

Sida Support to ten Projects at the Geological Surveys of Estonia, Latvia and Lithuania

**Torsten Toksvad
Janis Prols**

**Department for Central and
Eastern Europe**

Sida Support to ten Projects at the Geological Surveys of Estonia, Latvia and Lithuania

**Torsten Toksvad
Janis Prols**

Sida Evaluation 98/8

**Department for Central and
Eastern Europe**

Evaluation Reports may be ordered from:

Infocenter, Sida
S-105 25 Stockholm
Phone: (+46) 8 795 23 44
Fax: (+46) 8 760 58 95

Authors: Torsten Toksvad, Janis Prols.

The views and interpretations expressed in this report are the authors and do not necessarily reflect those of the Swedish International Development Cooperation Agency, Sida.

Sida Evaluation 98/8
Commissioned by Sida, Department for Central and Eastern Europe

Copyright: Sida and the authors

Registration No.: ÖST-1997-0211
Date of Final Report: August 1997
Printed in Stockholm, Sweden 1998
ISBN 91 586 7588 4
ISSN 1401—0402

SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY

Address: S-105 25 Stockholm, Sweden. Office: Sveavägen 20, Stockholm
Telephone: +46 (0)8-698 50 00. Telefax: +46 (8)-20 88 64
Telegram: sida stockholm. Telex 11450 sida sthlm. Postgiro: 1 56 34—9
Homepage: <http://www.sida.se>

1 EXECUTIVE SUMMARY

When the 3 Baltic countries gained their independence in 1991, they also took over the responsibilities for running their individual geological surveys. The situation for this sector was difficult in all three countries, mainly caused by very limited budgets and lack of modern equipment, but also by a sense of isolation from the western geological community.

This led to the proposal of a number of co-operation projects with the Geological Survey of Sweden financed by the Swedish Government. Now in the summer of 1997 the projects are more or less completed. The total budget has been approximately 5.5 million Swedish Kronor, with 60% spent for the projects in Estonia.

This evaluation report is made by Carl Bro International for Sida, the Swedish International Development Co-operation Agency. Terms of Reference for the evaluation can be found in Appendix 1. The evaluation is made in connection with Sida's elaboration of strategy papers for the Baltic states. The focus has been on evaluating the relevance, the results, the cost-effectiveness, the effects and the sustainability of the programme. The primary objective has been evaluating the institutional and training aspects and the secondary objective has been evaluating the technical aspects.

In agreement with the guidelines of BITS the projects were established with a co-operation principle. This has caused some problems because it requires a financial support by the recipient country, which has been difficult to obtain.

Initially the contents of the projects were expected to be mainly technical training. When the work started, it emerged, however, that the technical level at the recipient surveys was higher than expected. As a consequence the objectives for some projects were changed and expanded, but still within the technical fields.

The selected topics for the individual projects and the activities are considered to be relevant for the work of the geological surveys as well as for the development of the Baltic countries. The use of modern information technology, methods for sampling and analysis are all fundamental for the activities at a modern geological survey, and the projects are expected to have an influence on both attitudes and methods throughout the recipient geological surveys.

The need for capacity building and institutional strengthening was not stated explicitly in the stated objectives for the projects, but only in the general objectives of BITS/Sida. These aspects were to some degree covered through co-operation, discussions and the general work during the projects. The absence of any formalised training in institutional issues is nevertheless considered to be unsatisfactory. It is recommended that future projects include these issues in a more serious fashion.

The transfer of technology has mostly been in the shape of computers and analysing equipment. The equipment is of internationally known types and standards. It is expected to be possible to maintain the equipment locally.

The implementation of the projects has largely depended on the involved persons. The administrative framework has been vague, which can be seen in the lack of documentation, such as terms of reference, minutes of meetings and progress reports. It is recommended that future projects include administrative obligations to the participants.

The projects have generally achieved the objectives and in several cases even gone beyond these. It is however the impression that the ambitions were set too low for some projects. With a better knowledge and evaluation of the pre-project situation it is possible that the results could have been further improved.

The physical output from the projects in the shape of reports, atlases, maps and databases is considered satisfactory. It is also concluded that SGU has fulfilled the obligations to BITS/Sida by providing the necessary input of man hours and equipment.

The training issues have included specific fields such as computers, field- and laboratory equipment as well as indirect training by giving access to libraries, scientific papers and scientific discussions. In general the training has been completed with success and there has been expressed satisfaction from the receiver side.

The results are considered to be sustainable, but this depends on a few key persons. The achievements could be lost if these persons should choose to leave the survey.

Language has been a problem in some projects, but not in all. It is considered fundamental for the success of this type of programme that communication is unhindered between the participants, and it is recommended that an evaluation of the issue is included in future project planning. If language problems are expected to be a major obstacle, it is recommended to include language training in the early stages of the project.

The project co-operation between the participants appears to have been based largely on personal communication and co-operation, and it has generally worked well. From an evaluation viewpoint it is, however, regrettable that the documentation is limited.

The projects are generally evaluated to have an acceptable cost-effectiveness. The purely technical objectives could possibly have been reached at a lower cost, but the immaterial effects of the projects are considered to be equally important and this justifies the additional costs. The absence of well defined objectives in the institutional field makes the last statement somewhat subjective.

There is an obvious need for further support to the geological surveys in the three Baltic countries. It is recommended to combine the technical themes with institutional ones. The key issues could be in fields such as: quality assessment, presentation, languages – especially English, project management, cost cutting etc. It is also recommended to include some type of training or introduction to new roles and possibilities of the geological survey in the society and in a free market economy.

2 TABLE OF CONTENTS

	PAGE
1 EXECUTIVE SUMMARY	2
2 TABLE OF CONTENTS	5
3 PROGRAMME CONTEXT.....	6
4 EVALUATION METHODOLOGY	7
5 FINDINGS.....	8
5.1 Setting of the programme.....	8
5.2 Project preparation.....	9
5.3 Project implementation and performance.....	10
5.4 Project management.....	14
5.5 Achievement of objectives.....	14
6 CONCLUSIONS AND RECOMMENDATIONS.....	17
7 LESSONS LEARNED	18

Appendix 1	Terms of reference
Appendix 2	Reports on each individual project
Appendix 3	List of persons interviewed

List of terms and abbreviations :

BITS	Swedish Board for Investment and Technical Support
EGK	Eesti Geologiakeskus, Geological Survey of Estonia
GDL	Geologijas Dienests Latvija, Geological Survey of Latvia
LGT	Geological Survey of Lithuania
“The Programme”	All 8 (10 with extensions) projects for the geological surveys in the Baltic countries, financed by BITS / Sida
Project:	Each of the individual 8 (10) projects mentioned above
Sida	Swedish International Development Co-operation Agency
SGU	Sveriges Geologiska Undersökning, Geological Survey of Sweden

3 PROGRAMME CONTEXT

In the beginning of the 1990s, after the three Baltic countries gained their independence, geologists from Sweden started to enhance their contacts with the geological surveys of the Baltic countries.

A meeting between the directors of the Nordic and Baltic geological surveys were arranged by the Geological Survey of Sweden (SGU) and held in Uppsala in 1991. Different geological subjects were discussed, and ideas for possible co-operation projects were drawn up. The main problem for establishing co-operation was lack of finances for this purpose in the Baltic countries. Therefore it was decided to prepare project proposals and to submit these to BITS to obtain financing.

The geological surveys of the Baltic countries drafted the proposals for co-operation projects. SGU then reprocessed these proposals in order to meet requirements of BITS, and returned them in order to have final confirmation of their validity in both the geological surveys and the responsible ministries in the Baltic countries.

The following relevant state Institutions approved suggested project proposals:

- Ministry of the Environment and Ministry of Finances, Estonia
- Ministry of the Industry of the Republic of Latvia; since 1993 GSE become to be a subordinated structure to the Ministry of Environment,
- Environmental Protection Committee of the Republic of Latvia; since 1993 Ministry of the Environmental protection and Regional Development,
- Ministry of Construction and Urbanisation of the Republic of Lithuania

All the proposed projects, in one way or the other, included:

- Establishment of bilateral contacts, both scientific and practical, between staffs of SGU and related geological surveys of the Baltic countries.
- Institutional strengthening of the geological surveys of the Baltic countries through situation improvement in particular fields, such as geochemistry, GIS, environmentally-safe peat production and monitoring of groundwater and water supply.
- Transfer of know-how through purchase of equipment and training of the local staff in use of this equipment

All projects were established on the basis of cost-sharing with the client country. The local geological surveys were supposed to pay all salaries of local staff, travel cost for these and accommodation for Swedish experts, when visiting the Baltic countries. These requirement was a demand from BITS, based on a basic principle written into the mandate of BITS.

4 EVALUATION METHODOLOGY

According to the Terms of Reference the primary objective of this study was to evaluate the institutional and training aspects of the programme. The secondary objective was to evaluate the technical aspects.

The stated objectives for the individual projects are mainly technical, but the institutional and training aspects were apparently known by all participants. The institutional objectives can be found in general documents produced by both BITS and Sida. This is shown by the following quotations:

- “Make it possible for the partner countries to make use of Swedish know-how and competence in their reform work”
- “Self-reliance and sustainability are core elements in the approach and philosophy.”
- “Support environmentally sustainable development”
- “Integrate the countries round the Baltic in long-term co-operation between neighbouring countries”
- “contributes to lasting relations”
- “- place considerable emphasis on transfer of know-how, human resource development, institutional building and economic co-operation”
- “Special priority is given to public administration”
- “Support to environment and energy”

The evaluation is based on interviews with the management and the involved staff at all four geological surveys. The interviews followed a questionnaire prepared in advance to meet the requirements in the TOR.

During visits at Sida and the 4 geological surveys documents were studied and the physical outputs were presented by the participants in the projects.

The evaluation team included:

Mr. Torsten Toksvad, Carl Bro a|s, Denmark

Mr. Janis Prols, GeoConsulting, Latvia

All visits took place in May 1997.

Following this, the evaluation team compared the achievements with the objectives stated in the project descriptions and the un-stated objectives as quoted above, in order to produce this evaluation report. After agreement with Sida the report consists of a main part describing the combined programme and an annex describing the individual projects. The draft report was sent to all the involved persons for comments before the final version was prepared.

5 FINDINGS

5.1 Setting of the programme

All the projects evaluated in this report have been integrated in the daily work in the respective geological surveys. The relationship with other national- and international organisations, companies, etc. have been limited.

The economic and technological situation of the geological survey sector in the recipient countries have been and is still difficult. The political and economic changes that took place after the independence in August 1991 have had a considerable effect on the geological surveys as they were transformed from a branch of the huge Soviet geological survey to smaller independent organisations with very limited budgets.

In the beginning of the 1990s it was impossible for the three surveys to finance any larger purchase of computer and laboratory equipment as well as sending staff to other countries. The Swedish programme has contributed to ease this situation by making it possible to acquire different kind of equipment and giving a number of people the possibility to visit the SGU and other Swedish organisations.

SGU and the surveys of the Baltic countries carry out similar activities, and therefore it has been rather easy to determine objectives and a content for particular projects. The preparation phase of the projects were usually comparatively short, not exceeding a few months.

The first complication came after the draft proposals had been delivered to the responsible ministries. The ministries supervising activities of the geological surveys were supposed to confirm the importance and necessity of the projects, and then allocate local financial resources for an implementation. Also the Ministries of Finance should evaluate whether the particular project would provide a sustainable result concerning either a specific problem or facilitate the general capacity building. Only if the answers from the ministries were positive, could the project be supported locally and included in the state budget. It should be noticed that the geological surveys of the Baltic countries have state budgets, which are already subdivided into particular tasks or projects by the responsible ministries.

The issues of importance and necessity were usually handled without problems, but the second issue of local co-financing was much more difficult. The Ministries of Finance, in the each of the three countries, have already stated priorities or fields, where foreign aid is most urgently required. Therefore they are very careful when assessing the necessity to support any project, which requires even limited local financial input.

Preconditions for the implementation of the projects were usually evaluated, but only in a generalised manner. Because of this, the local base conditions are sometimes evaluated either too optimistic [laboratory equipment, Estonia] or too pessimistic [technical and scientific standard of staff; laboratory equipment, Lithuania].

5.2 Project preparation

The project preparation did not include fact finding or feasibility studies by independent persons. This may be the reason why the documentation for the pre-project situation is limited and that the project concepts are almost entirely focused upon traditional geological disciplines and very little on capacity building in fields such as languages, western type project management, cost cutting, quality assessment, presentation etc.

The projects were prepared taking the following into consideration:

- Importance and urgency of the problem, which has to be solved,
- Current situation of the particular division/field in the recipient geological survey
- Interest of the SGU and possibilities for SGU of delivering the necessary know-how

5.2.1 Content of project proposals

The project design, including choice of equipment, has been done in close co-operation between SGU and the three Baltic geological surveys.

All project proposals include a description of the geological/technical objectives, which should be achieved as well as a description of equipment and training that must be provided in order to achieve the particular goals. These technical objectives, as a rule, are measurable, achievable and relevant. Methods for verification of achieved results, are not indicated.

The project descriptions have clearly stated geological or environmental (scientific) objectives, but in general only limited formulation of exact activities in order to achieve the stated objectives is envisaged. The staff, which were expected to be involved in a realisation of the project, were not specified and the CVs of the project members (both Swedish and local) were not presented.

The fact that most or all of the staff in these organisations are scientist may have caused the programme to be biased towards a very technical approach, while other more organisational and management oriented issues have been given a low or no priority at all. It was noticed that similar Norwegian and Danish programmes have included language training.

There are no projects devoted exclusively to the institutional strengthening or capacity building of the geological surveys of the Baltic countries. It should be mentioned that one project proposal comprised a general situation analysis and provision of capability of the EGK, but this proposal was not accepted by the Estonian authorities.

Nevertheless, all projects have in some way, contributed to institutional strengthening and capacity building, by providing knowledge about work methods and conditions in Sweden, even though this was not stated as specific and measurable activities and objectives.

5.2.2 Project planning

Planning and timing of different activities in the programme are only described in summary form, and only one project provides a list of particular activities and time schedule for the implementation. Nevertheless, this is not considered a major problem for the individual projects,

because a list of activities and a time schedule (utbetalingsplan) were provided immediately after approval of the project by BITS and later by Sida.

Most projects have followed the original plans in general. In several occasions corrections or changes have been made to accommodate a changed situation or the realisation that the original assumptions proved to be wrong. It is considered favourable that this, with a few exemptions, has been possible.

5.2.3 Financing

Only the costs covered by BITS/Sida were available for evaluation. The local financing is not analysed, but have been considerable and essential for a successful implementation of the project.

The projects were implemented with the concept of co-operation between the partners. This implies that the recipient part is on equal terms with the donor part. This appears at first to be an attractive solution compared to the traditional donor-recipient situation. When applied to the financing it did however turn out to be an unbalanced partnership because of the very limited financial resources in the Baltic countries. The projects had difficulties in obtaining local financing for certain activities such as travel expenses. As a consequence the local financing have been a bottleneck for the project progress in several situations. It may have been more reasonable to finance the projects with the traditional donor-recipient concept.

5.2.4 Processing of project applications

It is noticed that there has been long delays in the processing of applications in many of the projects. A processing time of more than 12 months for these relatively small projects is considered excessive. The reason for the delays has not been investigated. The cause could be that the whole situation were unfamiliar for both the geological surveys and BITS, and it does appear that the situation has improved in the later projects.

5.3 Project implementation and performance

5.3.1 Documentation

Most of the projects, especially the programme in Estonia have no or very limited formal framework in such areas as organisation, time and activity schedule, minutes of meetings, integrated quality assessment systems etc.

5.3.2 Adequacy and timing of input: personnel, training, equipment, funds etc.

In general both co-operating sides provided the necessary resources of staff. There are no serious complaints from any sides concerning qualifications of involved specialists, but the following remarks were received:

- Problems with language (English) during implementation of some projects
- Substitution of responsible persons (project manager) in recipient geological surveys
- Occasional problems with availability of the project manager for the project in Latvia
- Occasional problems with the availability of the Swedish project manager for the peat-projects

The general impression is that the training has been adequate and well timed during the programme.

The balance between the different budget items has been discussed and criticised for most projects. From the recipients side there has been a general wish to shift more funds from consultant fees specially to equipment and to a certain extent to travel expenses. This situation was discussed with BITS, but BITS had a very restrictive policy towards purchase of equipment and travel expenses. It should also be noticed that such a change within the fixed budget would cause a weakening of the training aspect.

For some projects it has been a problem that the recipient surveys, through the contract were obliged to pay for accommodation for the Swedish experts, when they visited the Baltic countries. With the limited national budgets and the level of cost for hotels and restaurants, this has put too heavy a burden on the recipients.

5.3.3 Relevance of activities and balance of project components

The selected topics, geochemical mapping, hydrogeology, peat production, databases and GIS are relevant for the present and future work of the geological survey as well as for the development of the Baltic countries. In general the project activities are also considered to be relevant in order to achieved the objectives.

Some adjustments were made in several projects, because either the technical standard at the recipient surveys turned out to be higher than expected or new and important knowledge were discovered during the project.

The balance of project components was not commented on by any of the participants except for the financial funding as described in the previous section. It is the general impression that the recipients are satisfied and that both methods and equipment have been incorporated into the daily work at the surveys.

The evaluation team find that the institutional aspects of the programme have been overlooked, presumably because they were not stated clearly in the objectives and no specific activities were directed towards these during the programme.

5.3.4 Technical analysis, appropriateness of technology chosen, incl. maintenance aspects

Except for one project the choice of hard and software has been of internationally used standard products. Some of this was bought in Sweden, in the early stages of the programme, because these products were not then available in the Baltic countries. It was however assured that proper guarantees and maintenance were provided by the Swedish company that sold the products.

In the later stages of the programme most or all products have been available locally and bought there.

5.3.5 Economic evaluation, cost-effectiveness

In general the projects are evaluated to have an acceptable cost-effectiveness. This is described more detailed in the appendices for the individual projects.

It is possible that the purely technical objectives could have been reached at a lower cost. The immaterial effects of the projects were an integrated and substantial part of the whole programme and is considered to be equally important and this justifies the additional costs.

Under the given circumstances and the pre-project knowledge it is the overall impression that the results are satisfactory when compared to the investment. It is, however, also the impression that more clearly defined objectives in the fields of capacity building and institutional strengthening would have produced better and more measurable results.

5.3.6 Institutional analysis, incl. availability of local personnel and support by SGU home office

With a few exceptions there have been no problems concerning availability of personnel and home-office support. See appendix 2.

5.3.7 Training activities

The training component were provided in full in all completed projects and there is not expected any problems in the ongoing projects.

Training were provided both in Sweden and in the Baltic countries. There are no complaints concerning the training from the local specialists. On the contrary, the specialists from the Baltic countries, especially in Estonia, are very thankful to SGU for providing access to the libraries of SGU and the universities in Uppsala.

Some of the projects have included external experts, from ex. the Agricultural University in Uppsala. This have been very beneficial and is considered to be in agreement with the general objective to bring the Baltic nations closer to the Scandinavian.

The training can be divided into 5 separate groups:

- General training: introduction to up-dated approach and methods required for a implementation of the particular task. This type of training was provided mostly in Sweden at SGU
- Training in data storage, treatment and processing, using different hardware and software for these purposes. This training was provided mostly in Sweden at SGU. Later, if it was required - training was also provided in the recipient countries.
- Training in use of the different field equipment (loggers, pumps, microprocessor-equipment, etc.). This training was provided mostly in the recipient countries using the new equipment purchased for the project.
- Training in use of laboratory equipment. It was done both in Sweden by introducing visitors to with the laboratories of SGU, their methods and equipment and also in the recipient countries using the newly purchased equipment.
- Indirect training - by providing access to the technical and scientific libraries in Sweden and to different manuals and other references owned by SGU specialists, and finally by providing participation in international seminars and conferences.

5.3.8 Project output, physical

All project have or are expected to produce the intended physical results in shape of analysis, reports, maps, databases, etc. Several projects have even surpassed the goals set in the project descriptions. See also in appendix 2

In general SGU has fulfilled its commitment to BITS/Sida and the Baltic Governments by providing the staff, equipment and facilities necessary for the training, field work, analysis, computer work and map production.

5.3.9 Identification of areas/subjects where assistance has not been successful

The stated objectives have been reached, and it is difficult to point out areas where the programme has not been successful. It is however the impression that the ambitions were set too low for some projects, probably because the pre-project situation was not examined thoroughly. With a better knowledge of the background conditions it is possible that the results could have been reached faster or to a higher degree of perfection.

Certain issues have been raised pointing at minor problems. This is in areas such as language, communication and sharing information.

5.3.10 Major factors affecting implementation and performance including bottlenecks.

The only common negative factor noticed for the whole programme has been the limitations in financing for two items. The first one is for travelling, which has reduced the possibility for working together and training for longer periods. The second is for equipment, which is a commonly heard complaint in this type of projects. These two issues should be taken into consideration in possible future projects of the same type

5.3.11 Language as a problem during the project implementation

In some projects this has been a problem, in others it has not. See also information in appendix 2.

There has not been set any specific requirements for the working language. As a consequence project documentation exists in a irregular mixture of Swedish, English and one of the Baltic languages. In relation to evaluating the projects the documentation must be described as uneven at best.

There is a consensus among the interviewed participants that the projects and the development of the Geological surveys would have benefited from some kind of formal training in English as an integrated part of the project.

5.4 Project management

5.4.1 Organisation, management and administration

Most of the projects, especially the programme in Estonia, have no or very limited formal framework in areas such as organisation, time and activity schedule, minutes of meetings, integrated quality assessment systems, financial reporting, etc.

The general impression is, however, that the projects have been run in a decent and honest way, but the flow of information has been relatively poor and depending very much on the personal relationship between the involved people.

5.4.2 Co-operation between parties involved

The co-operation between the Swedish and Baltic partners has been characterised by an mutual interest in establishing closer relations and sharing knowledge. The project co-operation appears to have been based on personal communication and has generally worked well.

There is, however, a general disapproval from the recipient organisations that they have been left out of decision and in several situation also without information about the financial situation of the projects. This is considered to be in disharmony with the general objective with the programme and the co-operative concept.

The staff on both sides have in general been available at the required time and the projects have not suffered from major conflicts or misunderstandings. In some projects there are indications of some problems, see appendix 2.

5.4.3 Reporting

The programme suffers in general from lack of official progress reports that could have been used to monitor and evaluate the history and implementation of the individual projects. Apparently both the Swedish and the Baltic partners prepared reports, but these were in the national languages and were not distributed in a formal / regular manner to the partners in the project.

The final reporting of the projects has in general been as expected, but in some projects delays have occurred. These delays are mostly insignificant and caused by a justifiable need to re-make some of the analysis. It does, however, appear that one or more projects suffers from a combination of communication and management problems causing an unsatisfactory situation concerning the preparation of the final report. See appendix 2.

5.5 Achievement of objectives

The stated objectives of all projects have been transfer of know-how in technical fields such as sampling, analysis and use of computers for different purposes.

The projects have in general achieved the stated objectives and in several situations even gone beyond these. In certain situations it has proved to be necessary/possible to adjust the original objectives and in this way reach a remarkably good result, se appendix 2.

The fundamental development objectives such as integrating the countries round the Baltic in long-term co-operation with their neighbours were not described in the planning documents. The programme have nevertheless contributed to achieve this objective in many ways.

It is difficult to estimate to what degree the institutional objectives that are described in the general BITS/Sida-documents have been achieved. The reason for this is that the pre-project situations were not documented, there were not prepared any means of verification and the participants have given little attention to the institutional issues.

5.5.1 Assumptions and objectives, incl. relationship between them

The technical and scientific level of the staff at the three Baltic geological surveys turned out to be higher than originally assumed. Consequently the objectives have been exceeded in several projects. It has been possible to expand the original project to either larger areas, to give more details or to accommodate for supplementary activities, but only within the technical fields. See appendix 2.

5.5.2 Educational and training effects

The educational objectives are considered fulfilled for most projects. Most of these are expected to be sustainable, but it should be mentioned that in some projects the transfer of knowledge depends very much on a few persons. Should these persons chose to leave the survey, a substantial part of the achievement will be lost. This situation it not unlikely to happen as seen in the project in Latvia. In future training activities it is recommended to take this into consideration and include a lager number of persons in the training activities

5.5.3 Other major effects and impact

The programme has besides the stated objectives effected the recipient surveys in several ways, which were less well defined. Among these should be mentioned:

- The programme realised in proper time the need of the 3 Baltic surveys to break out of their isolation caused by lack of contacts, finances and language skills
- It has been possible for the staff to travel to Sweden at a time when establishing ties to the Nordic countries was extremely important.
- Establishing lasting contacts between the staff at SGU and the staff in the 3 Baltic countries
- Some departments have been able to present their new equipment and technique in local media and in this way help promote the survey
- Some departments have increased their contacts with regional and municipal organisations
- Access to libraries in Sweden
- Participation in conferences and seminars
- Incorporating the Baltic geological surveys into the association of European/Nordic Geological surveys

5.5.4 Sustainability of achievements

The transfer of technology and equipment is generally considered to be sustainable and will have a positive impact on the recipient surveys for a number of years.

In the field of institutional strengthening and capacity building the results are generally considered to be more vague. The sustainability in these fields very much depends on individuals, their motivation and possible future co-operation projects, see also section 5.5.2

5.5.5 Gender aspects

There has not been any indications that the gender issue has been a problem during the implementation of the programme. Men and women have been working on equal terms on both sides.

5.5.6 Need for possible further support

There is an obvious need for further support to the 3 surveys. The long term objectives for a continued support is suggested to be:

- A continued modernisation, to fulfil the function as a provider of service to the public
- A continued and increased co-operation with the sister-organisations in neighbouring countries

Suggested key issues to be studied in a possible future support from Sida.

- Project management and co-ordination
- Introduction of Quality Assessment Systems
- Introduction of cost-efficiency in project planning
- Multidisciplinary approach to projects/work, breaking the boundaries between scientific disciplines
- Languages, especially English
- Transition from the Soviet style command-driven organisation to a demand-driven organisation
- The role and possibilities of the geological survey in the society and in free market economy
- Establishing units/departments that can operate on a semi-commercial basis by selling services to the public and private sector.
- Preparation of maps, reports, analysis, etc. on request rather than for “print”, using modern information technology. This aims at bringing the demand from the community into the planning and priority making of the geological survey.

Suggestions for changed administration and implementation:

- Well structured and open project administration, with access to all relevant information
- Use of external lecturers for special subjects
- Participation in special training programmes i.e. public administration
- “On the job training” at relevant organisations or companies

6 CONCLUSIONS AND RECOMMENDATIONS

This chapter describes some general recommendations concerning the whole programme. The recommendations related to technical issues in the specific projects can be found in appendix 2.

The programme is considered to be successful in both having achieved the technical goals and having established lasting relations between SGU and the geological surveys of Estonia, Latvia and Lithuania.

The programme has focused primarily on the transfer of technical and scientific know-how, and the institutional elements have been limited to a secondary position with only indirect training. It is the impression received through the interviews, that the staff at the Baltic geological surveys did learn something about western thinking and methods, but that they could have benefited from a more organised form of training. This situation originates in the absence of formal institutional elements in the project description. It is recommended to combine the technical themes with institutional ones on a more equal basis. This will aim at strengthening the recipient geological surveys in their relationship with other parts of society and to improving the skills in fields such as project management, quality and financial control, communication and presentation.

The technical and scientific levels at the recipient geological surveys are considered to be high, and the need for transfer of know-how in these fields is limited. However, the technological development is so fast, that it is of utmost importance that the geological surveys continue and enlarge their co-operation with the world-wide geological community in order to exchange information and participate in development of new methods. This is difficult with the present financial situation and consequently any external help is valuable. It is recommended that future programmes take this into consideration and make participation in international co-operation a part of the project objectives.

The balance of the different items in the budget (consultants fee, equipment, travel expenses, accommodation, etc.) should be reconsidered in order to favour longer periods of training and co-operation in either Sweden or the Baltic countries.

The repeated change of task managers at BITS and Sida has caused frustrations. It is believed that a more stringent procedure for reporting and communication could have eased the transition from one task manager to the next. A more comprehensive reporting and filing routine would have made it easier and faster for the new task manager to bring him/herself up to date and to make decisions concerning the project.

These general recommendations favour a strengthening of the institutional, organisational and administrative topics. The evaluation team will however emphasise the importance of combining technical and institutional elements in the programme in order to motivate the participants.

7 LESSONS LEARNED

It is the opinion of the evaluation team that the programme would have benefited by the following:

- Detailed assessment of the pre-project situation and correspondent adjustments of the objectives and activities
- Terms of reference for the projects (TOR) should have been prepared and distributed to all relevant partners
- Rules for reporting and communication should be described and agreed upon by the partners
- Preparation of progress reports including financial situation every 3-6 months
- Descriptions of well defined objectives for the institutional component of the projects and activities dedicated to achieve these objectives
- Possibilities for longer periods where the partners could have worked together.
- Integration of language training in the projects

Appendix 1

Terms of Reference

Terms of Reference

Evaluation of 10 SGU-Projects in Estonia, Latvia and Lithuania

1. Background

In connection with the elaboration of strategy papers for the Baltic States, a number of evaluations are carried out by Sida to learn from past experiences, identify bottlenecks and short-comings in order to find out where the assistance has been successful and led to sustainable results and where additional assistance is needed.

In view of the large number of projects aiming at the development of the geological survey sector in the Baltic States and especially Estonia, Sida has decided to undertake a review and evaluation of these projects. The review shall also identify whether there are any motives for continued assistance to the sector and make an appraisal of the proposed continuation of the previous and ongoing projects. To undertake this evaluation, Sida intends to engage an independent consultant (the Consultant). These terms of reference will guide the work to be performed by the Consultant.

So far Sida/BITS has financed 10 projects concerning geological information systems, geological mapping, peat production etc. where the Geological Survey of Sweden has been the responsible part from the Swedish side. Most of the projects are performed together with the Geological Survey of Estonia as the counterpart. In Latvia and Lithuania, the Geological Surveys of the respective country are the local counterparts. Some of the projects are already completed while others are still ongoing, but are supposed to be completed by spring 1997. A list of projects is enclosed. The duration period of the projects was scheduled to be 1 to 3 years. The total project costs for the 10 projects will be maximally SEK 5.488.000.

One of the main objectives of the projects was transfer of knowledge within the geological survey sector. The projects were also supposed to strengthen the Baltic counterparts organisations and to pave their way to self-sustainable organisations.

2. Objectives

The main purpose of the evaluation exercise is to evaluate the relevance, the results, the cost-effectiveness, the effects and the sustainability of the support so far provided to the development of the geological survey sector in the Baltic States, especially in Estonia. The primary objective will be to evaluate the institutional and training aspects of the 10 projects, and the secondary objective will be to evaluate the technical aspects.

Furthermore, the purpose of the study is to identify aspects to consider in any possible future Sida support to the institutions in the geological survey sector, to ensure effective support and the establishment of the Estonian-, Latvian- and Lithuanian Geological Survey sector on a self-sustained basis.

The evaluation shall be based on a review of relevant documents, as well as on personal interviews with relevant persons in the respective Geological Surveys in Sweden, Estonia, Latvia and Lithuania.

The Swedish Embassies in the 3 Baltic States may also be consulted if Sida or the Consultant conclude that this is important for the evaluation. Interviews at the Ministries of Environment in the country in question may also be held if deemed necessary.

The Consultant shall study the relevant documentation available at Sida. To collect the information needed, the Consultant will initially visit the SGU in Uppsala, who has been responsible for all the technical assistance from the Swedish side. The Consultant will then visit relevant counterparts/institutions/organisations in Tallin, Riga and Vilnius for further fact finding.

3. Scope of Work

The aim of the assignment is to evaluate 10 projects performed by the SGU in the three Baltic States. The Consultant shall identify major issues with regard to the execution of the BITS/Sida support, the manner in which it has been implemented, both with respect to the provision of technical assistance services, the arrangements and absorptive capacity on the Estonian, Latvian and Lithuanian side, including important features in the enabling environment, as well as the cost-effectiveness of this kind of assistance.

The evaluation shall be carried out in accordance with the Sida Guidelines for Evaluation, and shall comprise but not necessarily be limited to the following aspects:

A brief description of the setting of the project

- The institutional and political framework of the projects, key responsible government bodies, and other national stakeholders.
- The economic and technological situation of the geological survey sector in the Baltic States and the effect of the project with regard to these aspects.

Project preparation

- Project identification, choice of technological options.
- Project design, screening of technology options against local capability and maintainability.
- Project planning
- Base-line data, selected key indicators of the pre-project situation at the 3 geological surveys

A summary of project descriptions

- To be based on project documents received at SGU and the 3 Baltic geological surveys

Project implementation and performance

- Implementation plan
- Adequacy and timing of input: personnel, training, equipment, funds etc.
- Relevance of activities and balance of project components
- Technical analysis, appropriateness of technology chosen, incl. maintenance aspects
- Economic evaluation, cost-effectiveness
- Institutional analysis, incl. availability of local personnel and support by SGU home office
- Training aspects
- Project output, physical
- Fulfilment by SGU of commitments to Sida and the Baltic Governments
- Identification of areas/subjects where assistance has not been successful
- Major factors affecting implementation and performance including bottlenecks.
- Language as a problem during the project implementation

Achievement of objectives

- Analysis of the achieved results, as well as possible deviations from the objectives set in the terms of reference
- Analysis of assumptions and objectives
- Achievement of stated objectives
- Educational and training effects
- Other major effects and impact
- Gender aspects
- Intentional and unintentional effects attained through the projects
- Sustainability of achievements and the long-term impact (with emphasis on organizational impacts and improvements at the geological surveys of Estonia, Latvia and Lithuania)

Project management

- Organisation, management and administration at Swedish and local level
- Co-operation between parties involved
- Reporting

Development of the previous-, ongoing- and possible future projects

- Prospects and conditions for future sustainability of project benefits
- Need for possible further support, and the scope, objectives and arrangement of such possible support including identification of key issues to be studied in a possible future support from Sida.
- Conclusions and recommendations drawn from the activities carried out
- Considerations to be taken in a possible future decision of co-operation, such as changed objectives, contents, planning, implementation, administration etc.
- Assessment of a possible proposed continuation of previous projects in the Baltic States.

The need for further analysis

- Identification of areas inadequately documented for a proper completion of the evaluation or for giving recommendations for future projects

Conclusions and recommendations / Lessons learned

- Presentation of conclusions for the previous and ongoing projects and recommendations for ongoing and future projects
- “What could have been done better” ?

4. Project Evaluation Report

The evaluation report shall be written in English and should not exceed 20 pages, excluding annexes. The outline of the report shall follow the Sida Evaluation Report - a Standardised Format (see Annex 3, p 71 of Evaluation Manual for Sida).

Draft report

Two copies of the draft report shall be submitted to Sida not later than June 23, 1997. The SGU and the Geological Surveys in the Baltic States shall be given the opportunity to comment on the draft report before it is submitted to Sida for Sida's review.

Final report

Within two weeks after receiving Sida's comments on a draft report a final version shall be submitted to Sida in three copies and on a floppy disc. The evaluation report shall be written in Word for Windows or a compatible format and be presented in a way that enables publication without further editing.

Subject to decision by Sida, the report will be published and distributed as a publication within the Sida Evaluations series.

The evaluation assignment includes production of a summary according to the guidelines for Sida Evaluations Newsletter (Annex 1) and the completion of Sida Evaluations Data Work Sheet (Annex 2). The separate summary and a completed Data

Work Sheet shall be submitted to Sida along with the draft report. The final report shall begin with a comprehensive summary of results and recommendations.

5. Composition of Team

The person(s) who will perform the evaluation shall have international working experience, preferably in the Baltic countries or eastern Europe, and have relevant knowledge of the technical/environmental and institutional issues. At least one of the team members (if more than one team member) must be able to read and communicate in Swedish.

6. Timing and communication

The work shall be started as soon as possible and a draft shall be ready before June 23, 1997. At this date consultations with the Geological Surveys in the Baltic States and Sweden must be completed and their viewpoints shall be included in the draft report.

Sida will inform the Swedish embassies of the evaluation and forthcoming visits by the Consultant. The Consultant will be responsible for the practical arrangements in co-operation with the Swedish embassies in conjunction with the missions to Estonia, Latvia and Lithuania. The Consultant will be responsible for visits and arrangements in Sweden.

The maximum time input will be 4 weeks effective time.

If interviews cannot be carried out in Swedish/Scandinavian or English, interpreters shall be hired and costs reimbursed by Sida.

7. Documents made available

Sida will ensure that all written material (reports, project preparation documents, project completion reports, etc.) deemed to be of relevance to the evaluation exercise will be made available.

During the visit to Stockholm and Uppsala, at the latest, the Consultant will receive copies of key documents selected by the Consultant and Sida.

Preliminary list of key documents:

1. Sida Evaluations Newsletter
2. Sida Evaluation Manual (incl. Annex 3)
3. Sida Evaluations Data Work Sheet (Annex 2).
4. Project descriptions
5. Sida decisions
6. TOR, if available
7. Inception reports, if available
8. Midterm reports, if available
9. Final reports

List of Projects to be Evaluated

Estonia

- EST-0722 Geoinformationshantering
- EST-0721 Geokemisk kartering
- EST-0723 Hydrogeologisk övervakning
- EST-0724 Geoinformationssystem, etapp 2
- EST-0725 Geokemiska undersökningar av och kartor över förorenad mark
- EST-0726 Miljövänlig torvproduktion
- ÖST-1995-0550 Hydrogeologisk övervakning, tilläggsbeslut

Latvia

- LVA-0771 Geokemiska undersökningar

Lithuania

- LTU-0631 Planering av vattenförsörjning i centrala Litauen
- LTU-0641 Miljövänlig torvproduktion

Appendix 2

Reports on each individual project

Project: GEOINFORMATION SYSTEM, ESTONIA

Setting of project:

The project is financed by BITS/Sida and is numbered EST0722, with the extension EST0724. The name is Geoinformation system - "Computer storage of bedrock data in Estonia / digitising, storing, processing and presentation of geological data in Estonia". The projects include transfer of technology and know-how for establishing databases for geological data at The Geological Survey of Estonia. The Geological Survey of Sweden is acting as consultant in the project.

Objective:

To develop a system for storing, processing and presenting the data which are being collected and which will form the base for mineral prospecting, utilisation of natural resources and be an information source for making decisions in the field of environmental protection.

Realisation time:

1993 to 1996. A proposal for phase I was delivered to BITS in April 1992, and was accepted 9th June 1993. A list of activities and overall time schedule for a realisation of the Project were elaborated 12th July 1993.

BITS accepted an extension (phase II) 26th July 1994. A list of activities and overall time schedule for this phase was elaborated 1st September 1994.

Contracting:

Contracts between SGU and EGK were signed 8th July 1993 for phase I and 18th August 1994 for phase II

Financing:

330,000 SEK for phase I and 576,000 SEK for phase II

Equipment (purchased and transferred to EGK):

- 1 PC-486DX/66
- 1 PC-486DX/100, with dual display
- 1 HP LaserJet 4M (600dpi)
- 1 Digitiser, A1

Software: Intergraph/Mapping Office (Microstation 5.0); MapInfo 2.1 and upgrading to 4.01; Statistica; Rockware LOGGER and GRIDZO

Transfer of used computers from SGU to EGK: 9 pcs. PC-286, 2 pcs. PC-386SX and 1 pcs. PC-386MX

Responsible executors:

Harald Ressar, SGU

Eduard Pukkonen EGK

Status:

The project is completed successfully in 1996

Achievement of stated objectives:

- Introduction to and evaluation of different database systems
- Transfer of knowledge from Sweden to Estonia
- Purchase of hardware and software for data storage, processing and presentation
- Education and training of 8-10 persons from the Estonian staff
- 1st report on the co-operation project 28th February 1994
- 2nd report on the co-operation project March 1995
- Final report and proposal for continuation 27th May 1996
- Realisation of working databases for bedrock samples, soil data and hydrogeological data.
- Production of geological and other thematic maps
- Production of brochures

Achievement of non stated objectives:

- The project has given the Estonian staff an opportunity to make contacts in the Nordic countries at a critical time.
- It has provided additional and essential hard- and software in the form of used PCs
- The project has surpassed the expected results
- The project has produced a highly sustainable result.

Additional findings:

The project has few shortcomings, but the introduction of quality assessment, which was stated as an objective for the second phase, does not appear to have been completed.

During the early part of phase I the objective was only to establish a database for bedrock samples. During the remainder of the project focus has been changed to cover all relevant databases at EGK and to include digital mapping and GIS.

SGU use UNIX-systems for data storage and map production, and most of the training has been made using workstations and UNIX. This is considered to be inappropriate, since funding does not allow EGK to follow this choice. Instead SGU and EGK have wisely chosen the PC-platform for the development in Estonia.

It is probably still beyond the financial possibilities of EGK to purchase the necessary additional equipment to complete the geoinformation system.

The cost of the project has been a total of 740,000 SEK, since 165,000 SEK from the budget are left over. The balance between consultants fee 65%, travel costs 10% and purchase of equipment 25% is considered to be biased too strongly towards consultants fee.

Conclusions by the evaluation team:

The project has successfully completed the majority of the stated objectives as well as achieved some additional results.

The cost effectiveness of the project is considered acceptable, but the budget imbalance has caused some inappropriate situations. Allocation of more funds for travel costs and equipment may have made the project progress faster.

The difference in choice of computer platform (UNIX vs. PC) has been an problem in the project. This has been overcome, but should nevertheless be considered in a possible continuation of the project.

The future of the EGK is considered to depend heavily on the progress of tools for data storage, processing and presentation. It is considered to be important that the whole staff of EGK will have direct access to databases in the future and that the service given to the society will continue to develop and in this way give substance to ideas such as openness, public participation and co-operation.

Recommendations:

It is recommended to continue the support of the project, but also to make demands for a more elaborate documentation of the implementation and progress of the project.

In the plans for continuation it is suggested to include:

- Development of GIS and involvement of computer specialists, with practical experience in developing PC-based GIS
- Training in the development of PC-based network systems, for sharing data
- Training in institutional issues, project management, cost cutting, presentation
- Training in quality assessment systems, dedicated to database management
- Training in advanced English
- Participation in international seminars and workshops

Project: GEOCHEMICAL ATLAS OF THE HUMUS HORIZON OF SOIL AND UPPER LAYER OF PEAT DEPOSITS OF NORTHEAST ESTONIA

Setting of the project:

The project idea was discussed as early as in 17 October 1991 when Estonian specialists visited SGU. Afterwards the Estonian side made a proposal draft, which was sent to SGU. After common discussions and consultations the final version was elaborated and delivered to BITS. The project idea was discussed with the Ministry of Environment (during this EGK was under the Ministry of Industry), and they supported it.

Situation in EGK before the realisation of the project:

- The geochemical mapping of the north-eastern part of Estonia was already started in 1988, and approximately 4,000 samples have been collected and analysed using mainly semi-quantitative method of spectral analysis, and only 10-20% of the samples (only heavy metals) were analysed using AAS produced in East Germany and Ukraine. EGK did not have any suggestions on data validity
- The Western standard samples had never been used for checking the equipment, which was to the disposal of EGK
- EGK did not possess any hardware and software for data processing and assessment or for compiling and presenting geochemical maps. All data was processed manually (including drawing of the maps) until the realisation of the project. Otherwise, EGK did not have the resources required for the completion of the study and presentation of the maps for authorities and public

Objective: (stated in the Contract):

- Production of geochemical maps of north-eastern Estonia,

Realisation time:

1993/94. The proposal was delivered to BITS in 1992 and was accepted on 18 March, 1993. List of activities and time schedule for a realisation of the project were already elaborated in 1992

Financing:

360,000 SEK

Contracting:

Contract between SGU and EGK was signed on 29 April, 1993

Responsible executors:

Harald Ressar, SGU

Valter Petersell, EGK

Status:

Project is completed.

Outcome (the main items):

- Knowledge and equipment transfer from Sweden to Estonia, training of the Estonian staff
- Atlas of geochemical maps (scale 1:400,000) for the north-eastern Estonia and Sililamae surroundings (scale 1:25,000) and explanatory note
- Comparative analysis of humus and peat samples in Sweden and Estonia

Project planning, management and realisation:

- The project planning was very successful: list of activities, time schedule and list of equipment, which were to be purchased to EGK, were provided before project start
- Also the project management was successful. For instance, when it became clear that EGK had serious problems with laboratory analyses, it was decided to purchase second hand AAS (made in Australia) for EGK. All equipment maintenance was provided by the Swedish side. This helped providing significant improvements in the field of laboratory investigations
- The working language was Estonian, but nevertheless the report (atlas and explanatory note) is provided in both Estonian and English,
- Estonian specialists provided data processing using the purchased equipment, but the black and white maps for the atlas were printed in Sweden.

Recommendations:

- Data assessment, presentation and publication should preferably be done in Estonia
- SGU should work more as an adviser and on the quality assurance side
- Introduction of market research concerning interest in the planned products and services. (EGK has distributed about 170 copies of the atlas to interested authorities, but more are interested, so the number of printed reports may prove to be too limited)
- Training in institutional issues, project management, cost cutting, quality assessment, presentation etc.
- More attention should be paid to base conditions, especially to the possibilities and conditions of local laboratories

Project: GROUNDWATER MONITORING, PHASE 1. ESTONIA

Hydrogeological Monitoring - Transfer of Technology and Know-how for Investigations of Groundwater Pollution and Groundwater Monitoring in Estonia

Setting of the project:

The project idea was discussed already on 17 October, 1991, when Estonian specialists visited SGU. Afterwards the Estonian side made a proposal draft, which was sent to SGU. After common discussions and consultations the final version was elaborated and delivered to BITS.

In 1992 EGK was subordinated the Ministry of Industry, and therefore the proposal was not discussed with the Ministry of Environment.

Situation in EGK before the realisation of the project:

- EGK did not have any modern equipment for groundwater sampling and micro-processors for the field measurements of pH, EH, EC and others. Validity of samples had never been considered
- All data processing was done manually. One East German computer “Robotron” (with very limited processing power), a USSFQ386 and a ALCOM286 were available
- EGK did not have experience or tools for up-dated data processing, evaluation and presentation
- The activities for groundwater monitoring was significantly reduced, and the Ministry of Environment thought that some tender or outsourcing of National groundwater monitoring were necessary.

Objective: (stated in the Contract):

- To improve the possibilities for Estonian authorities to solve problems in connection with groundwater status, pollution and monitoring by transfer of technology and knowledge from Sweden to Estonia

Realisation time:

1994/95. The proposal was delivered to BITS in 1992 and was accepted on 16 December, 1993. List of activities and time schedule for a realisation of the Project were elaborated on 18 February, 1994.

Financing:

1,000,000 SEK

Contracting:

Contract between SGU and EGK was signed on 18 February, 1994

Responsible executors:

Jan Pousette, SGU

Lehte Savitskaja, EGK

Status:

Project is completed.

Outcome (the main items):

- Knowledge and equipment transfer from Sweden to Estonia, training of the Estonian staff
- Purchase of hardware and software (MAPINFO) for data processing and presentation, education and training of the Estonian staff
- Introducing and training of Estonian staff on representative groundwater sampling and data processing, assessment and presentation
- A creation of a database named “Boreholes”
- Comparative analysis of groundwater in Sweden and Estonia
- Report on the co-operation project

Project planning, management and realisation:

- Planning of the project was provided almost immediately after acceptance of it by BITS, i.e. planning included: list of activities, time schedule and detailed list of equipment (to be purchased for EGK). The project planning was provided in good way and in right time
- Objectives were achieved - EGK received equipment (all the items, which were included in the list of equipment) and necessary training (in accordance with list of activities). Comparative water analyses made by EGK and SGU have shown that obtained results are compatible. The report on realised activities and obtained data has been completed
- Co-operation between both sides was slightly complicated by the language problem
- EGK has known the total budget of the project, but did not have information on individual items of the budget (excluding sum of money allocated for the equipment)
- There were problems with finances from both sides - a shortage of local money for EGK, and too much money for SGU (only 550,000 SEK of 1,000,000 SEK were spent for the project's needs. Later the non-used part of the budget - 450,000 SEK - was allocated for a realisation of the 2nd phase.

Recommendations:

- Improvement of the project planning and management, especially concerning the financial part: both involved parties should know the total budget allocated from both sides for the project realisation - only then is adequate planning of the project possible
- If the local partner (staff of EGK) has problems with the English language, training courses should be provided as part of the project. Related expenses are very low, but an improvement of English skills will significantly improve both communications and practical realisation of the project, especially its training part.

Project: GROUNDWATER MONITORING, PHASE 2, ESTONIA

Analyses of the Chemical Composition of the Groundwater and Modelling of the Influence of Sea Water Intrusion on the Groundwater

Setting of the project:

The project (EST0723) was designed jointly by EGK and SGU as logic continuation of the Groundwater Monitoring, Phase I. In 1995 EGK has subordinated to the Ministry of Environment. The Ministry was very interested in comparative analyses especially concerning content of radio-nuclides (they should provide standard for a drinking water) and groundwater modelling problems.

Situation in EGK before the realisation of the project:

- The Ministry of the Environment and EGK had problems with determination of radio-nuclides in the groundwater, and they did not know which level of radioactive elements could be tolerated in the drinking water standard. Even background values were not known very well, because results of determinations provided in Estonia caused doubts, at least, in EGK
- Very serious problems existed in the Tallinn area, due to salt-water intrusions into aquifers used for water supply. Restructuring of the water supply sources needed to be provided for the City
- EGK has good computer specialists, but they had never before worked with hydraulic or migration modelling. Additionally hardware and software required for this purpose did not exist in EGK

Objectives: (stated in the Contract):

- A determination of hazardous micro-components and radio-nuclides in groundwater in order to provide relevant information to decision making authorities.
- To create a groundwater flow model, simulating the migration-filtration of groundwater of the Cambrian-Vendian aquifer system in Estonia.

Realisation time:

1996/97. Approval from SIDA received on 8 March 1996. List of activities and time schedule for a realisation of the Phase 2 were not elaborated.

Financing:

450,000 SEK (remained from the phase 1) + 85,000 SEK (the letter from SIDA, dated 8 March, 1996). Total - 535,000 SEK

Contracting:

Contract between SGU and EGK was signed on 12 April, 1996

Responsible executors:

Jan Pousette, SGU

Lehte Savitskaja, EGK

Status:

The project is ongoing, should be finished in 1997

Outcome (the main items, which are already provided):

- Training of EGK specialists in Sweden,
- Purchase of hardware and software (Groundwater Modelling System / GMS) for hydrogeological modelling and training of the Estonian staff
- Comparative analysis of groundwater in Sweden, Estonia and Finland (only radio-nuclides in Finland).

Project planning, management and realisation:

- There are still problems with the project planning: there is only the list of long-term activities (prepared during the 1st phase), but a detailed list of activities, a time schedule and even a list of equipment, which should be purchased to EGK, are missing. At least, a detailed list of activities and a time schedule for the remaining part of the project should be elaborated immediately
- EGK do not know details on the project budget. EGK considers that this is an issue, which is *a priori* decided by the SGU,
- Probably, the above mentioned was the main reason for causing a delay of computers and Groundwater Modelling System (GMS) to EGK.

Recommendations:

- An up-grade of computers purchased to EGK during the 1st phase is required (RAM increased from 8 to 16 Mb and some other minor improvements. Expenses related to the mentioned up-grade of computers are small, and it could be recommended to cover them from the project budget
- Co-operation on GMS should be strengthened. Planning on this should have high priority, because the project must be completed at the end of 1997.
- Training in English is still required, and it is still possible to provide it from the project budget because the related expenses are insignificant.
- Training in institutional issues, project management, cost cutting, quality assessment, presentation etc.

Project: GEOCHEMICAL RESEARCH OF THE SOIL POLLUTION, ESTONIA

Setting of the project:

The project (EST0725) was designed jointly by EGK and SGU as logic continuation of the first project on geochemical mapping in north-eastern Estonia. The project had great support from the Ministry of Environment, and from the Ministry of Agriculture and Ministry of Finances as well.

Situation in the Environmental Department of EGK before the realisation of the project:

- Experience obtained during the first geochemical project. About 1600 samples have been collected (it was started in 1982, and it was ordered by the ministry of agriculture) and analysed using mainly semi-quantitative method of spectral analysis; only 5 elements (U, Th, Pb, Y, Sr) were determined using x-ray analysis. Accuracy of the spectral method was evaluated as $\pm 300\%$
- The western standard samples had never been used for checking the equipment, which was applied for analyses
- Former Soviet standards of samples were produced in the three different sites and, unfortunately, had different concentrations for same elements. Therefore occasional and systematic errors took place
- EGK were not in possession of any hardware or software for data processing and assessment, or for a compilation and presentation of geochemical maps. All data was processed manually before this project (including drawing of the maps). EGK did not have the required resources for the completion of the study and presentation of the maps for authorities and public.

Objective: (stated in the contract):

- Geochemical investigations and production of geochemical maps of soil in Estonia,
- Determination of background concentrations of different elements in humus horizon.

Realisation time:

1994/97. Proposal was delivered to BITS in 1992 and was accepted on 26 July, 1994. List of activities and time schedule for a realisation of the project were elaborated before start of the project.

Financing:

619,000 SEK

Contracting:

Contract between SGU and EGK was signed on 23 August, 1994

Responsible executors:

Harald Ressar, SGU

Valter Petersell, EGK

Status:

Project should be completed in August, 1997

Outcome (the main items):

- Knowledge and equipment transfer from Sweden to Estonia, training of the Estonian staff
- Education on the procedure of the geochemical mapping applied in different Western countries, access to the library of SGU and University of Uppsala
- Purchase of hardware and software (MAPINFO) for data processing and presentation, education and training of the Estonian staff
- A set of geochemical maps with 31 elements for the Estonia and explanatory note for these (author's variant is already provided). Additionally - maps of soils, parent rocks, coefficients of element's concentrations, main associations of elements (under preparation). All maps for publication are prepared in colour.
- Comparative analysis in Sweden and Estonia of humus samples.

Project planning, management and realisation:

- The project planning was very successful: list of activities, time schedule and list of equipment, which should be purchased to EGK, were provided before the start of the project
- Project management was also successful. Any problems were solved in working order using direct communication between the responsible executors in EGK and SGU
- The working language is Estonian, but nevertheless the report (maps and explanatory note) will be provided in both languages - Estonian and English
- The Estonian specialists provided all the data processing using the purchased equipment (hardware and software), but map layouts will be done in Sweden for later printing in Estonia.

Recommendations:

- More attention should be paid to base conditions, especially to possibilities of using local laboratories, in particular in this case, where both sides already have experience and know the existing shortages and problems
- A continuation of the geochemical project in future might be very useful, if it includes methods new for EGK, but known well by SGU specialists. This could for example be biogeochemical mapping, which provided excellent results in Sweden. More emphasis, in such project, should be put on the training element, especially to sampling procedures, because EGK has no experience in this field.
- Participation of specialists from SGU in the field, at least in the beginning of the process will be required.
- One serious problem still remains; EGK uses old equipment for X-ray analysis (produced in the former USSR), which only allows for determining 9 elements, while the equipment used in Sweden allows determination of about 40 elements. Therefore it should be a long-term objective to refit the EGK laboratory in order to provide a full set of up-dated equipment required for geochemical / biogeochemical investigations.

Project: ENVIRONMENTALLY SAFE PEAT-PRODUCTION, ESTONIA

Setting of project:

The project is financed by BITS/Sida and is numbered EST0726. The projects deals with methods for environmentally safe and sustainable production and use of energy and horticultural peat in Estonia. The Geological Survey of Sweden is acting as consultant in the project and The Geological Survey of Estonia is the recipient.

Objective:

To provide the EGK with knowledge and technology to make classifications of peat according to western standards. This is assumed to lead to a long-term objective of increased export and more rational use of peat locally.

Realisation time:

1994 to 1996(7). A proposal was delivered to BITS in June 1994, and was accepted 7th July 1994. A list of activities and time schedule have not been prepared.

Contracting:

Contracts between SGU and EGK were signed on 18th August 1994

Financing:

106,000 SEK

Responsible executors:

Dag Fredriksson, SGU

Mall Orru, EGK

Status:

The project is not completed yet. Some results of analysis and the final report is still under preparation. The project period has been extended several times according to the contract. Originally it was scheduled to be finished in October 1995.

Achievement of stated objectives:

- Transfer of knowledge on classification of energy peat
- Transfer of knowledge on classification of horticultural peat
- Transfer of knowledge on drainage and water chemistry in peat mires
- Education and training of 2 persons from the Estonian staff

Achievement of non-stated objectives:

- The project has given the Estonian staff an opportunity to make contacts in the Nordic countries at a critical time.
- Participation in international peat congress in Bremen 1996. (At this point it is not clear if Sida will allow support of participation in events in third countries)
- Discovery of radioactivity in Estonian peat deposits

Documents:

- Project report, 12th December 1995 (in English)
- 1st progress report, 19th August 1996 (in Swedish)
- 2nd progress report 20th February 1997 (in Swedish)
- Several travel reports (in Estonian)

Additional findings:

During the early part of the project the objective was to transfer knowledge on classification, later the scope of the project has been enlarged to include the question of concentrations of radioactive elements in certain the layers of peat.

Apparently it has not been possible to apply the western type of classification of peat directly to Estonian peat types. The reason for this may be purely technical (biological), but language and other communication problems may be involved too. Another reason may be that the western classification is still preliminary or in other ways inadequate.

The balance between consultants fee 65%, travel costs 30% and purchase of literature 5% is considered to be reasonable, maybe biased slightly towards the consultants fee.

Conclusions by the evaluation team:

The project has not yet successfully completed the stated objectives of introducing the western classification methods. It is doubtful if this is possible.

The discovery of the presence of radioactive elements in the peat is considered very important and it is in favour of the project that this issue has been taken up and dealt with.

The cost effectiveness of the project can not be estimated without the final report. The inability to introduce the western classification indicates weakness in either preparation or implementation.

It is the impression that the communication between the two partners has not been entirely satisfactory. This may be caused partly by language problems, but partly also by the absence of well defined procedures and routines for communication and reporting.

Recommendations:

It is recommended to support a new phase of the project, but also to make demands for a much more elaborate project proposal and the preparation of "Terms of Reference". The proposal should as a minimum include a methodology, time & activity schedule, staff plan, CVs and a detailed budget. Demands should also be made for documentation and reporting of the implementation and progress of the project.

In the plans for continuation it is suggested to include:

- Studies of hazardous elements and radioactivity in peat.
- Participation of the Agricultural University or other organisations active in peat studies
- Training in institutional issues, project management, cost cutting, quality assessment, presentation etc.
- Training in advanced English
- Participation in international seminars and workshops
- Mandatory scientific publication of the results

It should be investigated whether it is possible for one or more persons working with peat production in Estonia to participate in a “On-the-job” training programme in a Swedish peat production company. In this way the knowledge of the environmental aspects of peat production could be transferred directly.

Project: GEOCHEMICAL MAPPING, LATVIA

Setting of project:

The project is financed by BITS/Sida and is numbered LVA771, and named: Geochemical mapping in the eastern part of the Riga district. The Geological Survey of Sweden is acting as consultant in the project and The Geological Survey of Latvia is the recipient.

Objective:

To provide the GDL with knowledge and technology to implement geochemical mapping, with mapping of the Inchukalns Area east of Riga as pilot project.

Realisation time:

1994 to 1997. A proposal in English was delivered to BITS in June 1994, followed 7th July 1994 by a project description in Swedish including a detailed budget. The project was accepted by BITS on 24 October 1994. A detailed list of activities and time schedule were not prepared for the complete project, but a schedule for 1995 was presented.

Contracting:

Contracts between SGU and GDL were signed on 14th December 1994

Financing:

750,000 SEK

Equipment (purchased and transferred to GDL):

- Workstation, Intergraph TD-30
- Statistica 4.5 (software)
- Special sampling tools
- pH-meter
- Various equipment for sample preparation

Responsible executors:

Madelen Andersson, SGU

Janis Prols 1994-1996, GDL

Aivars Gilucis 1996-1997, GDL

Status:

The project is completed, but the final report have not yet been officially approved by SGU

Achievement of stated objectives:

- Transfer of knowledge on geochemical methodology and European standards
- Transfer of knowledge on field work and sampling techniques
- Transfer of knowledge on analysis and interpretation of results
- Transfer of knowledge on use computers for data storage and presentation
- Education and training of 2-3 persons from the Latvian staff
-

- Comparative analytical work
- Preparation of geochemical maps of the Inchukalns Area

Achievement of non stated objectives:

- The project has given the Latvian staff an opportunity to make contacts in the Nordic countries at a critical time.
- Access to Swedish technical and scientific libraries

Documents:

Besides the proposals and contracts already mentioned the following documents have been inspected:

- Minutes of meeting ,15th-16thDecember 1994 Riga
- Work schedule for 1995, 2nd March 1995
- Minutes of meeting ,25th-28thApril 1995 Uppsala
- Preliminary project report, February 1996 (in English)
- Progress report 29thApril 1997(in Swedish)
- Report, February 1997 (in Latvian with English summary)
- Memo from Madelen Andersson on project progress and suggestion for 2 new projects in the same field. 18thFebruary 1997

Additional findings:

The project has fair documentation including minutes of meetings and reports. It does however appear that the project would have benefited from a stronger commitment to communication and a quicker reply to certain requests. It should be mentioned that the contract between SGU and GDL specifically states that the language of the project is English.

The project is considered to have sustainable effects, because GDL now have acquired the ability to produce geochemical maps without direct external assistance. Before the project geochemical mapping was more or less unknown in Latvia. GDL now plans to continue the mapping of the rest of the country. There is however still a need for control analysis for comparison and quality control of the Latvian results.

The Latvian side expressed a general satisfaction with the training, but they would have preferred more emphasis on methods of mathematical statistics.

During the whole project communications have been troubled by the Latvian project manager being busy. Recently the communications have further deteriorated, because the new project manager has difficulties with the English language.

The balance between consultants fee 68%, travel costs 20% and purchase of equipment 12% is considered to be biased towards the consultants fee. The original demand for Latvian financing of accommodation for Swedish personnel when staying in Latvia may have been unreasonable taking the limited budgets of GDL into consideration.

Conclusions by the evaluation team:

- The project has completed the stated objectives of producing a geochemical map of the Inchukalns Area.
- The project has also introduced a large number of relevant methods and technologies for sampling, analysis and presentation.
- The project does not appear to have achieved the objective of identification of problems related to gas escaping from an underground storage facility

The estimate of the cost effectiveness of the project is somewhat uncertain, because the final documentation still exists only in Latvian. It appears that a considerable effort has been made on both sides and some very good results have been achieved compared to the investment.

It is the impression that the communication between the two partners have not been satisfactory. This may be caused partly by language problems, partly also by change of project manager on the Latvian side and the absence of well defined procedures and routines for communication and reporting. Furthermore the Swedish side, in January 1997, lost one person, that worked on the project.

Recommendations:

It is recommended to support a new phase of the project, but also to make demands for the project proposal and the preparation of "Terms of Reference". The proposal should as a minimum include a methodology, time & activity schedule, staff plan, CVs and a detailed budget. Demands should also be made for communication and documentation routines and reporting of the progress of the project.

The question of project language should be discussed and settled before any final decision on continuation.

In the plans for continuation it is suggested to include:

- Continuation of the mapping program
- supplemented by :
- Implementation of use of Global Positioning System GPS
- Implementation of Quality Assessment and Control
- Training in advanced English
- Participation in international seminars and workshops

Project: INTEGRATED WATER SUPPLY PLANNING FOR POLLUTED AND “WATERLESS” REGIONS, LITHUANIA

Setting of the project:

The project idea was discussed as soon as 1991, when Lithuanian specialists visited SGU. Afterwards the Lithuanian side elaborated a proposal draft, which was sent to SGU. Additionally it was decided also to involve “Vilnius Hydrogeology” Ltd. in the Project realisation. After common discussions and consultations the final version was elaborated and delivered to BITS in 1992.

In 1992 LGT is still subordinated to the Ministry of Construction and Urban Development, and the project proposal was accepted by the mentioned Ministry. Additionally it was discussed with the Environmental Protection Agency of the Jonava, which accepted the project proposal as well.

Situation in LGT before the realisation of the project:

- LGT had a good knowledge of water supply problems in general and in the Jonava District in particular, but did not have the equipment necessary for field investigations (pumps, generators, microprocessors, etc.) and data processing and presentation (hardware and software),
- Data processing was mostly done manually.

Objectives:

The project realisation was divided into 3 phases:

1. Collection and assessment of all available data (precipitation, runoff, evaporation, geology and hydrogeology), improvement and completion of the already existing database. Presentation of data in graphical way, description of the research, purchase of equipment and training of the LGT staff.
2. Field investigations (inventory of traditional and drilled wells, water sampling; inventory of the existing monitoring network) and laboratory tests.
3. Preparation and finalising of the Water Supply Plan. Recommendations on its implementation.

Realisation time:

1994/97. Proposal was delivered to BITS in 1992 and was accepted on 6 September, 1994. List of activities and time schedule for a realisation of the Project was elaborated in December, 1994.

Financing:

1,115,000 SEK

Contracting:

Contract between SGS and LGT was signed on 15 December, 1994, in Uppsala. Duration time of the Contract: 15 December, 1994 - January, 1997.

Responsible executors:

Jan Pousette, Lars Linde, SGU
Kestutis Kadunas, LGT

Status:

Project is completed

Outcome (the main items):

- Knowledge and equipment transfer from Sweden to Lithuania, training of the Lithuanian staff
- Purchase of hardware and software for data processing and presentation, education and training of the Lithuanian staff
- Introducing and training of Lithuanian staff on representative groundwater sampling and data processing, assessment and presentation
- Upgrade and development of database “Boreholes”
- Comparative analysis of groundwater in Sweden and Lithuania
- Report on the co-operation project; bulletin “Groundwater quality in the Jonava District” will be published in June 1997 (in accordance with Mr. K. Kadunas)

Project planning, management and realisation:

- Project preparation was excellent, and planning was also good: list of activities, time schedule and list of equipment, which has to be purchased to LGT, were provided before a start of the project
- A very positive feature was the involvement of environmental protection authorities from the Jonava District in the project realisation. It assisted a lot to specify particular needs both for centralised water supply and rural water supply (single farms). Two workshops organised together with local authorities of the Jonava District were very useful, because specific needs and wishes of the District were clarified
- The company “Vilnius Hydrogeology”, dealing with installation of the water supply wells, was involved in realisation of the practical part of the project
- Project management was also good. Minor language problems arose during the workshops, but LGT specialists provided necessary translation. All current working problems were solved using direct communication between responsible executors in EGK and SGU
- LGT is very satisfied with training courses and supplied equipment
- Planned goals were surpassed, mainly due to the LGT which actually provided significantly more activities as was originally foreseen by the project (K.Kadunas: “Such projects gives increased authority to the Survey, and the public understands the issues better and increase their support”).

Recommendations:

- More careful evaluation of local (LGT) capabilities is required, because it can reduce extra costs for laboratory investigations (in Sweden) and over staffing from the LGT side.

Project: ENVIRONMENTAL SAFE AND SUSTAINABLE USE OF PEAT IN LITHUANIA

Setting of the project:

The project idea was discussed as soon as 1991, when Lithuanian specialists visited SGU. Afterwards the Lithuanian side elaborated a proposal draft, which was sent to SGU. After common discussions and consultations the final version was elaborated and delivered to BITS in 1992. In 1992 LGT is still subordinated the Ministry of Construction and Urban Development, and the project proposal was accepted by the mentioned Ministry. The Laboratory of Association of Peat Producers (Lithuania) was involved for a provision of laboratory tests (does not have own laboratory for peat samples analysing).

Situation in LGT before the realisation of the project:

In 1991 Environmental Protection Committee of the Republic of Lithuania transferred responsibility for peat researches to LGT. Methods used for peat research were very simple; some of the achieved results did not satisfy LGT specialists. Therefore it was necessary to improve he used methodology (equipment for sampling, hardware and software for data processing and presentation, etc.).

Objectives:

The project realisation was divided into 3 phases:

1. Establishment and implementation of database on peat resources, which should be compatible with other databases developed by LGT. Visit and training of LGT specialists in Sweden in fields such as information systems, legislation on peat in Sweden, up-dated investigation methods and visit to the Uppsala Energy Company.
2. Interpretation and assessment of data in order to select area for peat prospecting. Visit and training of LGT specialists in Sweden: methodology and relevant equipment used for peat prospecting.
3. Pilot project at the selected area: field works, laboratory tests, comparative analyses between Lithuanian and Swedish laboratories. Equipment purchase from Sweden to Lithuania. Recommendations for an industrial peat utilisation of a peat. Training of the staff of LGT in Sweden. Final reporting.

Realisation time:

January, 1995 - October, 1996. Proposal was delivered to BITS in 1992, and it was accepted on 8 September, 1994. List of activities and time schedule for a realisation of the Project was elaborated on 3 February, 1994.

Financing:

350,000 SEK

Contracting:

Contract between SGS and LGT was signed on 15 December, 1994, in Uppsala. Duration time of the Contract: 1 January, 1995 - 31 October, 1997.

Responsible executors:

Dag Fredrikson, SGU

Vyda-Elena Gasiuniene, LGT

Status:

Project is completed

Outcome (the main items):

- Knowledge and equipment transfer from Sweden to Lithuania, training of the Lithuanian staff
- Purchase of hardware and software required for a creation of the database on peat resources in Lithuania, education and training of the Lithuanian staff
- Comparative analysis in Sweden and Lithuania of peat samples
- Report on results of peat inventory (end of 1995), report and manual on the database on peat resources (December, 1996), bulletin "Lithuanian peat resources and their use" (1996).

Project planning, management and realisation:

- Project preparation and planing was good: list of activities, time schedule and list of equipment, which should be purchased to LGT, were provided before a start of the project
- Project management was also good. All current working problems were solved using direct communication between responsible executors in EGK and SGU
- The laboratory of the Association of Peat Producers was involved in the realisation of the Project, because LGT does not have its own laboratory for peat investigations
- LGT is very satisfied with the training courses and the supplied equipment
- All reporting from LGT is completed - the last report was finished in November 1996 after receiving results of analysis from SGU, but a final report to Sida must be submitted by Mr. Dag Fredrikson. This report is still in progress.

Recommendations:

- Items related to environmental and economic policy and legislation should be discussed with corresponding authorities before the actual project start. If the problem is disputable, more attention should be paid to legal aspects.

Appendix 3

List of persons interviewed

List of persons interviewed:

Swedish International Development Co-operation Agency, Sida:

Thorbjörn Ramberg, Programme manager

Kerstin Nyman, Area manager

Geological Survey of Sweden (SGU):

Naz Ahmed Shaikh, Director

Johan Anderberg, Hydrogeologist

Madelen Andersson, Senior State Geologist

Harald Ressar, Senior Geologist

Jan Pousette, Senior Hydrogeologist

Dag Fredriksson, Senior Geologist

Lars Linde, Senior Hydrogeologist

Geological Survey of Estonia (EGK):

Vello Klein, Director

Rein Raudsep, Research Director

Eduard Pukkonen, Head of Information Department

Valter Petersell, Head of Department of Environmental Geology

Lehte Savitskaja, Head of the Ecohydrogeological Section

Mall Orru, Senior Geologist, Department of Mineral resources

Geological Survey of Latvia (GDL):

Rudite Anikejeva, Director (communication by telefax)

Aivars Gilucis, Head of Geochemistry Department

Alexis Tukatsinsky, Official interpreter at GDL

Z. Kunda, Geologist

Geological Survey of Lithuania(LGT) :

Jonas Satkunas, Deputy Director

Vyda - Elena Gasiuniene, Head of Mineral Resources Division

Kestutis Kadunas, Head of Hydrogeological Division

Recent Sida Evaluations

- 97/34 Swedish Support to the Energy Sector in Eritrea. Ralph Kårhammar
Department for Infrastructure and Economic Cooperation
- 97/35 Swedish Labour Market Projects in Latvia 1994 -1996. Susanne Oxenstierna, Henrik Huitfeldt
Department for Central and Eastern Europe
- 97/36 Swedish Support to Social Sciences Research Centres in Central America. Rubin Tansini,
Alberto Nagle
Department for Research Cooperation, SAREC
- 97/37 Energy, Environment and Development Programme of the Stockholm Environment Institute.
Daniel M Kammen
Department for Research Cooperation, SAREC
- 97/38 Biotechnology Research Projects: Tree Tissue Culture and Proteins/Enzymes as Biosensors.
Indra K Vasil, Howard H Weetall
Department for Research Cooperation, SAREC
- 97/39 Sida Support to World University Service - South Africa (WUS-SA). Marcella Ballara, Shireen
Motala, Lesley-Anne Wilkinson
Department for Democracy and Social Development
- 97/40 Swedish Labour Market Projects in Estonia 1994-1996. Susanne Oxenstierna, Henrik Huitfeldt
Department for Central and Eastern Europe
- 98/1 Sida Support to Telecom in Southern Africa. Lennart Königson, Karl Erik Olofsson, Kalevi
Nykänen, Åsa Königson
Department for Infrastructure and Economic Cooperation
- 98/2 Sida Support to the Banking Sector in Vietnam. Nguyen Van Dinh, Peter Gisle, Lisa Román,
Börje Wallberg
Department for Infrastructure and Economic Cooperation
- 98/3 Swedish Labour Market Projects in Lithuania 1995-1997. Susanne Oxenstierna, Henrik
Huitfeldt
Department for Central and Eastern Europe
- 98/4 Den mänskliga faktorn. Samarbete mellan svenskt postväsende och den regionala posten i St
Petersburg, Ryssland. Lars Rylander
Department for Central and Eastern Europe
- 98/5 Apoyo de Asdi al Programa Nacional de la Mujer en Bolivia. Marina Subirats, Åsa
Westermarck
Department for Latin America
- 98/6 Sustainability and Partnership. Sida supported cooperation between Swedish and Baltic Non-
governmental Organisations. Peter Winai
Department for Central and Eastern Europe
- 98/7 Sewerage and Water Sector Projects in Egypt. Nigel Nicholson, Nemat Guenena
Department for Infrastructure and Economic Cooperation

Sida Evaluations may be ordered from:

Infocenter, Sida
S-105 25 Stockholm
Phone: (+46) 8 795 23 44
Fax: (+46) 8 760 58 95

**A complete backlist of earlier
evaluation reports may be ordered
from:**

Sida, UTV, S-105 25 Stockholm
Phone: (+46) 8 698 5133
Fax: (+46) 8 698 5610



SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY

S-105 25 Stockholm, Sweden

Tel: +46 (0)8-698 50 00. Fax: +46 (0)8-20 88 64

Telegram: sida stockholm. Telex 11450 sida sthlm. Postgiro: 1 56 34-9

Homepage: <http://www.sida.se>