

Atmospheric Environment Issues in Developing Countries

**Gun Lövblad
Peringe Iverfeldt
Åke Iverfeldt
Stefan Uppenberg
Lars Zetterberg**

**Department for Infrastructure
and Economic Cooperation**

Atmospheric Environment Issues in Developing Countries

**Gun Lövblad
Peringe Iverfeldt
Åke Iverfeldt
Stefan Uppenberg
Lars Zetterberg**

Sida Evaluation 99/18

**Department for
Infrastructure and Economic
Cooperation**

Evaluation Reports may be ordered from:

Infocenter, Sida
S-105 25 Stockholm
Telephone: (+46) (0)8 795 23 44
Telefax: (+46) (0)8 760 58 95
E-mail: info@sida.se, Homepage <http://www.sida.se>

Authors: Gun Lövblad, Peringe Iverfeldt, Åke Iverfeldt, Stefan Uppenberg, Lars Zetterberg.

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 99/18
Commissioned by Sida, Department for Infrastructure and Economic Cooperation

Copyright: Sida and the authors

Registration No.: INEC-1999-01777
Date of Final Report: September 1999
Printed in Stockholm, Sweden 1999
ISBN 91 586 7747 X
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 (0)8-20 88 64
Telegram: sida stockholm. Postgiro: 1 56 34—9
E-mail: info@sida.se. Homepage: <http://www.sida.se>

Table of contents

Executive Summary	1
1 Background	3
1.1 Global Climate Change and Responses	3
1.2 Acidification in Developing Countries	4
1.3 CFC Use and control	4
1.4 Programme Coordination and assessment	4
2 The Purpose and Scope of the Evaluation	4
3 Swedish Priorities and Sida's Policy as a Basis for the Evaluation	5
3.1 Swedish priorities for international development cooperation	5
3.2 Sida's policy for international development cooperation	5
3.3 Swedish priorities on supporting the Climate Convention	6
3.4 Swedish priorities on supporting protection of the ozone layer	6
4 Evaluation – Global Climate Change and Responses	7
4.1 Description of the work	7
4.1.1 Adaption to climate change in forest-based land use systems	7
4.1.2 The publication of Tiempo	8
4.1.3. Assessment of the use of alcohol fuels to reduce greenhouse gas emissions in the transportation sector in Thailand	8
4.2 The relevance and character of the programme	8
4.3 The performance of the programme	10
4.3.1 Tiempo	10
4.3.2 Adaption to climate change in forest-based land use systems	10
4.3.3 Introduction of alcohol fuels in Thailand	11
4.4 The capacity and competence attached to the programme	11
4.5 Impact and sustainability	12
4.6 Cost effectiveness	12
4.7 Recommendations	12
5 Evaluation – Regional Air Pollution in Developing Countries	13
5.1 Description of the work	13
5.1.1 Air pollution studies	13
5.1.2 Effect studies	13
5.1.3 Meteorological modelling of pollution transport in Asia	14
5.1.4 Emission reduction strategies and policy dialogues	14
5.1.5 Capacity building	15
5.2 The relevance and character of the programme	15
5.3 The performance of the programme	16
5.4 The capacity and competence attached to the programme	16
5.5 Impact and sustainability	17
5.6 Cost-effectiveness	17

5.7 Recommendations by the Evaluator	19
5.7.1 Monitoring of deposition	19
5.7.2 Effects studies – sensitivity maps	19
5.7.3 The model calculations	20
5.7.4 Abatement strategy planning and policy dialogues	20
6 Evaluation – Use and Control of Ozone Depleting Substances	21
6.1 Description of the work	21
6.1.1 Network meetings	21
6.1.2 Exchange of experience between meetings	22
6.1.3 Workshops targeting other actors	22
6.2 The relevance and character of the programme	22
6.3 The performance of the programme	23
6.4 The capacity and competence attached to the programme	23
6.5 Impact and sustainability	24
6.6 Cost-effectiveness	24
6.7 Recommendations by the Evaluator	24
7 Evaluation – General and Administrative Issues	25
7.1 Policy of purchasing – roles of procurement and execution	25
7.2 Capacity building	26
7.3 Gender dimensions	26
8 Main Conclusions and Recommendations	26
8.1 Global Climate Change	26
8.2 Regional Air Pollution in Developing Countries	27
8.3 Use and Control of Ozone Depleting Substances	28
8.4 General aspects	28
Annex 1 Terms of Reference	29
Annex 2 Literature used in the evaluation of the programme	
"Global Climate Change and Responses"	36
Annex 3 Literature used in the evaluation of the programme	
"Regional Air Pollution in Developing Countries"	38
Annex 4 Literature used in the evaluation of the programme	
"Use and Control of Ozone Depleting Substances"	41

Executive summary

Background and scope of the evaluation

Sida has assigned to the Swedish Environmental Research Institute (IVL) to evaluate the programme for Atmospheric Environment Issues in Developing Countries. The background is that Sida since 1992 has granted the responsibility to the Stockholm Environment Institute (SEI) to manage, develop and monitor a “Programme for Atmospheric Environment Issues in Developing Countries” (AEIDC). The evaluation covers the work performed during the period 1992–97, divided mainly into three sub-programmes:

- Global Climate Change and Responses
- Regional Air Pollution in Developing Countries
- Use and Control of Ozone Depleting Substances

Major conclusions for the programme on climate change issues

The climate change projects in the AEIDC programme includes three main activities. These are a project on adaption to climate change in forest-based landuse systems, the publication of the magazine *Tiempo* for information dissiminations and news coverage, and a project on assessment of the use of alcohol fuels to reduce greenhouse gas emissions in the transportation sector in Thailand. The projects are largely desktop studies, such as information compilation and dissimination through newsletters; research and assessments based on earlier references; organisation of seminars and workshops; and the consequent publication of state-of-the art reports. The reports are mainly directed towards scientists, policy makers and authorities working with or in the process of starting to work with global climate change issues. The projects focus on policy making regarding climate change issues in developing countries.

We believe that *Tiempo* represents a cost-effective way to cover and disseminate news and general information on climate change issues to third world countries. We further think that the land use projects have been performed professionally with excellent competence connected to the projects. A number of high quality state-of-the-art reports have been produced. We do however, question the relevance of the motor alcohol project in Thailand, even if the report is well supported by facts and offers valuable insights to the issue

Our main criticism lies in the direction and composition of the climate change programme rather than on the individual programme components. Our recommendations for the climate change part in the AEIDC-programme are:

- A comprehensive programme should be designed rather than performing individual non-connected nisch projects. The programme design should take into consideration issues of scientific importance, issues of importance to Swedish and Sida policy, requirements resulting from the Climate Convention and Kyoto protocoll, availability of Swedish expertise and the probability of project success.
- Since climate change issues are well established in Sweden both on policy, scientific, technological and istitutional levels, we strongly believe that the climate change programme would benefit if more Swedish expertise were involved in the programme.
- Along with further work on policy issues, the implementation of concrete measures needs to be introduced

Major conclusion for the programme on regional air pollution

Acidification has been the main topic of the project. The work has been carried out mainly according to European experience and practice. The work has been well performed, results are produced, but an assessment of the actual extent of the acidification problem in Asia, as a basis for the future work is, to our minds, still lacking. Such an assessment should be made in order to find out, whether the acidification argument for emission reduction is the most appropriate in the countries involved and to indicate in what direction the work on acidification and/or other effects should be extended in the future. The most important issue is the work on policy dialogues, which has resulted in a joint declaration in South Asia on the need for keeping emissions low.

The recommendation for the future is that the policy dialogues are important and should continue. They should to our minds be focussed on Asia, where the most success has been gained. If possible, the dialogues should be broadened to include new actors and new countries and preferentially, driven towards protocols. This would be of benefit also to all other possible effects of pollution, such as urban health effects, oxidant formation, etc.

Major conclusions for the programme on ozone depleting substances

The project seems to have been very important for the work on phase-out of ODS in the developing countries in the network. It has also shown the vital importance of including government officers in developing countries in the work and providing a forum for them to exchange experiences and ideas with colleagues in other countries. We therefore suggest that Sida will continue to support the network without reducing the funding of the network administration.

In the future, it will be important to show what effects the work of the network have had on the total emissions of ODS from the network countries. It is therefore our opinion that the future work also should aim at producing reliable ODS consumption statistics for the countries. The statistics should also show the consumption for different sectors in order to make it easier to develop cost-effective phase-out strategies.

We also recommend that Sida will state to UNEP that it is important to keep the dynamics of the network meetings.

Major conclusions on general aspects

The work by SEI on all tasks in the programme has been performed in a skilled and competent way. SEI has made use of their networks and contacts and have succeeded in engaging people in the developing countries to carry out the work within the programme. The work has been carried out with reasonably large budgets. The cost-effectiveness of the programme cannot, as we see it, be judged in relation to other projects in developed countries. A very important aspect for the success, is to involve people in the developing countries, and this is a time-consuming part of the work.

To some extent women from the developing countries have taken active parts in the work, even if men have dominated workshops and policy dialogues, as well as programme management and Swedish expertise. The project as such, aiming in the long term at reduced pollution levels, is favourable for the human life situation as a whole.

Our strong recommendation to Sida is to consider their role in the programme. Sida will have to determine who is to set the priorities and plan the programme and who is to execute the work. There is a number of options to administer the procurement part of programme, from developing in-house competence to using reference groups of mixed composition and other organisations/institutes to participate in setting priorities in relation to the executive part of the programme.

1 Background

Sida has assigned to the Swedish Environmental Research Institute (IVL) to evaluate the programme for Atmospheric Environment Issues in Developing Countries. The following persons at IVL have been involved in the work, responsible for mainly for the mentioned topics, but also for general and administrative aspects of the evaluation:

Lars Zetterberg (Climate Change issues)

Gun Lövblad (Regional air pollution, project leader)

Stefan Uppenberg (Ozone depleting substances)

Peringe Grennfelt and Åke Iverfeldt (All aspects)

Since 1992, Sida has granted the responsibility to the Stockholm Environment Institute (SEI) to manage, develop and monitor a “Programme for Atmospheric Environment Issues in Developing Countries” (AEIDC). The evaluation covers the work carried out during the period 1992–97, which is divided mainly into three sub-programmes:

- Global Climate Change and Responses
- Regional Air Pollution in Developing Countries
- Use and Control of Ozone Depleting Substances

The programme derives from the international conventions regarding global environment issues, the Climate Convention and the Montreal Protocol. However, also the achievement on a regional scale from the work within the Convention on Long-Range Transboundary Air Pollution in Europe, is a model for the work in the developing countries. In the international conventions, the developed countries undertake a responsibility to support competence building in their countries and their possibilities to participate in the negotiations.

The objective of the AEIDC programme is to enhance the capacity of the developing countries to participate locally and regionally in programmes and activities to resolve atmospheric environmental problems. It is further to increase and facilitate the participation and involvement of developing countries in international initiatives and negotiations. Activities within the programme – as expressed in the Terms of Reference, ToR (Annex 1) – are:

1.1 Global Climate Change and Responses

Activities to maintain and develop the institutional capacity of SEI to respond to climate-related issues and to reinforce SEI’s role as a “think tank” and “adviser to Sida”:

- To maintain and develop the library,
- To organise seminars on climate related issues,
- To follow the debate,
- To perform prefeasibility studies and case studies
- To identify new project proposals

In addition, quarterly publication of a news bulletin is included in the programme. It should be excluded in the evaluation, but addressed as a part of the overall programme.

1.2 Acidification in Developing Countries

The programme contains activities to increase the capacity in developing countries to inform policy makers of the consequences of unrestricted growth of emissions. The following activities are included:

- To collect, compile and synthesise relevant information (create databases).
- To develop tools and methodologies for impact studies (meteorological model).
- To establish networks and transfer capacity to implement methodologies (workshops).
- To inform and influence policy progress (arrange policy dialogues).

1.3 CFC Use and control

This subprogramme supports a network between government officials, working with national phase-out of ozone depleting substances in South East Asia and the Pacific. From now on, the CFC Use and Control is not a part of the Programme. It will be financed directly by Sida via UNEP, Paris.

1.4 Programme Coordination and assessment

The programme is coordinated via the SEI office in York, where also most of the work is carried out.

2 The purpose and scope of the evaluation

Reasons for the evaluation, scope and focus of the evaluation are outlined in the ToR (Annex 1). The evaluation of the AEIDC programme should focus on questions about SEIs professional capacity and competence in the field, quality of research output and project implementation. The evaluation of the programme should focus on the phase 1992–1997, but the contract for 1998 – 1999 should be used for comparison with the previous programme to assess possible future changes.

Sida has stated major overall aims of the programme and specific project-wise objectives. The evaluation should cover an assessment of the implementation and progress of the work in relation to Sida's overall objectives as well as in relation to the objective of the programme.

The evaluation is based on written material handed over to IVL by Sida and SEI, combined with discussion with the programme managers at SEI. The evaluation does, however, not include any site visits or discussions with persons involved in the programme in the developing countries.

3 Swedish priorities and Sida's policy as a basis for the evaluation

3.1 Swedish priorities for international development cooperation

The Swedish Government issued in August 1996, overall priorities for sustainability in connection with the Swedish participation in international cooperation for development. Sweden should work for the following aims:

- To strengthen the work within existing international conventions, including effective application and follow-up, to work for new agreements and towards an increased number of parties involved.
- To work for sustainable consumption and production patterns a.o. via economic means of control favour clean production using limited resources, using the principles of precaution, the polluter pays principle etc.
- To integrate environmental aspects into trade politics via actions to favour liberal trade and increased market access for the developing countries
- To integrate environmental aspects into security politics, including the prevention of conflicts and wars, but also the maintenance of the life-sustaining systems of the earth.
- To integrate environmental aspects into the policy of development assistance, e.g. by setting high priorities for the cooperation, in order to develop methods for the householding of national resources. The national resources in this context includes a.o. forestry and agriculture, marine and fresh water, and sustainable land use.

3.2 Sida's policy for international development cooperation

According to Sida's programme declaration (www.sida.se), international cooperation for development is an investment for better human life in poor countries, to protect the environment and to promote peace, democracy and equality. Eventually it will make way for equal relations and make further cooperation for development unnecessary.

Sweden takes part in the cooperation, as a global responsibility. The cooperation for development is important for the Swedish society and contributes to the internationalisation of Sweden. An important task for Sida is to create a basis for changes towards a sustainable social, economic and environmental development. Sida shall also promote equality between sexes. Furthermore, peace and security are important conditions for development. The prevention of conflicts and disasters are therefore important parts of the mission. The co-operating countries are responsible for their own development. Sida is the conveyor of resources and enhanced knowledge and competence. Sida's field of activity is wide. Choices are often made in unique situations and Sida must have a thorough knowledge of countries, problems of development and methods of cooperation. Sida shall be characterised by a holistic view, clarity and ability of change.

3.3 Swedish priorities on supporting the Climate Convention

Especially the Climate Convention is of importance in the Swedish Government policy. It is stated that Sweden, according to a common EU climate policy and a long-term energy policy, should act towards a protocol to the convention. Sweden should furthermore work towards implementing:

- emission reduction targets with set time limits
- efficient control measures, for instance within the energy and transport sectors
- cost efficient economical control means, such as carbon and energy taxes
- the development of carbon sinks

Furthermore, Sida has stated the importance of the Climate Convention for its international development cooperation. Sida concludes in the report "Sida and the Climate convention" that:

- A future programme for Sida's activities in relation to the Climate Convention must be based on an evaluation on short-term and long-term needs.
- On a long time scale, the participation of the developing countries in the mitigation of Climate Change is a prerequisite in order to stabilise the atmospheric content of greenhouse gases at a safe level.
- In the short term, the first priority must be to facilitate the adaption to a changing climate in vulnerable regions and to increase the ability of developing countries to participate in the Convention work.
- Improved environmental statistics are of importance to enable developing countries to compile their national communication to the convention.

3.4 Swedish priorities on supporting protection of the ozone layer

International cooperation on the protection of the ozone layer should according to the Swedish Government aim towards the following:

- All parties to the Vienna Convention and the Montreal Protocol should commit themselves to eliminate all Ozone Depleting Substances (ODS).
- Earlier deadlines for the phase-out of ODS within the Montreal Protocol.
- Regulating also the production of transitional alternatives, such as HCFC.
- International spreading of the Swedish experiences of the phase-out.

4 Evaluation – Global Climate Change and Responses

The material used in the evaluation is listed in Annex 2. Beside reports and other written material, information has been retrieved from contacts with Johan Kuylenstierna from SEI at York and Benita Forsman, at SEI in Stockholm.

4.1 Description of the work

During the three contract periods 1992/1994, 1995/1996 and 1997 SEI has had three main activities:

- Adaption to climate change in forest-based land use systems, including “Adaption of the forest sector in India to climate change” (1992/1994); “Studies on tropical forest-based landuse systems in Western Ghats” (1995/1996); and “Round table policy dialogue on adaption to climate change in forest-based land use systems” (1995/1996)
- The publication of *Tiempo* (1992/1994, 1995/1996 and 1997)
- Assessment of the use of alcohol fuels to reduce greenhouse gas emissions in the transportation sector in Thailand (1992/1994)

4.1.1 Adaption to climate change in forest-based land use systems

Adaption in the forest sector of India to eventual climate change

This part of the programme is concerned with adaptive responses to potential impacts of climate change on crop-based and forest-based landuse systems in developing countries. The work was based on studies carried out in Latin America, in SADC countries and in Vietnam by the International Institute for Environment and Development (IIED) and the University of East Anglia (UEA). This previous work resulted in the development of a planning framework called “Sustainable Adaption”, in which climate scenarios were used to work out actions and programmes to reduce the vulnerability to potential impacts of climate change. A manual “Sustainable Adaption in the Forest Sector: A guide to Strategy” was prepared by IIED and UEA over this programme period and was eventually published in 1996.

Under the programme, this approach was applied in India to test general applicability. The first study focussed on subtropical forests in the northern state of Himachal Pradesh and started in 1994 in collaboration with the TATA Energy Research Institute (TERI)

Tropical forest-based land use systems in Western Ghats

The “sustainable Adaption” methodology, used in the Himachal Pradesh project, was modified and applied in the Western Ghats, a biodiversity-rich tropical forest area in southern India. Work on this project started in April 1995 in collaboration with the Center for Ecological Studies (CES) in Bangalore. The work in the field ended in April 1996 and the final report was published in 1997. Climate scenarios for the Western Ghats region were developed by the Climatic Research Unit of University of East Anglia (CRU/UEA) and applied and the final report was published in 1997.

Round-table dialogue on adaption to climate change in forest-based land use systems

As a follow up of previous studies within this programme, a roundtable policy dialogue on the subject *Adaption to Climate Changes in The Forest Sector* was held in Kathmandu, Nepal in January 1997. A policy document entitled *Climate Change Adaption and Forests in South Asia: Policy for Multiple Stakeholders*, summarizing the discussions at the meeting, was produced and published in 1997.

4.1.2 The publication of Tiempo

The quarterly newsletter Tiempo, published since 1991, was distributed during the period 1992–1994 by direct mail to more than 3500 readers, to 800 readers at conferences and workshops and to 500 readers through computer mail. Developing countries received the newsletter free of charge and contributed articles to the newsletter. Recent developments, scientific information and debates on various issues related to climate change were published in the newsletter.

4.1.3. Assessment of the use of alcohol fuels to reduce greenhouse gas emissions in the transportation sector in Thailand

Limited work was carried out on the objective relating to options for the control of emissions and thus far there has been an assessment of the use of alcohol fuels to reduce greenhouse gas emissions in the transportation sector in Thailand. The report “Alcohol as an Alternative Transportation Fuel: Operational Issues in developing Countries” outlines the issue developing countries should consider when assessing the implications of fuel switching to alcohol. The report was finished in 1995, published in 1996 and was widely disseminated to developing countries.

4.2 The relevance and character of the programme

What is the relevance of the individual components that comprise the AEIDC-programme to the context of the developing countries?

The climate change projects in the AEIDC programme includes three main components:

- Publishing the quarterly magazine Tiempo for information dissemination and news coverage on global environmental issues.
- Through workshops and seminars, building networks and publishing state-of-the art policy reports on options for adaptation to climate change for land use systems in India.
- A case study on motor alcohols in Thailand.

The projects are largely desk-top studies, compiling and disseminating information through newsletters, assessments based on earlier references; organisation of seminars and workshops; and the consequent publication of state-of-the-art reports.

The reports are mainly directed towards scientists, policy and decision makers dealing with global climate change issues. They give often well-motivated recommendations on how to manage the climate change issue from the perspective of an authority official or a policy maker. They do, however, only to a small extent address the implementation of concrete measures.

It is our view that:

- The individual climate change projects in the AEIDC-programme are quite different in scope and character and do not seem to be interconnected as a part of a broader programme framework. The projects are mainly niche projects. We believe that a comprehensive program towards the climate change issues in developing countries should have been developed first, under which specific projects should be individually motivated. We understand that during the 1998/1999 contract period SEI has started formulating such a programme.

- The projects aim primarily at increasing the knowledge among policy makers and authorities and aiding them in formulating strategies addressing climate change issues. The projects are generally of policy and research character. Through these projects “the ground is prepared” for implementing measures towards reducing greenhouse gas emissions and adapting to climate change. We believe, however, that there should be a stronger focus in the programme on implementing concrete actions such as performing emissions inventories, identifying measures for reductions of greenhouse gases and addressing fiscal and other regulatory instruments.
- It should be noted, however, that if the scope is to help developing countries to understand the climate change issues and to help making policy decisions on adaption measures, the Indian land-use projects are relevant and have been performed in a professional and satisfactory way. For the purpose of disseminating information and news on climate change issues the Tiempo project has also been quite successful.
- Sida should consider whether the most effective way to maintain and develop the institutional capacity on the climate change area in Sweden is, as is today, to rather unconditionally let SEI “maintain a library, organise seminars and follow the debate”. We believe that there are more efficient ways of capacity building.

How far has the relevance of the individual components of the programme been driven by the demands of the host countries?

It is obvious that potential future climate change, being a global concern, is of importance to all developing countries. This is further emphasized by that fact that many effects of climate change are likely to be more severe in the developing countries. Greenhouse gas emissions from developing countries are growing very fast and it is believed that they will soon reach levels higher than the emissions from the developed world. Therefore, measures towards reducing greenhouse gas emissions must be directed on the developing countries as well as towards the developed world.

It is important that the host country has a genuine interest to assimilate the project results and that there is a “win-situation” for the host country. It might be difficult to gain local support for projects and actions to reduce greenhouse gas emissions in developing countries, if the actions put restrictions on the developing potential of the host country. This issue has been well addressed by the SEI projects. SEI has highlighted this fact as one of the reasons for focussing the Indian forestry projects on the adaption of climate change, which in general would gain a higher level of local acceptance than projects focussing on emissions reductions.

How relevant is the programme in relation to the guidelines adopted by the Swedish Government (Aug. 1996) for the Swedish approach to environment issues?

The Sida/SEI projects in the AEIDC programme do not aim at setting up emissions inventories, assessing the potential effects of climate change or introducing options for reducing emissions of greenhouse gases. These issues are discussed in the reports, but more on a policy level.

However, the Indian forestry projects, with the aim of identifying options for adapting to climate change, are consistent with Sidas policy on the Climate Convention. The policy states that: “In the short term, the first priority must be to facilitate adaption to a changing climate in vulnerable regions and to increase the ability of developing countries to participate in the Convention work”.

It should be noted that Sida during the project design and development formally has had the option to influence the scope and character of the programme and to make sure that the focus follows the policy and demands of Sida and the Government. Since Sida has placed the responsibility for programme design with SEI, it is only natural that the programme largely consists of projects, in which SEI has a high level of ability and competence. We believe that Sida could have

taken the necessary actions to incorporate projects and expertise, more in accordance with the policy of Sida and the Swedish government. It is our view, that Sida should separate the administration and procurement role from the executive role.

In addition, even if the individual projects are in line with the policy of the Swedish Government and Sida, we believe that the outcome of the projects could have been more useful if they had been more closely linked to the overall situation in the developing countries.

4.3 The performance of the programme

What is the degree of success in achieving the overall objectives and the specific component-wise objectives of the programme?

Our experience from European convention work shows that the actual participation in the convention process is one of the most important components in order to create awareness, start local action plans and achieve long term results. This also seems to have been the case in the SEI projects.

4.3.1 Tiempo

The performance of the magazine Tiempo is not to be evaluated since a reader survey was performed in 1995. The evaluation of the AEIDC-programme should, however, examine the relevance of each individual component, where Tiempo is one.

It is therefore in place to give a short presentation of the achievements of Tiempo. The magazine is published four times per year on a regular basis. It has 4 900 subscribers and an estimated total readership of 10 000 – 15 000 readers. The cost for production and delivery is 18 SEK/issue.

According to the reader survey made in 1995 the usefulness and acceptability of Tiempo appears to be high. A majority of the respondents believed that “Tiempo sufficiently reflects the views and concerns of developing countries regarding climate change”. Almost 80% found Tiempo “essential reading or very useful” in their work.

We believe that Tiempo represents a cost-effective way for news coverage and dissemination of general information on climate change issues to the third world countries. It is important that the information distributed by Tiempo is relevant and timely and reaches the right target groups on a periodical basis. This, we believe, appears to be the case with Tiempo.

4.3.2 Adaption to climate change in forest-based land use systems

It is our view that the projects consist of a number of case studies, which are performed in a professional way with excellent competence. A number of high quality state-of-the-art publications have been produced focussing on policy making for the adaption of forests to potential climate change. The work has been extensive and has formed the largest part of the programme. Possibly, it might have been more efficient to have a different partitioning of the funds, pursuing work in other areas as mentioned earlier, instead of focussing so much of the funds on this specific issue.

4.3.3 Introduction of alcohol fuels in Thailand

The aim of the project is, according to SEI, to begin to understand important issues in making policy decisions for introducing motor alcohols in developing countries, and specifically in Thailand. The study is illustrative, rather than comprehensive. The report starts by listing a number of key issues, which are important to address. These issues are then discussed in a systematic way, but at a brief level.

It is our view, that the report serves as interesting reading. It is well written and seems well supported with references and interviews, performed locally in Thailand.

A vast experience based on issues related to motor alcohols exists in Sweden and in other developed countries. Experience also exists in developing countries, such as Brazil. We do believe that similar introductory, policy reports are already available. It would have been interesting if the study had gone one step further and more thoroughly tried to describe and assess the key issues listed, such as costs analysis, addressing technical solutions and challenges, questions of supply, demand and other practical issues necessary for the decision makers.

Through experiences from similar projects in Sweden and other countries, it is clear that the introduction of motor alcohols poses difficult challenges when technology, cost effectiveness and environmental aspects are considered. There are hardly any success stories, proving the feasibility of motor alcohols in developing countries. Therefore, we believe that there should be strong underlying reasons to launch this particular project, in the light of the risks for not reaching positive results in the end. We have, however, not been able to find these motives. We have a feeling that the project is a result from available competence rather than from a true demand of the host country.

4.4 The capacity and competence attached to the programme

How is the professional competence and quality of the project management at SEI in relation to their performance within the programme?

In regard to the issues addressed, the competence of the project teams is excellent, both with regards to project leadership and to the policy and scientific issues.

How are Swedish expertise and institutions involved in the programme?

In the climate change projects within the AEIDC-programme, Swedish expertise has been used only to a minor extent, the exception being primarily the motor alcohol project in Thailand.

The Swedish expertise in forest management and issues related to climate change is unquestioned. The Swedish competence base is very wide and should have been used in a larger extent, than has been the case in the AEIDC-programme. In the area of motor vehicle alcohols, Sweden has during the last 10–20 years gained a wide experience in the areas of policy issues, technical development, prognosis tools, fiscal instruments etc. It is therefore satisfactory to note that the motor alcohol project in Thailand has been connected to the Department of Environmental and Energy systems studies at the University of Lund. The relevance of this project is, however, questioned as described earlier. With regards to climate change issues in developing countries in general, a vast competence base is available in Sweden on:

- emissions and sinks – measurements and inventories as well as effects from changes in land use
- climate change modelling
- effects from climate change on different ecosystems, including hydrological systems, terrestrial systems and marine systems

- technical mitigation options
- fiscal and other instruments for mitigation
- policy and authority management issues
- capacity building and information dissemination

In an earlier evaluation of the AEIDC-programme (1998-03-27), Sida states that the programme does not have any alternative coordinating centers. We strongly believe that this is not the case.

4.5 Impact and sustainability

What importance, impact and sustainability can the project have had in developing countries?

The projects have mainly resulted in awareness making, helping developing countries to understand important issues in making policy decisions and the spreading of information and news. We believe that these results need to be followed up by concrete actions.

4.6 Cost effectiveness

The budget for the different project components was as follows (figures in kSEK) and we believe that it is largely consistent with the expectations of project results.

Table 4.1

Global Climate Change	94/95	95/96	97
Tiempo	300	546	545
TERI Case Study	500		
SEI involvement Deshingkar		500	
IIED-UEA Reg. Climate Scenario			
Workshop		200	
Western Ghats			100
Roundtable discussions Kathmandu		950	
Environmental Externalities			300
TOTAL	1 500	1 596	845

4.7 Recommendations

Our recommendations may be summarized as follows:

- A comprehensive program should be designed rather than performing individual non-connected projects. The programme design should take into consideration issues of scientific importance, of importance to Swedish and Sida policy, requirements from the Climate Convention and Kyoto protocol, availability of Swedish expertise and probability of project success.
- Since climate change issues are well established in Sweden both on policy, scientific, technological and institutional levels, we strongly believe that the climate change programme would benefit if more Swedish expertise were involved in the programme.
- Along with further work on policy issues, the implementation of concrete measures needs to be introduced
- Sida should separate the administration and procurement role of the AEIDC-programme from the executive role

- Sida should reconsider the statement that there are no alternative coordinating centers in Sweden for the climate change projects within the AEIDC programme.
- Sida should consider if the most effective way to maintain and develop the institutional capacity within the climate change area in Sweden is to unconditionally let SEI “maintain a library, organise seminars and follow the debate”. We believe that there are more efficient ways of capacity building.

5 Evaluation – Regional Air Pollution in Developing Countries

The material used in the evaluation is listed in Annex 3. Beside reports and other types of written material, an interview was made with the project leader, Johan Kuylensstierna from SEI at York.

5.1 Description of the work

Regional air pollution is already a problem in parts of Asia. Not least was this observed during the forest fires in 1997 with the wide-spread smoke pollution. Problems with transboundary air pollution are expected to increase with increasing emissions of acidifying substances and ozone precursors.

When the programme was initiated it was planned to be developed in stages, rather than to tackle all issues at the same time. Acidification was chosen as the main problem in connection with transboundary air pollution problem, since there was a risk that it already was a problem in sensitive ecosystems and since emissions are increasing. The problem was tackled from two main objectives during the period 1992–97; increased information flow and higher awareness in the expert community, and improved international cooperation, leading to the development of regional policy processes. There has been an emphasis on the South and South East Asia region, but also Latin America and Africa has been involved. During the period the work has consisted of the following parts.

5.1.1 Air pollution studies

The programme has been almost entirely focussed on acidification and measurements of precipitation chemistry to estimate the wet deposition of acidifying components. The establishment of a long-term monitoring network was the first activity to estimate the extent of the problem and to communicate the problem to scientists and the policy process. Precipitation chemistry monitoring of acidifying substances is a traditional Swedish issue. In Sweden the Precipitation Chemistry Network was started 1955, and the main persons at MISU, who ran the network in Sweden for many years, have been greatly involved in the programme.

5.1.2 Effect studies

The other main topic of the regional air pollution programme has been the inventories of soil sensitivity. Global maps have been produced, in order to point out the most sensitive areas, where acidification problems may be a problem or may occur in the future due to expected strong emission increases. The sensitivity is estimated via a number of factors. Land use and vegetation are used to indicate the buffering ability of the site and the tolerance to increased acidification. Soil types are used to indicate the effectiveness of buffering mechanisms (weathering, cation and anion exchange).

Soil moisture is used to indicate the distribution of ecosystems with characteristics relevant to buffering of acidic deposition. The three main factors soil, land use and climate are combined to give the final sensitivity. The first sensitivity map produced was improved and modified to a better resolution during 1997. As a next step, critical loads will be assigned to the sensitivity classes, and critical load exceedances will be estimated. In a parallel programme, the RAINS-Asia work has been performed to elaborate critical load maps according to the European example. There has been to some extent a cooperation and to some extent a different approach from SEI's side. IVL has not within this work made any evaluation of the differences and any possible overlaps between the projects.

Other effects of air pollution have not been integrated into the programme in the first phase 1992–1997. In the present phase of the programme, health effects and corrosion are being included as a basis for the policy dialogues. Only general literature surveys have been made so far.

5.1.3 Meteorological modelling of pollution transport in Asia

As a complement to the monitoring network and the effect studies, modelling of air pollution was initiated by SMHI and maps of sulphur deposition was produced for Asia, Africa and Latin America, based on emission inventories on a global scale. The model is now improved with better meteorological input to fit tropical climate. It will eventually be used in the region by a relevant and suitable institute. The model will be run for scenarios of the future deposition.

5.1.4 Emission reduction strategies and policy dialogues

The overall objective of the project “Regional Air Pollution In Developing Countries” RAPIDC is to eventually ensure that air pollution per unit of activity is low and that emitted amounts are acceptable or at least decreasing. Processes and activities should be effective. Pollution should be prevented or controlled. The air pollution amount emitted per unit of activity is often high in developing countries, in many cases significantly higher than in the OECD countries. The emission data used in the project so far, are collected from Global Emission Inventory Activity, GEIA. Also future scenarios for emissions 2050 were collected from international databases, in this case scenarios from IPCC. No emission inventories are so far made in the countries.

However, a need for emission reductions has been defined, and strategies to reduce pollution impact between countries have been set up via agreements, which may later lead to agreements on pollution control. Three policy dialogues have been held; in Bangkok in Thailand, Cañuelas in Argentina and in Harare, Zimbabwe. As a basis for the meetings, background documents were prepared.

At the meeting in Bangkok (March 1998), a representative for each country's Ministry of Environment in the South Asia region, as well as local NGO's, intergovernmental organisations, Asian Development Bank, Sida and experts participated. A draft declaration was accepted. It was signed a month later by the Ministers of the Environment for all South Asia countries and is known as the Malé Declaration on Control and Prevention of Air Pollution and its likely Transboundary Effects for South Asia (Feb 1999).

The Malé Declaration states that governments in South Asia have agreed to that initiatives are required, such that risks from air pollution may be understood and emission prevented as required. The signing of the Declaration stated the need for the countries to carry on or initiate studies and programmes on regional air pollution in each country in South Asia. The first step is to document

the current situation and identify gaps of knowledge. The gaps will need to be filled to create a solid base for the policy process. As a consequence of the Malé Declaration, the countries are now elaborating “Base line studies” and “National Action Plans”. The Declaration does not include any commitments by the countries on emission reductions or even freezing of emissions.

5.1.5 Capacity building

In the project, an emphasis was put on involving experts from the developing countries in all stages of the process. In the Composition of Asian Acid Precipitation (CAAP) activity, scientists in the different countries have been doing the monitoring and developed skills in sampling and analysis. A large number of actors have been involved in the workshops and policy dialogues.

5.2 The relevance and character of the programme

What do the results of the monitoring network and the sensitivity maps tell us about the extension of the acidification in Asia?

A number of activities are initiated to study acidification and its effects. A lot of results are available. However, as far as we have found, assessments of the extent and development of the problem in different regions are lacking.

Precipitation chemistry measurements are made at seven sites in Thailand, Nepal and India. In the annual reports very little is said about the levels of pollution in precipitation. More is in fact said about the data quality. What would be of interest to know e.g. is the magnitude of sulphur deposition, in relation to wet deposition in Scandinavia, Europe etc. and in relation to sensitivity of ecosystems. From the workshop reports it is possible to get ideas about the situation at single points. The need for an assessment of the acidification problem is obvious. Data from modelling and monitoring should be used. The assessment should answer questions such as: How large is the acid deposition in different regions? How far has the acidification reached? How are the emissions developing? Where are the areas of special risk? etc. In this connection also the data quality must be evaluated.

How far has the relevance of the individual components of the programme been driven by the demands of the host countries?

It is not clearly stated in the papers from Sida and SEI whether there has been any demands on acidification studies from the host countries. Acidification is, however, a traditional Swedish/Scandinavian issue, for which we may contribute to both the definition of the extent of the problem, as well as to the possible solutions to it. The programme was to a large degree designed from Scandinavian experiences of acidified precipitation and from a European perspective of abatement of regional air pollution. The individual countries in Asia, Latin America and Africa are in the position of increasing emissions. Regional pollution problems such as acidification may be a potential threat in sensitive areas, even if this so far has not been shown by the results of the programme.

However, air pollution emitted in the different regions has environmental impact also via other effects. For example, direct damage to health, vegetation and material by gaseous pollutants may be even greater threats to the environment than acidification, especially in areas with a higher sensitivity to acid deposition. But actions to reduce emissions will be favourable also for the effects on other receptors than acid-sensitive ecosystems. In this way the different parts of the programme will provide results of value in relation to what could be expected as a general demand of the host countries.

How relevant is the programme in relation to the guidelines adopted by the Swedish Government (Aug. 1996) for the Swedish approach to environment issues?

The programme is in line with the guidelines adopted by the Swedish Government. It is an important objective of the programme to initiate studies that will increase the common knowledge with scientists, politicians and the public on the consequences of emission increases, to keep emissions low and to undertake actions against pollution. Especially, the intention to strengthen international cooperation on pollution control and agreements between countries on emission reductions, is met in the programme activities on a policy dialogue and the Malé declaration in Asia.

5.3 The performance of the programme

What is the degree of success in achieving the overall objectives and the specific component-wise objectives of the programme?

The outcome of the project is a number of activities, from which the combined results generally should be well in line with the overall objectives of the programme. The greatest success of the programme is the result of the policy dialogues in South Asia.

There is a network of seven sites running. Local scientists are involved in the work and have developed a skill in sampling and analysis. From visiting one of the workshops (Bangkok, November 1998) and from an interview with the project leader, an open and confidence-inspiring spirit is found in the CAAP group. It has also been the aim of the project leader to create such an atmosphere and to coordinate the work in a way that equal relations and mutual confidence is gained. This may have increased the success of the project.

A regional-scale pollution dispersion model is developed and modified for tropical climatic conditions. It will soon be available for operational use at a regional institute. A model is one of the necessary tools for policy development, not only to study acidification, but also for other pollution problems.

Within the programme a map of sensitivity for acidification is produced. The map indicates areas of particular sensitivity of soils and ecosystems, which may be of interest for further studies. To make it possible to use it as in Europe in integrated assessment modelling, the sensitivity must be transformed into critical loads values, which may in turn be put in relation to actual deposition of acidifying compounds.

The most important work in the programme is, however, the actions towards reduced emissions. A number of policy dialogues have been held in Asia, Africa and Latin America. As mentioned, the progress has been greatest in South Asia, where the work has resulted in the Malé declaration. This is a first important step towards the inclusion of environmental aspects in the future development of the countries, and is obviously a success.

5.4 The capacity and competence attached to the programme

How is the professional competence and quality of the project management at SEI in relation to their performance within the programme?

The professional competence of SEI in running the programme is high. SEI has a general competence in air pollution and air pollution effects, as well as in mapping issues and in the way of planning abatement policy against regional pollution in Europe. The programme management is made with the aim of creating equal relations with scientists, politicians, and organisations in the developing countries. This is a way of managing the programme, which is likely to be necessary for successful work.

How are Swedish expertise and institutions involved in the programme?

The SEI has linked Swedish organisations to the programme for modelling (SMHI), wet deposition monitoring (MISU) and in the latest phase of the programme, for the policy dialogues, experts on air pollution effects on materials from the Swedish Institute for Corrosion Research. The Swedish expertise involved in the all have the relevant experience and skill needed.

Other experts involved are partly scientists from the developing countries, partly experts from developed countries, such as UK and Australia. These experts from other developed countries were used e.g. for writing background documents to the policy dialogues on topics such as health effects and ozone effects on vegetation. In some cases, the experts involved may have out-standing competence, as regards the specific topic of work. In other cases, Swedish experts are equally qualified and may just as well have been involved in the work. As far as we have found, it is no outspoken policy of Sida to involve only Swedish experts in the programmes, but on the other hand it is on Sida's agenda to "internationalise" Sweden.

5.5 Impact and sustainability

What importance, impact and sustainability may the project have implied in developing countries?

So far no direct effects on emission reductions have been shown as a result of the programme. However, the policy process has obviously started. Scientists, politicians, people in NGOs and other organisations have started to be aware of the problem with increasing emissions. From European experience it is known, that starting the policy process is generally a more time-consuming task than the actual work on emission control activities. The Malé declaration is quite an impressive step on the road towards keeping control of emissions and environment impact in the South Asian countries. Also, it is an achievement, which may serve as an example for other developing countries, and maybe a better and more important example than European Conventions and protocols.

The process with monitoring, comparing results, meeting with colleagues in neighbour countries is also an important achievement, which hopefully will continue in the future. As far as we are able to judge, SEI seems to have involved the local experts in the monitoring, in the production of maps and in dialogues, which is a condition for future success.

5.6 Cost-effectiveness

What is the cost-effectiveness of the programme?

It is not evident that programmes for development assistance are possible to run in a cost-effective way, compared for example to running a similar programme in Sweden. It is necessary to take into consideration the extra time needed to overcome the different situations in the development country as regards culture, relations between scientists, politicians, organisations etc. To evaluate cost-effectiveness, it is necessary to study the budget of the programme. The budget breakdown available is presented in the Table below for 1994–96 and for 1997.

The sums of money for 1994–1996 are relatively reasonable amounts in view of the activities reported. The largest budget is for the activity "Utilising the results from the sensitivity mapping and deposition assessment to determine areas at risk from acidification", 2,5 million SEK. It covers a 3-year period and the money was spent on workshops and SEI core activities (sensitivity maps?). We have assumed that also travelling expenses and boarding for a number of participants are included in the budget. The budgets for the years 1994–1996 can be separated into the following parts:

Table 5.1

Projects 1994–96	Activity Title	Budget SEK
2.7.1.1	Utilising simple scenarios to indicate the progression of the acidification problem in the developing countries	200,000
2.7.1.2	Utilising the results from sensitivity mapping and deposition assessment to determine areas at risk from acidification. 1994–1996. This includes all work carried out from 1994 until 1996 (3 year period) on the assessment of ecosystem sensitivity to acidic deposition and the validation workshops. Approx. 1,500,000 was spent on the workshops Approx. 1,070,000 was spent on SEI core activities in the programme	2,570,000
2.7.1.3	Continuation of work on acid precipitation in Asia (MISU) The development of CAAP 130,000 Measurements and analysis of acid precipitation in Asia 338,000	468,000

The situation before 1994 is not presented. The economic situation during 1997 specified below is, however, not included in the evaluation.

Table 5.2

Projects 1997	Activity Title	Budget SEK
2.7.2.1	Mapping ecosystem damage world-wide	410,000
2.7.2.2	Round-table policy dialogues and their preparation Dialogue costs 620,000 Preparation costs 890,000	1,510,000
2.7.2.3	Future deposition scenarios	250,000
2.7.2.4	Deposition and monitoring SMHI 370,000 MISU 355,000	725,000
2.7.2.5	Network and capacity building	460,000
Other costs	Equipment SEI, SMHI Equipment APIN Centres	85,000 165,000
	Publishing costs	350,000

How appropriate is the level of programme management in relation to administrative costs?

The budget is separated on activities, and administrative costs are not separately exposed.

This question is for this reason not possible to answer.

5.7 Recommendations by the Evaluator

5.7.1 Monitoring of deposition

In the Sida decision for 1997, it is stated that the monitoring in India and Thailand should be “finished”, and that the results so far indicate a small but increasing trend. However, the monitoring of pollution in a long-term network is an important tool to make a first estimate of the extension, to follow the development of the problem and for model validation. In areas where regional acidification is shown to be a problem, monitoring should be carried out, preferable on the long-term and by the host country.

Precipitation chemistry analyses may seem like a non-important piece of work, but it may be a valuable tool also for communicating the problem to the scientific and political community, as well as to the public. The network measurements will provide training and increase the skill of the scientists in the developing countries. It will offer chances for exchange of data and information between the scientists and with the scientific community in the rest of the world. This may be of use also for the exchange of information on other pollution problems, and will lead to increased information and cooperation between the countries. If the modelling activities are to continue, validation data are needed to keep control of modelled trends etc. The budget for the monitoring activity is also expected to be a relatively small part of the project.

The presently available results should, however, be assessed in relation to calculated results and to the situation in other parts of the world, e.g. Europe and the USA. Also, it should be assessed, if optimal parameters are measured at the optimal number and location of sites. The lack of assessment makes it difficult to evaluate the success of the present network, the need for future work, and possible need for increased number of sites and parameters.

This work is in principle recommended to continue. The responsibility for the operation and the quality assurance and quality control should, however, gradually be handed over to the countries themselves. A condition is that there is an interest from the developing countries to take over.

Acidification may, in parts of the area, not be the pollution effect of main importance for emission reductions in Asia (and Africa and Latin America). It may be that urban air quality and health effects are causing even greater problems, also as transboundary pollution, which makes it favourable and also necessary for countries to co-operate.

5.7.2 Effects studies – sensitivity maps

It is not definitely clear that more effort should be put into the world-wide sensitivity maps unless it is shown in an assessment that acid deposition is, or will be, a serious problem. We recommend that before turning sensitivity classes into actual critical loads on a larger scale, the magnitude of critical load exceedance should be estimated in some selected regions. The development of the programme towards integrated assessment modelling should not be started until it is clear what the main pollution effects are.

5.7.3 The model calculations

The model is an essential part of the work. It should be possible to use it for scenario calculations for the future and also for other regional pollution problems in the area. In addition, the atmospheric model should preferably be run at an institute in South East Asia. Fundings should be spent on keeping the model in operation and used for validation of monitoring data and emission inventories. It should be provided with good quality input data on emissions, meteorology and measurements.

5.7.4 Abatement strategy planning and policy dialogues

The work on policy is important. It is in line with the view of the Swedish Government and it has – as far as can be seen from the written material and the discussion with the project leader – been successful. The Malé declaration is an important step and it has a symbolic value for the countries in South Asia. The lobby work should continue and maybe, if possible, be broadened to the other countries in South East Asia, such as Thailand, Malaysia and China.

The Asian policy work has come further than in Africa and Latin America. It is recommended that most effort is put on further progress in Asia. The example in Asia may then, in turn, be used in Africa and Latin America. It is also important that the work results not only in wordings, but also in actual emission reductions. If no concrete results are seen in Asia, the value of being an example will be lost also for the other parts of the world.

Furthermore, it is important for future emission reductions and possible protocols (as well as for models) that homogeneously provided emissions from different source categories, different areas and different countries are estimated and agreed upon. The emissions should be produced according to elaborated procedures in Europe and USA, but modified to be relevant for the situation in Asia.

The work performed during 1998–99 is in relation to the previous activities moving towards a more control-oriented direction, which is in line with the main aims of programme.

6 Evaluation – Use and Control of Ozone Depleting Substances

The material used in the evaluation is listed in Annex 4. Beside reports and other types of written material, an interview was made with Ingrid Kökeritz, Network Manager at UNEP, Paris, 1990–1994.

6.1 Description of the work

The depletion of the ozone layer caused by emissions of different man-made chemicals is today a fact. It is internationally agreed, in the Montreal Protocol, that the use and production of ozone depleting substances (ODS) must be phased-out globally as soon as possible. This programme provides support to a network between government officials working with the phase-out of ODS, in South East Asia and the Pacific (ODSONET/SEAP).

The programme has run since 1993 and was based on experiences from a pilot programme (1990–92) under which four countries in South East Asia were supported individually. The pilot programme, including activities during 1993, was evaluated by the end of 1993 by Touche Ross & Co, London. The outcome of the evaluation was in general very positive, especially in terms of building institutional capacities in the developing countries and that it had direct influence on the participant's response to the Montreal Protocol. Further financial support was suggested in addition to the recommendation to establish the project concept in other parts of the world. From 1998, the programme is no longer a part of the AEIDC-programme, co-ordinated by SEI. Now, Sida funds this programme directly via UNEP.

The overall objectives of the programme have been:

- to facilitate early elimination of the use of ODS in developing countries including limiting ongoing short-term increases; and
- to encourage and facilitate developing countries to become Parties to the Montreal Protocol through greater knowledge of suitable actions to be taken nationally to implement the Protocol.

The project purpose has been to enhance the capacity of ODS Officers to design and implement efficient phase-out strategies, well adapted to the conditions in their own countries, through exchange of experiences and cooperation amongst themselves and with colleagues in developed countries. During 1993–97 the programme has consisted of the following activities:

6.1.1 Network meetings

The network consists of ODS Officers from ten developing countries: Thailand, Malaysia, Singapore, the Philippines, Vietnam, Indonesia, Myanmar, Lao P.D.R., Brunei, Darussalam and Fiji – and, initially three developed countries: Australia, New Zealand and Sweden. New Zealand withdrew its membership in 1996. Network meetings have been held twice a year (one major and one minor meeting) during the period. A Regional Network Co-ordinator, based at UNEP's Regional Office in Bangkok, has been responsible for arranging the meetings.

The major meetings have focussed on discussing problems that the ODS Officers have encountered in designing or implementing government strategies. The meetings have also served as an informal meeting point for discussions and exchange of material on ongoing activities in the different

countries. The minor meetings have been used to follow up actions taken since the previous meeting, and to decide what subjects that should be discussed at the next major meeting.

The network meetings have provided the development countries ODS officers with new knowledge on how a country like for example Sweden, with a long experience of issues concerning the phase-out of ODS, has handled the question. The exchange of knowledge and experience between the development countries has been of equal or even greater importance. Direct contact between the ODS Officers have resulted in several official visits of delegations from one network country to another. The exchange of experience and knowledge has in turn inspired to other activities in the different countries, such as developing the legislation, ratifying the Montreal Protocol, choosing earlier deadlines in the phase-out plan and banning the use of ODS within certain sectors.

6.1.2 Exchange of experience between meetings

The Regional Network Co-ordinator has between the meetings also worked with distribution of information and material. He/she has also produced a network bulletin containing information on activities in network countries.

6.1.3 Workshops targeting other actors

ODSONET/SEAP has initiated and organised (through the Regional Network Co-ordinator) several workshops funded by the Multilateral Fund. The workshops have been used to inform different actors using a certain type of ODS, on e.g. strategies for phase-out or non-ozone-depleting alternatives.

6.2 The relevance and character of the programme

How far has the relevance of the individual components of the programme been driven by the demands of the host countries?

The programme has not been initiated directly by the demands of the host countries, but by a global demand, through the Montreal Protocol. As mentioned earlier, it is internationally agreed that it is of vital importance to eliminate the use of ODS as soon as possible, and many developed countries have already substantially reduced their consumption and production of ODS. However, continued and increased ODS use in developing countries can eliminate these achievements. This is a problem intimately connected to the economic and technical development of the developing countries. Increased production and use of refrigerators, electronic components etc. will result in increased emissions of ODS, as long as the development countries continues to use old technology. The problem has its roots in the lifestyle of the modern industrialised countries like Sweden, which thereby have a responsibility to help the development countries with the ODS phase-out.

The work within the programme has, however, been driven by the demands of the host countries. All the activities resulting from the programme, such as official visits to other network countries, special workshops, design of control and monitoring strategies etc., have been initiated by the network members and funded by the member countries or other financiers like the Multilateral Fund. An important task of the programme has been to make the host countries a part of the international ODS phase-out process.

How relevant is the programme in relation to the guidelines adopted by the Swedish Government (Aug. 1996) for the Swedish approach to environment issues?

The programme corresponds well to the guidelines adopted by the Swedish Government. The objectives include that Sweden should have an early phase-out of all ODS. It is also included that Swedish experiences on the subject should be spread internationally. It is further stated that resources will be needed to help the development countries phase-out their use and production of ODS.

6.3 The performance of the programme

What is the degree of success in achieving the overall objectives and the specific component-wise objectives of the programme?

The programme has succeeded well in achieving both the overall objectives and the specific component-wise objectives of the programme. Most countries in the network have decided on ambitious phase-out target dates and, at least one new ratification of the Montreal Protocol has been made among the network countries (Lao P.D.R.). SEI states in their final report for the programme that the cooperation within the network is likely to have had an influence in this regard, which seems reasonable.

It is clear that the ODS Officers within the network have increased their knowledge on designing and implementing efficient phase-out strategies. The network is also an important forum for exchange of experience concerning how strategies can be adapted to conditions in the different countries. It is probably also important for the ODS Officers to get support from the network members when they encounter problems in the implementation in their home countries.

The network meetings have become increasingly popular and have lately attracted many interested attendants, apart from the network members. This development has shown to be not only positive since it has resulted in less time for informal meetings between the network members. There is a risk that the dynamics of the meetings may be affected in a negative way.

6.4 The capacity and competence attached to the programme

How is the professional competence and quality of the project management at SEI in relation to their performance within the programme?

The present project manager at SEI, Stockholm, Ingrid Kökeritz, was the Network Manager at UNEP, Paris, until 1994. An earlier evaluation of the programme made by Touche Ross & Co found that the project had been well managed. UNEP has since then continued to co-ordinate the project, and has received the funds from Sida through SEI.

The post as Regional Network Co-ordinator was vacant during the end of 1996 and the whole of 1997. This resulted in a slow-down of the work and partly unused funds, which were paid back to Sida. We have not evaluated if and how this period affected the project.

How are Swedish expertise and institutions involved in the programme?

Ingrid Kökeritz has been involved in the programme even after 1994. She has participated in network meetings and written several reports on phase-out strategies. Personnel from SEPA have also participated in the network meetings. Study tours have also been arranged to come to Sweden and learn from Swedish experiences.

6.5 Impact and sustainability

What importance, impact and sustainability can the project have had in developing countries?

The project is assumed to have been very important for the phase-out of ODS in the developing countries in the network. Several countries have reduced their use of ODS and implemented new legislation and phase-out deadlines. This project has also served as an example, that it is of vital importance to include government officers in developing countries in the work and to give them a forum to exchange experiences and ideas with colleagues in other countries. The Multilateral Fund has previously not believed in the need for such cooperation. They have traditionally funded projects aiming at converting large and medium scale enterprises to new less ozone depleting technologies. But since that strategy has not been shown to be successful, they have now started funding of networks similar to ODSNET/SEAP in other parts of the world. Another important aspect of the work is the development and implementation of methods and formats on ODS imports and emissions.

Since the actions initiated by the network are based on the needs of the host countries and performed by the network members in their own countries, it seems reasonable to assume that the achievements will be sustainable.

6.6 Cost-effectiveness

The budgets for the years 1992–1997 can be separated into the following parts:

1994/1995:	2 000 000 SEK
1995/1996:	2 300 000 SEK
1997	1 750 000 SEK

What is the cost-effectiveness of the programme?

The money from Sida is only meant to fund the administration of the network. The network is organised by two persons, a Regional Network Coordinator and an assistant. The funding also cover their travel costs and costs connected to the network meetings. It is difficult to assess the cost-effectiveness of projects of this nature. However, since the results of the project have been very good, and the costs seem reasonable, we consider the project to have provided good value for money.

How appropriate is the level of programme management in relation to administrative costs?

Administrative costs beside program management have not been separately exposed. This question is thereby not possible to answer.

6.7 Recommendations by the Evaluator

The network has been and will continue to be very important for a successful phase-out of ODS in the network countries. We therefore suggest that Sida continue to support the network. The demands on reductions in the use of ODS in the developing countries will get stronger from now on, according to the Montreal Protocol. This will probably lead to an even more important role for the network. It is therefore our recommendation that Sida will not reduce the funding of the network administration.

In the future, it will be important to show the effects of the network on the total ODS emissions from the network countries (measured as ODS consumption). It is therefore our opinion that the future work also should aim at producing reliable ODS consumption statistics for the countries.

The statistics should separate ODS consumption for different sectors to facilitate the development of cost-effective phase-out strategies.

There is a risk that the increased popularity of the network meetings will affect the work in the network negatively. We therefore recommend that Sida will state to UNEP the importance of maintaining the dynamics of the network meetings.

7 Evaluation – General and Administrative Issues

7.1 Policy of purchasing – roles of procurement and execution

The most important conclusion in the evaluation of the non-scientific part of the programme, is the obvious lack of separated roles of procurement and execution. There is a clear risk that a programme, influenced mainly by one part, will not develop in an optimal way. The AEIDC is based on an open and wide mission and on the responsibility given to SEI for the, for “managing, developing and monitoring” atmospheric environment issues in developing countries. SEI acts on Sida’s behalf on all matters related to financing and administration of projects within the programme. SEI disseminates information generated from the projects.

Sida has chosen SEI as an institutional partner for developing the content and scope of the programme, to coordinate and implement the programme activities and to report to Sida on the progress. In addition SEI shall function as Sida’s advisor in this field. SEI is also the main executor. No alternatives to SEI has according to Sida been considered or identified within Sweden. SEI is also partly paid to keep competence in the relevant fields.

In this context several aspects could be mentioned. In our view it is not wise, that Sida has left to one organisation, in this case SEI, to have the role of advisor/coordinator as well as main scientific executor of the programme. Sida should have the necessary competence in the field within their organisation or via a special consultant to make the necessary priorities of the programme.

Sida uses part of programme budget to pay the consultant to keep up competence. Normally, that is a part of the consultancy work, not separated and specially paid for. It may be of a greater use for Sida to use the same money to keep in-house competence. Otherwise Sida will have to find itself in the position of being totally relying on consultants.

No alternative advisers/coordinators/operators in Sweden have been considered by Sida. The reasons behind this seem somewhat peculiar. There are experienced Swedish institutes and consultants with a similar competence as SEI in the field of international environmental work in developing countries.

Finally, we have some comments to the use of Swedish expertise in the programme. In some of the projects, Swedish experts are involved. In other parts, Swedish experts could be more involved. Sida’s policy is not totally out-spoken, but it states that via the cooperation on development, Sweden should be “internationalised”. There should be a national gain of keeping Swedish experts and organisations greatly involved in this work.

7.2 Capacity building

The capacity building in the programme seems to involve a large number of actors in the developing countries, mainly in workshops and policy dialogues, rather than a few selected experts. This is an advantage from the sustainability point of view.

7.3 Gender dimensions

One of Sida's aims is to promote equality between sexes. The gender dimension in environmental work is two-fold:

- The result of the work should not favour or disfavour the life situation of any of the sexes.
- Both sexes should have a possibility of influencing the work and be involved in the capacity building.

Have the programme affected women and men differently, and if so in what way?

Regional air pollution and its effects affect women and men in the same way, on the short-term and on the long-term. Both sexes are equally favoured of reduced pollution levels and loads. Climate impacts and measures against climate change will, of course, influence both sexes. It is likely that climate change will affect the availability of water, firewood and foodstuffs. This means that in the short-term, tasks such as collecting water, firewood and foodstuffs, prevailingly carried out by women, may be more complicated and may require more effort. From this point of view, the life situation of women may be more affected by climate change. In the long-term, however, the total human life situation will be altered.

Most of the work within the programme is carried out by men, but many women in developing countries are involved in measurements as well as in policy dialogues. For example, the organisation and hosting of the workshop in Bangkok November 1998, was mainly carried out by a woman, Dr Jariya Boonjawaat (from SEA-START in Bangkok) and several women played important and active roles at the workshop.

8 Main conclusions and recommendations

8.1 Global Climate Change

The climate change projects in the AEIDC programme includes three main activities: the adaption to climate change in forest-based land use systems; the publication of the magazine *Tiempo* for information dissimulation and news coverage; and the assessment of the use of alcohol fuels to reduce greenhouse gas emissions in the transportation sector in Thailand. The projects are largely desk-top studies, compiling information and dissimulation through newsletters; research and assessments based on earlier references; organisation of seminars and workshops; and the consequent publication of state-of-the art reports. The reports are mainly directed towards scientists, policy makers and authorities working with or in the process of starting to work with global climate change issues. The projects focus on issues in making policy decisions regarding climate change issues in developing countries.

We believe that Tiempo represents a cost-effective way for news coverage and dissemination of general information on climate change issues to third world countries. We further think, that the landuse projects have been performed professionally, with excellent competence connected to the projects. A number of high quality state-of-the-art reports have been produced. We do however, question the relevance of the motor alcohol project in Thailand, even if the report is well supported by facts and offers valuable insights to the issue. The budgets attached to the three activities seem largely consistent with our expectations of project results.

Our main criticism lies in the direction and character of the climate change programme rather than on the individual programme components. Our recommendations for the climate change part in the AEIDC-programme are:

- A comprehensive program should be designed rather than performing individual non-connected nisch projects. The programme design should take into consideration issues of scientic importance, of importance to Swedish and Sida policy, requirements from the Climate Convention and Kyoto protocoll, availability of Swedish expertise and the possible project success.
- Since climate change issues are well established in Sweden both on policy, scientific, technological and istitutional levels and the programme would most likely benefit if more Swedish expertise were involved in the programme.
- Along with further work on policy issues, the implementation of concrete measures needs to be introduced.
- Sida should separete the administration and procurement role of the AEIDC-programme from the executive role.
- Sida should reconsider the statement that there are no alternative coordinating centers in Sweden for the climate change projects within the AEIDC programme.
- Sida should also consider, if the most effective way to maintain and develop the institutional capacity within the climate change area in Sweden is to unconditionally let SEI "maintain a library, organise seminars and follow the debate". We believe that there are more efficient ways of capacity building.

8.2 Regional Air Pollution in Developing Countries

The work on acidification in Asia is more or less carried out in accordance with how the problem was tackled in Europe. A monitoring network is initiated. A model is elaborated. The network, however, consists of only seven sites and is only measuring precipitation chemistry. What is needed is an assessment of the acidification problem in Asia, today and as a prognosis for the future. Also, as input data for the model and as a basis for abatement strategies, a reliable and homogenous emission data base is needed, and should be on the first priority for coming years. Maybe also other effects should be looked into more to create a basis for abatement and to demonstrate the need for emission reductions.

The work has been carried out in a professional and confidence-inspiring way and with the necessary skill. Maybe too much emphasis has been put on the elaboration of sensitivity maps. The maps are necessary to indicate where risk areas are located. However, to be useful for the abatement strategies, they have to be translated into critical load data, and validated extensively over Asia. This is a big task and should not be done unless an assessment has pointed out the areas to concentrate on.

The focus of the programme is now directed very much towards the policy dialogues, which should be relevant in order to make politicians and decision-makers aware of the pollution problem and the need for reducing emissions. The policy work should as we see it be focussed on Asia, and broadened to other Asian countries, not presently involved. It should also aim at protocols to the Malé declaration with agreements on emission reduction or freezings.

8.3 Use and Control of Ozone Depleting Substances

The project seems to have been very important in the work for phase-out of ODS in the developing countries in the network. It is clear that the ODS Officers within the network have increased their knowledge on designing and implementing efficient phase-out strategies. The network is also an important forum for the exchange of experience concerning how strategies can be adapted to conditions in the different countries. This project has also served as an example that it is of vital importance to include government officers in developing countries in the work and to give them a forum to exchange experiences and ideas with colleagues in other countries.

We suggest that Sida should continue to support the network without reductions in the funding of the network administration.

In the future, it will be important to be able to show what effects the work of the network have had on the total emissions of ODS from the network countries. It is therefore our opinion that the work in the future also should aim at producing reliable ODS consumption statistics for the countries. The statistics should also show ODS consumption for different sectors in order to make it easier to develop cost-effective phase-out strategies.

We also recommend that Sida would state to UNEP that it is important to maintain the dynamics of the network meetings.

8.4 General aspects

The work by SEI on all tasks in the programme has been performed in a skilled and competent way. SEI has made use of its network and contacts and has succeeded to engage people in the developing countries to carry out the work within the programme.

The work has been carried out with reasonable budgets. The cost-effectiveness of the programme must be judged in relation to other projects in developing countries rather than in relation to similar programmes in developed countries.

To some extent women from the developing countries have taken active parts in the work, even if men have dominated workshops, policy dialogues, programme management and Swedish expertise.

Our general recommendation is that Sida should consider their role in the programme. Sida will have to determine who is to set the priorities and who is to execute the work. There is a number of options to administer the procurement part of programme, from developing in-house competence to using reference groups of mixed composition and other organisations/institutes to participate in setting priorities in relation to the executive part of the programme.

Annex 1

Terms of Reference

Diarienummer:

INEC-1998-0866/1997-0121/1995-0418

Terms of reference for the evaluation of the sida-supported programme for
“Atmospheric environment issues in developing countries”

With the stockholm environment institute

1 Background

Since 1992, Sida has granted the responsibility to the Stockholm Environment Institute (SEI) to manage, develop and monitor a Programme for Atmospheric Environment Issues in Developing Countries. The Programme has been divided into mainly three areas/sub-components:

- Global Climate Change and Responses
- Regional Air Pollution in Developing Countries
- Use and Control of Ozone Depleting Substances

A new two year programme for the period 1998-99 (about 17 MSEK) is presently proceeding. The objective of the Programme is to enhance the capacity of developing countries to participate locally and regionally in programmes and activities to resolve atmospheric environmental problems and to increase and facilitate the participation and involvement of developing countries in international initiatives and negotiations.

The purpose of this evaluation shall be to evaluate the performance of the previous programme periods (1992/93-1997).

SEI's role

The Programme derives from the international conventions regarding global environment issues where the developed countries undertake a responsibility to support the competence building of the developing countries and their possibilities to participate in the international negotiations. All sub-components of the Programme are connected by measures called for by international environment agreements.

Sida has chosen to use SEI as the institutional partner for the development of the contents, direction and scope of the programme. Alternatives to SEI have not been considered or identified within Sweden.

SEI has been assigned to develop a coherent programme within this field. SEI shall also coordinate and implement the programme activities and periodically report to Sida about what progress that has been made and about the results of the activities. SEI shall also function as Sida's advisor in this field.

Previous experiences

The Programme has been functioning well in large. For the first two sub-components the focus has however primarily been on research, something Sida has been trying to change to a focus on more implementing measures.

For the component on *Regional Air Pollution in Developing Countries* this has gradually improved and especially in Asia countries has shown a growing interest in the issues of acidification. The Swedish Environmental Protection Agency (SEPA) was in 1997 assigned to evaluate the relevance of this component, its arrangements and possible improvements. They assessed that the competence within the SEI in this field was excellent and of highest international standard.

The component on *Global Climate Change and Responses* has not reached the same level of support by the recipients and presently this component has been reduced to a core support function for news coverage and information dissemination.

The component on *Use and Control of Ozone Depleting Substances* is not longer part of the programme. Sida has from 1998 on taken over the administration of the programme on the Swedish side. The reason for this was basically that it was conceived as an unnecessary cost to have SEI administer the programme when UNEP¹ in Bangkok already functioned as a central coordinator of the programme.

Connection to the objectives of the Swedish development cooperation

Sida has been assigned by the Government of Sweden to promote follow-up and implementation of international environmental conventions and agreements. About one year ago (March 1998), Sida was assigned to analyse and present in what extent Sida's present activities are related to the implementation of the Climate Convention. The results from this survey showed that the Atmospheric Programme with SEI is the only concentrated programme that is implemented within Sida in this field. The situation is almost the same with the other sub-programmes (ozone and acidification).

2 Purpose and Scope of the Evaluation

As mentioned above, the purpose of this assignment is to evaluate the performance of the Programme on "Atmospheric Environment Issues in Developing Countries" for the period 1992/93 – 1997 (in the following referred to as the *AEIDC-programme*). Since the start, this programme has consisted of the following sub-programmes and components:

1. GLOBAL CLIMATE CHANGE AND RESPONSES

a, Core Climate Activities at SEI

Activities which is undertaken to maintain and develop the institutional capacity at SEI to respond to climate related issues, reinforcing SEI's role as a think tank and advisor to Sida in this field.

There are four major activities: Maintain and develop the Library, Organising seminars on climate related issues, Following the climate debate, Pre-feasibility studies/Identify new project proposals.

*b, Continued development and quarterly publication of the *Tiempo news bulletin* as well as Tiempo Climate Cyberlibrary at the Internet.*

¹ United Nations Environmental Programme

Up to 1998 this sub-programme consisted of several other components as well, such as case studies in developing countries. Please see *Annex 1* for a compilation of these.

2. ACIDIFICATION IN DEVELOPING COUNTRIES

a, Programme on Regional Air Pollution in Developing Countries.

Activities to increase the capacity in developing country regions to inform policy makers of the consequences of an unrestricted growth in emissions. By means of (*examples in brackets*):

- (1) collect, compile and synthesise information relevant for policy makers (*create databases*);
- (2) develop tools and methodologies that help portray aspects associated with risk of various impacts (*develop MATCH-model*);
- (3) establish networks and transfer capacity to implement methodologies (*workshops*) and
- (4) inform and influence policy process (*arrange policy dialogues*)

3. CFC USE AND CONTROL

This sub-program concerns support to a network between government officials, working with the national phase-out of ozone depleting substances, in South East Asia and the Pacific (ODSONET/SEAP). UNEP has been coordinating this sub-programme from the start with its Bangkok office as a focal point. (From 1998 on Sida handles this programme.)

4. PROGRAMME CO-ORDINATION

a, Programme Co-ordination and Assessment

SEI has several offices. It is the office in York that perform most of the research under the acidification sub-programme.

All the sub-programmes and components are described in more detail in the programme documents for the different programme periods. These will be obtainable from SEI.

Components that is not to be evaluated but shall be examined

The 1998-99 Programme shall not be evaluated but shall be examined in comparison to previous programme periods in order to be able to assess what changes is recommended for the future.

The Tiempo magazine shall also be excluded from the evaluation since it was evaluated in a Reader Survey in 1995. But as a part of the AEIDC- programme it shall be analysed for the same reason as the 1998-99 Programme.

The purpose and the reasons for the evaluation

In addition to evaluating the performance of the AEIDC-programme over the period 1992/93 – 1997 the evaluation exercise should focus on questions about SEI's professional capacity and competence in this field, quality of research output and project implementation, cost-effectiveness, impact and sustainability.

We would also want the evaluation exercise to help us in getting an understanding of what is needed for the future in relation to what is required under the Climate Convention.

In the section on Assignment below, these and other questions are spelt out in terms of specific tasks that the evaluator will have to address.

3 The Assignment (issues to be covered in the evaluation)

In conducting the evaluation, the evaluator will keep in mind, firstly, the major overall objectives, as well as the specific project-wise objectives of the AEIDC-programme and, secondly, Sida's overall objectives in supporting the AEIDC-programme, as outlined in the preceding sections. The evaluator will assess the following:

3.1 The relevance and character of the programme

- The relevance of the individual components that comprise the AEIDC-programme to the context of the developing countries. How far have they been genuinely driven by the demand of the host countries?
- The relevance of the programme in relation to the guidelines adopted by the Swedish Government in August 1996 for the Swedish approach to the global environment issues (see Annex 2).

3.2 The performance of the programme

- The degree of success of the programme in achieving the overall objectives and the specific component-wise objectives of the AEIDC-programme.

3.3 Capacity and competence attached to the programme

- The professional competence and quality of the project management at SEI – to be assessed in relation to their performance within the programme
- The range of Swedish expertise and institutions involved in the programme.

3.4 Impact and sustainability

- *Discuss* what importance, impact and sustainability the programme can have had in the developing countries.

3.5 Gender dimensions

- The AEIDC-programme have not had a gender objective. We would however want the consultant to try to assess if and in what way the programme have effected women and men differently (see enclosed booklet on “Kvinnor och män - Sidas program för jämställdhet” for Guidelines to these questions).
- We would also want the consultant to discuss whether a relevant gender component could be designed in a future AEIDC-programme.

3.6 Cost-effectiveness

- Cost-effectiveness of the AEIDC-programme.
- The appropriateness of the levels of the programme management and administration costs.

3.7 Recommendations by the Evaluator

In addition to the detailed and in-depth assessment of the performance of the AEIDC-programme over the period 1992/93 – 1997, the evaluator is also specifically invited to present recommendations on the changes and improvements required in the approach, the design and the execution of the AEIDC-programme in the future as well as suggestions on how to formulate measurable objectives.

4 Methodology, Evaluation Team and Time Schedule

The Methodology

The evaluator will study the published and unpublished written output produced by the SEI over the period 1992/93 – 1999 including the Project Documents (Work plans) submitted by SEI to Sida for the relevant years as well as the additions and clarifications submitted during the same period.

The evaluator will conduct in-depth interviews with the concerned programme officers at SEI's offices in Stockholm and in York.

SEI will help the evaluator to the written material as well as to the concerned programme officers.

In order to evaluate how the “*Acidification in Developing Countries*” sub-programme operates in the field, the evaluator might also undertake one field visit to Asia. After having conducted the desk study of the written material and the interviews, the evaluator shall suggest to Sida what institutions and components of this sub-programme, and geographical area, that is most relevant and feasible to visit. Thus, one field visit to a developing country is budgeted for, but will only be undertaken upon Sida's approval.

The Evaluator

The evaluator shall have the following expertise:

- Knowledge and experience of the climate issue, ozone issue and acidification issue
- Knowledge of the international conventions regarding global environment issues (such as the Climate Convention and the Montreal Protocol)
- Knowledge of the developing countries situation in the relevant areas

The Time Schedule

The time needed for the study is estimated to about 4 weeks (the eventual field visit not included), spread over the period March to May 1999. The evaluator will submit a single, joint draft report in English to Sida not later than the 31 May 1999. This will be sent by Sida to SEI for comments.

These comments, together with Sida's, will be sent by Sida to the evaluator, who will dispatch the final version of their report to Sida not later than two weeks after receiving the comments.

If a field visit is suggested by the evaluator the time estimated for this is 60 hours, about one week for the field visit and two days to include the findings in the report.

5 Reporting

The evaluation report shall be written in English and should not exceed 30 pages, excluding annexes. Format and outline of the report shall follow the guidelines in *Sida Evaluation Report – a Standardised Format* (see Annex 3). Three copies of the draft report shall be submitted to Sida no later than 30/4-99. Within two weeks after receiving Sida's comments on the draft report, a final version in four copies and on diskette shall be submitted to Sida. Subject to decision by Sida, the report will be published and distributed as a publication within the Sida Evaluations series. The evaluation report shall be written in Word 6.0 for Windows (or in a compatible format) and should be presented in a way that enables publication without further editing.

The evaluation assignment includes the production of a Newsletter summary following the guidelines in *Sida Evaluations Newsletter – Guidelines for Evaluation Managers and Consultants* (Annex 4) and also the completion of *Sida Evaluations Data Work Sheet* (Annex 5).

The separate summary and a completed Data Work Sheet shall be submitted to Sida along with the (final) draft report.

Annexes 3, 4 and 5 are retrievable from 'Sida-mallar'/Sida Evaluations.

Annex 1

Different components of the Sub-programme on Global Climate Change and Responses between 1992/93–1999

During **1998–1999** the Programme on Global Climate Change and Responses consists of the following two components:

1. Core Climate Activities at SEI

Activities which will be undertaken to maintain and develop the institutional capacity at SEI to respond to climate related issues, reinforcing SEI's role as a think tank and advisor to Sida in this field. There are four major activities: Maintain and develop the Library, Organising eight seminars on climate related issues, Following the climate debate, Pre-feasibility studies/Identify new project proposals.

2. Continued development and quarterly publication of the Tiempo news bulletin as well as Tiempo Climate Cyberlibrary at the Internet.

In **1997** there was also two components for:

3. Environmental Externalities in Energy Investment: Developing Local Responses
4. Mapping Food Security and Social Vulnerability to Climate Change in India

In **1995–96** there was also three components for:

5. Identifying Strategies to Enhance Strategic Options for Adapting to Climate Change in Forest Based Land Use Systems
6. Roundtable Policy Dialogue in India
7. Socio-Economic and Physical Approaches to Analysing Climate Change Impacts in Vietnam

In **1992/93**, the first programme period, there was also components for (some of these activities continued during the period **1993/94–1994/95**):

8. Methodology Manual (IIED)
9. Regional Climate Change Scenarios (CRU)
10. Indian Case Study (Himachal Pradesh)
11. Alcohol fuels and energy efficiency

All these components are described in more detail in the programme documents for the different programme periods. These will be obtainable from SEI.

Annex 2

Literature used in the evaluation of the programme “Global Climate Change and Responses”

- Climate Network Europe (1995). *Getting the Right Mix. Participation in GEF Climate Change Projects. Synthesis and Background Report*. Climate Network Europe & other Climate Action Network NGOs.
- Cronland, D. (1995). *Alcohol Fuel as Alternative in the Transportation Sector*. Atmospheric Environment Issues Series No. 1. SEI.
- Deshingkar et al. (1996). *Adapting to Climate change in Forest Based Land Use Systems: Case study of the Western Ghats, India*. (draft report). SEI and Centre for Ecological Sciences (CES).
- Deshingkar, P. (1995). *History of Forest Use in Himachal Pradesh*. SEI.
- Deshingkar, P. (1995). *Adapting to Climate Change in a Forest Based Land Use System: A Case study of Himachal Pradesh*. SEI (in press).
- Deshingkar, P. (1994). “Adapting to Climate Change in a Forest in Himachal Pradesh” in *Renewable Energy for Development*. Vol. 7, No. 3. SEI.
- Goldstick, M. (1994). *Tiempo. A Reader Survey*. SEI
- Granich, S., Kelly, P.M. & Sandbrook R. (eds) *Tiempo*. A quarterly bulletin. Issues No. 1–20. Climatic Research Unit (CRU) of University of East Anglia (UEA) & International Institute for Environment and Development (IIED).
- Granich, S., Kelly, P.M. & Huu Ninh, N. (1993). *Global Warming and Vietnam*. CRU(UEA and IIED).
- Halpin, P.N. et al. (1992). *Forests and Forestry: Adaptive Responses to Climate Impacts. Pilot Project for Nicaragua*. CRU/UEA and IIED.
- Halpin, P.N. (1992). *Climate Change and Central American Forest Systems. Costa Rica Pilot Project*. CRU/UEA and IIED.
- Katere, Y. (1992). *Woodland Management and Utilisation in Zimbabwe*. UEA and IIED.
- Kelly, P.M. (1996). *Climate Scenarios for the Western Ghats Region*. CRU/UEA.
- Kelly, P.M. & Hulme, M. (1994). *Climate Scenarios for the Indian Sub-continent and the Himachal Pradesh Region*. CRU/UEA.
- Kelly, P.M. & Hulme, M. (1992). *Climate Scenarios for the SADCC Region*. Report for Swedish International Development Authority (SIDA). CRU/UEA and IIED.
- Kelly, P.M., Granach, S. & Low, P.S. (1991). *Global Warming and the Third World Current Initiatives*. UEA and IIED.
- Kone, I. (1996) “Workshop on the Sensitivity of African Ecosystems to Acid Deposition”, in *Whydah* magazine, Vol. 5, No. 2. 1996. Publication of the African Academy of Science, Nairobi.
- Mascarenhas, O. (1992). *Maize Production and food Security in Tanzania*. IIED and UEA.

Mertens, S. (1996). *To: Nani G. Oruga – An NGO Guide to the Global Environment Facility*. Climate Network Europe.

Secrett, C.M. & Kelly, P.M. (1996). *Sustainable Adaption: A Precautionary Response to Climate Change*. UEA and IIED.

Secrett, C.M. (1994). *Sustainable Adaption in the Forest Sector. A Guide to Strategy*. IIED.

Secrett, C.M. (1991). *Forest Overview. Costa Rica*. IIED. Earth Scan Publications Ltd.

Wilson, D. & Swisher, J. (1993). “Exploring the gap – Top-down Versus Bottom-up. Analyses of the Cost of Mitigating Global Warming”, in *Energy Policy*, 249–263. Climatic research Unit (CRU) of University of east Anglia (UEA) & International Institute for Environment and Development (IIED).

Annex 3

Literature used in the evaluation of the programme “Regional Air Pollution in Developing Countries”

Ayers, G.P. et al., (1992) Summary Document, 2nd IGAC CAAP Workshop. Bhabha Atomic Research Centre, Bombay. 30 September – 2 October 1992.

Background Paper for Workshop held in Thailand, April 1996.

Background Paper for Workshop held in Zimbabwe, April 1996.

Background Paper for Workshop held in Costa Rica, October 1996.

Cambridge, H.M., Chadwick, M.J., Kuylenskierna, J.C.I. and Cinderby, S. (1995). *“The sensitivity of Ecosystems to Acidic Deposition: Validation of Methods and Results”*. Background Report on Global Ecosystem Sensitivity. Stockholm Environment Institute, York.

Cambridge, H.M., Kuylenskierna, J.C.I., Cinderby, S. and Chadwick, M.J., (1996). *“A hard rain’s gonna fall ... environmental monitoring of acid rain”*. GIS Europe 5(2), 20–22.

Cambridge, H.M., Chadwick, M.J., Kuylenskierna, J.C.I. and Cinderby, S. (1997). *“Preliminary Global Assessment of Terrestrial Ecosystem Sensitivity to Acidic Deposition”*. Version 1 Map. Stockholm Environment Institute.

Chadwick, M.J. (1995). *“Sensitivity of Ecosystems to Acidic Deposition in Developing Countries”*. Interim validation report. Stockholm Environment Institute (SEI).

Chadwick, M.J. and Kuylenskierna, J.C.I. (1994). *“Monitoring and Estimating Acid Deposition: A Joint Approach to the Assessment of Ecosystems at risk in Malaysia”*. Paper presented at the ARNSESEA Conference, Kuala Lumpur, Malaysia, 1994.

Chipindu, B., Wright, A., Simukanga, S., Hicks, K. and Kuylenskierna, J. (1998). *“Proceedings of the Harare Policy Dialogue on Prevention and Control of Regional Air Pollution in Southern Africa and its likely Trans-boundary Effects.”*

Cinderby, S. (1995). *“The Sensitivity of Ecosystems to Acidic Depositions”*. In Proceedings of the 1995 International SPANS Workshop, Ottawa, Ontario, Canada.

Cinderby, S., Cambridge, H.M., Herrera, R., Hicks, W.K., Kuylenskierna, J.C.I., Murray, F., and Olbrich (1998). *“Global Assessment of Ecosystems Sensitivity to Acidic Deposition”*. Version Two Map. Stockholm Environment Institute.

Granat, L., et al. (1996). *“Regional Background Acidity and Chemical Composition of Precipitation in Thailand”*, in Atmospheric Environment, Vol. 30:10/11: 1589–1596.

Granat, L., Rodhe, H. and Robertson, L. (1995). *“Modelling of Sulfur Deposition in the Southern Asian Region”* in Water, Air and Soil Pollution 85: 2337–2343, 1995.

Granat, L. et al. (1992). *“Acid Rain in Thailand – Results from daily Precipitation Chemistry Measurements at Two Sites.”* Extended Abstract of Presentation at the Second CAAP/IGAC/IGBP Workshop in Bombay 29 September – 2 October 1992.

- Granat, L. et al. (1993). *“Chemical Composition of Precipitation at Two Background Stations in Thailand”*. Paper presented at the IGAC Symposium in Eilat, Israel 1993.
- Granat, L. et al. (1994). Regional Background Acidity and Chemical Composition of Precipitation in Thailand. A paper prepared for the Scientific Conference of IGAC, 5–9 September 1994, Fuji–Yoshida Japan.
- Herrera, R., (1998). APINLA Database.
- Iyengararasan, M. (1998) *“Implementation of the Malé Declaration on Control and Prevention of Air Pollution and its Likely Transboundary Effects for South Asia”*. Phase I. Parts I and II.
- Kuylensstierna J., Cinderby, S., Chadwick, M.J. (1994). *“Air Pollution Effects and Modelling Pollution Abatement Strategies”*. Paper presented at the second International Conference on Computerised Air Quality Management, Bangkok, 30 November – 2 December, 1993.
- Kuylensstierna J.C.I., Cambridge, H.M., Cinderby, S., Chadwick, M.J. (1995). *“Terrestrial Ecosystem Sensitivity to Acidic Deposition in Developing Countries”*. Water, Air and Soil Pollution, 85: 2319 – 2324.
- Kuylensstierna J and Hicks, K. (1998), *“Regional Air Pollution in Developing Countries”*. Background Document for the Policy Dialogue Bangkok, March 1998. Stockholm Environment Institute.
- Kuylensstierna J and Hicks, K. (1998), *“Regional Air Pollution in Asia”*, Executive Summary, March, 1998. Stockholm Environment Institute.
- Kuylensstierna J and Hicks, K. (1998), *“Regional Air Pollution in Developing Countries”*. Background Document for the Policy Dialogue Harare, September 1998. Stockholm Environment Institute.
- Kuylensstierna J and Hicks, K. (1998). *“Regional Air Pollution in Africa”*. Executive Summary. September 1998. Stockholm Environment Institute.
- Kuylensstierna J., Hicks, K. and Herrera, R. (1998), *“Regional Air Pollution in Developing Countries”*. Background Document for the Policy Dialogue, Buenos Aires, June 1998. Stockholm Environment Institute. (Submitted to Ambio).
- Kuylensstierna J and Hicks, K. and Herrera, R. (1998), *“Regional Air Pollution in Latin America”*, Executive Summary. June 1998. Stockholm Environment Institute.
- Kuylensstierna, J., Rodhe, H and Cinderby, S. (1998). *“Acidification in Developing Countries: the Critical Loads Approach Applied at Global Scale”*. Stockholm Environment Institute. (Submitted to Ambio).
- RAPIDC Newsletter, Number 1, August 1998. Stockholm Environment Institute.
- Robertson, L. (1995). *“Modelling of Sulphur Deposition in the South Asian Region”*. SMHI.
- Robertson, L. (1996). *“Modelling of Anthropogenic Sulphur Deposition to the African and South American Continents”*. Swedish Meteorological and Hydrological Institute, (SMHI).
- Robertson, L., Rodhe, H. and Granat, L. (1995). *“Modelling of Sulphur Deposition in the Southern Asian Region”*. Water, Air and Soil Pollution, 85: 2337–2343.
- Rodhe, H. (1989). *“Acidification in a Global Perspective”*. Ambio 18:155 – 159.
- Rodhe, H., Galloway, J. and Dianwu, Z. (1992). *“Acidification in South – East Asia – Prospects for the Coming Decades”*. Ambio 21(2), 148 – 150.

Rodhe H., (1994). "Regional Budgets of Sulphur and Nitrogen in the Tropics. In Calvert, J.G. (ed.) "The Chemistry of the Atmosphere: Its impact on Global Change". International Union of Pure and Applied Chemistry. Blackwell Scientific Publications.

Rodhe, H. et al. (1996). "Acid Reign '95? Summary Statement from 5th International Conference on Acid Deposition – Science and Policy". Göteborg, Sweden, 1995. In special issue of Water, Air and Soil Pollution, Vol. 85.

Scholes R.J. et al. (1996). "Harare Statement of the Sensitivity of African Ecosystems to Acid Deposition Workshop", by participants to the conference on the Workshop on Sensitivity of Ecosystems to Acidic Deposition – SEI Map Validation, in Harare, Zimbabwe in April 1996.

Simukanga, S. (1998). "Air Pollution Impact Network – Africa (APINA)". Report on Activities for 1997/98. APINA-SEI Internal Report, November 1998.

Simukanga, S. (1998). "Air Pollution Impacts – Kitwe Copperbelt, Zambia". Internal Report for RAPIDC Newsletter.

Simukanga, S. (1998) APINA Database.

Annex 4

Literature used in the evaluation of the programme “Use and Control of Ozone Depleting Substances”

- Baker, J. (1993). *Phase Out of Ozone Depleting Substances in India and Possibilities for Networking in the South Asian Region*. United Nations Environment Programme (UNEP).
- Heileman, L. (1994) *1994 Workshop of ODSOINET/LA-S in Montevideo, Uruguay*, Amy 1994: Workshop Conclusions. UNEP/PROLAC.
- Juanchaya, T. (1998). Report of the ODSOINET/SEAP 1998 Meeting, 24–27 August 1998, Singapore. UNEP/ROAP and SIDA
- Juanchaya, T. (1998). Report of the Follow-up Meeting for the ODSOINET/SEAP 1997 Meeting, 19–20 March 1998, Bangkok, Thailand. UNEP/ROAP and Sida.
- Kökeritz, I. (1998). *ODS Import/Export Licensing Systems. Resource Module*. UNEP IE:
- Kökeritz, I (1997). *Government Strategies to Phase Out Ozone-Depleting Refrigerants. Four Case studies form the Nordic Counties*, UNEP IE:
- Kökeritz, I. (1996). *Regulations to Control Ozone Depleting Substances. A Guidebook*. UNEP IE - SEI.
- Kökeritz, I. (1996). Monitoring Imports of Ozone Depleting Substances. . *A Guidebook*. UNEP IE-SEI.
- Kökeritz, I. et.al. (1994). Report and Proceedings of the regional Halon Conference and Workshop. Kuala Lumpur, Malaysia. 18–20 January 1994. UNEP IEE, SIDA and the Government of Malaysia.
- Kökeritz, I. (1993). *Report – 1993 ODSOINET/SEAP Workshop*. Synthesis report of the 1993 ODSOINET/SEAP Workshop, Bangkok, Thailand, 7–10 June, 1993. SIDA and UNEP IE/PAC.
- Kökeritz, I. (1993). *Collecting and reporting of data When Implementing the Montreal Protocol*. Report from the 1993 ODSOINET/SEAP Workshop (first session) in Bangkok, Thailand, 7–10 June, 1993. UNEP IE/PAC.
- Kökeritz, I. & Carstensen, J. (1992). *Data Collection Problems when Implementing the Montreal Protocol*. Discussion paper prepared for the Pilot Workshop for CFC Officers in Bangkok, 30 March–2 April 1992.
- Kökeritz, I. & Carstensen, J. (1992). *Report of the Pilot Workshop for CFC Officers. 30 March – 2 April 1992. Bangkok, Thailand*. UNEP IE/PAC and SIDA:
- Kökeritz, I. (1992) *Report – Seminar on the Montreal Protocol for government Officials on May 21 and May 22, 1992 in Vientiane, Lao PDR*. UNEP/ROAP, UNEP IE/PAC and SIDA:
- Lagerhorn, H. and Chelliah, M. (1992). Alternatives to halons for Fire Protection – Report on an Mission on Halon Phase Out Strategies for Malaysia. UNEP/ROAP and SIDA:
- Seki, M. (1993). Report of the Follow-up and planning Meeting for the ODSOINET/SEAP 3rd Workshop, 25–26 November 1993 in Bangkok, Thailand. UNEP/ROAP and Sida.

Seki, M. (ed.) (1993). *Report – 1993 ODSOINET/SEAP Workshop*. Proceedings of the 1993 ODSOINET/SEAP Workshop, Bangkok, Thailand, 7–10 June 1993. SIDA and UNEP IE/PAC.

SISIS & IVF. (1992) *Evaluation report on Survey on the Use of Alternatives of CFC 113 and 111-trichloroethane in Singapore Electronics and Metal Industries*. UNEP Regional Office for Asia and the Pacific Region (ROAP) and SIDA:

Touche Ross (1994). Evaluation of the UNEP/SIDA Project on Ozone Depleting Substances in South-East Asia. Touch Ross & Co.

Vithoontien, V. (1996) *Report of ODSOINET/SEAP 1996 Meeting 13–16 August 1996, Bandar Seri Begawan, Brunei Darussalam*. UNEP/ROAP and SIDA.

Vithoontien, V. (1996) *Report of the Follow-up Meeting for the ODSOINET/SEAP 1995 Meeting 21–11 March 1996, Bangkok, Thailand*. UNEP/ROAP and SIDA:

Recent Sida Evaluations

- 99/5 Sida-Supported Programme within the African Energy Policy Research Network, AFREPREN. Frede Hvelplund, Ernst Worrell
Department for Research Cooperation, SAREC
- 99/6 Masters Programme in Land Management. Swedish support channelled through The Royal Institute of Technology (KTH) to participants in Central and Eastern Europe. Jim Widmark
Department for Central and Eastern Europe
- 99/7 Environmental Projects in Tunisia and Sengal. Ulf von Brömssen, Kajsa Sundberg
Department for Infrastructure and Economic Cooperation
- 99/8 The Collaboration between Sida and SAI, The Department of Social Anthropology (SAI), Development Studies Unit, Stockholm University. Ninna Nyberg Sörensen, Peter Gibbon
Department for Natural Resources and the Environment
- 99/9 Access to Justice in Rural Nicaragua. An independent evaluation of the impact of Local Court Houses. Elisabeth Lewin, Christian Åhlund, Regina Quintana
Department for Democracy and Social Development
- 99/10 Working with Nutrition. A comparative study of the Tanzania Food and Nutrition Centre and the National Nutrition Unit of Zimbabwe. Jerker Carlsson, Suraiya Ismail, Jessica Jitta, Estifanos Tekle
Department for Democracy and Social Development
- 99/11 Apoyo de Asdi al Sector Salud de Nicaragua. Prosilais 1992-1998. Marta Medina, Ulf Färnsveden, Roberto Belmar
Department for Democracy and Social Development
- 99/12 Nordic Support to SATCC-TU, Southern Africa Transport Communications Commission, Technical Unit. Björn Tore Carlsson, Leif Danielsson.
Department for Infrastructure and Economic Cooperation
- 99/13 Cooperation Between Sweden and Ukraine in the Field of Local Self-Government. Lars Rylander, Martin Schmidt
Department for Central and Eastern Europe
- 99/14 Research Cooperation between Sweden and Uruguay 1986-1995. An evaluation and some general considerations. Osvaldo Goscinski, Mikael Jondal, Claes Sandgren, Per Johan Svenningsson
Department for Evaluation and Internal Audit
- 99/15 Sida Supported Advantage Projects in the Baltic States. Claes Lindahl, Petra Stark
Department for Central and Eastern Europe
- 99/16 Diakonia Program for Democracy and Human Rights, the El Salvador Case. A qualified monitoring. Vegard Bye, Martha Doggett, Peter Hellmers
Department for Latin America
- 99/17 Dollars, Dialogue and Development. An evaluation of Swedish programme aid. Howard White, Geske Dijkstra, Jan Kees van Donge, Anders Danielsson, Maria Nilsson
Department for Evaluation and Internal Audit

Sida Evaluations may be ordered from:

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

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



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. Postgiro: 1 56 34-9

E-mail: info@sida.se. Homepage: <http://www.sida.se>