulator in South Africa, National Electricity Regulator (NER), and NVE was signed in February 1999. The objective of the cooperation is to develop the regulatory framework for South Africa.

Achievements

The institutional agreement has made it possible for NER and NVE to exchange professional personnel during 1999 to transfer skills and build capacity in NER and NVE.

It is prepared for a consultancy study to give assistance to NER related to options available for reform in the South Africa Electricity Supply Industry and in its regulatory approaches.

3.11 Uganda

Uganda-08 Ministry of Energy and Mineral Development

NVE has since July 1997 assisted the Ministry of Energy and Mineral Development in preparing a new energy act. The drafting process has continued during 1997, 1998 and was finalised in 1999. The NVE input has been channelled through a Government Task Force.

In the second half of 1999 emphasis has been given to how NVE can assist Uganda in implementing the new Electricity Act.

Achievements

The new Electricity Act has been approved by Parliament 1 November 99

Ugan-09 Audit assistance to UEB

Uganda requested in 1999 assistance from Norway to improve the internal audit function in Uganda Electricity Board (UEB). This was formalised through an amendment to the existing cooperation with Ministry of Energy and Mineral Development, and NVE has assisted in the recruitment process for the new auditor.

Achievements

PriceWaterhouseCoopers was selected after a tendering process and started an 8 months assignment in UEB 1 December 99.

3.12 Vietnam

After preparatory work by the World Bank, Norway and Sweden agreed to provide financial support to Vietnam for the development of a National Hydropower Plan Study under Agreement signed in July 1999. The total grants are 28 mill NOK. A consortium by Sweco/ Statkraft Eng./ Norplan has been given the contract for the implementation of the study over a period of two years.

From the Norwegian grant, a 4 mill. NOK is allocated for a two year institutional cooperation between Electricity of Vietnam (EVN) and NVE. The cooperation includes the posting of a long-term adviser at EVN in Hanoi. The resident adviser took up his duties in Hanoi from 1 May 1999.

The ultimate goal of the institutional cooperation is to strengthen the administrative and technical capacity of EVN in its role as implementing agency for the National Hydropower Plan.

Achievements

The resident adviser was recruited, and started from 1 May 1999.

A group of five officers that all are involved in NHP project visited Norway on a study trip in August 1999. The programme aimed at giving the participants a broad introduction to the energy sector in Norway with visits included governmental agencies, power companies and research institutions.

NVE made a review of the report and provided comments on the consultants Inception (phase 1) Report in October 1999. NVEs comments focused in particular on the methodological aspects of the study.

3.13 Zambia

Zam-08 Financial management and accounting system

According to a contract with ZESCO of October 1997 NVE has made quarterly follow-up visits to check the progress on ZESCO's ISU system (Information Systems for Utilities). The last visit under this contract was done in March 1999.

Achievements

A status report of the ZESCO ISU system was made in March 1999. The report focuses on critical points for progress and discrepancies from workplan. Advice to ZESCO management regarding project progress was given.

Zam-11 ZESCO training program

ZESCO and NVE entered in October 1999 into a contract where NVE should facilitate training to ZESCO related to administrative systems and the small hydropower Pre-Investment study.

Achievements

A part of the training was conducted in 1999. The training program will be accomplished in April 2000.

4. Comments on NVEs cooperation with NORAD and Partner Institutions

4.1 Cooperation with NORAD

The cooperation with NORAD has been running smoothly in 1999, without any major difficulties. The discussion in previous years on different roles and responsibilities of the various actors in the development assistance has been very useful and helped preventing misunderstandings between the different actors.

One possible improvement in relation to the understanding of roles is participation by NVE at annual meetings between NORAD and NVE's cooperating institutions. The current practice is varying, in many cases NVE is invited, but far from always. In cases NVE were invited it is by invitation from the client and as adviser to the client. In most cases NVE finds it very useful for our work to be present as adviser and observer at the meeting, and it would be beneficial if NORAD made it normal procedure to indicate to the cooperating agency that NVE should be invited to the annual meeting.

As can be seen from Appendix A, Table A-1, 1592,5 man-hours have been recorded as "general assistance". This covers time spent on reporting, accounts to NORAD, visits of delegations and part of the administration of the International Office. At the annual meeting in 1999 it was agreed that this account should be reduced. This has been successfully followed up with a reduction from about 2000 man-hours in 1998 to 1592 man-hours in 1999. A further reduction to about 1000 man-hours is foreseen in 2000. The reduction is achieved by charging all assistance directly related to the institutional agreements on the specific projects.

A still unsolved problem for NVE is the considerable outstanding claims throughout the year. Discussions have been going on between NORAD and NVE, but no solution has been found. In 1999 the problem by the end of the year and the closing of the accounts in NVE became even worse. Several invoices certified by our clients for payment from NORAD in December were left unpaid until January 2000.

4.2 Cooperation with Partner Institutions

In general the cooperation with our partner public institutions in cooperating countries is running smoothly, and substantial results have been achieved. There are, however, a few problems that may be commented upon. A general problem is delay of planned activity, and the expectations by our clients to be able to provide the expected service on very short notice. This is causing severe problems for NVEs activity planning and creates extra difficulties in providing the best possible service, at the same time as it may be demotivating for the involved staff who need to make advance plans for their activity. In addition to the responsibility for NVE to explain for our clients the necessity of advance planning, assistance also from NORAD in explaining this to our clients would be appreciated.

In some countries progress have deviated from the plans. This is the case in Ethiopia because of the war, and outside our influence. In Palestine it has been the plan to make use

of a large amount of foreign experts, some of which were supposed to be NVE experts. This part of the plan has not been followed, because of what NVE regard as reluctance from PWA. This may well have valid explanations, but is not understood by NVE, and is causing difficulties in our planning and motivation.

Delay in use of foreign experts has also been the case in Mozambique, but here the reasons seem more diverse, and are partly due to lack of follow up from NVE. NVE has taken action and will follow the implementation of the project closely in 2000.

4.3 Cooperation with Norwegian Institutions

On a case by case basis, NVE has frequent contacts with other Norwegian directorates, research institutions and universities. These contacts are also strengthened through the network established by NORAD.

In 1999 NORAD initiated a discussion with NVE on how Norwegian water institutions could improve the relevance and quality of their assistance to developing countries. This was followed up by NVE with the initiation of meetings with the State Pollution Control Authority (SFT) and the Directorate for Nature Management (DN) with the objective of identifying means to meet the demands set by NORAD. The cooperation has been very successful with a very positive approach from all three institutions. Several means to improve the cooperation and the quality and relevance of our services have been identified, the most concrete and demanding one is the development of a course on Cooperation on Water Management in Developing countries. NVE has undertaken the responsibility to take the lead in developing and implementing the course in 2000.

NVE is member of the board for the International Centre for Hydropower (ICH), and is actively contributing to ICH's initiatives towards developing countries. NVE participated in four meetings of the Steering Committee in 1999. Professionals from NVE gave several presentations during the two courses, each of three weeks duration on "Hydropower Resources Development and Management" and "Hydropower and the Environment", organized by ICH in 1999.

4.4 Other International Cooperation

NVE is a member of the Executive Committee in IEAs "Implementing Agreement for Hydropower Technologies and Programmes" and attended the two ExCo meetings in 1999. NVE is Operating Agent for the programme Annex III on "Hydropower and Environment", and has one participant in Annex 1 "Hydropower Upgrade Resources and Technologies".

4.5 Information Dissemination

During 1999 NVE has increased the efforts to share information on the activity within the framework of the Cooperation Agreement between NORAD and NVE. This has resulted in 7 articles in NVE's magazine "Vann og Energi":

Helgestad, Anne K., *NVE i Mosambik*. nr 1, s 6.

Helgestad, Anne K., *På jobb i Mosambik*. nr 1, s 6.

Norbye, Vibeke H., *Utfordringer i Vietnam*. nr 1, s12.

Norbye, Vibeke H., *Ny vannforsyning til Kathmandu*. nr 2, s 16.

Svelle, Morten., *NVE deltar i gjenoppbyggingen på Balkan*. nr 5, s 11.

Bjelland, Rolv., *Samarbeidet med Uganda videreføres*. nr 5, s 12.

Lier, Espen, *Konsesjonsbehandling i Tanzania*. nr 6, s 12.

Sverre Sivertsen, *NVE in Namibia*. nr 6, s.6.

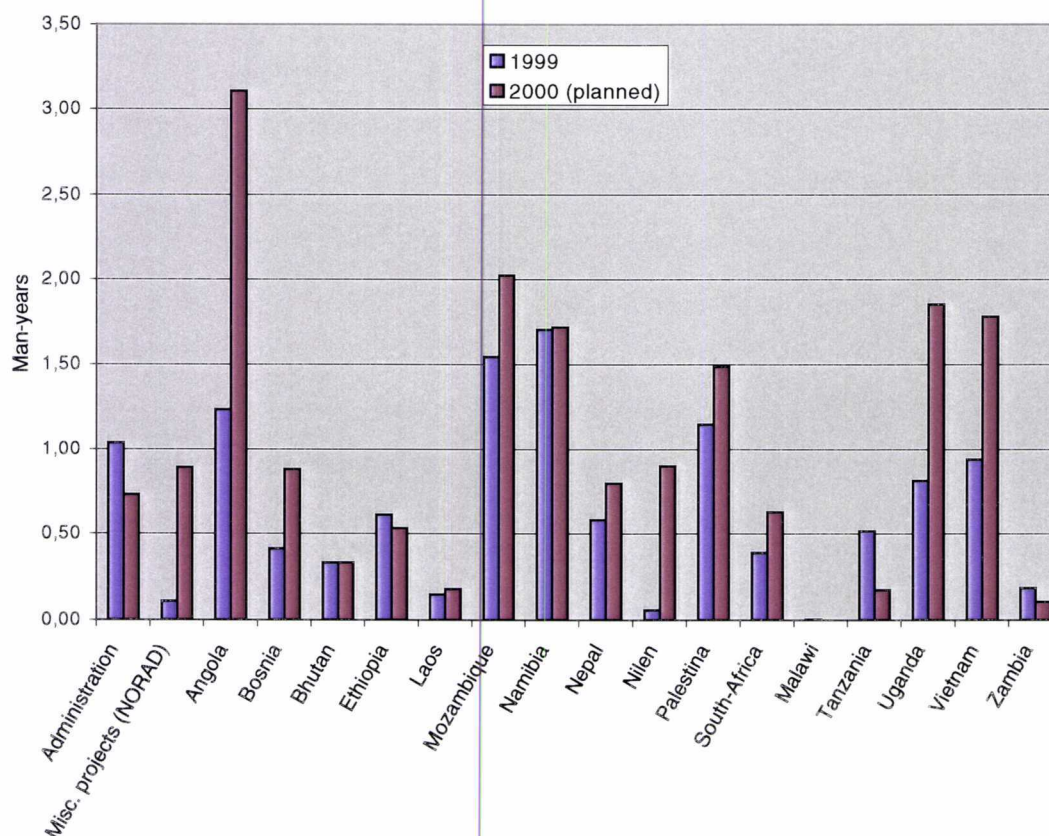
5. Planned Activities in 2000

The planning of activities for 2000 was discussed with NORAD in a meeting in 21 December 1999. The tentatively agreed activities and budgeted use of personnel are shown in Appendix B.

The expected time consumption for 2000 is 18.1 man-years¹, and is based on existing commitments laid down in the running institutional agreements, and information provided by NORAD in a meeting in December 1999. The expected further increase of activities is mainly a consequence of an increase in the activity in institutional co-operation and increased use of resident advisors. Out of the total of 18.1 man-years about 14.7 man-years are expected on institutional cooperation, including 4.5 man-years on long term advisers stationed in the cooperating institutions.

Experience from previous years does however indicate that the planning routines give a higher estimation of future work than what is actually recorded during the year. This is due to *inter alia* delay in the initiation of planned work from the co-operating institutions. It is therefore reason to believe that the time consumption for 2000 will rather be in the range of 15-16 man-years than the estimated 18.1 man-years.

The distribution between countries compared to 1999 is illustrated on the figure below.



¹ One man-year = 1400 hours

6. Appendices

APPENDIX A

TABLE A-1

TOTAL NORAD CONSULTANCY ALLOCATION. Based on invoiced expenses 1-4 quarter 1999

Proj.no	Activity	NVE hours	Fee (charged)	NVE exp.	Consultants	TOTAL
Admi-01	General assistance	1 592,50	740 512,50	11 175,00		751 687,50
Admi-01/26	Rural Electrification/NORAD	51,00	23 715,00	2 780,00		26 495,00
Admi-01/28	Seminar NORAD/SIDA	32,00	14 880,00	4 832,00		19 712,00
Admi-01/29	Paper on licensing/revision of report NORAD	85,50	39 757,50	49 920,00		89 677,50
Bos-01	Bosnia. Preparatory work for Electricity law	158,50	73 702,50	83 741,93	206 618,56	364 062,99
Laos-04	Conference, Hydropower and Environment	101,00	46 965,00	84 046,50	129 802,83	260 814,33
Laos-05	Xeset Hydropower Station			80 266,00		80 266,00
Mala-01	Lilongwe Distribution and Rehabilitation Project, Malawi	3,00	1 395,00	47 336,09	144 592,00	193 323,09
Nepa-10	Status overview within the power sector	25,00	11 625,00			11 625,00
Nile-01	Nile Basin initiative	89,00	41 385,00			41 385,00
Tanz-05	Kihansi Water Power Project	154,50	71 842,50	53 071,80		124 914,30
Tanz-11	Conference on hydropower and environment	617,50	287 137,50	99 690,94	70 355,00	457 183,44
Tanz-12	Seminar "Power Restructuring in Tanzania"	14,00	6 510,00			6 510,00
Tanz-13	Meeting in Bagamoyo re. Power Sector Restructuring			4 707,00		4 707,00
Viet-03	National Hydropower Plan, Vietnam			8 432,00		8 432,00
Zamb-10	NVE assistance to Zesco	53,00	53 107,50	1 168,00		54 275,50
	TOTAL	2 976,50	1 412 535,00	531 167,26	551 368,39	2 495 070,65

TOTAL ACCOUNTS - INSTITUTIONAL COOPERATION. Based on invoiced expenses 1-4 quarter 1999

Proj.no	Activity	NVE hours ¹	Fee (charged)	NVE resident adviser	NVE exp.	Consultants	TOTAL
Ango-06	Angola. Ministry of Energy and Water Affairs, Energy sector	1 583,00	736 095,00		347 864,51	99 198,20	1 183 157,71
Ango-08	Angola Preparatory work for inst. cooperation, DNA	307,00	142 755,00				142 755,00
Ango-08	Angola. DNA visit to Norway				115 543,24		115 543,24
Bos-01	Bosnia. Electricity law	470,50	68 355,00		71 214,33	144 588,70	284 158,03
Bhut-02	Bhutan. Ministry of Trade and Industry, Division of Power, Mangde Chhuu	512,00	238 080,00		232 710,80		470 790,80
Ethi-07	Ethiopia. Ministry of Water Resources. Hydrology Dept.	284,50	132 292,50		71 881,61		204 174,11
Ethi-08	Ethiopia. Ministry of Mines and Energy, Energy Department	596,50	277 372,50		94 097,69	12 031,50	383 501,69
Ethi-09	Energy Distribution Plan, PD (Ethi-017)	57,00	26 505,00		13 784,00	211 994,00	252 283,00
Laos-02	Lao PDR. Ministry of Industry and Handicraft, Legal framework, phase II	125,00	58 125,00		34 678,65	261 533,80	354 337,45
Mosa-09	Mozambique. National Directorate of Energy	569,50	305 328,30	497 381,81	648 997,13		1 451 707,24
Mosa-10	Mozambique. Electricidade de Mocambique. Alto-Molocue-Gurue transmission line	80,50	38 237,50		573,00		38 810,50
Mosa-11	Mozambique. Gurue-Lichinga Transmission Line	230,50	109 487,50		51 083,50		160 571,00
Mosa-12	Mozambique. Assistance to UTIP re. Tender procedures	188,50	87 652,50				87 652,50
Nami-04	Namibia. Ministry of Mines and Energy	1 308,50	608 452,50	526 374,38	924 859,97	478 624,25	2 538 311,10
Nepa-09	Nepal. Melamchi Water Supply Development Board.	866,00	409 310,00		235 226,05		644 536,05
Pale-01	Palestinian Water Authority.	351,00	163 215,00	677 137,72	394 451,00	18 000,00	1 252 803,72
S.Afr.-06	South-Africa. Inst. cooperation NER/NVE	597,00	277 605,00		103 187,60		380 792,60
Ugan-08	Uganda. Ministry of Natural Resources.	1 059,00	492 435,00		248 882,85		741 317,85
Ugan-09	Recruitment of Audit Assistance to UEB	190,50	88 582,50		1 952,00		90 534,50
Viet-03	Vietnam. Institutional cooperation NER/NVE	415,50	193 207,50	442 450,60	1 024 623,48	8 116,00	1 668 397,58
Zamb-08	Zambia. Financial Management and Accounting System	110,00	22 687,42		26 903,43		49 590,85
Zamb-11	Zesco, Training Programme	119,00	55 335,00		137 608,89		192 943,89
TOTAL		10 021,00	4 531 115,72	2 143 344,51	4 780 123,73	1 234 086,45	12 688 670,41

¹ Excluding resident adviser

Planned Activities 2000

Country	Project	Hours
	NORAD ASSIGNMENTS:	
Nile	Nile Basin Initiative	1260
Tanzania	Kihansi	160
	Conference report	80
Mozambique	Licensing on water seminar	450
Vietnam	Licensing on water seminar	450
Miscellaneous:	Water Resources Management (WRM) Course	550
	Development of WRM Course	300
	Global Water Partnership	80
	Privatisation Advice document	80
	Tariffs study	80
Admi-01	General assistance	1020
	Projects to be defined	160
	TOTAL NORAD assignments	4670
	COUNTRY SPECIFIC ASSIGNMENTS:	
Angola	Institutional cooperation, energy sector	2150
Angola	Institutional cooperation, water	2200
Bosnia	Institutional cooperation, electricity act.	1230
Bhutan	Institutional cooperation, Mangde Chhuu	465
Ethiopia	Institutional cooperation, hydrology	230
Ethiopia	Institutional cooperation, energy	510
Laos	Institutional Cooperation, legal framework, phase II	90
Laos	Xeset II, feasibility study	160
Mozambique	Institutional cooperation, energy	2380
Namibia	Institutional cooperation, energy legislation	2400
Nepal	Melamchi Water Supply Projects	1115
Palestine	Institutional cooperation, PWA, Water	2080
South-Africa	Institutional Cooperation NER	880
Uganda	Recruitment of Audit Assistance to UEB	70
Uganda	Continuation of legislation project	1290
Uganda	National Electricity Regulator	1230
Vietnam	Institutional cooperation EVN	2040
Zambia	Zesco, Training Programme	150
TOTAL	Country specific assignments	20670
TOTAL PLANNED ACTIVITY 2000		25340¹

¹ Including resident advisers



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