MARCH 2003 • LARS BJERN

Enhancement of exchange and co-operation in the field of urban environment

Indo/Swedish exchange and co-operation

Preface

That the Environmental situation in Urban Centres in India is a huge problem is a well-known fact for everyone living in the country, and for those who have been lucky enough to get the opportunity to visit India. To tackle these problems might be considered as an impossible mission. The initiative to this program is therefore a very positive sign, and especially if the program in the long run could contribute to spread the results from different inputs. Even if this specific program, with it's limitations, might be seen as a small input to the total situation, one should not forget the old saying;

"many small streams can create a river"

It has been a very challenging, interesting and difficult task to compile this report.

- Challenging, because it has given an opportunity to personally contribute to a long term support, and hopefully an improvement, of the environmental situation in India.
- Interesting, because there has been so much to learn, both about specific environmental situations, the wide field of resources in both countries, the organisation, or in some cases the lack of organisation, of environmental work.
- Difficult, because environmental work is a very complex issue. There has been so many insights, so many ideas and advice, so much information material to consider. To structure this into a program, which can be both pragmatic and theoretically correct, has demanded a lot of hard work and alternately thinking.

This Report on *"Enhancement of Indo/Swedish exchange and cooperation in the field of urban environment*" is divided in four different Parts.

Part I
Gives an Introduction to the assignment, the Background, and the Approach and Methodology.

Part II
Includes the Fact Finding phase. This part contains brief minutes and compilation of data from discussions held with both Swedish prospective parties and organisations, as well as Indian Government agencies, local experts, other donor agencies, local NGOs, research institutes, etc.

It also contains some conclusions and recommendations.

Part III
Is a presentation of the structured material. The first section is an attempt to describe the Pre-conditions, a logical approach to a Program and the complexity of Urban Environment. In addition, the Swedish and Indian Resource base, ideas on possible Strategies, Program Organisation, as well as necessary Financing schemes are found in this part of the report.

Part IV
This part gives reference information, like the Terms of Reference, and the List of contacts / persons met.

It is my hope that the report will serve as intended, and that it will be a useful instrument when the Program takes it's final shape.

Lars Bjern

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Abbrevations

AMC	Ahmedabad Municipal Corporation
AMDA	Association of Urban Management and Development Authorities
APPCB	Andhra Pradesh Pollution Control Board
astra	Centre for the Application of Science and Technology to Rural Areas
AusAID	Australian Agency for International Development
AWARE	Action for Welfare Awakening in Rural Environment
BEAG	Bombay Environmental Action Group
BMP	Bangalore Mahanagar Palike (Bangalore Municipal Corporation)
BWSSB	Bangalore Water Supply & Sewerage Board
C.P.H.E.E.O.	Central Public Health and Environmental Engineering Organisation
CEC	Centre for Environment Concerns
CMAG	City Managers Association Gujrat
CPCB	Central Pollution Control Board
CSIR	Council for Scientific & Industrial Research DES-PU: Department of
DCO	Development Co-operation
EIA	Environmental Impact Assessment
Environmental Sciences – Pune University	
EPTRI	Environment Protection Training & Research Institute
GIS	Geographical Information Systems
GPCB	Gujrat Pollution Control Board
HMWSSB	Hyderabad Metropolitan Water Supply & Sewerage Board
IISC	Indian Institute of Science
Indsearch	Indian Institute of Cost and Management Studies & Research
JMC	Jaipur Municipal Corporation
MCCIA	Mahratta Chamber of Commerce, Industries and Agriculture
MIDC	Maharashtra Industrial Development Corporation
MPCB	Maharashtra Pollution Control Board
MUICT	Mumbai University Institute of Chemical Technology
NORAD	Norwegian Agency for Development Cooperation
PCMC	Pimpri Chinchwad Municipal Corporation
PHED	Public Health Engineering Department
PMC	Pune Municipal Corporation
RCCI	Rajasthan Chamber of Commerce & Industry
REEDS	Research in Environment, Education and Development Society
RPCB	Rajasthan Pollution Control Board
RUIDP	Rajasthan Urban Infrastructure Development Programme
Sida	Swedish International Development and Co-operation Agency
SMC	Shirur Municipal Council
SPEQL	Society for Protection of Environment & Quality of Life
TMC	Thane Municipal Corporation
USAID	United States Agency for International Development
WWF	World Wide Fund for Nature

Part I:
General

1. Introduction/ background

In the directives for development co-operation with India, it is stated under objectives that

– The development co-operation should strive towards using Swedish expertise, knowledge and technology. Co-operation between Swedish and Indian business partners should be encouraged.

Consonant with "Riktlinjer för det fortsatta utvecklingssamarbetet med Indien", INEC received, at the end of January, 2002, a mandate to study ways of enhancing the Swedish/Indian cooperation in the field of environment. Since then an "Issues Paper on Urban Environment in India' has been completed. In its final version the paper contains a brief elaboration on the promoting of Indo-Swedish Linkages in Urban Environment.

Sida/INEC has therefore indicated interest to explore the possibilities to set up reactive instruments to meet the objectives outlined above. The time-span shall be from 2002 into the next strategy period 2003–2007.

Indian authorities have also shown great interest in co-operation in the fields of technical transfer and knowledge development.

Andante Tools for Technology AB, Värnamo, Sweden has been assigned to conduct this mission. The Contract between Sida, Stockholm and Andante is dated October 28, and signed during the first days of November 2002.

1.1 Objectives of the mission;

As stated in the T.o.R.; "The overall objective is to achieve enhanced Indo/ Swedish cooperation in the environmental sector. In this regard the environmental sector should be viewed in a wide perspective involving as many actors as possible, including the commercial as well as the public sector."

It is understood that the study shall suggest a framework for economic cooperation in the field of technology transfer concentrating on urban environment, and to identify players and instruments, which in the most efficient way could be combined in a network for such cooperation.

The technology transfer should focus on technical areas like

– Solid waste management
– Urban air quality
– Urban water supply
– Waste water issues

Further, it should be based on cooperation areas where Swedish experience, knowledge and technology could play a role, e.g.

- Business partnership
- Research
- Twinning arrangements,
- Academic cooperation

In addition, the study shall elaborate on schemes for credit facilities in order to reinforce the technology transfer network.

1.2 Approach

The T.o.R. has generally described the mode of work. A more detailed approach is presented below.

The applied approach could be summarized as;

Clarifying policy and strategy matters
Inventory of possible resources on both sides
Elaboration on Credit scheme
Draft proposal
Visit to India for

- discussions with prospective network partners
- talks with Swedish Embassy/Sida
- scrutinizing credit scheme facilities and possibilities

Draft proposal
Discussions on draft and revision if necessary
Final report

2. Methodology

The proposed comprehensive program for Enhanced Indo/Swedish Cooperation in the field of Urban Environment is a totally new approach from Sida in the support to India. To consider all important aspects, it has been necessary to apply different methodologies. The objective has been to structure existing resources in both countries in a program that as far as possible can deal with the local demand for improved environment in urban centres.

The following methods have been applied.

2.1 Desk studies

Even if Sida does not have direct experience of a program like this in India, there are a number of reports and documents, which have been studied to serve as a support to ideas and strategies.

One major report is the "Issues Paper on Urban Environment ion India" presented by ERM (Environmental Resources Management) in March 2002.

Another important document is "The Sustainable City" a concept jointly worked out by SWECO, The Swedish Environmental Technology Network/Swedish Trade Council, supported by Swedish Ministry of foreign affairs and Ministry of the Environment.

The Evaluation of the Triangular Model tested in Chile has also served as an interesting document to understand possible cooperation between Government, Business sector and the Academic sector.

- In addition the following document, among others, could be listed;
- Development Cooperation with India, Semi Annual Report, Oct. 2001–March 2002.
- Sida's Financial Instruments
- Annual Reports from Forum Syd, SALA IDA, etc.
- Misc. Presentations and reports from Indian Municipalities, Institutions, Chamber of Commerce, etc.

2.2 Meetings with representatives from the Swedish Resource base

Frequent meetings have been held with different organisations already involved in, or with indicated future interest in urban environment projects in India. The following organisations have been included in such contacts and/or meetings.

- ALMI Företagspartner, Start Syd Program, Borås
- Swedish Environmental Technology Network/Swedish Export Council
- NUTEK
- SALAIDA/Swedish Association of Local Authorities/County Councils
- Forum Syd (Umbrella organisation of NGOs)
- SWECO (Consultancy Company)
- Internationella Handelshögskolan I Jönköping
- University of Linköping,
- Indiska Magasinet AB
- Swedfund International AB

More detailed information from these meetings is found in Part II of the report, Chapter "Preparatory contacts in Sweden"

2.3 Field visits to India

In order to have a more detailed picture of the environmental situation in urban centres, and to meet with representatives for prospective actors, two field visits have been paid to India.

The first two weeks visit was carried out in end November 2002, and the second, 1 week visit in mid January 2003. During these field missions, valuable assistance with meeting arrangements and contacts was given by the Sida office/Swedish Embassy, as well as by Andante's subsidiary, Andante India Consultants Pvt. Ltd.

The first visit covered two + two days meetings and discussions with the Swedish Trade Commissioner in Dehli, Mr. Aashid Sawjani, and the DCO, Ms. Sunita Chakravarty and Mr. Owe Andersson. 2–3 meetings with individual local experts in the field of urban development were also conducted, as well as meetings with 4 other donor agencies.

The State of Maharashtra was visited for one week, including meetings with

Municipal Corporations and Government agencies (4 + 3), Universities/Institutions (3), local NGOs (6), and Business sector (2)

In December, visits by Mr. Suresh Pingale, Andante India, were paid to the State Andhra Pradesh, Hyderabad and Karnataka, Bangalore. Similar discussions were held with Municipalities, Government agencies (5), Academic institutes (2), local NGOs (8), and Business sector (1).

During the second visit, one day was set aside for Sida/Stockholm information seminar on Sida's Financial Instruments. The rest of the week was used for visits to Rajasthan, Jaipur and Gujarat, Ahmedabad. This week covered meetings with Municipalities, Government agencies (6), local NGOs (1), and Business sector (3).

It could be argued that the fieldwork could continue for ever, as there are so many interesting contacts to tap, but it is felt that the meetings held during the field missions have given a fairly good picture of the local situation as well as possible resources to include in the program.

Detailed information from these meetings is found in the Part II of the report, Chapter "Field visits in India".

Part II:
Fact finding phase

3. Contacts in Sweden

During the first weeks of November -02, and in the later part of January -03, a number of activities and meetings were conducted. The following is brief information on such contacts with prospective Swedish actors in the intended program for Urban Environment in India.

3.1 Technology Transfer

One very important component in dealing with environmental problems within an urban area is the accessibility to modern and appropriate environmental technology. This could refer to technical areas like for example;

- Water and sanitation
- Traffic and transport – air quality
- Waste and recycling

Of course all these areas can be further divided in technology sub-areas, e.g. "Water" into;

Drinking water, Ground water, Storm water, Waste water, Watershed areas, Etc.

This indicates that there are numerous technology areas to be addressed when environmental problems have to be solved. Of course it is not easy to identify the most appropriate technologies, and even more difficult to identify suppliers of relevant technologies.

The Swedish Government has assigned the Swedish Trade Council to establish a network for export of Swedish Environmental Technology. The objective is that the Swedish business sector, active in the field of environmental technology, shall coordinate and combine their competence and capacity in export promotion.

The following is a brief presentation of the network.

3.1.1 The Swedish Environmental Technology Network

is a three years sector program within the Swedish Trade Council. The business concept is to through joint actions promote and support new business possibilities in the environmental technology area.

The network

offers the international market contacts with the wide and deep expertise of the Swedish environmental technology industry within the fields of water- and wastewater treatment, waste management and air pollution control.

includes some 600 different consultants and suppliers to this sector, and ass ists foreign businesses in finding information on and getting in contact with Swedish environmental technology companies.

assists in arranging visitor programmes for delegations and individuals as well as assisting in finding partners for international bidding.

facilitates co-operation. This web site is a focal point with a company register database, information about the three areas of operation; air, water and waste, a pressroom, information about market activities and other news etc. In a near future this web site will also serve as a market-place for electronic trade.

promotes co-operation through joint participation in international conferences and seminars, which also is part of the marketing strategy of the project.

also facilitates the process of international public tendering through formation of powerful and professional Swedish national teams for cost effective environmental technology projects.

assists Swedish companies in co-ordinating with foreign companies and financial institutions through public procurement, seminars, bilateral conferences and training.

3.1.2 NUTEK Environmental Technology Export Coordination

The Government has requested NUTEK to work out and present a model for a Centre for Environmental technology export. NUTEK should have the role of coordinating such export possibilities for the technology suppliers in Sweden.

The set up will be presented in April -03, and it is therefore not possible at present to judge whether this would be an additional channel into the Swedish resource base.

3.1.2.1 StartSouth Program

This Sida financed program aims at assisting SMEs in Sweden in their intentions to establish commercial collaboration with firms in developing countries. The program offers a supplementary financing of especially software in terms of competence and capacity building. The StartSouth program is on behalf of Sida, administered by NUTEK in close collaboration with ALMI.

NUTEK has just recently taken over the administration, ALMI has been involved in the program since many years as Sida's channel to the private sector. Sida is the Financier, NUTEK the administrator and ALMI the link to the individual companies.

Swedish private firms, with an established contact in developing countries for commercial and mutual interest for business collaboration, can apply for financial assistance from this program. There are however certain pre-conditions set for the applicants (size of the company, sound financial situation, duration of ongoing cooperation,, environmental aspects, etc.). ALMI handles the information and service regarding

applications, receives the application for an assessment and recommendation. NUTEK, after consultation with Sida, approves/disapproves the projects. Up to 40% of the total project costs can be given as support, in the form of one loan for software, (max. SEK 500') which is written off after the completion of the training/expert services, and one loan for hardware (max SEK 250') with soft terms.

It is not likely that a Swedish and/or Indian company with an interest in cooperation easily find each other.

Swedish companies are normally fully concentrating on the domestic market or the neighboring markets. To look beyond the horizon is not normal, only upon certain request or proper information, such ideas come to their mind.

Companies in developing countries might have the interest to develop contacts, but it is not very easy to find right channels to such information and to create contacts with companies far away. Besides the lack of modern technology might hamper their attempts to find partners.

Experience has shown that it is very important to assist companies in both countries to find the right partner, to develop the right business idea, and to link the companies to each other on an appropriate technology level. In many cases such alliances between firms have been created as a spin off from either training programs, study visits, international courses. Another tool, which has been applied, is the use of a technology broker, giving assistance in terms of finding ideas, developing project proposals, scouting for partners, guiding the project through bureaucracy and financing schemes, etc. This kind of assisting program has been named Strategic Alliances.

3.1.3 Swedfund International AB

Swedfund was founded 1979, and is owned by the Swedish Government. The organisation offers Swedish companies risk capital for investments in developing countries. The objective is to create commercially viable companies, and contribute to the economical development in the countries of investment and at the same time promote Swedish companies business opportunities. All investment decisions are purely based on commercial criteria and viable business ideas.

Swedfund is at present represented with investments in 31 countries, with an investment capital of totally SEK 670 million. The inputs from Swedfund can be share capital, different kind of loans, part financing of leasing agreements, networking with local and international financing institutions, legal expertise, etc.

The Swedfund projects are normally fairly big. As an average, the total project investment should be at least in the range of SEK 10 million. SF can normally cover up to 25% of the investment, but never more than the Swedish business partner. All technology areas are considered, however, projects related to alcohol, tobacco and the defence sector are excluded.

SF is always the third partner, there must be a Swedish company, and a legally registered local company.

3.2 Swedish NGOs

The majority of important Swedish Non Government Organisations are members of the Umbrella organisation “Forum Syd". This organisation was formed 1995, when the already existing organisations SVS and BIFO merged. At present, the number of member organisations counts to roughly 160.

Forum Syd has a Frame contract with Sida, SEKA (The Department for Cooperation with Non-governmental Organisations and Humanitarian Assistance & Conflict Management) This contract serves most of the members and the funds available for member activities are some 100 million SEK. The terms for members are based on the 20/80 rule, i.e. the member organisations are supposed to contribute 20% of project costs, while the remaining 80% can be financed from the Forum Syd/ Sida contract.

Most of the members are fairly small NGOs, but there are also some big independent organisations, like Swedish Red Cross, Save the Children, Olof Palmes International Center, Swedish Church, etc. These organisations have their own Frame Contracts with Sida.

There are quite a number of Swedish NGOs on the list for India, in the range of 70–80. Looking at the applications for the last years (1998–2002), some 25 organisations have applied for different projects. Out of these, only one has a project directly related to environmental issues. Maybe 2–3 have projects with an indirect relation to environment.

According to Forum Syd, there are few members active within the environmental sector. One such example is Svalorna – India /Bangladesh-section. Other organisations, dealing with environmental issues are – Self Management, Framtidsjorden, Svenska Naturskyddsföreningen.

Svalorna does not have any projects on their own, but merely cooperation with local organisations. They are concentrating on the State Tamil Nadu, where they also have a Swedish representative, coordinating the work. The local organisations are all active in the rural areas, and mainly on farming sector, including farming related environmental issues. They are not represented in Urban areas.

Framtidsjorden is an international network of at present some 50 organisations, working for an ecological and social development. They are most active in South America, but have activities in Himalaya (incl. urban environment) and Tamil Nadu, mainly rural activities. New cooperation partners have to become members of the network. They could be interested in urban environment in India.

3.3 The Academic sector

Discussions have been held with representatives from the Academic sector, just to mention a few; Björn Hettne, University of Gothenburg, Chairman of the association Sasnet, Prof Jan Lundkvist, Dept. of Water & Environmental Studies, Linköpings University, Prof. Benny Hjern, International Business University Jönköping, Prof. Gunnar Jacks, KTH, Stockholm.

The Swedish academic sector has been involved in quite a number of projects in India, and there is a valuable experience in this sector. Direct involvement in research programs and exchange of students has been ongoing for years. Most of the projects are spin offs of other types of

contacts. Some projects have been supported by Sida, some by other financial institutions, like World Bank, Forskningsrådet, Vetenskapsrådet, etc.

A Sida program for Urban Environment could definitely serve as a base for intensified cooperation with Indian research institutes.

3.4 The private business sector

Mr. Anders Thambert, Managing Director of Indiska Magasinet AB, informed that they have 5 purchasing offices in India, mainly in Northern and Western areas. The Head office, with 17–18 employees is located to Mumbai. Indiska has been active on the Indian market for many years. Most of the textile products are purchased in Tamil Nadu, the cities of Tiruppur, Dindigul and Madurai. In this area, the textile industry has created a lot of environmental and social problems in terms of water pollution and child labour.

Other Swedish industries like IKEA, Hennes & Mauritz, Ahlens, Hemtex etc. are also active in this area. The common interest among these Swedish industries is to contribute to an improved environment and social situation.

In addition to the Tamil Nadu area, concentration of Swedish industries is also found in Maharashtra, especially Pune (Sandvik, Atlas Copco, Tetra Pak, Alfa Laval, etc.) and in Karnataka, Bangalore (mainly IT companies)

Mr. Thambert emphasized the possibility to coordinate Sida's interest in the Urban environment with the interest of Swedish private industries. The groups of Swedish industries are interested not only in an improved environment and social situations, but also in support to a Sida program in terms of utilizing the existing network and channels to industrialists, NGOs and Government agencies.

3.5 Twinning arrangements

Twinning between municipalities, Counties and Regions in Sweden and developing countries is one way of strengthening competence and capacities in different fields, important for Local Governance. Sida has since many years an agreement with the Swedish Association of Local Authorities and Swedish Federation of County Councils regarding assistance in the administration of twinning arrangements in Central and Eastern Europe and in developing countries in the South.

During the years 1999–2002, Sida allocated roughly SEK 11 million. So far, 22 projects have been approved for financial assistance, utilizing roughly 50% of the allocated funds. This program has been a pilot program and will be evaluated in beginning of year 2003.

SALA IDA, a subsidiary of the two organisations mentioned above, administers the program. A short presentation of the company is given below.

SALA IDA

The company was established in August 2000 as a result of organisational restructuring of the Swedish Association of Local Authorities (SALA). The company acts as a subsidiary company of the Swedish Association of Local Authorities and the Swedish Federation of the

County Councils (SFCC).

The main aims of SALA and SFCC are to:
- Support and develop the system of local self-government
- Defend the interests of local and regional authorities
- Promote co-operation between local and regional authorities
- Assist local and regional authorities through service and expert advice

SALA IDA develops and carries out international projects in support of local self-government in Eastern Europe, Africa, Asia and Latin America. The main goal is to support and develop local and regional self-government. Presently the company has 13 persons working full-time with the planning, implementation and administration of the projects.

Since 1990 SALA IDA has been managing and administrating funds from the Swedish Government – through Sida – to twinning projects between Swedish municipalities and their twin towns in Eastern Europe and a number of other countries in the world.

Main areas of co-operation are strengthening of democracy and a democratic culture, environmental issues, social issues and education.

Twinning projects through SALA IDA

Twinning projects are quite often a spin off of other projects and contacts. It is not likely that municipalities in developing countries manage to create interest for a twinning project with a Swedish counterpart on their own. It is more often based on an already created contact, either through an implemented project, in which two municipalities in one way or another have been engaged, or even personal contacts based on relatives, business contacts, exchange of students etc.

Regardless of how the contacts have been established, Sida, through SALA IDA, can partly financially support the future cooperation. Some kind of formal agreement, indicating the intention with the cooperation between the partners, is a prerequisite. Another condition is that external consultants are not engaged in the project, as the cooperation shall be based on long term mutual agreements. Up to SEK 500 000 per project can be given as initial support. Swedish municipalities without previous experience from twinning arrangements can even seek for financial support for exchange of experience with municipalities already "in the business".

The twinning arrangements shall concentrate on specific areas like; local governance, planning and environment, both on the political level and technical level.

SALA IDA can assist to identify Swedish municipalities/counties/regions, but their main role is to administer the program by developing the project idea, assessing applications, recommending projects and guiding the projects through the process.

It should be mentioned that SALA IDA has a long and valuable experience from support to twinning arrangements, but so far no experience from India. The task to find Swedish municipalities interested in cooperation with Indian partners is looked upon as fairly difficult, one reason being that quite a number of Swedish municipali-

ties already have established arrangements. Another reason is that India is a bit far away geographical wise, and visits and communication might be regarded as expensive and complicated.

4. Summary of findings/conclusions from meetings in Sweden

- The resource base in Sweden for export of environmental technology is impressive. Most suppliers of goods and services are well organised in different networks or organisations/associations, and can easily be found either through these networks/associations, or via different websites.
- There are a number of NGOs with experience from and activities in India. However, most of these NGOs are active in rural areas, and only some few are active within the field of environment. Most of these NGOs are organised under the umbrella of Forum Syd.
- The Academic sector has traditionally good relations with Indian research institutes, and has either been directly involved in projects, or involved in programs for student exchange. Several of the Universities in Sweden are engaged in environmental related areas, like water supply and treatment, traffic situations in third world etc. Sasnet is an organisation for coordination and information about different projects.
- Swedish companies have a long tradition and experience from cooperation with India. Already 40–50 years ago, Swedish firms started operations mainly in Pune, which has became the first "Swedish concentration" Later on, Swedish companies purchasing textile have created an additional centre of Swedish activities in Tamil Nadu, and the IT sector has concentrated on Karnataka, Bangalore. The interest from Swedish companies to contribute to improved environment should be considered in a program like this.
- Municipality to Municipality, so called twinning arrangements, are quite common for Swedish Municipalities. However, with few exceptions, India has not been on this map. Most arrangements are made with Baltic countries, and according to SALA IDA it might be difficult to raise interest for the "Indian market". There is no systemized way of creating such twinning arrangements, in most cases they are spin offs from personal contacts.
- There are really good opportunities to involve many different actors in a program concentrating on Urban environment and related areas. Interest for India, as well as previous experience from different projects, would form a good foundation for making use of the Swedish environmental technology and services.

– Discussions and meetings with the Swedish resource base could “go on for ever", in order to find more information and details. It is judged that the above contacts give a fairly good picture of the major sectors and actors who could have a role to play in this program.

5. Field visits in India

The first visit to India by Andante Tools for Technology AB, Sweden, Mr. Lars Bjern, was conducted during the period 18th–30th November -02. Due to pragmatic reasons the visit was concentrated to Dehli and the State of Maharashtra, the reasons being that Andante's joint venture partner is located in Pune. It was judged that it would be easier to arrange meetings in that area, considering the short notice.

In December, the local partner Andante India Consultants managed to travel to Andhra Pradesh, Hyderabad and Karnataka, Bangalore.

The second visit by Andante Sweden was paid during the week 9th–17th January -03. During this week, the states/cities of Rajasthan, Jaipur, and Gujarat, Ahmedabad were visited. In addition, some meetings were conducted in Dehli.

6. Contacts/ meetings during the field visits in India

The brief presentations of the different meetings held during the field visits are not presented in chronological order. It would be more interesting to divide the meetings in categories/sectors to make sure that these prospective sectors are fully represented.

6.1 General contacts and Donors

6.1.1 Swedish Embassy/Development Cooperation Section
Mr. Owe Andersson, Councellor /Head
Dr. Sunita Chakravarty, Programme Manager

This was mainly an introductory meeting, sharing ideas and views on the mission, In addition, the DCO had assisted in planning of some meetings in Dehli during the latter part of the visit, and details of such meetings were presented.

6.1.2 Swedish Trade Commission
Mr. Aashid Sawjani, Trade Commissioner

Mr. Sawjani informed that he is fairly new on this post, just since some months. A general discussion was held regarding the role of the Trade Commission. The program for Enhancement of Cooperation in Urban Environment was presented, and especially the potential for technology transfer was aired. In addition, the concept for "The Sustainable City" was discussed. This is a concept presently being designed as a joint undertaking by Sweden and the Republic of China. The concept could be used as a base also for this program.

6.1.3 Mr. Ashok Nehru, Advisor in India to Swedfund International AB
Mr. Nehru has since long served as the agent for Swedfund in India. He has a valuable and interesting insight in the business community as well as the Government sector. This meeting was quite informal, but the idea of introducing this program was very attractive to Mr. Nehru. He suggested that the program should firstly address an area where the tools for success were already established. The program should need a positive result fairly soon. He also assisted by giving away some other interesting contacts, name and addresses.

6.1.4 Prof. E.F.N. Ribeiro, Dir. of Association of Urban Management and Development Authorities. Previously Director for School for Planning and Architecture
Prof. Ribeiro informed about the classification of urban areas in India. Details will be found later in the report. He also mentioned that urban areas with a population growth of more than 30% per decade are regarded as crisis areas, with expected serious environmental problems. (Census Publications of Year 2001 gives detailed information on population growth) He further informed that Mumbai has a fairly good infrastructure, the best in the country – catering well for a population of 12 million, but as the population is expected to grow to 18 million, there will be a gap in the infrastructure. Prof. Ribeiro shortlisted some urban areas which could be of interest, but also fully agreed with Mr. Nehru that a success story of the program would be essential.

6.1.5 Mr. Shirish Patel, SPA Consultants, Mumbai
Mr. Patel has previously served as the Chief Planning Officer for New Mumbai. He is very familiar with the situation in Mumbai, and had a lot of interesting and controversial information. Planning in mumbai is deemed fairly good, but a lot of floor space is created, not considering the need of related infrastructure like water supply, waste management, etc. Environmental Impact Assessments (EIA) are not conducted.

There is a demand for a review of the total planning process. The slum areas should be addressed, but constructing houses for the slum dwellers will create political problems regarding the rent levels. Air quality is a big problem. Plans for Fly-Overs will worsen the problems as traffic will not decline, on the contrary more cars will enter the roads, affecting the air quality even more. Such studies – traffic volume – air pollution – health risks are not carried out or considered.

Public interest is not prioritised. Too many different interests, corruption and lobbying are taking over. No rental houses are built, due to the State Act on frozen rents – resulting in slum areas. Example was given; a police man in Mumbai has no decent place to live but is forced to live in the slum, meaning that the policeman himself occupies an illegal house.

Introduction of GIS is very important. At present it is extremely difficult to get basic information, and if received, it is no guarantee it is correct. There is o transaparncy. GIS could bridge that problem, but the question is if there a political will to introduce such systems.

Mr. Patel also stressed the necessity and importance of having people with visions driving the program. There are many such individuals, but they must be identified and properly selected.

6.1.6 Royal Norwegian Embassy, Development Dept.
Mrs. Agnete Eriksen

NORAD (The Norwegian Agency for Development Cooperation) is concentrating their support to the environment sector on two States, Karnataka and Himachal Pradesh. The umbrella agreement is with Min. of Finance, Dept. of Economic Affairs, but consultation is done with the State Governments.

They are involved in a number of different small projects, which are mainly administered and implemented by local NGOs. Solid Waste

Management is one sector. The NGOs get direct support from NORAD, there are some 10–15 applications for assistance per week.

The cooperation with NGOs in Norway is quite limited, mainly due to the non-existence of Norwegian NGOs local offices in India. The support to NGOs is somewhat questioned, as the NGOs take on responsibilities which actually belongs to the Local Governments. Where lies the responsibility ? It is difficult for NGOs to reach a scale with sustainable impact, and difficult to tie the work of NGOs to the State/municipal plans.

NORAD also support an Institution Link Program on research in the environmental sector. The NORAD assistance, some 1 million NKr, is divided into two accounts in Norway and in India. A steering Committee and 1.5 permanent staff, administer the program by monitoring and identifying demands and resources. The funds are mainly used for software, exchange of experience and information, but roughly 30% is used for hardware, mainly labarotory equipment. There are comprehensive guidelines for this program.

NORAD has a number of projects in Karnataka/Bangalore;

Cleaning of lakes, Forestration, Flyash to construction material, Piccolo hydro power, Bio gas from coffee processing waste, etc.

All these projects are run with local resources. The following 1–2 years will be a consolidation phase to assess good and bad, lessons learned, who to take it on, etc.

6.1.7 United Sates Agency for International Development (USAID):
Mr.Nabaroon Bhattacharjee, Program Manager and Regional Training Advisor, Regional Urban Development Office for South Asia.

Mr. Bhattarajee has thrown more light on the Programs undertaken by USAID, in India and South Asia. USAID has also a Country strategy for India for 5 years from 2003–2007. USAID is working mainly on macro level in the area of policy formulation in the area of Urban Environment Energy Efficiency Distribution, Urban Service Delivery System, Roads, Sanitation, Geographical strategy. The USAID is working from 1993 with many agencies in India but mainly with Ministry of Urban Development and Poverty Alleviation of Govt. of India. Mainly working in SAARC region excluding few countries.

Its Indo-USAID Financial Institutions Reform and Expansion (FIRE-D) Project helps municipal and state governments to develop sustainable urban environmental services which ensures the access of poor.

The project's technical assistance efforts have concentrated on more urbanised state of Gujrat, Maharashtra, Tamil Nadu, Andhra Pradesh, Punjab and Madhya Pardesh.

The Agency has developed a structure for municipalities to access domestic capital markets through municipal bonds (debt instrument) by initiating a credit rating system. 30 cities have obtained credit rating and seven of these have issued bonds for infrastructure. Ahmedabad Municipal Corporation was the first one to issue bonds in 1998.

The Agency was instrumental in the following areas:

– Introduction of urban management reforms, particularly financial management accounting reforms

– Development of a state-level policy framework for water and sanitation services and a national policy framework for improving solid waste management
– Sharing of lessons learned through a training network, study tours, city managers' associations, reports

The Agency have the following future directions:
– Help cities develop sustainable environmental infrastructure services by introducing a consumer and commercial orientation
– Strengthen municipal financial viability with emphasis on resource mobilisation of tax and non-tax internal resources
– Demonstrate a targeted strategy to improve access of the poor to urban infrastructure services
– Promote state and central policy reforms in water and sanitation
– Expand the market-based infrastructure financing system
– Increase efforts to strengthen municipal capacity and disseminate lessons learned

As per them the such program for visible results is possible in developed states and then can be replicated in other states.

6.1.8 Water and Sanitation Program – South Asia
Mr. Salman Zaheer, Lead Utilities Specialist
Dr. Pushpa Pathak, Urban Specialist

Sida already sponsors this program for the coming 3 years. The main objective for this program is to work with Water & Sanitation in the slum areas. The program will concentrate on 3–5 States, not yet selected, but most probably Maharshtra, Gujarat, Andhra Pradesh, and Madhya Pradesh.

Solid waste management is covered by the organisation, but here more on the institutional level, by assisting in strengthening the institutions in planning of segregation, collection, composting, landfilling, etc. This is an area for technology transfer later on.

Urban sewage systems and water quality assessment is also potential areas for technology transfer.

The program has no focus neither on states, nor on the size of cities/towns. The general impression is that small cities/towns are more interested – more desperate – more for privatisation – lack of financial means. It might be easier to reach results in smaller cities.Big cities have a more complex situation and more political disturbance.

It was mentioned that there are at least three major funds sponsored by the Government for Municipal development, but none of them have started to disburse funds up to now. Partnership funds could supplement already existing funds.

6.1.9 Australian Agency for International Development (AusAID)
Mr. Ramesh K. Subramanian, Senior Project Officer

AusAID started its activities in India in 1988. Ausaid is smaller than Sida. The target states selected on the following criteria:

Political will, Capacity Building, Service Delivery System, Impact generation and most important early tangible outcome similar to USAID strategy.

The program focuses on key sectors in Environment, where Australia has appropriate technology and expertise to contribute to poverty reduction and public sector reform.

Their primary geographic focus of Australia's aid to India during the 2001–2006 period is in the North Eastern States. They have selected Sikkim and Meghalaya for improvement in water supply and environmental sanitation services as also to develop local government capacity to implement better water supply and sanitation programs in Gangtok in Sikkim and Shillong in Meghalaya the Capital cities. They have presence in Himachal Pradesh for urban environment activities.

AusAID had just completed 2 year programme in Bangalore for water supply and sanitation with the help of local government and NGOs and monitored by them. The project is now taken over by ADB.

As per them the involvement of local government and its willingness to build capacities is an important component for quick success.

6.2 Governmental Agencies

6.2.1 Maharashtra Pollution Control Board (MPCB)

Background:
The Board was established in 1970 under the State Act. Presently working under the Deptt. Of Environment Govt. of Maharashtra. The Board has its Head Office in Mumbai and has 11 Regional Offices in the State through which the entire State is covered for issuing pollution clearances to various authorities and industrial units.

Activities:
Implementation of various Environmental Legislations of GOM mainly including Water Pollution, Air Pollution, Environmental Protection, Biomedical Waste, Hazardous waste, etc.

Areas of interest in the program:
Training to Staff in advance techniques
Access to Modern Technologies
Assistance in Lab. For Analysis
Environmental Monitoring Tool

6.2.2 Maharashtra Industrial Development Corporation (MIDC)

Background:
The Industrial Development Corporation mainly dealing in providing the infrastructural facilities to Industrial Units in Maharashtra. Corporation has several Industrial estates in Maharashtra of which certain estates are industry specific i.e. Chemical, S/W parks, Bio-technology Parks, etc.

Activites:
Providing Industrial Infrastructure with all available modern amenities in the State. Promoting General and Specific Industrial development in the State. Also providing Common Effluent Treatment Facilities in the Industrial Estates.

Areas of interest:
Modern Technology for treating Industrial Effluents – Solid and Liquid
Assistance in planning of ultra Modern Industrial Estates
Power Generation

6.2.3 Thane Municipal Corporation (TMC)

Background:
The Corporation is having around 100 Sq. Km. area under its control. Population approx. 1.40 Mln. excluding a floating population of around 150,000.

Activities:
Sanitation and Sewage
Drinking Water
Urban Transport
Primary Education
Health, etc.

Areas of interest
Solid Waste Management
Sewage Treatment
Urban Air Quality
Urban Water Supply

6.2.4 Pune Municipal Corporation (PMC)

Background:
The Corporation was established 50 years ago and second in biggest in the State. Presently having 315 Sq. Km. area under its control. Population approx. 2.60 Mln. Excluding floating population of around 100,000.

Activities:
Sanitation and Sewage
Drinking Water
Urban Transport
Primary Education
Health, etc.

Areas of interest:
Urban Transportation
Solid Waste Management
Sewage Treatment

6.2.5 Pimpri Chinchwad Municipal Corporation

Background:
Started as Municipal Council in 1970 and in 1982 the civic body was upgraded to Pimpri-Chinchwad Municipal Corporation. Presently having 171 Sq. Km. area under its control. The present population is approx. 1.0 million and a floating population of 100,000 or more being a developed Industrial bet in the State.

Activities:
Sanitation and Sewage
Drinking Water
Urban Transport
Primary Education
Health, etc.

Areas of interest:
Bio-medical Waste Management
Sewage Treatment
Lab. set up for analysis of different environmental parameters
Generation of Bio-gas from slaughter house waste
Power generation out of solid waste

6.2.6 Shirur Municipal Council

Background:
The Municipal Council was established in 1968. Presently having 25 Sq. Km. area under its control. The town is 65 Kms away from Pune city towards North east. The population is 50,000 and equal number of floating population due to main commercial center. 15 wards and 15 councilors are elected.

Activites:
Sanitation and Sewage (Open Drainage System)
Drinking Water
Primary Education (3 schools)
Health, etc. (1 Hospital)

Areas of interest:
Under Ground Drainage System
Solid Waste Management
Sewage Treatment
Environmental Courses in Colleges and Institutions

6.2.7 Central Pollution Control Board

Background:
Central Pollution Control Board is working under the Ministry of Environment & Forests and is an apex body for the Sate Pollution Control Boards (SPCBs), located in Delhi.

Activities:
Mainly issuing the broad guidelines to the SPCBs in environmental related areas i.e. Water Pollution, Water cess, Air Pollution in industrial sector, Environment protection. The apex Board is dealing with environmental legislations and its enforcement, though the enforcement is a challenging task. Also analyses the air quality in Delhi and monitors various parameters of vehicullar pollution.

Areas of Interest:
Strengthening of Labs.
Training to staff
Disposal of Industrial Solid Waste
Industrial Pollution in general

6.2.8 Central Public Health and Environmental Engineering (C.P.H.E.E.O.)
An apex agency established in 1950 under Health Ministry and now working under the Ministry of Urban Development & Poverty Alleviation. They provide technical assistance in Urban Water Supply, Sewerage and sanitation, storm water drainage and sanitation to States and Local Bodies. This Agency is an approval authority for state technical schemes for sanitation.

They undertake the technical scrutiny of proposals submitted by State Governments and Municipal Corporations from Techno-economic feasibility angle. The CPHO Manuals on urban water supply and treatment, Sewerage and Sewage treatment, Municipal Solid Waste Management and Operation and Maintenance (O & M) are quite handy and widely used as a reference in the country.

In addition to this C.P.H.E.E.O. also conducts courses varying from 1 week to 1.5 years duration for field staff of the Local bodies.

The accelerated water supply program for small towns (population less than 20,000) is implemented through CPHEEO on demand driven and on participatory basis.

Areas of Interest:
Assistance in conducting study for water measurement, water pipe lines
Training to staff for conducting such studies
Recycling technology for solid waste
Good quality of Water meters
Technology for treatment of Municipal waste water

6.2.9 Bangalore Water Supply & Sewerage Board (BWSSB), Bangalore
Mr. M. N. Vidyashankar, Chairman

Background and Activities:
Established in 1964, provides potable water and sewerage facilities to Bangalore City. BWSSB successfully executed and commissioned Calvary Water Supply Schemes Stage I, II, III and supply drinking water to city around 700 MLD. After commissioning IV Phase the water supply scheme will be augmented by additional 270 MLD. The Japanese Government agreed to extend a project loan of 28,452 Mln. Japanese Yen. BWSSB have introduced Consumer friendly measures like improved

system of payment of water bills, receipt of advance annual payments which are then adjusted every month, training to Meter Readers, Valvemen, Water Inspectors, direct connection from board, etc.

As regards Sewerage System, the Board has currently 4 sewage treatment plants, where water is treated upto secondary levels and the treated water is allowed to flow into natural valleys in which plants are located. Two new French funded treatment plants of 60 MLD and 10 MLD being set up and will enable the recycling of water for use by industries.

With French assistance a GIS project has been taken to cover an area of 100 sq. kms. Of Bangalore city at a cost of INR 65 Mln.

With Australian Aid, a project has been taken up to prepare a Master Plan covering water supply and sanitary needs of Bangalore City for the next 25 years at a cost of INR 196 Mln.

Areas of Interest:
Financial and Technical Assistance to its proposed 7 Water Supply & Sewerage Treatment Plants.

6.2.10 Bangalore Mahanagra Palike (BMP)
Mr. M. R. Shreenivasa Murthy, Commissioner
Mr. A. B. Mandanna, Asstt. Commissioner

Background and Activities:
BMP is having an area of 226 Sq. KMs. Under its command and the present population is 4.14 Mln (2001 census) plus a floating population of 1.00 Mln. There are 100 wards. As per the Commissioner they are mainly interested in the Solid Waste Management area. The solid waste generated, collected & segregated at different urban centres is estimated 2,500 MT. The hospital waste for the Municipal Hospitals is handled by private agencies and it is made mandatory to private hospitals to have their own treatment facilities. The waste is being collected at door steps is of 50%. A total of 5% garbage is segregated. Several NGOs taking interest and practicing the segregation in some parts of the city. Re-usable, re-cyclable waste has been segregated at house hold level and being sold. Kitchen waste is used for kitchen gardens (5%).

Out of total waste collected 350 MT is used for composting and balance is openly dumped.

Areas of Interest:
The BMP is keenly interested in the Solid waste management project i.e. scientific land filling techniques, power generation out of waste, etc. However, they want it immediately (by end January).

6.2.11 Hyderabad Metropolitan Water Supply & Sewerage Board,(HMWSSB) Hyderabad, Andhra Pradesh
Mr. M. G. Gopal, Managing Director

Background and Activities:
The Board was established on 01.11.1989, provides drinking water and sewerage facilities to the City. The present supply is 147 MLD excluding

25 MLD ground water source. There is demand supply gap for water supply. The Board has taken initiatives for Rain Water Harvesting (RWH) and during year 1999–2000 constructed 100 numbers of rain water pits and drilled 217 bore wells. The Board has full-fledged Training Institute and training is imparted to staff for upgrading technical skills. Foreign Aid as well as funds from Indian Financial Institutions are tied up for undertaking the water supply and sewerage projects.

Areas of Interest:
The MD Mr. M. G. Gopal, stressed the following areas of specific interest:
Help for Unaccounted Water Management – Metering system
Refurbishment of 60% sewerage net work, trench less technology, etc.
Recharging of ground water level – expertise and assistance

6.2.12 AP Pollution Control Board (APPCB), Hyderabad, Andhra Pradesh
Mr. B. Murali Krishna, Additional Secretary

Background and Activities:
Incorporated in 1976, by the State Government is implementing environmental regulation policies, laws and developing frameworks to manage waste and resources more efficiently. APPCB has 5 zonal offices and 17 regional offices through out the State. The Board is closely working with State and Central Government Organisations, NGOs and the industry. The Board has intensive networking with NGOs and share with them published material and information regularly. The Board has 5 liquid waste treatment plants in the different industrial estates and out of which 2 are working. The Labs of the Board are funded by the World Bank assisted projects and well equipped.

Areas of interest:
Presently self sufficient and no help is required may be interested in program if specific role is assigned.

6.2.13 Municipal Corporation of Hyderabad, AP
After repetitive phone calls from Pune and Hyderabad, we did not get an appointment to meet the Municipal Commissioner. We were also told by other agencies that AP is well placed for bigger bi-lateral aid projects and may not be interested in this programme.

6.2.14 Municipal Corporation of Jaipur
Mayor Ms. Sheel Dhabhai
Dep. Mayor. Mr. Pavan Sharma
Chief Executive Officer, Mr. Damodar Sharma
Chairman Building Committee, Mr. Raghau Sharma

Jaipur is a fairly old city, some buildings are 250 years. The city is clean and well organised, with good roads. The old city is however quite congested. The city is the Capital of Rajasthan, and is the commercial centre, regarded as a rich city. The population is close to 4 million, and the growth rate is 40–50%.

There is no organised environmental work within JMC. An Environmental Dept. exists, but the Committee is not functioning properly. There is a need of training in environmental management. Very interested in the Program.

The main environmental problems are;
Air pollution, due to increasing use of motor vehicles (at present 800')

Quality of drinking water, supply and treatment not sufficient

Waste water, a mixture of open and piped drainage, no treatment, uncontrolled discharge

Solid waste management, no segregation, no recycling, open dumping area (hazardous waste and hospital waste is incinerated at a BioMedical plant)

6.2.15 Public Health Engineering Department (PHED), Jaipur, Rajasthan
Chief Engineer Mr. S. C. Mathur

Background and Activities:
PHED is a State Level Department responsible for water supply arrangement to the state of Rajasthan. It is an implementing and administrative authority implementing several small and medium sized projects in urban and rural areas of the State. In big cities the per capita supply is 150 liters/day and in small towns having population up to 100,000 the per capita water supply is 70 liters/day.

As per the Chief Engineer the city is using 80% ground water and 20% surface water. However due to consecative five draught years the under water level has gone down or in certain areas it is disappearing. The Authorities are planning to bring the water for Jaipur city from a reservoir located at 150 Kms away from the city.

Presently for water supply and sewerage treatment facilities an Asian Development Bank's (ADB) project is being implemented. This project will cover 20% sewerage pipeline and 80% open system of treatment. ADB has selected 6 major towns in the state for implementing its project viz. Jaipur, Ajmer, Bikaner, Jodhpur, Udaipur and Kota.

The German project (under the agies of kfw) costing INR 4000 Mln. is nearing to completion for supply of drinking water. The projects relating to infrastructure are taken up by Rajasthan Urban Infrastructure Development Agency.

Areas of Interest:
- Medium sized supply schemes
- Equipment for supply of water and metering
- GIS Mapping

6.2.16 TAG (Technical Advisory Group)
Member Secretary Mr. B. B. Uppal

TAG was formed under C.P.H.E.E.O (Central Public Health & Environmental Engineering Organisation) in August 2000, as a result of a directive from the Supreme Court. The objective of TAG is to support

the Local Governments with technical advisory services in the field of environment, especially solid waste management.

The Government has issued three important notices on solid waste management, but the Municipalities lack technical expertise in this area.

TAG comprises of 24 experts from all over the country, and if need be access to additional expertise. TAG is divided in three groups; technology group – for appropriate technologies, finance groups – for identifying financial institutions, human resource group – for training, awareness, IEC.

TAG is giving courses in different environmental field; post graduate courses – 2 years part time, Diploma holders – 3 months full time, and refreshing – 7 days. These courses are fully financed and subcontracted to different institutes. However this is not sufficient, there is room for more initiatives.

Final message: Training of Local political decision-makers and administration officers in environmental management is a must before technical projects can take off. Nothing will work if capacity building is not prioritised.

6.2.17 Ahmedabad Municipal Corporation (Administration)

Mr. J. G. Hingrajia, Dy Mun Commissioner (West Zone)
Mr. D. B. Makwana, Dy Mun. Commissioner (South Zone)
Mr. Dilipkumar J. Mahajan, Dy Mun Commissioner
Mr. D. K. Begada, City Engineer

Ahmedabad, Gujarat, has a population of roughly 4 million. The city is divided in 5 zones, each with a Commissioner. The main problems are;

Air pollution, which is mainly due to increasing no. of vehicles, 2- and 3-wheelers are more than 1 million. The Mun. is running public transport, 600 buses whereof 420 are operating. Needs upgradation of public transport. Plans to convert some buses into Gas, and to contract services to private sector. Totally 2000 buses would be needed in future. Public transport priority.

Solid waste management. There is a fairly good system for solid waste, 1500 tons/day collected, segregated by private company into 500 tons waste for composting, rest to landfill. 40% of collected waste is already in containers. Hazardous waste incinerated in collaboration with hospitals. Landfill was visited, fairly good order and equipment, but not up to standard, technology wise. Lining is missing.

Water supply is OK, even if bore wells are declining, or rather ground water level is going down. Almost 90% covered by piping systems. Technology for changing from surface water to ground water needed.

Waste water plant is there, through USAID. When fully implemented, capacity for 5 million population.

An Environmental Committee exists, comprising of experts from Mun. Corp., USAID, Pollution Control Board, Traffic Police etc. The committee is not functioning well, no regular meetings, only Ad Hoc meetings, The Mun. is too much depending on external resources. Training of internal staff is important.No proper training programs available. Interested in comprehensive training, also for political level.

6.2.18 Ahmedabad Mun. Corporation (Mayor's Office)
Mayor Himmatsingh Patel
Mun. Advisor P.U. Asanani
Mr. Badruddin Shaik, Chairman Standing Committee

The lion share of the information was given by the Advisor, Mr. Asanani. He mentioned that air pollution is actually not under the Mun. but under the Pollution Control Board. Waste water treatment and Solid waste Management are in general two priority areas for India. Landfilling technologies are important. The waste generated in India is not suitable for energy generation, maybe for composting turning into manure. Not very easy to market, to compete with chemical fertilizers.

There is a big market for technology in solid waste, including containerised systems and proper landfilling. A package with technology modules could be one solution.

Capacity building of Local Government, political level – orientation training, and implementers – comprehensive training is extremely important. This should be hands on training. Some training programs are going on but not sufficient.

Message: Waste water treatment technology needed. In bigger cities – advanced technology, in small cities – could be on basic level. Solid Waste Management – technology on right level.

6.2.19 Gujarat Pollution Control Board
Mr. Sanjiv Tyagi, Member Secretary

The GPCB is responsible for air pollution, hazardous waste and all industrial pollution. Mr. Tyagi mentioned Solid waste as the main problem for the Municipalities. The Gov. Act and the directive from Supreme Court has given the Mun. up to end year 2003 to implement proper solid waste handling. None has so far come up with solutions. Landfilling technology a must very soon.

Sewerage treatment plants are mostly old and needs to be upgraded. Water should be treated to the extent of reuse for irrigation, horticultural use etc. Not necessarily to drinking water quality.

Air quality mainly caused by vehicles. A need for improved public transport systems, and private initiatives.

Technology transfer must come together with financing.

6.3 Academic Sector

6.3.1 University of Mumbai, Institute of Chemical Technology (MUICT)

Background:
An autonomous Body affiliated to Mumbai University and founded on 04.08.1934 was earlier known as University Dept. of Chemical Technology (UDCT) is closely working with the Indian Industry. There is no separate Dept. Of Environmental Sciences in the University and MUICT handles the courses in the area of Environment. MUICT is the highest recognized institute in the country.

Activities/Courses:
Undergraduate Courses:
Chemical Engineering
Chemical Technology
Pharmacy
Post Graduate Courses:
Masters degree in Eng. Plastics, Perfumes & Flavours, Bioprocess, Plastics Processing.

Ph. D. Course in Chemical Technology, Chemistry, Biochemistry, Microbiology, Chemicals Physics.

Areas of interest:
Students Exchange Programme
Indo-Swedish Research Programme in Environment
Effluent Treatment
Alternative water disinfections techniques

6.3.2 University of Pune, Dept. of Environmental Sciences

Background:
An autonomous Department of Pune University and founded in 10 years back. The Department is affiliated to Pune University and offering a 2 years (4 Semesters) Post Graduate Course and also 5 students per year registered for Ph. D.

Activities/Courses:
Apart from Academic Courses the Dept. is involved in the following activities:
Monitoring the urban Air quality
Analysis of Water quality of Municipality
Disposal of Hospital Waste
Assistance to Municipality in respect to Sound Pollution in festival period

Areas of interest:
Collaboration with Swedish Institute
Research in Water & Air Pollution areas.
Assistance/Help from Swedish Institute in the area of Dyes and Dyestuff degradation.

6.3.3 Indian Institute of Cost and Management Studies & Research

Background:
An autonomous management Institute conducting 2 years part time Post Graduate Diploma course in Environment Management.

Activities/Courses:
Academic Course
Field work and training

Areas of interest:
Strengthening the course contents and its
Exchange of Information, Research Work
Sharing of Resource Data Base4. Corporate Executive Dev. Programme with the help of Swedish Institute.

6.3.4 Indian Institute of Science, Bangalore
Mr. H. N. Chankya, Principal Research Scientist

Background and Activities:

Areas of Interest:
Solid Waste Management

6.3.5 Environment Protection Training & Research Institute (EPTRI), Hyderabad, AP
Mrs. Gayathri Ramchandran, Director General
Mrs. C. Umamaheshwari, Joint Director

Background and activities:
An autonomous Institution registered under the Societies Act, as a Society in 1992. The Institute is serving as Centre for Climate Change, Centre for Clean Development Mechanism, Referral Laboratory, Spatial Environmental Planning, Environmental Impact Assessment (EIA), Resettlement and Rehabilitation studies for Irrigation Projects, Irrigation Land use and Pest Management, GIS studies etc.

EPTRI collaborates with major stakeholders on environmental issues and also have close tie-up with NGOs working in Environmental areas. They conduct Subject specific Technical Training Programmes, Industry Specific Programmes, Environmental Awareness Programmes, etc.

EPTRI has global network partners and Sida is one of them. Direct funding was available from Sida for 2 phases and second phase is just concluded.

Areas of Interest:
Solid Waste Management
GIS Studies
Training
Consultancy studies

6.4 NGOs

6.4.1 SADHANA Village

Background and Activities:
An NGO registered under the Society's Act and working in the area of rural development in Sangali and Pune Districts. It also gets funds from International Agencies like NORAD, etc. for its women self employment/income generation and empowerment programmes. Working in urban waste collection and handling area.

Areas of interest:
Interested to work in urban environmental activity with its available resources and manpower.
Would like to have tie-up with NGO in Sweden having similar activities.

6.4.2 Ecological Society

Background and Activities:
An NGO registered under the Society's Act and working in the area of Conservation of natural resources. The Society also conducts a 1 year post graduate course in Natural Resource Management. The areas covered are 1. Forest Management, 2. Grass Management (cattle, flora and fauna) 3. Mountain (Himalaya) 4. Sea Coast (Marine) Guidance to Villagers regarding preservation of Ecology. Environmental Impact Assessment.

Areas of interest:
Interested to work in urban environmental activity with its available resources and manpower.

6.4.3 Nirdhar (Determination)

Background and Activities:
An NGO registered under the Society's Act and working in the area of Urban Air Quality Monitoring, Anti-Cracker programme in Schools, Family Planning Programme in Slum Areas. Also propagating and selling the Effective Micro-organisms (EM) a liquid solution of living entity containing active microbes. It has no chemicals and no genetically engineered organisms. The Local Corporation is also working with Nirdhar in EM area.

Areas of interest:
Interested to work in urban environmental activity with its available resources and manpower

6.4.4 World Wide Fund for Nature (Divn. Office)

Background and Activities:
A Divisional Office of WWF working in the area of creating Eco Friendly Generation. Have adopted 120 Schools in the city for educating the children about Ecology and nature.

Areas of interest:
Interested to work in urban environmental activity with its available resources and manpower especially with school education.

6.4.5 Aundh Vikas Mandal

Background and Activities:
A small NGO working in a particular part of the City with respect to Urban Environment i.e. Solid Waste Management, Air Quality, Open

Spaces, Gardens, Children Education, etc. and to create a model inhabitants cluster to then to replicate it in other parts of the city.

Areas of interest:
Interested to work in urban environmental activity with its available resources and manpower.

6.4.6 Nisarg Sevak (Nature Servant)

Background and Activities:
A small NGO working in a School Sanitation programme. Provides services for sanitation and clean water facilities to Schools.

Areas of interest:
Interested to work in Urban Environment in general and school sanitation in particular with its available resources and manpower.

6.4.7 Parisar (Surroundings), Pune

Background and Activities:
The registered NGO, mainly working in urban traffic and urban development. They also voice for unplanned and unauthorised constructions in the City. Also publishes bi-monthly newsletter highlighting the city traffic issues, city development plan, etc.

Area of Interest:
Urban planning, traffic management

6.4.8 Citizens Forum, Yelahanka New Town, Bangalore

Background and Activities:
Citizens Forum, Yelahanka New Town (CF-YNT) is a pro-active Residents Association, registered under the Societies Act. The Association is working closely with the various Government Authorities to improve the quality of life of all the residents in the town. They collect a small amount of membership fees from the households and the same is used for running the association. It is a Forum of senior citizens and all are retired from high posts from the public and private sector organisations. They are voicing the problems of town i.e. solid waste, street lights, water supply, transport, etc. and also closely work with other NGOs.

As regards sold waste collection the Forum informed the following interesting case:

In Indiranagar, Bangalore, the residents removed all the garbage collecting bins. The waste is not segregated by the households but given to the garbage collector, who is carrying big trolley having three bins with flat platform. The garbage bag/basket is given to the garbage collector and he segregates the waste on the flat platform and puts into appropriate bins. This helps the residents in segregating problems/habits and proper segregation is done.

Areas of Interest:
The Forum is interested to have a role in the Urban Environment Programme as also would like to have a tie-up with some Swedish NGO having similar activities.

6.4.9 Goodwill International Association, Bangalore

Background and Activities:
The Association was established in 1971 and got registered under the Societies Act of 1961 in 1982. The primary aim was to impart earning skills to the unemployed youths and school dropouts and thereby create an opportunity to fetch employment and earn their livelihood. The NGO has a close net working with Industrial units and other NGOs in the state.

The NGO is also working the health area in slum areas. This covers good quality of drinking water, sanitation facilities, internal roads and proper drainage system.

Areas of Interest:
Interested in working in health aspects of slum areas and to have tie-up with similar type of NGOs in Sweden.

6.4.10 Action for Welfare Awakening in Rural Environment (AWARE), Hyderabad

Background and Activities:
Aware is an internationally reputed National Development Organisation located in Hyderabad. It was started in 1975. Its rural activities are on large scale and multifarious. Aware has several institutions to support development process like – AWARE multi-super speciality Hospital, Community Health Centres, Rural Hospitals, Rural Vocational Training Centre, HRD Centre, Health & Research Foundation, Colleges for dropout girls, Chetana Bazars (market place), etc. About 6,000 women were trained and are working voluntarily for achieving gender justice. AWARE also involved in micro credit financing.

In environmental education and protection AWARE planted and grown 300,000 trees and provided 4,000 acres of horticulture in tribal areas. Biogas plants established and 24,000 smoke less choolas (stoves) have been constructed to save the fuel. AWARE formed 142 forest protection units with local people to guard the forest.

Areas of Interest:
Solid Waste Management
Training in Environmental Education

6.4.11 Research in Environment, Education and Development Society (REEDS), Hyderabad,

Background and Activities:
REEDS was registered under the Societies Act, on 08.10.1992. REEDS believe that environmental awareness is a pre-condition for development. It has a general body of 24 members including 16 women.

REEDS involved in conducting research and educate people about changing global environment and conservation of resources for future generations. Amongst other objective main are to make health as a community movement, to mobilise women, and make them as partners of development, to promote rural skills.

REEDS gets funding from Indian Government Agencies, England and Belgium. Rain Water Harvesting (RWH) is the thrust area of REEDS and they extensively implemented it in two districts of Hyderabad.

Areas of Interest:
Advocacy, promoting concept of RWH, Training and Waste Management.

6.4.12 Agri-Horticultural Society, Hyderabad, (Affiliated with the Royal Horticultural Society, London, UK)

Background and Activities:
Started in the regime of British as Royal Horticulture Society in 1953 and then converted into Agri-Horticulture Society. It got registered in 1970. This Society is sponsored by AP Agriculture Ministry. They have no geographic restriction on their activities. Mostly run by senior citizens. Society is involved in vermiculture, supply of fruit plants, plantation and growing of fruit trees, training to Gardeners, running short courses on gardening, etc. Society also publishes literature on horticulture.

Areas of Interest:
Training in Environmental areas and Solid Waste Management.

6.4.13 Centre for Environment Concerns (CEC), Hyderabad

Background and Activities:
Registered as Society in 1984. Mainly involved in pesticides management, land irrigation and forest management. Close association with other NGOs.

Areas of Interest:
Advocacy in Urban Environment, studies, community participation but not interested in actual implementation.

6.4.14 Society for Preservation of Environment and Quality of Life (SPEQL), Hyderabad

Background and Activities:
Formed in April 1988, with main objective of creating necessary awareness among the citizens, to protect, preserve, maintain and harness the natural environment in a sustainable manner including flora, fauna, aesthetic surroundings, cultural, historical and architectural heritage.

SPEQL undertakes mass tree plantation programme, extensive awareness programme on Automobile pollution, seminar on noise pollution, environmental litigations on illegal and unauthorised building

constructions, formed Area Action Committees to solve local problems, bio-degradable garbage composting, publishing bi-monthly magazine "Hyderabad Bachao –

Save Hyderabad" highlighting various vital issues such as Water supply, Roads, Traffic, Transport, etc. and suggesting solutions to the problems.

Area of Interest:
Urban Air Quality, Traffic and Transportation, Water Supply, Solid Waste Management.

6.4.15 Forum for a better Hyderabad, Hyderabad
Mr. C. Ramchandraiah, Member

Background and Activities:
Recently formed in June 2000, by NGOs and citizens, concerned about environmental and developmental issues in and around Hyderabad city. The Forum has an objective "to be proactive and constructive, to mobilise public opinion and to speak in one voice on major issues, where there is lack of transparency or neglect of environmental considerations in the decision making". The main focus of the Forum will be on advocacy of sustainable development. The Forum has highly qualified and experienced members having concern to urban environment. Forum also plans to publish a quarterly newsletter highlighting urban environmental issues.

Areas of Interest:
Advocacy, Education, Training and Research in Environmental issues.

6.4.16 City Managers association Gujarat
Dr. Yashesh Anantani, Executive Director

The CMAG is an NGO with the vision to strengthen the local governance. They are involved in different programs like IEC, Training & Capacity building and Advocacy. It is a pioneering institution which provides a common platform for city managers to interact, exchange information and canalise their efforts to achieve common goals. It also acts as a nodal agency to carry out various programs and projects towards strengthening of local governance. Supported by USAID and ICMA.

6.5 Commercial Sector

6.5.1 Maratha Chamber of Commerce, Industries & Agriculture (MCCIA)

Background:
MCCIA is very active organization in Pune and involved in different areas of business activities. The chamber conducts about 250 seminars in a year in various disciplines. Working closely with number organizations and have a good network established in western part of Maharashtra.

Activities and Courses:
Seminars and Exhibitions
Representation with various Govt. Authorities
Monthly magazine containing issues related with its members (2000 members)
Sub-committees looking after specific area

Areas of interest:
Macro level Participation
Strategic Alliance with Swedish Companies for its constituent members
Exchange of information

6.5.2 Feedback Ventures
Dir. Abhijit Bhaumik

Feedback Ventures is a private company working in the field of infrastructure, mainly water supply systems. On assignments from Local and State Governments, they take on full responsibility for projects, from the development stage, into planning, definitions, financing sources, implementation and construction.

The ongoing project Yamuna Action Plan is now on since 2–3 years, covering 32 cities in the North, including Dehli and the States Hariyana and Uttar Pradesh. Japanese experts are working in this project. No reason to duplicate.

The key issue for urban environment is to first strengthen the capacity within the municipalities. Planning, accounting and revenue systems are not up to standard. Capacity building is a must, no isolated projects will ever contribute if systems are not working. Also very important to ensure good relations between State Gov. and Local Gov. as all taxes are directed to the State level, which makes the State control the Municipalities.

According to Feedback Ventures, the two most progressive states are Tamil Nadu and Maharashtra. In T.N. there is a fund existing, TNIFS (Tamil Nadu Infrastructure Financial Services) supporting the Municipalities to develop different projects in the environmental area. Gujarat is known as the state with most efficient NGOs, which substantially contribute to environmental projects, and with visible results.

In addition it was discussed the old fashioned systems for charges of water supply. There is hardly any city with a proper system, i.e. charges based on consumption. Water meters are available and sometimes installed but the old way of charging a fixed amount per household is still in place. Water quality is of course important, but at present it is not on the agenda, as long as water access is still the overwhelming problem. The same goes for sewage systems and water treatment/reuse of water, not prioritised, as it is seen as only an investment. There is only one city, Chandigar/Punjab, having a proper treatment and recycling of treatment water. Two pipe systems are in place, one for drinking water, one for less quality water for general purposes.

Mr. Bhaumik also touched the Solid Waste issue, by saying that composting is normally not seen as the best solution. Many cities have tried but have serious problems to market and handle the composted

material. Electricity generation from solid waste is an interesting technology, but so far too expensive with low efficiency. New ideas must be introduced.

6.5.3 Subhash Projects & Marketing Ltd. (SPML), Bangalore

Background and Activities:
SPML is a Calcutta based Company having 3 regional offices and 8 branch offices all over India. It is a professionally managed company with more than 16 years of experience in handling large scale turn key infrastructure projects from concept to commissioning. The Bangalore Water Supply and Sewerage Board's Yelahanka New Town 10 MLD water treatment plant is being implemented by SPML in association with M/s OTV, France at a cost of INR 225.3 Mln.

Areas of Interest:
May be interested in working with a Swedish Company in implementing Infrastructure projects in India.

6.5.4 K. K. Polymers Pvt. Ltd. , Jaipur
Dir. D. P. Sehgal

Mainly a trading company in fibres and polymers. They are partly involved in the water supply and sewage projects as suppliers of plastic pipes. They have a general and moral interest in the environmental field and were very interested in the program, even showed interest to actively participate as coordinator of projects within the program.

Informed about an ongoing ADB project, RUIDP (Rajasthan Urban Infrastructure Development Project).

6.5.5 Akshat Engineers Pvt. Ltd.
Dir. Mukesh Godika

The company, established in 1948, is manufacturing pumps for the water supply systems all over the state of Rajasthan. The only client is the Public Health Engineering Department, and the capacity is 400 pumps/month. In addition the production, installations and after sale services is also included. They employ some 45–50 people.

Indicated interest in direct cooperation with Swedish company in the same line of production.

6.5.6 Rajasthan Chamber of Commerce & Industry (RCCI)
Gen. Manager Dr. L. M. Bhandari
Project Manager, Mr. Viral Makadia

This Chamber has around 700 direct members, representing all areas, like business sector, academic sector, lawyers, NGOs, etc. Through the about 50 associations tied to the Chamber they have indirectly many more members, figure not revealed. This means they have connections to all sectors and resources, also to the Government sector.

The most interesting is the cooperation with Swiss Development Agency, SDC, in a program for job creation, poverty elevation, economy improvement, and health improvement in the micro entrepreneur sector. This program started in 1998, and is now in it's Phase II, next Phase is supposed to cover up to year 2005. This program has been very successful, and the cooperation is direct between the Chamber and SDC, no Governmental interference, neither on National level, nor on State level. Some 20 persons are working with the program on administration level, and 4–5 persons on the field. The program simply uses the Chamber as the implementing agent.

The General Manager, Dr. Bhandari, has a background in the environmental field, both in private sector and in Government. He has worked with hazardous waste, urban environment, EIA, and has international experience as team leader for delegations abroad.

Dr. Bhandari emphasized the need of training in the Mun. Corporation. Both the political leaders as well as the Administration staff needs training in Environmental Management, to enable them to understand the complexity of environmental problems and to talk the "same language". The Jaipur Municipality does not have any organised environmental work in terms of planning, programs, technologies etc. Here there is a room for training and improvement, and this up gradation could be regarded as the key area for the program. Dr. Bhandari also emphasized the importance of having a Local Program Coordinator, assisting the Mun. Corp. in designing projects and organising local resources. This would be more or less the same role as they have in their cooperation with SDC.

This Chamber could definitely serve as a Local Program Coordinator in Jaipur, Rajasthan, and the interest is outspelled, but only if there is a direct cooperation between Sida and the RCCI, no Government or State interference.

7. Urban Centres in India

Classification of Urban Centers
According to Prof. E.F.N. Ribeiro, Previous Director of School for Planning & Architecture, all Urban Centers in India are grouped in 6 different classes, as per below;

Class I:	Mega Cities	Population > 10 million
	(there are 3, Dehli, Mumbai (Bombay), Kolkatta (Calcutta)	
Class II:	Metropolitan Cities	Population 1–10 million
	(At present 32, e.g. Bangalore, Hyderabad, Chennai, Pune…)	
Class III:	Large Cities	Population 300'–1 million
Class IV:	Small Cities	Population 100'–300'
Class V:	Large Towns	Population 20'–100'
Class VI:	Small Towns	Population < 20'

(It should however be noted that the Census of India 2001 for the State of Maharshtra has a slightly different classification of the Urban Centres, still 6 classes, but the figures for population differ from Prof. Ribeiro's information.)

Crisis Urban Centres
Urban Centres with a population growth of > 30% per decade, are determined as crisis centres, as it is deemed unlikely that the Local Authorities can handle the growing environmental problems which will come automatically with the population growth.

The Census Publication of 2001 gives detailed information on growing centres. The following list is just some examples of such Crisis Centres; (Listed by Prof. E.F.N. Ribeiro)

Ahmedabad	(Gujarat)
Vadodara	(Gujarat)
Surat	(Gujarat)

Hyderabad	(Andhra Pradesh)
Bangalore	(Karnataka)
Chennai	(Tamil Nadu)
Kochhi	(Kerala)
Jaipur	(Rajasthan)
Bhopal	(Madhya Pradesh)
Indore	(Madhya Pradesh)
Kolkatta	(West Bengal)
Ludhiana	(Punjab)
Pune	(Maharashtra)

8. Summary of findings/conclusions from meetings in India

The following is a summary of the impressions, ideas, facts and recommendations discussed during the meetings held with different authorities, donors, NGOs and other prospective actors in a program for Urban Environment.

- Municipal administration systems are old fashioned. Requires revamping and modern techniques.
- Financial accounting systems as well as revenue generation systems requires rationalisation to ensure streamlined revenue collection systems.
- In most cases, the Municipal Corporations lack internal technical competence and capacity. There is a huge demand for training of policy makers, administration staff and technical staff in Environmental Management Systems.
- The environmental work is not properly, if at all, organised in the Municipalities. In few cases Environmental Committees exist, but are not functioning as intended, merely on Ad Hoc approach.
- Solid Waste Management is the most prioritised area. No proper systems for segregation at source, collection, sorting, composting and land filling are in place. Software and hardware is needed.
- Urban air quality is another area of priority–related to lack of proper traffic planning/urban public transport, including road systems, type of vehicles, fuel used, etc. Interesting example from Pune; During the last four decades, the population growth is 4 times, the road length is 5 times, and the number of vehicles is 87 times. On a population of 2.6 million, the number of only two-wheelers (mostly two-stroke-engines) is exceeding 800 thousand.

A typical traffic situation in Ahmedabad, showing the mixture of vehicles and the congestion, even if two- and three-wheelers are missing. So are the ox-carts and camel-carts.

- Sewage systems are not properly planned and constructed, needs improvement. Responsible for health hazards, contamination of water and pollution of river waters, indirectly affecting nearby areas.

- There is no system for proper handling of Biomedical/hospital waste and other hazardous waste, like industrial chemicals.
- NGOs working in the urban environment are quite active and help the city administration to plan. Also they influence the decision-makers to take on public interest. NGOs are playing a vital role in urban environment, but Municipalities Corporation should overtake the small activities initiated by NGOs for permanent implementation on larger scale. This is most often not happening.
- Academic institutions are conducting certain courses on environmental related areas. However, there is a need for some advanced training and foreign expertise, both on management and technical areas.
- Some institutions are providing technical assistance to Municipal Corporations in the areas of monitoring air and water quality. There is a demand for foreign technical assistance both software and hardware.
- There is a great demand and interest in academic sector for collaboration with foreign institutions in the area of exchange of information, database, research results, expertise, etc.
- Both local experts and donor agencies have welcomed the initiative of this program. They have also expressed their opinion that such a program should initially be implemented in such places where tangible results will occur fairly soon, before the model can be replicated in other geographical areas.
- It is also important that political will and wholehearted participation of the local administration is ensured for successful implementation of the program.

- The report "Issue Paper on Urban Environment in India – March 2002" have some recommendations regarding selection of geographical focal areas, but it is also expressed that more or less all states have the some kind of problems. With reference to the sector strategies proposed by the report, all states are included as possible for such a program.
- The T.o.R. also includes the same environmental areas, i.e. Solid Waste Management, Urban air quality – Urban transport, Urban water supply, and Waste water issues. For which Sida indicates no geographical preferences. It is therefore necessary to elaborate further on the important issue of selection of initial geographical areas for implementation of the program.
- The same report gives recommendations to focus on several small cities (population 100'–300'). However, there are different views among both local experts and donor agencies about the size of places where the program would have better impact. One opinion is however common – Mega Cities (population > 10 million) should be avoided for such a program. Success stories are unlikely.
- It is important that the program has one local coordinator/contact point with full responsibility for local coordination, organisation of local resources and different activities.

Part III:
Program Proposal

This part of the report intends to develop a recommended Program. Before going into details of such a program, it is deemed important to elaborate on the foundation for the Program, what is the purpose of the program, and on which pre-conditions should the program rest.

9. Pre-Conditions

Urban Environment

The T.o.R. clearly indicate that the program should concentrate on urban environment. Urban centres could be categorized as cities with a population of above 100 000 people. Centres with a decadal population growth exceeding 30% are judged as crises areas, as the local authorities normally have limited resources to deal with the environmental problems following the population growth. In addition, the T.o.R. list the following focal environmental areas;

- Solid waste management
- Urban air quality – urban transport
- Urban water supply
- Waste water issues.

Discussions with a number of Local Governments have underlined the relevance of concentration on these environmental areas.

Many actors

To involve as many actors as possible is another statement in the T.o.R. This indicates that the program shall not only deal with pure technology transfer or supply of technical equipment from the Swedish business sector. There are a number of resources, which could be used as a complement to the business sector, like NGOs, Research Institutes, Consultancy firms etc. for soft ware inputs in the wide field of environmental management.

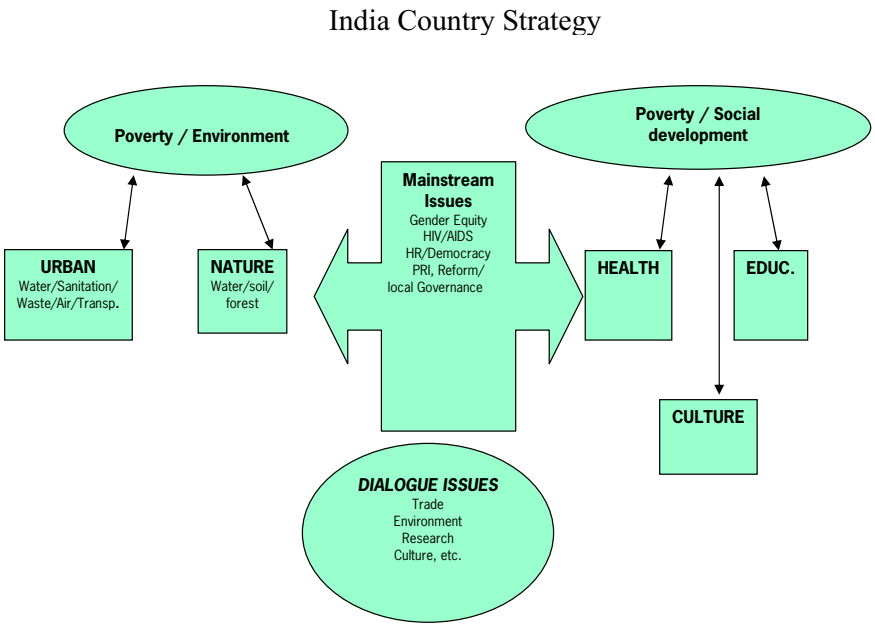
The program should consider the presence and availability of different resources in both countries.

India Country Strategy

This is an important pre-condition, however not specifically mentioned in the T.o.R. A new Country strategy for India is presently being developed. Even if not yet finalized and presented, there are certain indications on which this strategy will rest.

A frame for the strategy is presented below. This shows that the environmental issues have links to poverty alleviation, but also to the Nature as well as to other urban areas like democracy, local governance, health, education etc.

A program for urban environment must therefore be seen in a wider perspective, considering the links to other society areas.



Poverty alleviation and social development

This is one of the development goals for Sida. Will improved environment contribute to this goal? Directly – maybe Not, indirectly – definitely Yes.

Proper environmental management with controlled handling of waste, less hazardous waste, supply of enough and clean water, treated waste-water, clean air, etc. will lead to improved health, resulting in increased possibilities for work and income generation.

Do the poor people have any saying in environmental work. This is doubtful, the reasons being that this category of the population do not have any channels to the decision-makers. Even if the smallest units of the Municipal Corporation, the wards, are represented by elected corporators, it is not likely that these representatives come from the poor.

Awareness and understanding of environmental problems, through information campaigns and education, will most certainly lead to increased engagement in the process of solving the problems, with possible participation in discussions and decision-making.

Political Will

This is a very important pre-condition. Municipalities interested in the program must prove that they are dedicated to a structured approach to environmental work, and should have at least some records from environmental work.

In addition, the Municipality should have a financial situation that allows cost sharing in projects, and investments in technical equipment.

Democracy

Another important corner stone in the foundation for the program is the structure of the political system and the democracy within the system. India, and the Local Governments have a democratic system. This system must include the environmental work. According to discussions held during field visits, this is seldom the case. In fact, the environmental work is not properly organised, and hence, most certainly not democratic.

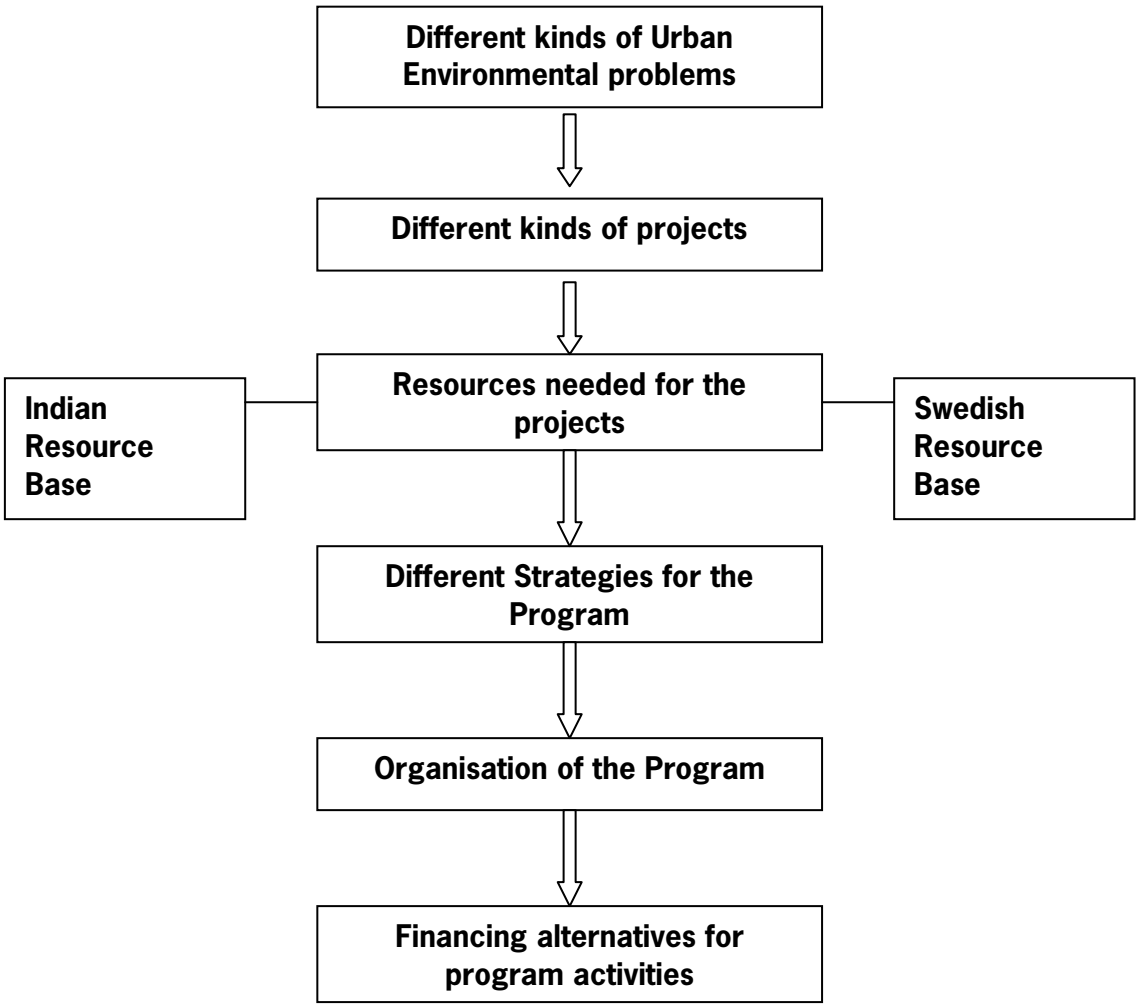
Narrow sectors

The environmental problems found in most Indian urban centres are not new. On the contrary, they have existed for many years, and unfortunately developed into a situation, which is now quite complicated to address. Where are the narrow sectors, the gaps, which could be bridged by a program like this? Why has not technical cooperation, nationally and internationally, been developed naturally, and in time. There are of course a number of reasons for not dealing with the environmental problems in time.

- Lack of management tools on the local governance level. (for example EMS, Environmental Management Systems) Environmental problems are addressed when situations become critical, and then only the specific problem is addressed.
- Lack of competence and capacity in the local governance. Neither the political leaders, nor the administration/technical staff are properly trained in environmental management and/or modern technical solutions.
- Limited financial resources. Normal environmental work in terms of good planning and administration is not costly, but investments in technical "in the end of the pipe" solutions can be an economical burden.
- In-proper organisation of environmental work. In most cases, there are no departments or task forces regularly dealing with environmental problems in a structured way. In few cases such departments are part of the organisation, but mostly not functioning properly.
- Difficulties to find appropriate and modern technology. The lack of competence results in limited possibilities to find sources for suitable technology.
- Difficulties to find cooperation partners. This is by experience not a natural process. There are no systems for finding partners, but it is necessary to have support from such resources that can scout for and organise partnership based on specified demands.
- A democratic system that does not fully involve all stakeholders. Even if the local governments could be regarded as democratic organisations with elected leaders, the system does not fully consider the roles of NGOs and the society.

In most of these cases, just mentioned as examples, a program for enhanced cooperation between India and Sweden in the field of urban environment, could contribute to strengthen the local governments and the societies.

10. A logical approach to a comprehensive program



The following Chapters will deal with all these different levels more in detail.

11. What is Urban Environment?

Urban Environment consists of quite a number of aspects like solid and hazardous waste, air and noise pollution, land contamination, domestic and industrial effluents, lack of infrastructure, etc. All these areas are in different ways connected to or depending on each other. There are links between the problems, as well as between the solutions to the problems. The complexity of the expression "Urban Environment" is shown below.

In general, the main actors in urban environmental management are the Local Government, the communities, and the service and industrial sector. The crucial issue is the competence and capacity of these actors to deal with environmental problems in a pro-active way (prevention of pollution, cleaner production, waste minimization), The same groups can also be identified as the main beneficiaries from an improved environment.

Different tools can be used to improve the environment. The most important one is certainly to introduce a structured system to deal with different kind of environmental problems, the so called EMS (Environmental Management System). The EMS has a logical structure with a revolving circle of continual improvements based on identified significant environmental problems. It encompasses policies, objectives and programs as well as a structured system of audit and review of environmental improvements. This is a basic management tool which later on can be developed, especially for the service and industry sector, to a comprehensive EMS that fulfils the certification requirements of ISO14001.

Another important tool is the access to modern and appropriate technologies, for example solid waste segregation, collection, land filling, incineration, waste water treatment, recycling of waste to raw material, improved production methods and machinery, etc. Again, another approach is to mobilize "prime movers" on all levels by introducing IEC as a managerial tool to handle awareness programs and training in specific environmental topics (waste handling, risks, chemicals handling and storing, waste minimization, use of environmentally friendly materials, etc.)

Experience has shown that isolated inputs are not enough. To introduce waste segregation in the industrial sector does not help if there is no organisation or method to handle the segregated waste. To introduce solid waste collection systems does not help if the society is not aware of the systems. Efficient wastewater treatment will require proper technolo-

gies. Efforts within the industrial sector will to a certain extent depend on the Local Government's understanding and contribution, that they speak the same language regarding technologies, laws and regulations. A holistic approach to Urban Environment is therefore of utmost importance.

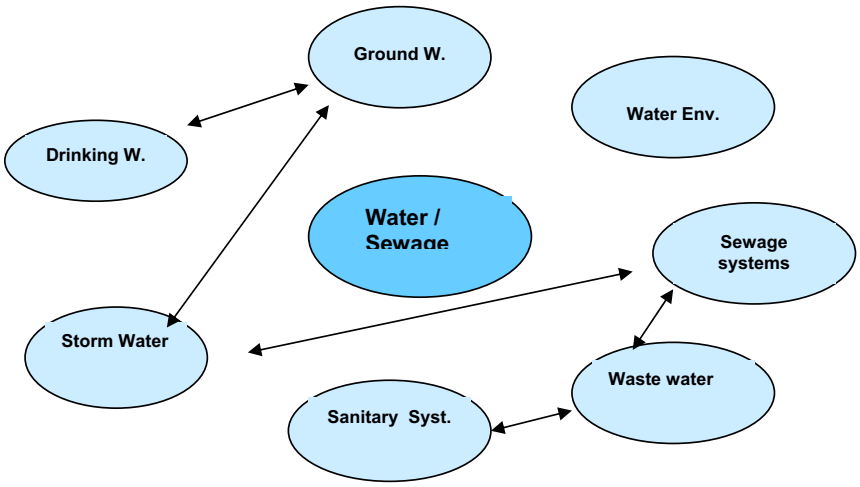
It is therefore necessary to find an approach, which combines all the target groups and the different tools. In general, Sweden has a very interesting and sufficient resource base to deal with environmental problems, on national, county, municipal and industrial levels. The challenge is to combine these Swedish resources with the demand and the already existing resources in India.

11.1 The Complexity of Urban Environment

The figure below is an attempt to illustrate a model of an Urban Environment. This model is general, but could probably be applied in most urban centres of reasonable size.

(This model has been used by the Concept called " The Sustainable City", a holistic concept jointly developed by the Swedish Environmental Technology Network and the Swedish consultancy company SWECO, and sponsored by Ministry of Foreign Affairs, Office for Project export, Sweden, and The State Environmental Protection Administration of the People's Republic of China.)

In order not to make the figure too complicated, only some few links between different areas have been inserted, just to show an example of the connections/dependence between the different areas.



This figure is one way of presenting the complexity, but in reality, it is even more complex than this. Each Environmental area, surrounding the Local Governance, can be further broken down in more detailed technical areas. As an example, the general problem area "Water/Sewage" can be presented as per below. As in the model above, only some few links between different areas have been included as examples.

Equally, all the environmental areas in above presentation could be divided in sub-problem-areas, similar to the example presented below.

11.1.1 The complexity of Water/Sewage (as an example)

Links between different environmental problems.

This picture illustrates one of the old landfills in Ahmedabad. The mixture of un-sorted waste dumped on the riverbank will certainly affect the nearby residential area and the restaurants. In addition, the lack of lining will affect both the surface water in the river, as well as the ground water. The river is certainly a source for collection of water. Depending on the use of water, there is a risk for health problems. Downstream, other villages will tap the same water without knowing the previous pollution and the risks.

A fairly proper landfill

This picture is taken at the new landfill in Ahmedabad, equipped with one private unit for segregation of waste and recycling, as well as with modern machinery for spreading and covering the waste in a proper way. The landfill is located in the outskirts of the city with no residential areas. Lining to avoid leachate is however still missing, which might result in pollution of ground water.

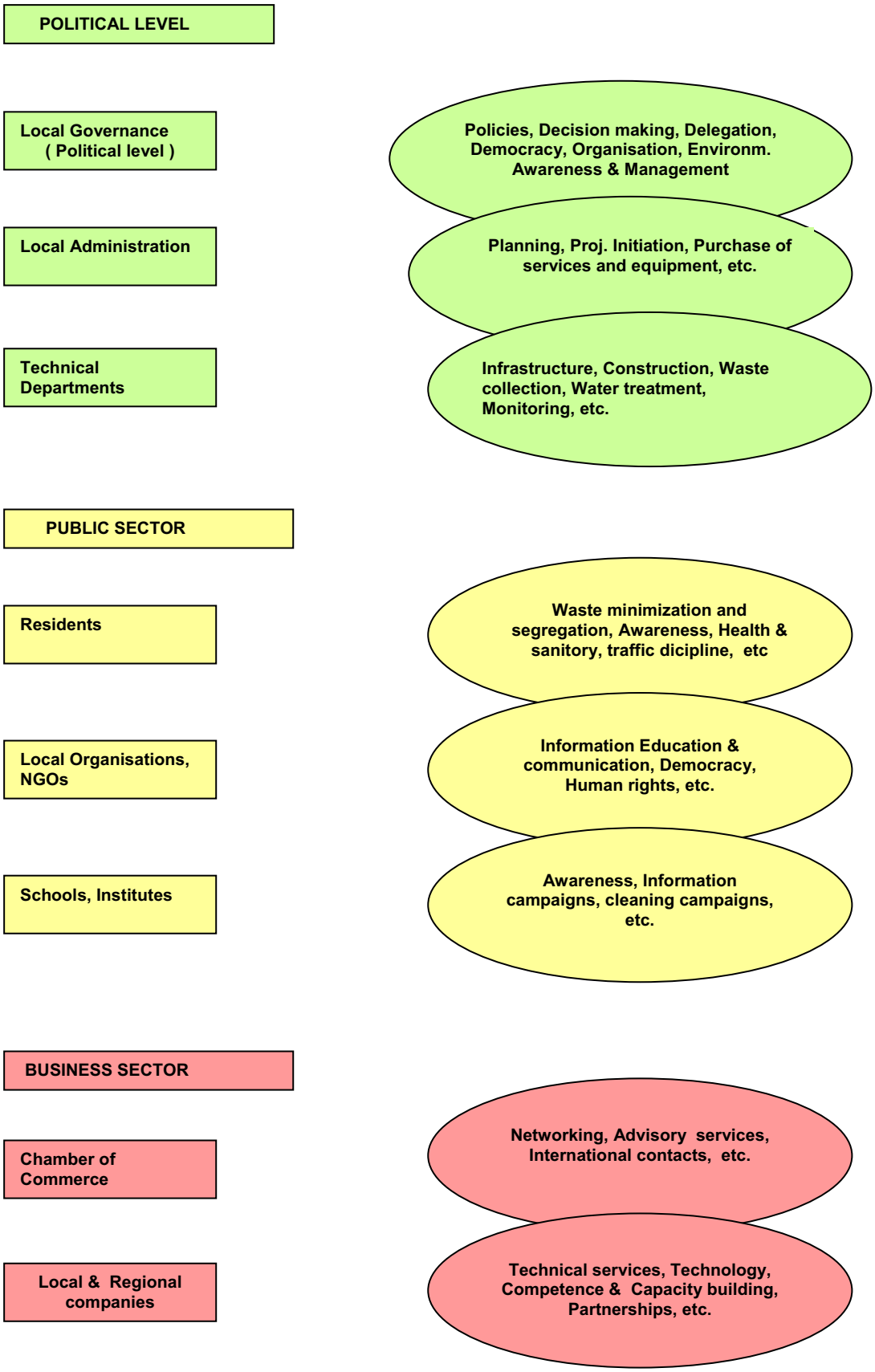
11.2 Owners of the Urban Environmental Problems

When studying the models presented above, it is clear that the Local Government will find itself in the middle of the Environmental Areas Circle. It could be judged that the main owner of the environmental areas/problems is the Local Government, at least organizational wise. Identification of problems, discussions of alternative solutions, planning of actions, scouting for technical and financial resources, implementation of projects, etc. are all examples of responsibilities on the level of the Local Government.

However, as already mentioned, there are more parties on the arena, also practically owners of the environmental problems. Without the participation and contribution from the public sector and the industrial sector, the Local Government would have serious difficulties to introduce any environmental improvements.

This indicates that there are links not only between different environmental areas, but also links between different interested parties, actors and beneficiaries. All these parties have their own roles to play, and again, they are all depending on each other. In addition, they have different responsibilities and possibilities to influence the environmental situation. It is important to find an interaction between these groups.

The figure below is an attempt to illustrate some of the parties on different levels, and their possible areas of responsibility.


POLITICAL LEVEL
Local Governance (Political level)
Policies, Decision making, Delegation, Democracy, Organisation, Environm. Awareness & Management
Local Administration
Planning, Proj. Initiation, Purchase of services and equipment, etc.
Technical Departments
Infrastructure, Construction, Waste collection, Water treatment, Monitoring, etc.
PUBLIC SECTOR
Residents
Waste minimization and segregation, Awareness, Health & sanitory, traffic dicipline, etc
Local Organisations, NGOs
Information Education & communication, Democracy, Human rights, etc.
Schools, Institutes
Awareness, Information campaigns, cleaning campaigns, etc.
BUSINESS SECTOR
Chamber of Commerce
Networking, Advisory services, International contacts, etc.
Local & Regional companies
Technical services, Technology, Competence & Capacity building, Partnerships, etc.

12. Type of projects

Discussions held during the field visits with Local Governments, Government bodies, different experts, institutes, NGOs, etc. clearly indicated the need of different kind of technical assistance to the urban centres. Hardware in terms of technical equipment was of course mentioned, but more often, software components like training programs, IEC, partnerships, etc. were brought up in the discussions and interviews.

The Chapter above describes the urban environment, the links between different environmental areas, and the complexity of environmental issues. These descriptions only reinforce the need of different kind of inputs to handle the environmental situation in the centres. No environmental area can be isolated and solved only with technical equipments, but the program must be designed in such a way that it can cater for different kind of inputs, based on the demand and priorities given by the Municipalities.

The basic idea with the Program is to involve as many actors as possible in a mixture of environmental related projects, with different kind of existing or tailor made financing alternatives.

What kind of different projects could then be relevant for a holistic approach to urban environment? The following are just some examples.

12.1 General Program activities

This refers to general promotion activities in order to get the program moving forward. This category of projects could include support to the local program facilitator in terms of information, training, visits to Sweden, etc. It could also include feasibility studies, and assistance in preparation of project ideas. The main recipients should be the Municipal Corporations and the program facilitators.

All these activities should be financed by the Program Partnership fund.

12.2 Capacity building/Training Programs

There is a need of management and technical training in the Municipalities.

Management training in environmental work should address mainly the administration staff, dealing with planning, project implementation, procurement of services and equipment etc. However, the political level

should also receive some orientation in environmental management. One possible concept is to introduce EMS (Environmental Management Systems) as a tool for sustainable development. This EMS includes different components arranged in a logical order, e.g. review of the environmental situation, environmental policy, objectives, targets, program, audits, management reviews, etc. This tool will assist the Municipalities to address the environmental problems in a structured way.

The technical training is needed in the Municipal departments handling the technical projects and equipment, for example waste collection systems and equipment, landfill technologies, water treatment processes, etc. This training should introduce modern technologies and technical equipment.

This kind of training should not be a “one time short seminar", but should be given a time span of at least one year, mixing theoretical inputs with pragmatic work and practicum periods. In both cases, the trainees should be given possibilities to be exposed to modern systems and technologies, for example during study visits to Sweden.

In addition to the introduction of EMS in the municipalities, there is also a need of EMS in the industrial sector. This sector, however depending on the type of industries in the urban areas, contributes substantially to the environmental problems in terms of waste generation, water effluents, air pollution, etc. Introducing EMS in the industries will create better awareness, minimization of waste, proper handling of solid waste, hazardous waste and chemicals, lowered water consumption, energy efficiency, etc.

(It could be mentioned that already in 1998, a proposed training program in EMS for the industrial sector in Pune, coordinated by the Mahratta Chamber of Commerce, Industry and Agriculture was presented to Sida, assessed, and prepared for approval. The Nuclear tests in May -98 shelved the project)

Training programs like the above examples are typical Technical Assistance (KTS) projects. For the time being, India is not on the list of countries considered for KTS projects. In case of an implementation of this program, this should be re-considered. If KTS financing can not be considered for this kind of technical assistance, the possibility to make use of the Partnership fund should be the alternative.

Some of this training could also be organised through participation in Sida program for International Courses.

12.3 Institutional building/Research

Both in India and Sweden, there are governmental institutions dealing with the environmental sector. These institutions could have the role of developing and proposing laws and regulations, implementation of environmental legislations, developing new technologies, but also the role of monitoring different environmental areas.

Some examples in India could be C.P.H.E.E.O (Central Public Health and Environmental Engineering Organisation) and SPCB (State Pollution Control Board)

In Sweden, institutions like National Institute of Public Health, Swedish National Road and Transport Research Institutes, Swedish Environment Institute Ltd., National Institute for Ecological

Sustainability could be mentioned.

To create links between such national institutions with the purpose to exchange experience and research results, to train technical staff, to introduce modern monitoring equipment etc. could be another area of possible projects.

It could be argued that this kind of projects would not have direct effects on the urban centres. However, it could be anticipated that the Municipalities will gain from such cooperation in the long run.

In addition to the possibilities to link institutes, there are also possibilities to create cooperation between the Academic sectors. Both countries have Universities engaged in environmental issues and technology areas. Organised cooperation with the objectives to exchange experience and research results, or exchange of students, could be considered as prospective projects.

12.4 IEC (Information, Education, Communication)

Environmental improvements depend to a large extent on the participation of the society. Even if the Municipalities should introduce political and technical solutions to problems, in most cases such solutions need engagement, involvement and participation from the people.

As an example, the Solid waste management could be mentioned. If the people, or even industries, do not assist in minimization of waste, segregation of waste for composting and recycling, proper delivery of waste, etc. it doesn't matter how effective and sophisticated the Municipal systems for waste management are.

IEC could be one way of involving the society. This could cater not only for pure environmental issues, but could also include areas like health, human rights, and democracy. Even if the Local Government has a role to play with information campaigns, the most efficient actors here are certainly different NGOs, working in residential areas and slum areas. IEC projects could also be introduced in schools, involving youth on an early stage.

There are quite a number of NGOs in India working with these issues, and with impressing results. Cooperation with Swedish NGOs could strengthen these local NGOs and indirectly give people a stronger voice, and create interest for participation in the democratic processes.

Forum Syd would be the natural channel to this kind of cooperation projects between NGOs in India and Sweden. Financing through Forum Syd scheme would be most relevant.

12.5 Strategic Alliances/Joint Ventures

Strategic Alliances is the general term for business cooperation between companies in Sweden and companies in developing countries. Such cooperation should be based on mutual and commercial long-term interest between the companies in the two countries.

Sida, and other donor countries, have used the concept since some 5–10 years. There are a number of cases where long-term relations between companies have been created, and where quite positive results have been achieved. In some cases, the relations have developed far beyond expected level.

It could be argued that it should be natural, in view of the globalization, for companies in different countries to create such alliances on their own. The reality is not that easy.

Swedish companies are normally fully concentrating on the domestic market or the neighboring markets. To look beyond the horizon is not normal, only upon certain request or proper information, such ideas come to their mind.

Companies in developing countries might have the interest to develop contacts, but it is not very easy to find right channels to such information and to create contacts with companies far away. Besides the lack of modern technology might hamper their attempts to find partners.

Experience has shown that it is very important to assist companies in both countries to find the right partner, to develop the right business idea, and to link the companies to each other on an appropriate technology level. The fact is that interested companies in the two countries do not easily find each other and the efforts through seminars/business meets/delegation visits are not enough and adequate for a mutual strategic tie-up. This is where the concept Strategic Alliances, as a component in this program can play a role.

Cooperation between the private sectors in India and Sweden is therefore regarded as a very interesting and possible component in the program.

(It should be noted that a concept for Strategic Alliances between firms in India and Sweden has already been tested. Some 7–8 collaborations were established in the State of Maharashtra during the period 1995–98, some of those related to the environmental field. Actually, this program was implemented by Andante Consultants AB, Sweden and Andante India Consultants Pvt. Ltd. , Pune) Other similar programs were also tested in Karnataka and Gujarat. According to ALMI/NUTEK, a project for water treatment is now being implemented in India, supported by the Start South program)

Sweden has a huge number of private firms involved in services and/or products related to the environmental sector. The Indian market for such products must be regarded as very challenging, and cooperation on commercial terms with Indian companies in this sector should be of interest for the Swedish business sector.

The cooperation between companies can take many different shapes. Everything with a mutual commercial long-term interest would be possible. The most sophisticated alternative, but maybe not the first priority, is the Joint Venture set up, with shared investment. This is in most cases an alternative developed from previous business cooperation when the parties have gained experience from the business and trust between the parties has been created.

The Swedish Environmental Technology Network could support in creating links between companies, and the Sida financed Start South program, administered by ALMI/NUTEK, would have a natural role for partly financing of this kind of projects.

Swedfund International AB is another possible partner to support and assist in financing of cooperation projects with a substantial volume.

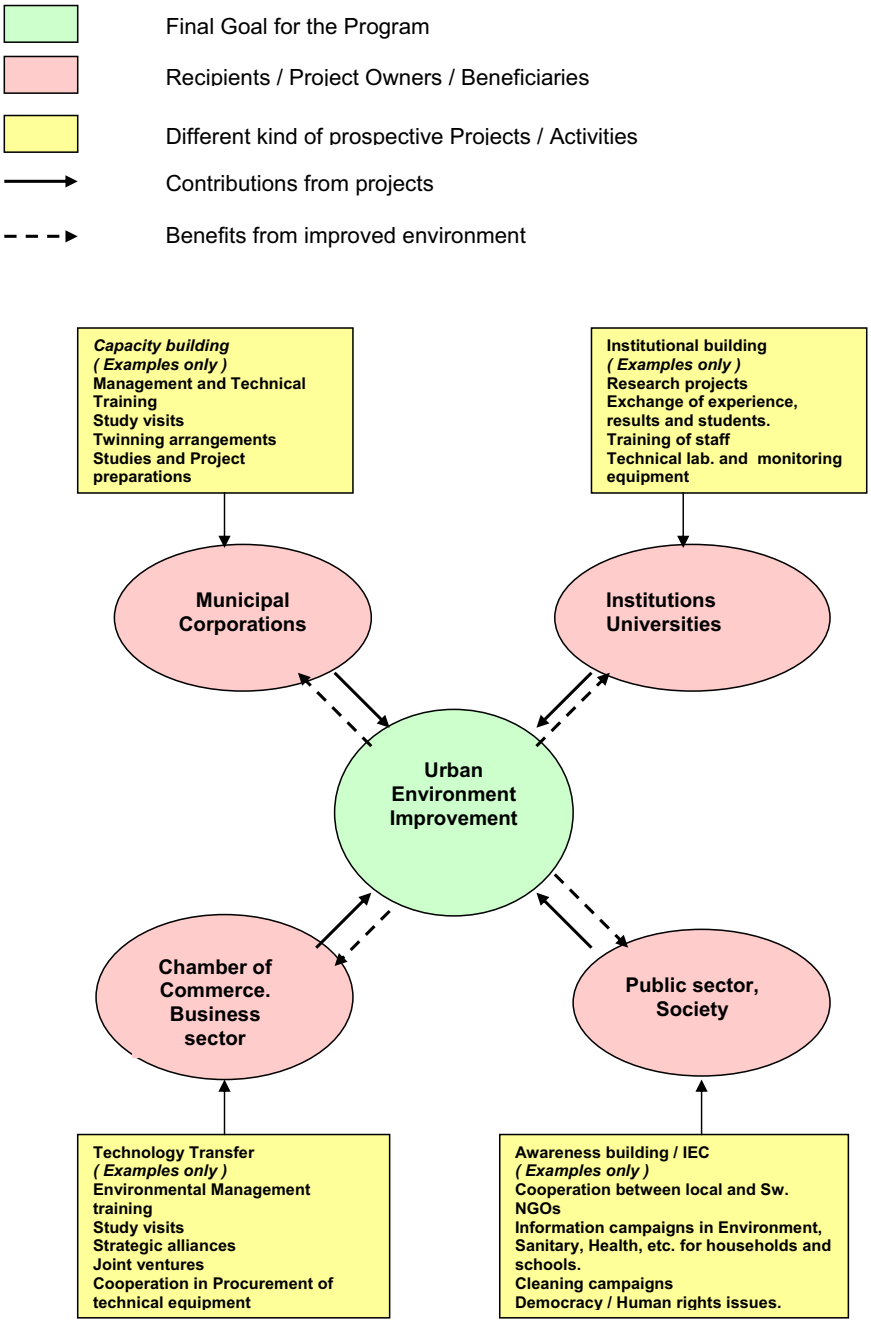
12.6 Supply of technical equipment

It cannot be neglected that solutions of environmental problems need technology and technical equipment. This could for example be modern traffic light systems, environmentally friendly public transport, wastewater treatment plants, containers and trucks for waste collection, and recycling units.

Procurement of such technical equipment is normally based on national or international tendering processes. Here, the program can assist in identifying such procurement and forwarding tender documents.

The Sida Financing schemes, like Guarantees, Concessionary credits and Soft loans can be used to assist the Swedish companies interested in such supplies.

12.7 Model for spreading different kind of projects within the Program



12.8 Who owns the projects?

Chapter 11.2 discusses the issue “Who owns the environmental problems". As the different projects are supposed to contribute to the solutions of certain environmental problems, it could be interesting to also discuss “Who owns the projects".

Similar to the statement in 11.2, there is no straight standard answer to this question. The whole program aims at improving the environment in the urban centres, and the main responsibility for the environmental situation lies with Municipal Corporation. However, as previously mentioned, everyone in the Municipality has some responsibility to contribute to improved environment.

For the sake of a proper implementation of the different projects within the program, it is important to determine the owner of the project, i.e. who has the responsibility for the project, who is supposed to contribute with resources and cost sharing, etc.

To determine the ownership of different projects within the program, there are two criteria that can be used; i.e. who is the prime beneficiary of the project, and from where is the project financed.

For sure, the Municipal Corporation is the owner of the Program, the contractual partner to the Program, and also the final beneficiary of the projects leading to improved environment. To support some of the activities in the Program, it is proposed that a fund should be established to cater for such activities that will not gain from other financing alternatives. This fund will belong to the Program owner, the Municipal Corporation.

To simplify this matter, it could be argued that the most important criteria is the prime recipient/beneficiary of the project, who in most cases also would be the project proponent. This could be the Municipal Corporation, but considering the different prospective projects described above, it could as well be other players with the interest to strengthen their own organisation, still with the objective to improve environment in the urban centre.

The source of financing has less interest, even if it could be judged that all projects financed from the Program fund, belonging to the MC, also should belong to the MC. This would however complicate the situation unnecessarily.

Examples:
If the industrial sector has an interest in a training program to introduce EMS, this sector, probably represented by the Chamber or an Association of industries, aim at improving their internal environment, but indirectly contribute to the total environment. In this case, the industrial sector, or it's representative, will be the project owner.

If a local NGO takes the initiative to cooperate with a Swedish NGO in a certain environmental related area, the local NGO shall be regarded as the project owner.

A project, in which a local institution seeks collaboration with a Swedish similar institution with the intention to exchange research results or exchange students, this local institute will be the project owner.

When the Municipal Corporation initiates a project, in which the political, administration or technical staffs is the prime beneficiary, the MC is the project owner.

13. Indian resource base

Before introducing Indian resources of interest for this program, it could relevant to present the structure of political forces involved in environmental work. Such forces are found both on the National level, on the State level, as well as the Municipal level.

13.1 Urban Environmental Management Structure

13.1.1 National level: Union of Federal States

Concerned Central Ministries:

1. Ministry of Environment and Forest
   |
   Central Pollution Control Board
   |
   State Ministries of Environment & Forests

2. Ministry of Urban Development & Poverty Alleviation
   |
   State Ministries of Urban Development

In addition to the ministries above, there are certain national bodies, which could serve as resources to the program.

Under the Ministry of Urban Development & Poverty Alleviation, the office of Central Public Health and Environmental Engineering Office (C.P.H.E.E.O.) is found (see 6.2.8). This organisation provides technical assistance to States and Local bodies in; Urban water supply, Sewerage and Sanitation, Storm water drainage and Sanitation.

Under C.P.H.E.E.O. the TAG, (Technical Advisory Group) is organised. This group, formed year 2000, has the main objective to support Local Governments with technical advisory services, mainly in Solid Waste Management.

There are certainly more national bodies in the field of environment, which can serve as advisors to the program.

13.1.2 State level: Federal States

Concerned Ministries:

1. Ministry of Environment and Forest
|
State Pollution Control Boards

2. Ministry of Urban Development

13.1.3 Municipal level: Municipal Corporation
(N.B. not limited to only environmental issues)

Political set up;
General Body
(Elected Members from Wards*)
|
Mayor (From Elected Members)
|
Deputy Mayor (From Elected Members)
|
*Standing Committee Chairman (From Elected Members)
(Standing Committee includes Members –15 number in case of PMC again from elected members/corporators representing all political parties)
|
Transport Committee Chairman (From Elected Members)
(Transport Committee includes Members – again from elected members/corporators)
|
Various other Committees/Departments headed by Chairman (Elected from Members). Other Committees include Education, Health, Roads, Drainage, Zoo, Parks, etc.). (The decisions are taken by respective Committees and ratified by Standing Committee).

*: Ward is a small part of the Municipal area. The ward bounded by definite area limits. The public representatives are elected from each ward and the elected members together form a General Body which the apex authority in the Municipal Corporation.

**: Standing Committee is a very important committee and it is acting like a watchdog for all financial spendings. The Committee consists of elected members from all the political parties in proportion to their representation in General Body. It is truly a democratic set up. All important policy decisions, Capital outlay, general annual budget, levy of taxation is vetted by the Standing Committee and then send it to General Body for its final Approval.

Administrative set up:

Commissioner (Appointed by State Govt.)
|
Joint Municipal Commissioner (Appointed by State Govt.)
|
Additional Commissioner (Appointed by State Govt.)
|
Asstt. Municipal Commissioner (Appointed by State Govt.)

*Department Heads	Ward Officers
Officers	Support Staff
Support Staff	Casual/Daily Workers

The routine decisions regarding execution and implementation of work is taken by the respective Department head and Ward Officers.

All important decisions are finally vested with the Commissioner.

In all Municipal Corporations there are Regional Offices/Zone Offices. These offices cover number of wards logistically included for effective rapport with citizens. The Regional Offices are generally based on wards from East, West, South, North, Central, etc. and they are responsible to handle the problems of citizens in the respective Wards.

In addition to Regional Offices there are Several Departments functioning in the Corporation and located either in the main administrative building or in different Regions.

Example of Departments (ex. from Pune Municipal Corporation):

- Health Department (For Primary Health)
- Traffic Department (Road)
- Building Permission Department
- Slum Control Department
- Fire Brigade
- Urban Community Dev. Department
- School Board – Primary Education
- Water Department
- Road Department
- Drainage Department
- Anti-Encroachment Department
- Tax Department (Assessment & Collection)
- Octroi Department*
- Garden Department
- Department of Primary and Secondary Education
- Statistics and Computer

13.1.3.1 Municipal Routines

The following is a general description of the normal routines used in a Municipality.

The Municipal Corporation, also known as Mahanagar Palika (in local language) is a Local Body comprising of Political and Administrative Structure. Municipal Corporations are formed by a Separate State

Government statute and comes under the Ministry of Urban Development of the respective States, which is headed by Minister and supported by Secretary, Urban Development. The Municipal Corporation is an independent and autonomous Local Authority and financially self-sufficient.

The Municipal Corporation is a gradual process and starts from Municipal Council (smaller form of Local Body). Once, a particular Municipal Council has crossed a threshold limit of Population and area then the Municipal Council is converted into Mahanagar Palika/Municipal Corporation. For such conversion the population and area of operation are one of the important criterion along with financial self-sufficiency. Of late, the resident population is becoming the main criteria to classify a particular town/city into a Municipal Corporation.

There is a Development Plan for each Municipal Corporation, which mainly relates with the area (radius) to be included in the Corporation. The Development Plan is a blue print of City's development and includes host of things. Viz. Residential areas, public gardens/parks, market place, internal roads, connecting roads, drainage system, public schools, recreational facilities, agricultural market, commercial area, zoo, etc.

It is generally prepared for a period of 10 years, but could serve for longer period, or indefinitely. Once, the plan is prepared by the Town Planning Authority, it is first submitted to the Municipal Corporation, the Administrative Wing (Commissioner, Additional Commissioner, Chief Planner, etc) They give their views and comments on it. It is then submitted to General Body after vetting from the Standing Committee. Once they approve it, the Plan is then kept open for public suggestions and comments. The interested public who are aware of it, NGOs, Citizens Forum, etc. register their comments (generally they oppose it). Their opposition is mainly for not including adequate social amenities and impact on general Environment of the City.

When the Development Plan is approved, it is sent to State Government (Ministry of Urban Development) and is vetted by Secretary, Urban Development and other concerned Ministries, if any. The Minister of Urban Development gives the final approval and then it becomes a final document for implementation.

The Mayor's term varies from State to State. In Maharashtra it is 2.5 years increased from 1 year. In Rajasthan the Mayor's term is for 5 years. However, the members of General Body have power to remove the Mayor before the expiry of his/her legitimate term by bringing a no confidence motion.

Mayor is an important position for policy and decision-making. In his own capacity he/she can initiate many programs and also stall unwanted programs, if any.

The Commissioner is an IAS (Indian Administrative Service) Officer generally appointed for 3 years period by State Government. This is a State policy not to have any appointed IAS Officer at one place for more than 3 years. After 3 years he is either transferred to some other department or promoted/elevated for higher job including transfer to Central Government. All Commissioners (in whole of the County) are IAS officers. It is a top rank administrative cedar in the Country.

The IAS officers cannot be removed or sacked unless an ascent from the President of India is obtained. However, the General Body of Municipal Corporation can recommend to the State Government with no confidence motion for transfer of an IAS Officer.

Generally, both Mayors and Commissioners work hand in hand for the development of the City. Mayor has political powers whereas Commissioner has executive powers.

The Commissioner presents the Annual Budget to Standing Committee with his suggestions for increase in taxation, allocation of funds, etc. However, his recommendations are not binding on the Standing Committee. The Standing Committee may accept his recommendations in toto or may reject them in toto. Generally, the recommendations are accepted with modifications and then the budget is submitted to General Body for final approval.

For sizeable Capital Outlay projects, State Government's clearance, approval and assistance is required and such clearance/approval/assistance is obtained after the approval of General Body. The Mayor musters the support from the State Government and in turn the State Government through its proper channel approaches to Central Government for clearance/approval/assistance, if any, required.

13.3 Other relevant resources for the Program

Once the Program has been anchored in the political and administrative systems on National, State and Local Government levels, there is definitely a scope for including other resources/actors than those described above.

13.3.1 Academic sector

It is natural that a country with a population exceeding 1 billion has a huge number of Universities and research institutes. Based on discussions held with the institutes visited during the field visits, there is a serious interest in cooperation with Swedish relevant institutes in terms of common research projects, exchange of experience and exchange of students.

All urban centres of countable size have such Universities and institutes, covering several interesting technology areas related to the environmental field. It should also be noted that there is already previous and ongoing cooperation between India and Sweden. It should therefore be possible to extend such traditions to a Program in Urban Environment.

13.3.2 NGOs

To find NGOs in India with an interest in environmental issues is not difficult. More than 15 local NGOs were met during the field visits, and they all expressed interest and willingness to work together with Swedish partners. In most cases, the work and results achieved so far was quite impressing, and the ideas and visions were equally interesting. To involve local NGOs in the Program, wherever it should be implemented, would prove both easy and fruitful.

To find Swedish NGOs, active in the combination of urban areas and environment, might be more difficult. Nevertheless, with clearly described projects and objectives, it should be possible to attract NGOs also on the Swedish side.

This could be a resource working with fairly small means but reaching the wider level of society, which might be difficult to address in normal project activities. It is therefore a very important resource to consider in the set up of program activities.

13.3.3 The private business sector

All environmental problems, with few exceptions, need technology in terms of both software and hardware.

Private firms, with products and services related to environmental problems do already exist in India. Just to mention some few examples; companies involved in planning, designing and construction of infrastructure, companies manufacturing products like pumps for water supply, pipes and systems for waste water, equipment for collection of solid waste, equipments for landfills, etc. There are also companies designing and building water treatment plants, as well as companies dealing with recycling of different waste material etc.

The competence and technology level in the indigenous industry is generally high. However, as Sweden is regarded as one of the leading countries in the world in terms of environmental awareness and technology, it is likely that Swedish companies in this sector could contribute to augment levels of competence in the local firms, as well as introducing more sophisticated and modern technologies.

14. The Swedish Resource Base

One intention with this Urban Environment program is to involve as many Swedish actors as possible in the support to the program and in the indicated focal areas; Solid Waste Management, Air Quality/Urban Transport, Water Supply and Waste Water issues.

Sweden has since long been in the frontline regarding research and modern technologies in environmental problem areas. Hence, the resources on the Swedish side are numerous.

It would be impossible to list all prospective individual resources for this program, and give names of individual companies. The selection of Swedish actors has to be based on for example; the demand for specific projects, the type of problem, the size of the project, etc. Only when such characteristics are known, it will be possible to indicate which kind of services and/or equipment that are needed from time to time. Another reason for not giving individual names of private companies is the foreseen tender procedures in some of the projects. It is therefore premature to identify individual actors in this report.

Most Swedish suppliers of services and equipment within the environmental field are organised in different networks or organisations. It would be more appropriate at this stage to list the possible channels to such prospective actors, by listing such organisations and networks, and to give some limited examples.

It should be noted that it is not possible to streamline the listing of resources in for example; Universities, Consultants, NGOs, Suppliers of hardware, etc. Most actors in the field of environment are represented in different organisations and networks. One network can therefore include different categories of players on the environmental arena.

Selected Resources

14.1 Svenska Miljönätet (Swedish Environmental Network)

One such Network, is Svenska Miljönätet (www.svenskamiljonatet.se), and especially the site "Vem gör vad i MiljöSverige" (Who is doing what in Environmental Sweden). This contains a number of Swedish resources, listed under different categories, like;

Statliga myndigheter (Governmental organisations/institutions).
Examples;
- Naturvårdsverket (Swedish Environmental Protection Agency)
- NUTEK (Swedish Business Development Agency)
- Folkhälsoinstitutet (National Institute of Public Health)
- IEH Statens Institut för ekologisk hållbarhet (National Inst. For ecological sustainability)
- Väg och Transportfoskningsinstitutet (Sw. National Road and Transport Research Inst.)
- Statens Institut för Kommunikationsanalys SIKA (Sw. Inst. For transport and Communications Analyses)

Intresseorganisationer (Organisations for common interests)
Examples;
- Föreningen för ekologi och planering (Swedish Society for Ecology and Planning)
- Föreningen Vatten (The Swedish Association for Water)
- Håll Sverige Rent (The Keep Sweden Tidy Foundation)
- Svenska Renhållningsverksföreningen RVF (The Swedish Association for Waste Management)
- Återvinningsindustrierna (The Swedish Recycling Industries Association)

Forskningsorgan (Research Organisations)
Examples;
Gothenburg Research Institute
Formas, Forskningsrådet för miljö, areella näringar och samhällsbyggande
- IVL Svenska Miljöinstitutet AB (Sw. Environment Institute Ltd.)
- TFK, Institutet för transportforskning (Transport Research Institute)
- SEI Stockhoplm Environment Institute

Universitet (Universities and Academic sector)
Examples;
Most Universities in Sweden are listed, environmental focus in for example,
- Lunds University
- Kungliga Tekniska Högskolan
- Linköpings Universitet
- Göteborgs Miljövetenskapliga Centrum (Chalmers Tekniska Högskola & Göteborgs Universitet

Konsulter (Consultants)
Examples;
Some 80–90 individual consultancy companies are listed. Not relevant to select examples.

Länsstyrelser (County Councils)
Examples;
21 County Councils are listed, Not relevant to select examples.

Kommuner (Municipalities)
Examples;
Most probably more than 200 listed, not relevant to select examples.

14.2 Miljörapporten

On this site, (www.miljorapporten.se) there is quite a lot of information about Swedish companies and their work within the environmental sector. A complete index on such companies can be obtained in the MiljöGuiden (Environmental Guide)

14.3 Forum Syd/NOGs

The majority of important Swedish Non Government Organisations are members of the Umbrella organisation “Forum Syd". This organisation was formed 1995, when the already existing organisations SVS and BIFO merged. At present, the number of member organisations counts to roughly 160. A presentation is found on www.forumsyd.se

There are quite a number of Swedish NGOs on the list for India, in the range of 70–80. Looking at the applications for the last years (1998–2002), some 25 organisations have applied for different projects. Out of these, only one has a project directly related to environmental issues. Maybe 2–3 have projects with an indirect relation to environment.

Forum Syd has a Frame contract with Sida, SEKA (The Department for Cooperation with Non-governmental Organisations and Humanitarian Assistance & Conflict Management) This contract serves most of the members and the funds available for member activites are some 100 million SEK.

14.4 The Swedish Environmental Technology Network

The Swedish Government has assigned the Swedish Trade Council to establish a network for export of Swedish Environmental Technology. The objective is that the Swedish business sector, active in the field of environmental technology, shall coordinate and combine their competence and capacity in export promotion.

This is a three years sector program within the Swedish Trade Council. The business concept is to through joint actions promote and support new business possibilities in the environmental technology area.

The network
offers the international market contacts with the wide and deep expertise of the Swedish environmental technology industry within the fields of water- and wastewater treatment, waste management and air pollution control.

includes some 600 different consultants and suppliers to this sector, and assists foreign businesses in finding information on and getting in contact with Swedish environmental technology companies.

assists in arranging visitor programmes for delegations and individuals as well as assisting in finding partners for international bidding.

facilitates co-operation. This web site is a focal point with a company register database, information about the three areas of operation; air, water and waste, a pressroom, information about market activities and other news etc. In a near future this web site will also serve as a marketplace for electronic trade.

promotes co-operation through joint participation in international conferences and seminars, which also is part of the marketing strategy of the project.

also facilitates the process of international public tendering through formation of powerful and professional Swedish national teams for cost effective environmental technology projects.

assists Swedish companies in co-ordinating with foreign companies and financial institutions through public procurement, seminars, bilateral conferences and training.

A detailed presentation of the Network is found on www.swedentech.swedishtrade.se

Different kinds of search possibilities are there, e.g. a presentation sector wise, including Air, Water and Waste Water, and Waste. Business contacts are found, categorized in Company, Area of operation, Key products. Another list contains Swedish Consulting firms, Contractors and suppliers, Institutions, municipalities, authorities, research institutes, etc.

14.5 Academic Sector/Sasnet

SASNET is a national network for research, education, and information about South Asia, based at Lund University. The aim is to encourage and promote an open and dynamic networking process, in which Swedish researchers co-operate with researchers in South Asia and globally.

The network is open to all sciences. Priority is given to co-operation between disciplines and across faculties, as well as institutions in the Nordic countries and in South Asia. The basic idea is that South Asian studies will be most fruitfully pursued in co-operation between researchers, working in different institutions with a solid base in their mother disciplines.

The network is financed by Sida (Swedish International Development Cooperation Agency) and by Lunds University.

SASNET´s root node is part of the International Office at Lund University. The International Office gives information about International studies at Swedish Universities, and Lund University in particular

The website, www.sasnet.lu.se includes a lot of information about the organisation, activities, as well as a list of Institutions, Departments and Colleges engaged in research activities in South Asia. Quite a number of Swedish institutions are active in India.

The site also includes a list of Universities and Colleges in India.

14.6 The private sector

Even if many private companies are represented in different networks, described above, there are of course also other channels to the private sector.

The umbrella organisation Swedish Chambers of Commerce organise all the regional Chambers. Generally speaking, each County has it's own Chamber of Commerce. Some Counties have established cooperation between their Chambers to further strengthen the roles of Chambers. The Swedish Chambers also have cooperation with ICC International Chamber of Commerce.

Företagarnas Riksorganisation (Businessmen's National Association) also organise private businesses and companies. The purpose with this organisation is merely to lobby for the best of the business sector and to assist companies with business opportunities and legal advice.

Most Counties or Districts, or even Municipalities with industrial concentration have different kind of associations, like Industrial Promotion Councils, Industrial Developing Centres, Business Association, based on geographical criteria or technology sectors.

Through these different organisations it is always possible to reach their individual member companies.

14.7 International courses in Sweden

Sida International courses
In 2003, Sida will sponsor some 60 training programmes in Sweden financed by its International Training allocations. These programmes aim at enhancing managerial and technical skills in partner countries and cover subjects of strategic importance to economic and social development.

Special emphasis is placed on areas in which Sweden has a considerable level of expertise to offer. Most programmes concern the fields of transport, communications, energy, environmental protection and industry. A number of training programmes cover the social sector, for instance health and human rights. Between 1979 and 2001 some 25,500 individuals from 125 different countries participated in these activities.

Sida international training programmes – each with 20–30 participants – have duration of three to eight weeks and are held in the English language.

Some examples of relevant/environmental related courses to be conducted during 2003.

Environment, Land Use and Natural Resources Management.
- Environmental Impact assessment
- Local Environmental Management
- Hazardous Waste Management
- Air Pollution Management & Technology
- Groundwater Development and management in Hard Rock Areas

Under development or tender procedures;
- Integrated Water Resource Management
- Solid Waste Management
- Urban Land Management
- Ecological sanitation

Other relevant courses.
Local Democracy and Local Governance 2003
SALA IDA manages and administers the Sida international training programme “Local Democracy and Local Governance". The programme will be conducted in English and addresses politicians and civil servants from nine African countries, including Eritrea, Ethiopia, Malawi, Mozambique, Namibia, South Africa, Tanzania, Uganda and

Zambia. The programme is scheduled for August 11–September 5, 2003 and will take place in Stockholm.

The overall objective of the course is to support the democratisation process. During the course 25 individuals will increase their knowledge and understanding of democracy and local governance, obtain tools for initiating changing processes and be trained to spread their knowledge among colleagues. At least one local project per participating country, related to the subjects taught during the course, will be developed and implemented as a result of the course. Closing date for applications will be February 15, 2003, and the application forms should be sent to the nearest Swedish Embassy or Consulate. This programme is sponsored by the Swedish International Development Cooperation Agency (Sida).

15. Elaboration on different strategies

Different strategies could be applied for this program, and the organisation of the program will depend on the chosen strategy. The following should be regarded more as a discussion on different alternatives, a discussion that will lead to a proposal for a program implementation in the end of this Chapter 15.

15.1 A Project approach, Concentration on isolated environmental problems

Most certainly there would be no problem at all to find environmental problems in each and every urban centre in India. This approach intends to find such isolated environmental problems, and concentrate on that specific problem. This strategy mainly contains technology supply for specific problems, and will address the business sector in Sweden. It is not likely that other actors like research institutes, NGOs, Swedish Municipalities will play a role in this model.

The advantage with this strategy is that it would be fairly easy to determine the problem and the project. Being a very specific problem, it will also be easy to work out a technical solution.

The disadvantage is that the program must be marketed among the urban centres to make sure that such centres are aware of the services the program can offer.

Another disadvantage is that the program might be spread over geographical areas in the country, which means that a number of contracts with States and/or Municipalities must be signed.

The strategy, to look for isolated environmental problems in isolated geographical areas would not give any long-lasting effects, as the surrounding environment of the specific problem is not addressed.

Using this strategy, Sida office in Dehli will assist the project proponent to get in touch with prospective suppliers of technology in Sweden. This can probably easily be done by using the different channels to such suppliers. When once identified, the Swedish suppliers will be invited to an International Tender procedure. There are existing Sida Financial tools/credit schemes for this kind of projects. However, the procedure is quite complicated, and there are no guarantees that the Swedish supplier, even if winning the tender, will have access to Sida funding through these credit schemes.

15.2 A Holistic Program Approach

The complexity of Urban Environment is presented in a separate chapter. This complexity indicates the need of looking into not only one specific environmental problem, but to consider all different existing problems and their relations to each other. A management tool, the so-called EMS (Environmental Management System) could be used to address all problems in a structured way, and to give priority to the most significant problems.

The advantage with such an approach is that there will be long lasting effects. The urban centre, whichever it is, and wherever it is, will be given a more complete and sustainable program. There will be possibilities to introduce all kind of tools and technical solutions, and interactions between different actors, both in India and in Sweden, will be easier to arrange.

This approach will also give possibilities to work out a model/package of different services, which could be replicated later on for other urban centres. Further, it could include training components in all environmental aspects, which will create local knowledge that could be utilized for future programs and projects.

Using this approach, Sida office in Dehli will have a more difficult task during the initial stage. The concept must be marketed, and it will be necessary to work out the procedures and contract with interested parties, as well as with the National Government and the State Governments.

Concentration on few selected urban centres will in the long run ease the administration and the local bureaucracy, as a limited number of contracts and arrangements with States and Municipalities will be needed. When the local administration is once set, the "working climate" will be soft and handy.

In this model, there will be room for more actors. The approach will include much more than only isolated technology transfer. Different projects, complementing each other, could be implemented simultaneously. Different actors like Consultancy firms, NGOs, Swedish Municipalities, could be engaged as complement to technology suppliers.

One disadvantage might be that a lot of resources are concentrated geographically for a long time period.

15.3 Geographical spreading or concentration

Neither Sida, Stockholm, nor the Sida office in Dehli, have indicated any preferences regarding geographical concentration of this program. In the meetings during the field visits, this issue was discussed, and local experts, Government agencies and other donor agencies gave certain advice and indications.

It is very important for a new program like this, that results can be obtained fairly soon. Such results will raise the interest for the concept, and engaged actors in both countries will be encouraged to work harder.

It is also important that the program is implemented in areas where necessary resources already partly exist. There should be a serious interest, but also administration strength to implement the projects. The possibility to organise not only the Municipality itself, but also other actors like Business sector (Chambers of Commerce), NGOs, research institutes, etc. should exist.

The Mega Cities, i.e. Dehli, Mumbai and Kolkatta, should be avoided. The environmental situation in these cities is too complicated, and it is not likely that results can be reached easily. In addition, such centres often get support through larger schemes.

It could be argued that remote areas and smaller cities should need the support more than larger cities. This should also fall into the policy that poor areas/people should gain from the program. To implement a new concept in such areas might be difficult, as the local resources will be limited. At least during the initial phase of the program, such areas should not be considered.

Cities with a population of 100 000 up to 3–4 million should be the target for the program. Another criteria could be the growing rate. As mentioned earlier, urban centres with a growth rate of more than 30% per decade are regarded as crisis areas in terms of environmental situation.

According to Sida office in Dehli, the donor agencies cannot approach/select Municipalities for a program like this. There is a certain procedure to be followed. The Municipalities themselves have to approach Sida, requesting for assistance via this program. In addition, the State authorities, and the National authorities have to endorse the applications. This means that Sida has to make the program known among the Municipalities, which can be done by spreading the information about the concept among e.g. Municipality Association in different States.

15.4 Implementation of the Program

Considering that the proposed holistic approach and a geographical concentration is preferred, Sida has to work out a strategy for implementing the program in one or several cities. Two alternatives might be possible.

15.4.1 The advantage of having at least two urban centres in the program

To implement a program like this will require quite a lot of initial resources, both in terms of personnel, time and funds. To initiate the program simultaneously in two urban centres will require a bit more inputs, but definitely not double the required resources. Such a parallel implementation will besides have other advantages.

Two different Municipalities will probably have similar environmental problems, but it might be that there are different priorities given to such problems. This would result in a broader scoop of work, more technical areas could be covered with the program.

Implementation of the program in two different areas might mean two different ways of running the program, i.e. different kind of inputs, different types of projects, etc. It could be of interest to have these alternative implementations as a base for comparison, a possibility to exchange information and to draw on experience for a further development of the concept.

Even if different inputs might be considered in the two areas, there will certainly be possibilities for similar and common projects. Such coordination of possible common activities would make the program more cost efficient, as the same resources, both local resources, but

merely Swedish resources could be made available, combined, and utilized in a more efficient way.

The combination of two urban centres could be done in different ways.

1. One large Municipality vs. one small (population 3 million vs. 100 000).
   This would give a possibility to evaluate if the program is more successful and useful in a large Municipality compared to a small one. This could of course be interesting, but the risk is that it will be difficult to compare the results, as the program activities might differ too much from a large centre to a small centre.

2. Two large Municipalities (population around 3 million).
   In this case, the expected program inputs would be more similar. The Swedish resources could be utilized more efficiently, and the comparison between achieved results would be more relevant.

3. Any combination in one State, or in two States.
   Implementation in one selected State, but with any of the combinations of centres, will probably ease the administration of the program implementation. Only one State Government will be involved, and it should be of interest for this State to have program activities addressing two state areas.

Working in two different States would have the advantage of spreading the program, and it might be that the implementation and/or the results will differ depending on the State's support and interest. Comparison of the program impact might be more interesting. On the other hand, the utilization of the resources, mainly the Swedish, will be less efficient because of the geographical spreading.

15.4.1 How to reach the Urban Centres

In one-way or another, the program concept has to reach the urban centres, and the Municipalities have to indicate interest to be involved in the program. What kind of alternative approaches can be used?

Sida selects the City(ies)

The first alternative is that Sida has a preference where to implement the program, based on criteria like; the size of the City, population growth, environmental problems, capacity of the Local Government in terms of personnel strength, financial situation, previous engagement in environmental work, presence of Swedish companies, possibilities to organise resources for the program, etc.

In this case, Sida office in Dehli should consider above given criteria, and simply offer the program to several cities. Proper information material should be used for this purpose, and the presentation of the program concept could be made by inviting 5–8 preferred/selected cities to such a presentation and discussions. The interested Municipalities should be requested to apply for the program. A simple format, in which the cities could include basic information like; organisation of environmental work and previous records, priority areas, financial strength, personnel re-

sources, etc. could be used as a complement to the application.

Based on the findings during field visits and other information received, (which is a limited base for selection of cities, but still relevant), such Cities could be; Jaipur, Pune, and Ahmedabad. Regarding Tiruppur there is limited information regarding some of the criteria.

There are certainly a number of other cities with similar problems and similar resources even if detailed information has not been obtained.

Based on discussions held in Sida office in Dehli, it is questionable if this approach could be used, as it should be considered more as an agency driven approach than a demand driven. On the other hand, there are obviously situations, where an agency has created a direct contact for the implementation of a specific program. (Reference is made to the Swiss program with the Chamber of Commerce in Rajasthan, Jaipur, see chapter 6.5.6)

Marketing the Program concept Nation-wide.
Using this alternative, Sida, Dehli, should market the program through seminars or information meetings, and/or circulation of promotion material to the different States and the associations of Local Governments.

In this case, a more detailed information/promotion material would be needed. Depending on the interest shown from various Municipalities, Sida can still give preference to Municipalities having the same criteria as described above.

This is a purely demand driven approach, but it might be more time consuming than the first one.

15.4.3 Possibilities to link this program to other Sida sectors

It has been indicated that there might be an interest to link this Urban Environmental Program to other Sida activities/programs. It could be argued that environmental problems have direct connections to sectors like health, education, poverty, human rights, etc.

If such coordination with other "Sida sectors" would be considered, additional criteria for selection of a City for the program must be considered.

15.5 Proposed Strategy for the Program

Based on the above elaborations of possible strategies, the following is proposed.

- Sida should avoid the isolated project oriented approach. This will not have the long lasting effects; just solve an isolated problem without considering the complexity of environmental situations.
- A holistic approach should be chosen. This will give long lasting and sustainable effects. Such an approach will also give possibilities to involve different actors on different levels in both countries. The possible mixture of different sub-projects within the program will give a better coverage of the environmental situation.
- Sida should initially concentrate on two geographical areas to make

sure that all the possible components in the program can be fully coordinated and best utilized. Such a concentration will also enable fine-tuning of the concept before introduction in other geographical areas is considered. Concentration on two areas will give both possibilities to compare and exchange results, as well as utilizing the Swedish resource in a more efficient way

- Sida should consider the concentration of Swedish companies in certain regions, and the promoting effects such industries could give, and if possible, implement the program in such areas.
- Sida should realize that most of the Municipal Corporations do not have enough competence and capacity to run different "international project". There is a need to contract Program Coordinators on both sides, who could assist in turning the identified environmental problems into realistic projects, and who could assist in the engagement of relevant resources and actors for the specific projects.
- The program should, when relevant, make use of already existing Sida financial schemes, for example; the Start South concept, the Forum Syd frame contract, the SAL IDA frame contract, the Guarantees, Concessionary Credits and Soft Loans. It is however likely that certain project ideas will not fall directly under existing schemes. For the purpose of catering for such projects, the Program should have access to a complementary financing scheme, designed and made available entirely for this Program.
- If the Program is approved for implementation, Sida should contract a professional Swedish company to work out presentation material, in the form of printed material and It-based material.

15.6 A Possible Initial Program Implementation

It cannot be avoided to give an idea for a possible initial implementation of the program.

During the first field visit, the Municipal Corporation of Pune, Maharashtra was visited. Considering the minutes from different meetings, and bearing in mind the criteria and structure of the program worked out at a later stage, it become quite obvious that Pune could be one very interesting partner for a pilot program, which could serve as a Role Model for replication. This statement is based on the following facts:

- Pune has at present a population of 2.54 million. The decadal population growth is around 62%, which categorize the city as an environmental crises area.
- The State of Maharashtra is regarded as one of the frontline States in terms of pioneering environmental work and interest. As a matter of fact, Maharashtra has in many cases worked out laws and regulations, which later on have been adopted nation-wide.
- The political level and the administration level (Mayor and Commissioner) in Pune has shown a serious interest for the possibilities to implement a full scale program for the environmental work.
- Urban transport is a huge problem. The number of two- and three-wheelers, compared to the population, is one of the largest in India. Air quality a big problem, Pune is one of the most polluted cities in India.
- A program for Solid Waste Management has been worked out, but

there is room for much more initiatives to augment the work of solid waste management, especially for atomised systems and recycling.

- Pune is by tradition a “Swedish Fort/Centre". Swedish industries started activities in Pune some 40–50 years ago. 5–6 well-known Swedish industries are established in Pune (Alfa Laval, Atlas Copco, Tetra Pak, Sandvik, Hoganas, etc.) The impact of Swedish presence is already exists.
- The Mahratta Chamber of Commerce, Industry and Agriculture has its Head office in Pune. The Chamber is very active and has a staff of 50+. The number of members is in the range of 1500 plus indirect members of roughly 500. There are existing ties to Sweden, and the Chamber served as organiser of the recently run Sweden Film Festival. The Chamber has experience of international projects.
- The Chamber has links (i.e. members) both to the Municipality, the Academic sector, the NGOs, the private sector as well as to R&D organisations.
- The Chamber has already in a letter to Sida, Dehli, about one year ago (when the Issue Paper for Urban Environment was worked out), indicated interest to be involved in a Sida program for Urban Environment.
- Pune is an educational and cultural centre of the Country, and the number of Universities and Training Institutes is impressing.
- The industrial sector in Pune is advanced, and besides growing fast. Heavy industries, not least in the car and vehicle manufacturing are represented in Pune, as well as the vibrant IT sector.
- Pune was the centre for the recently run Sida Program for Strategic Alliances between companies in India and companies in Sweden, with documented results. Experience of creating collaborations therefore exists.
- There are a good number of NGOs in Pune, working in the field of environment. Collaboration between the local NGOs exists.

All in all, based on the above criteria and information, Pune could be an ideal place to start up a program like this. Environmental problems are there, political will and administration capacity is there, the resource base including both academic sector, NGOs, private industry etc. is available. A possible local Program Coordinator could be the active and professional Chamber of Commerce.

16. Organisation of the program

Financing Schemes, alternatives depending on type of projects:

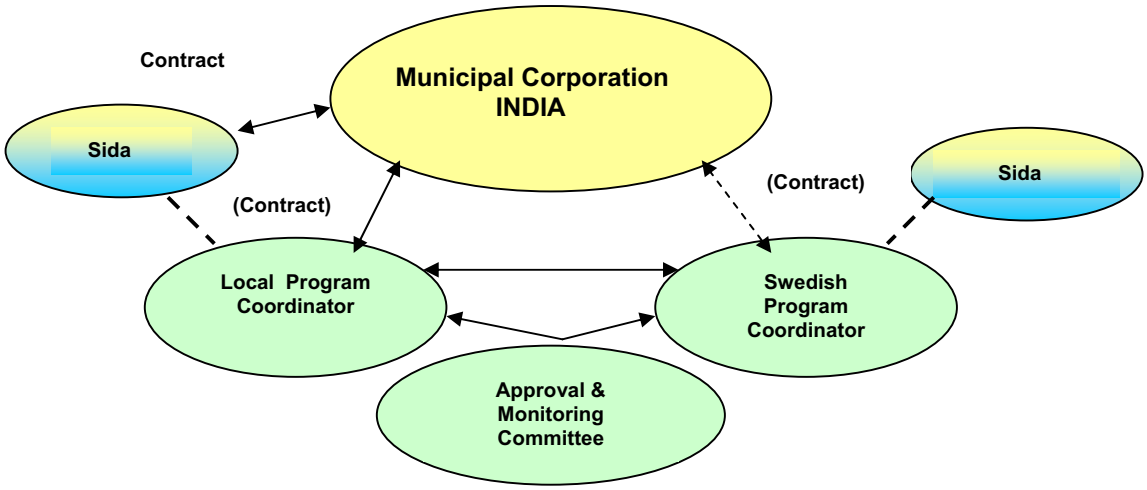
The "compact" Organisation Chart presented above is based on certain preconditions and assumptions.

- The program should be demand driven and should take it's point of departure in the environmental problems identified in the Municipality Corporations.
- It is rare that the Municipality Corporation has existing competence and capacity to organise and run projects based on international cooperation. The MC however has to identify and prioritise environmental projects within the frame of Sida's cooperation.
- There is no isolated environmental problem. In one way or another different problems relate to each other, a reason for a holistic approach.
- It is necessary to create a task force/facilitator, "Local Program Coordinator" who can assist the MC to design a project idea, to categorize the idea, to engage proper local resources and interested parties, to communicate the project and needs to the Swedish coordinator, and to assist the MC in implementing the project by coordinating resources and different inputs. Could be a local Chamber of Commerce, or any other organisation with relevant competence and good relations with MC as well as other local resources.
- The Local Program Coordinator should be contracted by the program (reference is made to alternatives for contract presented below) , and should have such a position that he can interact between the MC and all possible local resources.
- The Swedish resource base is huge, and it is necessary to have a Program Coordinator also on the Swedish side, to scout for and to organize resources needed for the different types of project ideas. Preferably, Sida should contract this Coordinator. The alternative is that the Local Program Coordinator procures and contract the Swedish Coordinator. This would probably complicate the situation unnecessary.
  (Compare with the Triangular Program implemented in Chile, where a Swedish County Council served as the Swedish Program Coordinator)
- The main actors in the program will be the two Program Coordinators. The main actors in different environmental projects will be selected resources on both sides, combined in the most efficient way.
- Certain Financing schemes already exist. Depending on the type of project, it might be that some schemes are already suitable for the

projects, and hence could be used to finance activities. However, there will be situations when no existing schemes can be used, and a Partnership Fund should be established as a complement.

16.1 Break down of the organisation Chart

16.1.1 The Program Top Organisation



This is the crucial part of the program organisation and could take different shapes depending on policy matters, necessary tendering procedures, financing possibilities, the most pragmatic solution etc.

Let us start to discuss and define the different players and the roles in the organisation.

The Municipal Corporation, is the Final Recipient of the program, and is supposed to sign a contract with Sida for the purpose of running the program and taking responsibility for the program activities. As a program recipient, the MC is also supposed to cater for part financing of the program, a responsibility, which could be met in different ways. It is proposed in the description of the special Partnership Fund, that the MC should contribute 20% of the total project costs when the fund is utilized. Local financing could also be arranged through full- or part-financing of the Local Program Coordinator. In addition, the MC could meet all costs for the Approval & Monitoring Committee. There are different options here.

Sida has a limited role as the Program Financier. Initially, Sida should initiate the Program and arrange all necessary local contracts and agreements on National, State and Municipality level. In addition, Sida should contract and finance the Swedish Program Coordinator. Whether Sida also should contract and finance the Local Program Coordinator has to be decided upon. When the Program has taken off, Sida will have no active role, but only the financing role.

This level is the Program Implementers/Facilitators. The two Program Coordinators in the two countries will have the main implementing power, with support from the Approval and Monitoring Committee. The Local Program Coordinator shall have the role of identifying

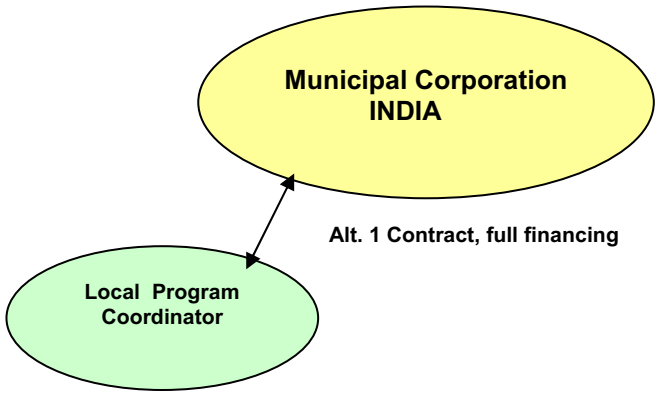
prospective and viable project ideas, prepare the ideas and present the same to the Approval and Monitoring Committee. The Swedish Program Coordinator shall, based on the indicated external resources for a project idea, scout for and organise Swedish resources. The role of the Approval and Monitoring Committee is self-explanatory.

Detailed, but brief Scope of Work for these players is included in the end of this Chapter.

Different alternatives for the Top Organisation could be discussed. The following is just an attempt to show some possibilities, but there could be others, or even a combination of the below presented varieties.

The Local Program Coordinator

Alt. 1. Municipal Corporation contracts and finances the LPC.

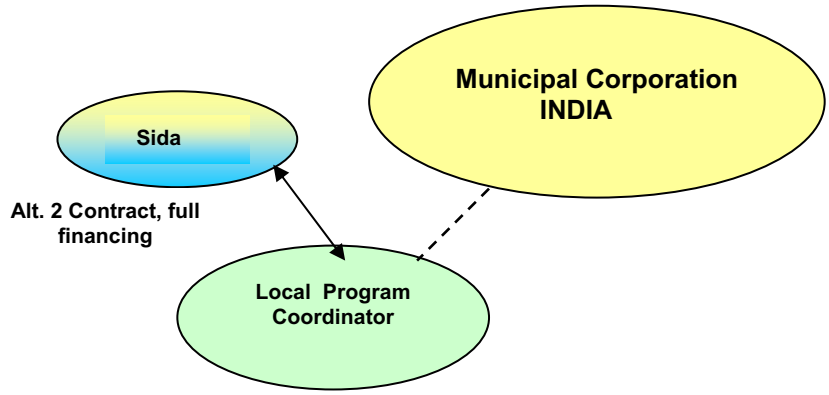


This corner of the Chart contains the two major actors in the Program. The main recipient of the Sida support is the Municipality Corporation.

To support the Municipalities in their efforts to run the Program and different projects to solve environmental problems, the MC should contract and finance a Local Program Coordinator. The LPC should be separated from the MC and have an independent role in the program implementation.

In this case it is up to the MC to find and select a suitable Coordinator, or to create a Task Force, which can take on the role of coordinating the program.

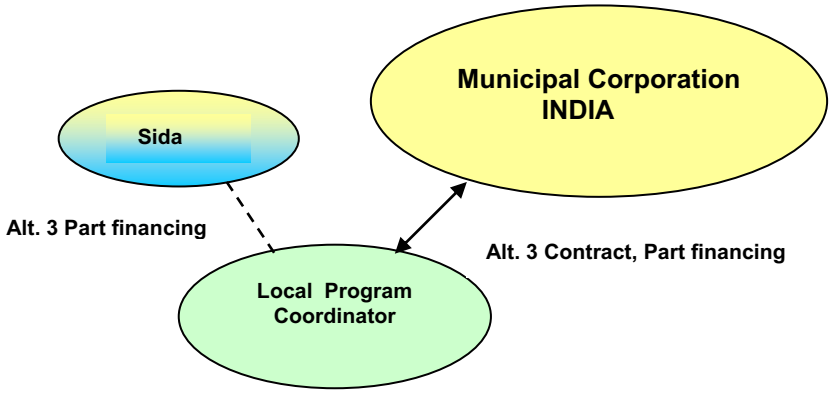
Alt. 2. Sida contracts and finance the LPC



In this case, Sida has to procure the services of the LPC. This will probably mean some kind of local Sida tendering procedure in India to find and select the LPC. Details of such a process is not fully known.

The MC can be a part of the procuring process, but Sida will have the final saying and the responsibility for the LPC.

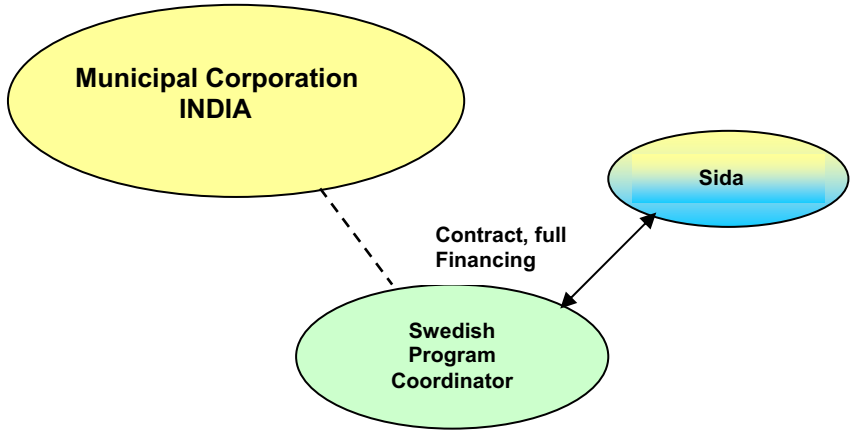
Alt. 3 Municipal Corporation contracts the LPC, and partly finances. Sida will support the MC with part financing



In this alternative, Municipal Corporation will be responsible for the procedure to procure the services from the LPC, and sign a contract. MC and Sida will share the financing of the LPC, terms for sharing to be concluded between the two parties.

The Swedish Program Coordinator

Alt. 1 Sida contracts and finances the Swedish program Coordinator (SPC)

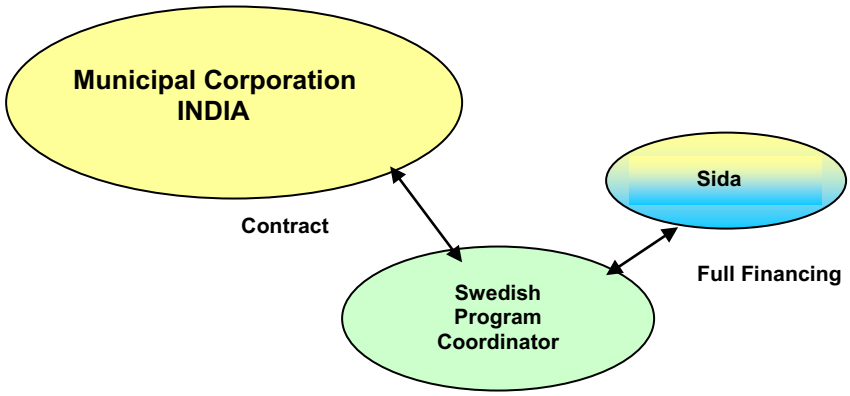


In this alternative, Sida, Sweden will through a tendering process select and contract the Swedish Program Coordinator. Besides Sida will pay fully for the services from the SPC.

The Municipal Corporation will not be involved in the process, but only informed about the procedure and the result.

This is most certainly the less complicated alternative. It could be judged that it is donor driven, not Program owner driven.

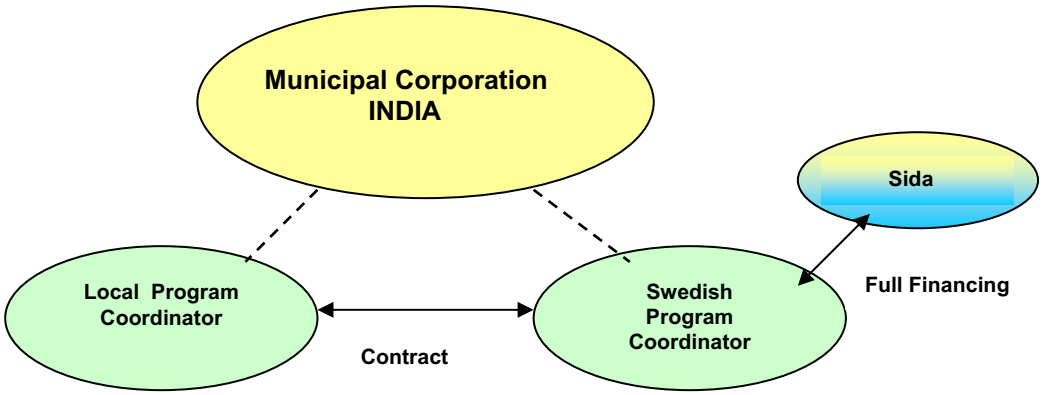
Alt. 2 Municipal Corporation contracts the Swedish Program Coordinator. Sida finances the services from SPC.



It could be anticipated that it would be more difficult for the MC to be involved in the procedure of procuring services on the Swedish side. Sida has already established routines and processes for this kind of tendering procedure.

Regarding payment of such services on the Swedish side, it is difficult to see any other financially possible or practical alternatives but that Sida meets the costs for the services fully.

Alt. 3 The Local Program Coordinator procures the Swedish Program Coordinator. Sida finances the SPC.



The only difference in this alternative is that the contracted LPC will take on responsibility for the procurement of the Swedish counterpart. Similar to the Alt. 2 above, it could be argued that a local organisation might have difficulties to handle the procedure of procuring services in Sweden.

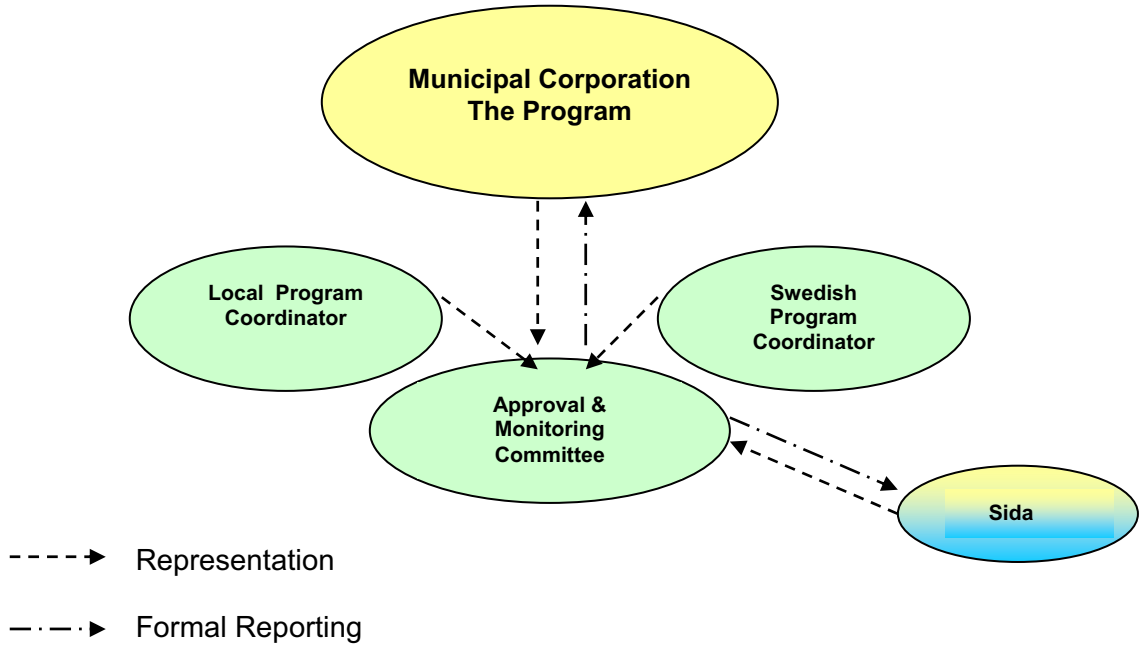
The Approval & Monitoring Committee (AMC)

The role of this committee is to ensure that viable projects of environmentally interest are considered for the Program. The committee shall support the Program through close cooperation with the Local and Swedish Program coordinators regarding discussions on the project proposals, prioritising the projects, and advising on financing alternatives, not least the utilization of the Partnership fund.

In addition, the AMC shall be responsible for the formal reporting to the Municipal Corporation and to Sida. Such reports on the progress of the Program and project activities, and the utilization of the Partnership Fund shall be presented semi-annually.

The Committee should consist of totally four members, one representative nominated by the Municipal Corporation, one member nominated by Sida, and one member each from the LPC and SPC. The group shall appoint one Chairman and one Secretary. All decisions in the committee shall be based on consensus.

The Partnership Fund shall cover costs for the Committee in terms of allowances, accommodation if any, travels costs if any, practical arrangements for meetings, etc.

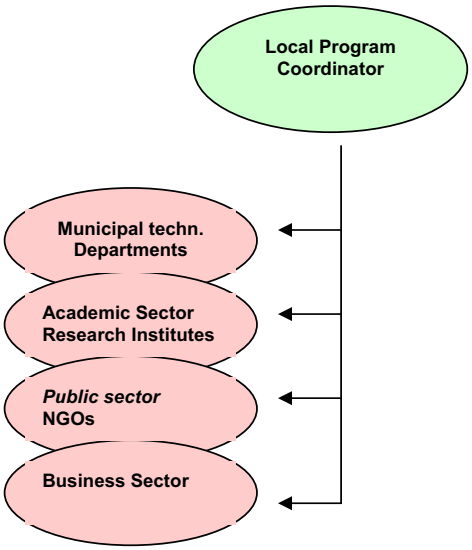


N.B.

The decision to combine the above-presented alternatives for arranging the Program Top Organisation, i.e. the Municipal Corporation, the Local Program Coordinator, the Swedish Program Coordinator and the Approval & Monitoring Committee in the most pragmatic and efficient way, must rest with Sida.

16.2 Mode of work within the Program

16.2.1 The Local Resource Base



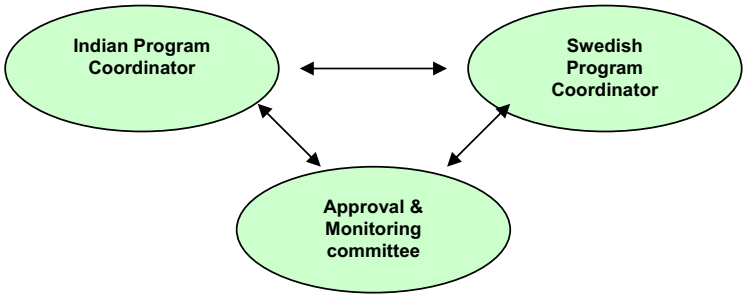
This corner of the Organization Chart illustrates the possibilities to make use of local resources.

When the Local Program Coordinator has a fairly good picture of the proposed project, it should be possible to identify local resources, which could contribute to the project, and/or gain from collaboration with external resources.

There is an impressing interest for the environmental problems, and knowledge of the local situation among the local possible actors. In addition there is a demand for external influence and know how.

The Program could support not only the Municipalities, but also in different ways support other actors with ties to the Municipalities and to environmental situation.

16.2.2 The link to Sweden



When the local Program Coordinator has worked out a proper project document, including the description of the problem area, the possible local resources, and the estimated need for external resources, such a proposal shall be presented to the Approval & Monitoring Committee. In case of approval, it is time to identify such resources on the Swedish side.

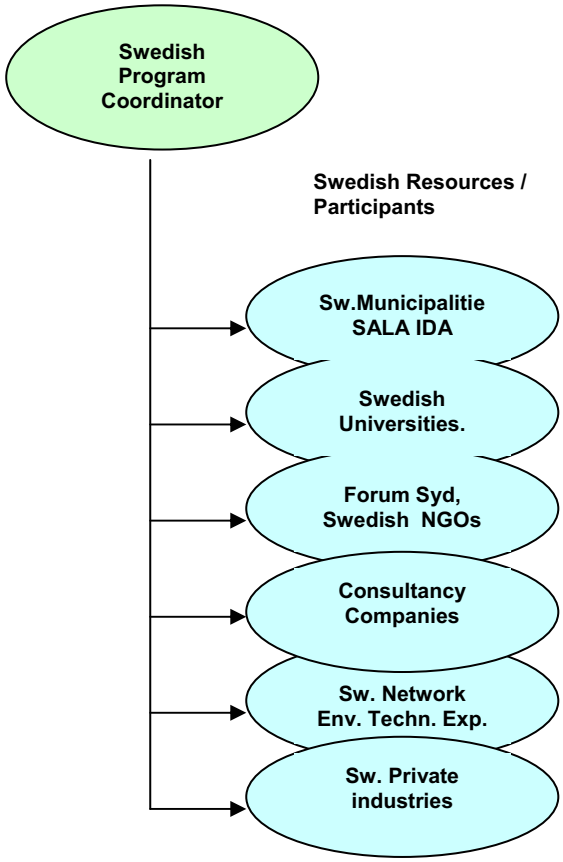
For this purpose, the Swedish Program Coordinator should serve as a broker of such needed inputs in terms of services or equipment. If applicable, a tendering procedure should be applied.

The Swedish Coordinator should, based on the project proposal, scrutinize the Swedish resource base, convey information about the intended project and negotiate with suitable partners for the project. Whether this stage would demand tendering procedures is not known at present. To ease the process, such tender procedures should be avoided, but if the Sida policy so demands, tenders should be applied.

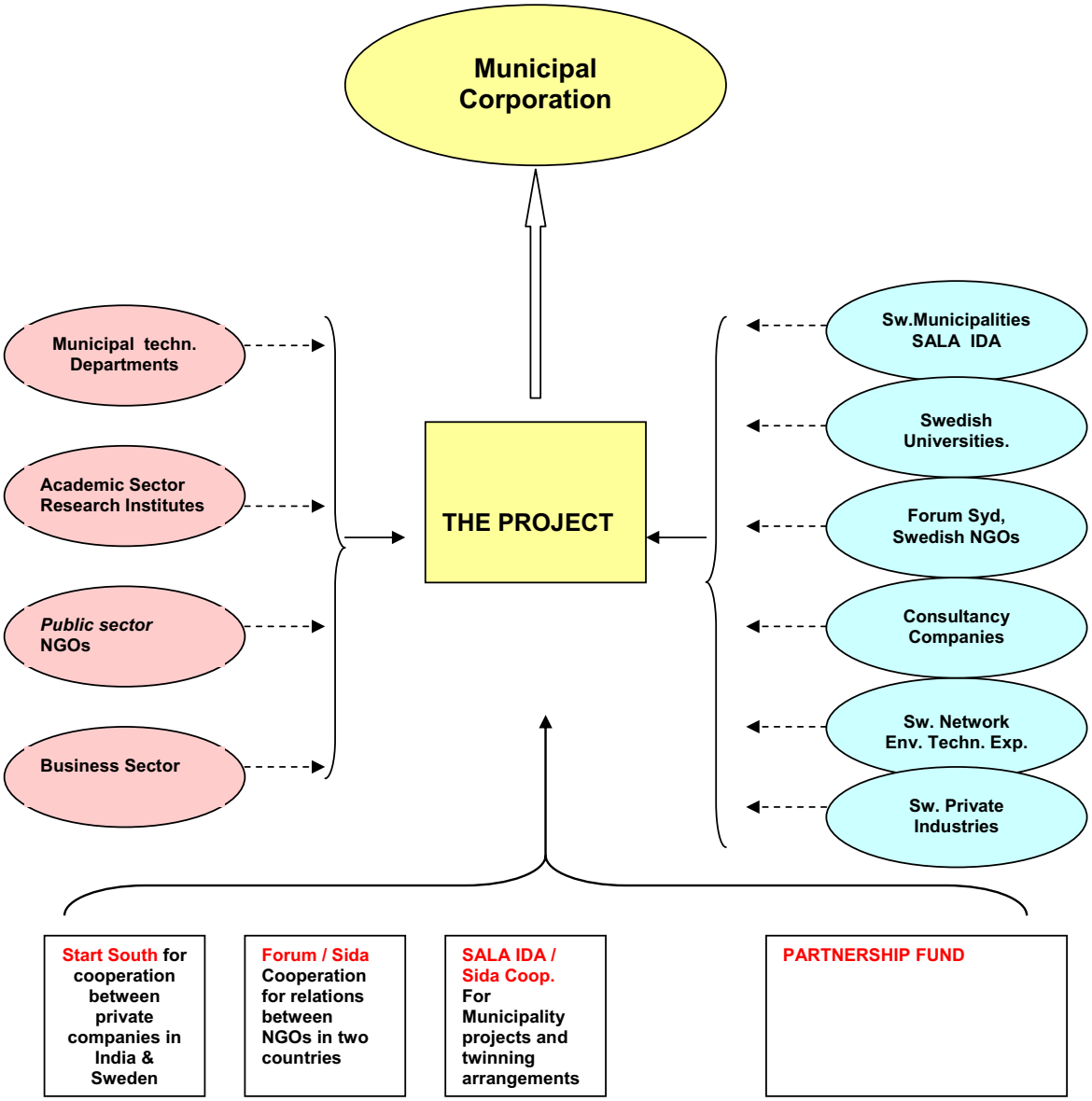
Based on the interest shown, and the existence of possible Swedish actors, the Coordinator should make the project proposal complete by adding the possible inputs from the Swedish side.

In addition, the Coordinator should identify the possibilities to make use of already existing Sida financing schemes, and/or propose other means of financing the components of the project.

The project proposal should be complemented with the suggested inputs from Sweden, and should be finally prepared for implementation.



16.2.4 Implementation of the project



To implement the project, the identified resources, or a combination of such resources, should join hands and conduct the necessary activities.

During the implementation, neither Sida, nor the Local/Swedish Program coordinators should be directly involved in the activities. The Program Coordinators should only monitor the progress, and work out regular reports to be presented to Sida.

It should be noted that several sub-projects could run simultaneously, involving different actors or combination of actors.

16.3 General Terms and Scope of Work for the Program Facilitators

16.3.1 The Local Program Coordinator (LPC)

The position as the LPC is maybe the most important in the whole Program, the “Hub in the wheel". The selection of the holder of this position is therefore crucial.

The LPC shall be looked upon as a service function to assist the progress of the Program. Experience in project assessment and development, project documentation and project implementation, as well as result-orientation are required to enable fast progress.

The LPC shall be separated from the Municipal Corporation. It is important that the LPC has a substantial network with good relations, including business sector (services and goods), the Municipal Corporation (political and administration level), the society and it's different associations and organisations.

The LPC shall have capacity in terms of staff and personnel resources with competence relevant for the program activities. As the program activities might differ from time to time, a preparation for flexibility is preferred.

The Local Program Coordinator shall;

- identify possible project ideas in close cooperation with the Municipality, and/or with other local resources.
- scrutinize and assess project ideas and decide on ideas for further development.
- inform the Swedish counterpart, and discuss project ideas to ensure that both program Coordinators have the same view on the ideas, and that possibilities for future connection with Swedish resources exist.
- develop and design project ideas into a proper project document, including, but not limited to; Project proponent/owner, project category, project purpose, expected results, direct and indirect beneficiaries, prospective available local resources, estimated external resources, project organisation, etc.
- identify local resources which could contribute to the projects, and/or gain from collaboration with foreign resources.
- interact with possible local resources during the development of the project to include their views and experience.
- appoint one representative as member of the Approval & Monitoring Committee, and participate in formal meetings with the AMC.
- have a continuous contact with members of the Approval & Monitoring Committee, and shall during formal meetings present the project documents for assessment and decisions.
- assist the implementing partners, local and Swedish, with necessary support in terms of contacts with National and State authorities, local institutions, local expertise, etc. during the implementation periods of the projects

16.3.2 The Swedish Program Coordinator (SPC)

Similar to the Local Program Coordinator, the SPC has a vital role in the progress of the Program.

The SPC shall be regarded as a service function to assist the progress of the Program. Experience in project assessment and development, project documentation and project implementation, as well as result-orientation are required to enable fast progress.

The SPC shall have capacity in terms of staff and personnel resources with competence relevant for the program activities. As the program activities might differ from time to time, a preparation for flexibility is preferred.

The SPC shall have a good network in Sweden, with developed, or with competence to develop, channels to the Swedish resource base. This includes contacts with; the business sector (organisations or associations), the consultancy sector, institutions and Universities, society organisations, NGOs etc.

The SPC shall;

- cooperate with the LPC in terms of discussions on the viability and relevance of project ideas.
- convey to the LPC prospective project ideas initiated on the Swedish side.
- upon request from LPC, scout for possible Swedish resources to match the needs indicated in project proposal documents.
- work out and convey information about the intended projects and negotiate with actors on the Swedish side to make sure that project resources are secured, as well as organise such prospective resources in the most efficient way.
- complement the project documents by adding the possible inputs from the Swedish side.
- if deemed necessary and relevant, work out tender documents for the procuring of Swedish resources to projects
- assist in identifying alternatives for financing of projects, and assist in application procedures for such financing, or to suggest other financing means.
- appoint one representative as member of the Approval & Monitoring Committee, and participate in formal meetings with the AMC.

16.3.3 The Approval & Monitoring Committee (AMC)

The AMC is a supporting body to the Program to ensure that all projects proposed for implementation are in line with the interest of the Program owner, the Municipal Corporation, and the Program financier, Sida.

In addition, the AMC shall be the main body for monitoring the progress of the Program, and shall report to the Municipal Corporation and to Sida.

The proposed Partnership Fund, to be established as an additional financing alternative for general program activities, shall be controlled and managed by the AMC. The administration and disbursement of funds for project activities shall however.

The members of the AMC shall consist of one representative from the Municipal corporation, one representative appointed by Sida, and two representatives appointed by the Local and Swedish Program Coordinators respectively.

All decisions in the AMC shall be based consensus.

The ANC shall;

- appoint one Chairman and one Secretary from the group members.
- arrange quarterly meetings in India, or in Sweden, in order to conduct the tasks and services required by the AMC.
- during formal meetings assess and discuss project proposals to ensure the viability of the projects and to ensure that all projects are in line with the intentions of the Program and the policies of the Municipal corporation and Sida.
- prioritise project proposal to make sure that the most viable projects are implemented, and that a proper mixture of projects is considered.
- decide on the utilization of financing from the Partnership Funds, and formally instruct the administrators of the funds to allocate funds for the approved projects.
- report to the Municipal Corporation and to Sida regarding the progress of project activities under the Program, and the utilization and status of the Partnership Fund. Such reports shall, at least initially, be presented semi-annual.

17. Financial Schemes

Different existing Financing Schemes, supported by Sida, have already been mentioned previously in this report. There is no reason why such schemes should not be tapped in case of sub-projects within the Program, which could fit into the criteria for those schemes.

It has also been mentioned that there might be situations when a project proposal does not fall within the criteria for such existing possibilities, but when there is need of an additional facility to cater for specific situations.

17.1 Existing Schemes

17.1.1 StartSouth Program

This program is administered by ALMI and NUTEK. The program offers a financing complement to SMEs for establishment of commercial business cooperation. The objective is to contribute to a smooth start up of productive and profitable business activity in developing countries, and to support competence development and technology transfer to firms in developing countries.

The program contains two different loans. The first one is purely meant for soft ware in terms of expert services, training components, etc. The upper limit for this loan is SEK 500 000, and the total loan amount is written off when planned activities have been conducted fully and successfully. The second loan is meant for necessary hardware during the initial period, and the repayment period is 5 years.

The maximum total amount for the two loans is set at SEK 750 000 per project, however not exceeding 40% of the grand-total project investment.

This program could be one alternative in cases when two private companies in India and Sweden respectively, decide to enter into a commercial business collaboration related to the field of urban environment.

17.1.2 Forum Syd

Forum Syd is the umbrella organisation for the majority of the Swedish NGOs, with roughly 160 members. Forum Syd has a frame contract with Sida, within which FS administer a budget in the range of SEK 100

million per annum. (Bidrag till enskilda organisationers utvecklingssamarbete med egeninsats, s.k. Folkrörelseanslaget.)

Out of the annual budget, about 90% is used for the South, and 10% for Eastern and central Europe.

The terms for this financing is the so-called 20/80 rule, meaning that the NGO contribute 20%, while the remaining 80% can be supported through Forum Syd/Sida funding.

The budget is regarded as not sufficient. Roughly 50% of applications can not be approved, of course due to different reasons, one reason being lack of funds.

If the program has strong intentions to include NGOs in project activities, it is proposed that an additional small fund is channelled through Forum Syd, clearly earmarked for this specific Urban Environment program in India.

17.1.3 SALA IDA Twinning arrangements

A contract exists between Sida and Svenska Kommunförbundet, the mother organisation to SALA IDA. This contract covers the 3-year period 1999–2002, and the total amount in the budget is around SEK 12 million. This period is regarded as a trial period and an evaluation of the activities and results will determine the possibilities to annual budget in the future.

SALA IDA AB organises aid projects e.g. within the filed of democracy, and administer twinning arrangements. One fairly new activity is the International course in Local Democracy and Local Government.

The objective of the twinning program is to assist Municipalities in Sweden to prepare and establish twinning arrangements with partner Municipalities in developing countries.

This SALA IDA scheme could be used if and when interest for possible twinning arrangements should develop. In addition, the above mentioned course in Democracy and Government would be one interesting possible component in the program.

17.1.4 KTS

Contract-Financed Technical Cooperation is merely a type of project, but as Sida is the main financier in this type of projects it could be argued that it is also a financing scheme.

The objective of contract-financed technical cooperation is to promote human resource development in low and middle-income countries by supplying know-how in areas, which are of strategic importance to the development of partner countries.

Projects under the contract-financed technical cooperation programme shall promote a greater exchange of skills and experience between Sweden and partner countries and encourage a wide range of Swedish organisations and institutions to participate in the programmes.

The cooperation shall focus on areas in which Swedish competitiveness and know-how are strong.

The main features of Sida's contract-financed technical cooperation are;

- Human resource development: Through programmes of contract-financed technical cooperation Sida contributes to various forms of human resource development for development purposes in strategically important areas in the partner countries.
- Specific requests: Sida's decisions to make contributions to projects are based on a concrete and specific request through a central planning agency in the partner country.
- Swedish resources: Contract-financed technical cooperation is based on Swedish know-how and Swedish experience, which have proved to be competitive.
- Contract-financing: A Swedish party and a party in the partner country sign a contract for the implementation of a project, which is partly financed by Sida. The responsibility for the implementation of the project rests on the parties concerned. Sida does not finance a contract, which is signed with a company in the partner country.
- Cost sharing: Requirements in respect of cost sharing apply in all projects, i. e. the party in the partner country is responsible for parts of the contract costs, and at least the local costs.
- Competence: This form of cooperation, in which Sida is the financier and a non-implementing party, requires competent partners in cooperation who have the capacity to plan and implement projects and to make good use of experience gained.

Sida applies the principle of cost sharing. This means that the partner country and the local partner in cooperation bear part of the costs of the work, which shall be done.

Sida's requirement that local costs shall normally be borne by the partner country has two aims. If the partner country assumes part of the responsibility for costs, it shows clearly that the project has strong support and high priority in the partner country. The requirement for cost sharing also contributes to promote cost-consciousness in procurements.

Sida normally covers the following costs in Swedish currency:
Each year Sida supports between 150–200 projects in some 30 countries under the contract-financed technical cooperation program. The projects have clear objectives and time limits, usually 1–2 years, and normally cost in the range of SEK 0.5 to 4 million.

17.1.5 Sida Financial Instruments

17.1.5.1 Guarantees

The main purpose with the Guarantees is to facilitate access to capital at good conditions on the local and the international market. The scheme is meant for private companies.
The conditions could be summarized as,
Projects within Swedish development policy
Not tied to Swedish products
No sovereign guarantee required
Other commercial financing involved
Risk reflecting guarantee fee is charged
Specific export contracts excluded

This Guarantee could for example be used in projects for power production, telecommunication, etc.

17.1.5.2 Concessionary Credits

Here the main purpose is to finance projects with low financial viability but of economic interest. This credit could be used by State owned or public entities.

The conditions in this case are;
GPI/capita < US 2,995
Within Swedish development policy
OECD Consensus Agreement
35% concessionality
Tied credits (min 70% Swedish products)
Financially non-viable
Economically viable

Examples when the credit could be used; Rural electrification, sewerage treatment, solid waste management, etc.

17.1.5.3 Soft Loans

Main purpose of these loans is to finance low or non-capital generating projects of economic interest, and is meant for State owned or public entities. Eligible countries are Low & Middle Income countries.

Conditions set are;
Within Swedish development co-operation policy
Untied credits
80% concessionality

Suitable projects for these loans could be; road networks, environmental and social projects.

17.2 A special Partnership Fund

For approved projects that cannot find financing through any of the existing schemes, a special fund should be established to facilitate and speed up the implementation of such projects. The Fund will be established through the Partnership Agreement on Environment to be entered into between Sida and the Municipal Corporation of the participating Indian municipality.

The purpose of the Fund will be to finance general programme development activities, as well as (separate projects in the programme) that cannot be financed under existing schemes or where the application of any of these schemes is deemed to be inconvenient.

It is envisaged that the Fund will mainly finance the following type of programme activities:

– projects for environmental development and development of environmental innovations. This would include the financing of activities for projects in relation to new environmental technologies, such as development and testing of pilot projects;

– consultancy services for project studies, preparation and implementation;
– training activities, seminars and workshops in environmentally related topics;
– study tours to Sweden of Indian programme personnel;
– visits to India by Swedish programme personnel.

These purposes for drawing on the Fund are not exclusive and should be seen as examples only.

Goods and services financed by the Partnership Fund shall be procured in a competitive manner and when feasible in accordance with Sida's procurement guidelines.

The Fund will consist of a contribution by Sida of SEK ten millions with a matching contribution by the Indian partner of 20% of Sida's input. Sida will pay its contribution up-front in one or several tranches into a special account in Sweden opened in the name of and managed by the Swedish Programme Coordinator.

The Indian contribution will be paid in project-wise as and when the Approval and Monitoring Committee approve a project. The Indian partner will pay up 20% of the total budgeted costs of the project into a special account in India opened in the name of and managed by the Local Programme Coordinator. The balance, 80%, will be drawn from the Sida funds. The respective Coordinator is then responsible for disbursements to the approved project. Portions of Sida's contribution will be transferred to the Indian account if costs in India are in excess of the Indian contribution. Amounts remaining in the special accounts when the Programme terminates will be repaid to Sida and the Indian partner respectively.

The Approval and Monitoring Committee shall approve all projects seeking financial support from the Partnership Fund. The Committee will have four members and consist of one member nominated by the Indian Partner, one member nominated by Sida and one representative each of the Indian and Swedish Coordinators respectively.

The Approval and Monitoring Committee shall submit regular reports (yearly or semi-annual) to Sida and the Municipal Corporation on the utilization of the Fund and the purposes.

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Appendix 1

Draft Terms of Reference for Identification Mission for the purpose of the Enhancement of Indo/Swedish Exchange and Co-operation in the field of Urban Environment

Background

Consonant with “Riktlinjer för det fortsatta utvecklingssamarbetet med Indien", INEC received at the end of January, 2002, a mandate to study ways of enhancing the Swedish/Indian cooperation in the field of environment. Since then an “Issues Paper on Urban Environment in India' has been completed. In its final version the paper contains a brief elaboration on the promoting of Indo-Swedish Linkages in Urban Environment.

In the report, a number of focus areas are claimed to be areas in which Sweden has built a well reputed know how and which know how could be expected to be in demand in India.

The focal areas are:
- Solid waste management,
- Urban air quality
- Urban water supply
- Waste water issues.

The report also identifies types of Swedish organization as having the potential to become actively and fruitfully involved in India. A list of such typical organizations include:
- Universities;
- Other academic or research institutes;
- NGOs, voluntary and humanitarian bodies;
- Municipalities and local government;
- Other government/public sector agencies;
- Producers and exporters of goods/products (including both goods that could contribute to delivering environmental benefit, and those which are specifically designed as environmental products);
- Producers and exporters of services.

The report suggests a number of 'mechanisms' or 'instruments' as relevant for an enhanced cooperation in the environment sector.

Besides 'traditional' technical assistance such mechanisms include:
- Assistance of the 'KTS' type,
- Grants
- Concessionaire Credits and
- Credit lines,

To enhance cooperation involving the commercial sector, nota bene the Small and Medium Scale Enterprises' sector, it is also proposed to establish 'A Business Partnership Fund' and to revive the 'Start South' program in India.

In order to strengthen linkages and broader cooperation in general between societies in the respective countries, including the commercial sector and public and academic institutions it is suggested in the report that twinning arrangements, research cooperation, International courses and workshops, trade fairs and other marketing activities be promoted.

Previous Experience

In 1997, the Swedish Government in their guidelines for cooperation instructed Sida to implement on a pilot basis a program known as 'economic co-operation of mutual interest' (Ekonomiskt Samarbete). The aim of the program was to find new forms for enhanced cooperation between on one hand Sweden and on the other South Africa (RSA), India and Chile.

Due to the nuclear tests performed by India in early 1998, activities were started in South Africa and Chile only.

Now that INEC has been given the mandate to find ways to enhance the cooperation with India, there are several options available. For cooperation between private enterprises, the Start Syd model remains as the most important vehicle, established since long and with a proven track record, also in India.

On behalf of the Government, The Swedish Export Counsil, has established The Swedish Environmental Technology Network–Sweden Tech. The Network includes over 500 consulting companies and suppliers in the field of water/waste water treatment, waste management and air pollution control. The network has improved the sector's visibility at the international level, offering access to and contacts with the broad and deep expertise possessed by the Swedish environmental technology export industry.

In Chile a cooperation model according to what is known as 'the triangle model', has been developed in which the commercial sector, universities and the public sector are engaged in a fruitful exchange and teamwork. Strengths and weaknesses of the different partners have shown rather clearly, as have to some extent also the arguments and reasons chosen for engaging in an international (development) co-operation.

In the co-operation with South Africa a fund has been established the aim of which it is to stimulate economic growth by facilitating sustainable and viable business partnerships between Swedish enterprises and south African small and medium enterprises (SME's). The principle for the operation of this fund could be tried also in an Indian context.

Sida Öst has a long experience of successful twinning arrangements between Swedish municipalities and counties and their counterparts in the Baltic's and East Europe. It is possible that similar arrangement could be tried also with counterparts in India.

In addition to direct commercial interactions there are a number of other potential areas of cooperation, ranging from research and academic cooperation to twinning arrangements between cities and municipalities. The opportunity to engage in professional interchange with staff in other countries have become increasingly important as a tool to attract qualified staff to public offices who can often not compete on other terms with the private sector.

Objective

The overall objective is to achieve enhanced Indo/Swedish cooperation in the environmental sector. In this regard the environmental sector should be viewed in a wide perspective involving as many actors as possible, including the commercial as well as the public sector.

Scope of work

1. The Consultant shall make an update of the list of institutions and partners listed in the Urban Issues paper as potential participants in enhanced cooperation between India and Sweden. Further, factors that can be figured as detrimental to an enhanced broad cooperation for the different partners as well as means that could contribute to its enhancement, should be identified and described.
2. The Consultant shall as far as possible establish specific arguments and reasons why different partners could engage in and benefit from an enhanced cooperation, e.g. through the establishing of partnership funds.
3. The Consultant shall suggest means and methods, e.g. “partnership funds” in which Sida can contribute towards an enhanced broad cooperation between the Swedish society at large and India in the field of urban environment. The Consultant shall elaborate on ways and means through which Sida could act as a 'broker' of contracts between Indian and Swedish partners.
4. The Consultant shall suggest scoping mechanisms for Sida's catalytic work in the various focus areas and for the various means and methods proposed. Procedures and criterias for utilisation of the proposed tools shall be elaborated.
5. In the event that the Consultant finds that further preparatory work is required, Terms of References for such support shall be suggested.

Mode of work

The Consultant shall meet with relevant institutions and/or partners in India and Sweden responsible for, interested in or otherwise concerned with cooperation between partners in the two countries. It is expected that the Swedish Export Trade Council could be one such partner. The Consultant shall also discuss with potential partners in both countries their needs and requirements for achieving an enhanced level of cooperation.

The consultant shall at the outset of the visit in India meet and consult with the Embassy in New Delhi. Visitation programs shall be

elaborated in cooperation with the Embassy. At the completion of the field visit, a de-briefing shall be arranged with the Embassy.

Expected result

The Consultant shall provide recommendations on further activities that are required to achieve tangible results towards fulfilling the overall objective of enhanced Indo/Swedish co-operation in the environmental sector. Studies or technical assistance proposals shall be substantiated with comprehensive Terms of References.

Reporting

The Consultant shall present a draft report to INEC and the DCO within three weeks of the completion of the field visit. Based on the comments from the DCO and INEC, the consultant shall submit the final report within two weeks of the receipt of the comments.

Duration of the Assignment

The duration of the assignment is 60 days. The work shall begin not later than September 2002 and be completed not later than November 2002.

Appendix 2: List of contact persons

General & Donor Agencies

Mr. Carl Mattsson, Managing Director, SALAIDA, Stockholm

Mr. Owe Andersson, Councellor, Embassy of Sweden, New Dehli

Mrs. Sunita Chakravarty, Program Manager, Embassy of Sweden, New Dehli

Mr. Aashid Sawjani, Trade Commissioner, Swedish Trade Commission, New Dehli

Mrs. Agnete Eriksen, Counsellor Development, Royal Norwegian Embassy, New Delhi

Mr. Nabaroon Bhattacharjee, Program Manager & Regional Training Advisor, USAID

Mr. Salman Zaheer, Lead Utilities Specialist, Water & Sanitation Program South Asia

Mrs. Pushpa Pathak, Urban Specialist, Water & Sanitation Program South Asia

Mrs. Soma Ghosh Moulik, Institutional Dev. Specialist, WSP-SA

Mr. Ramesh K. Subramanian, Senior Project Officer, Australian Agency for Intl. Dev.

Experts

Mr. Ashok Nehru, Gurgaon, Haryana, Consultant, Advisor to Swedfund.

Mr. Shirish B. Patel, SPA & Ass. Consultants, Ex-Chief Planner, Mumbai Expansion

Government Agencies

Mr. R.G. Pethe, Water Pollution Abatement Engineer, Maharashtra Pollution Control Board

R.K. Das, Dy. CEO (Envr.) Maharashtra Industrial Dev. Cooperation

Mr. Dilip Pandharpatte, Dy. Municipal Commissioner, Thane Municipal Corporation

Dr. Mr. S. K. Wagchore, Health Officer, Thane Municipal Corporation

Mr. Thomas C. Benjamin, Municipal Commissioner, Pune Mun. Corporation

Dr. Mr. Nagkumar R. Kunachgi, Medical Officer of Health, Pimpri-Chinchwad Mun. Corp.

Mr. R. M. Dhariwal, Ex-President of Shirur Municipal Council

Mr. Chandrakant S. Bafana, Municipal Councillor, Shirur

Mr. Dilip Biswas, Chairman, Central Pollution Control Board, Dehli

Mr. J. S. Kamyotra, Sr. Envr. Engineer, Central Pollution Control Board, Dehli

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Ms. Sheel Dhabhai, Mayor Jaipur Municipal Corporation, Jaipur

Mr. Pavan Sharma, Dep. Mayor, Jaipur Municipal Corporation, Jaipur

Mr. Raghau Sharma, Chairman Building Committee, JMC, Jaipur

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Mr. D. B. Makwana, Dy. Mun. Commissioner, Ahmedabad Municipal Corporation

Mr. Dilipkumar Mahajan, Dy. Mun. Commissioner, Ahmedabad Municipal Corporation

Mr. Badruddin Shaikh, Chairman Standing Committee, Ahmedabad MC

Mr. Hinnatsingh Patel, Mayor Ahmedabad

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Mr. D.K. Abhyankar, Director General, Mahratta Chamber of Com., Ind, and Agri. Pune

Mrs. Shubhada Shintre, Deputy Secretary, MCCIA, Pune

Mr. Abhijit Bhaumik, Director, Feedback Ventures Pvt. Ltd.

Mr. V. K. Gupta, Dy. General Manager (Projects), Subhash Projects & Mktg. Ltd., Bangalore

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Mr. Mukesh Godika, Dir. Akshat Engineers Pvt. Ltd & Vijai Metals, Jaipur

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Mr. Viral Makadia, Project Manager, Rajasthan Chamber of Commerce & Industry

Mr. Muzahid Malik, Project Manager Dasada Rann, Ahmedabad

Mr. Tarun Shankar, Ass. Man., Infrastructure Strategic Business Unit, IL & FS, Dehli

Mr. Anders Thambert, Managing Director, Indiska Magasinet AB, Stockholm

Mr. Bertil Elfving, Program Officer Start East/South, NUTEK, Stockholm

Att halvera fattigdomen i världen till år 2015 är vår tids största utmaning. Det kräver samarbete och uthållighet. Samarbetsländerna ansvarar för sin utveckling. Sida förmedlar resurser och utvecklar kunskap och kompetens. Det gör världen rikare.

Sida

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