REVIEW OF THE SINO-NORWEGIAN ENVIRONMENTAL COOPERATION 1996-2005

Final Report

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Jens Claussen and Stein Hansen, Nordic Consulting Group

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State Environment Protection Administration of China and Norwegian Agency for Development Cooperation

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18 JUNE 2007

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FOREWORD

This report presents a review of environmental development cooperation between Norway and China. The review covers the 10 years from 1996 – 2005 following the signing of a Memorandum of Understanding between the National Environmental Protection Agency (NEPA) and the Norwegian Ministry of Environment (MoE) on November 1995.

This review is undertaken by a team of three consultants; Mr. Wu Xiaofu, Mr. Jens Claussen and Mr. Stein Hansen (team leader). It started in august 2006 with collection and compilation of data, statistics and documents in Oslo and at the Norwegian Embassy in Beijing, followed by a desk review of the collected material. Based on this the Review Team held consultations with Norwegian stakeholders related to environmental development cooperation between Norway and China. This phase of the review was concluded with the submission of an Inception Report describing the cooperation in broad terms as basis for identification of key issues to be addressed in the following phase. Following the Inception Phase the Review Team had a two week mission in China for among others to have consultations with Chinese stakeholders and partners in the cooperation, meetings with other donors with bilateral environment cooperation agreements in China, and with the Norwegian embassy. Based on the analysis and follow up interviews in Norway the Review Team has prepared the Draft Review Report containing findings and recommendations as per terms of reference (ref. annex I).

The Review Team highly appreciates the professional inputs and facilitation provided throughout the review period by the Norwegian Embassy staff in Beijing, and by Norad and MFA in Oslo. Furthermore, the Review Team wishes to thank MOFCOM, SEPA, FECO and the various Chinese project participants for their contribution enabling the team to undertake the tasks assigned to them team during the period in China. Needless to say, all findings and conclusions are those of the Review Team and are not necessarily shared by those Chinese and Norwegian entities reviewed and interviewed.

Oslo and Beijing
18 June 2007

Wu Xiaofu,
Jens Claussen
and Stein Hansen

ACRONYMS

AGM = Annual General Meeting (of CCICED)
AirQUIS = Air quality Management System
AQM = Air Quality Management
CAF = Common Assessment Framework
CCEMS = China Centre for Environment Management Systems
CCCI = China Centre for Certification Incorporated
CCICED = China Council for International Cooperation on Environment and Development
CDM = Clean Development Mechanism
CGE = Computable General Equilibrium (economic analytic model)
CHN = China
CIDA = Canadian International Development Agency
CNEMC = China National Environment Monitoring Centre
CRAES = China Research Academy of Environmental sciences
DAC = OECD's Development Advisory Committee
DEM = Deutch Mark
DnV = Det norske Veritas
EEIA = Environmental Economic Impact Assessment
EIA = Environmental Impact Assessment
EMS = Environment Management System
ENSIS = Environment Surveillance and Information System
EPB = Environmental Protection Bureau (provincial and local levels)
EURO = EU currency
FECO = Foreign Economic Cooperation Office (affiliated to SEPA)
FYP = Five Year Plan
GDP = Gross Domestic Product
GND = Green Network Development
GOC = Government of China
GTZ = Deutche Gesselschaft fur Technische Zusammenarbeit GmbH
ICB = International Competitive Bidding
IEE = Institute of Environmental Economics (Renmim University)
ISO = International Standards Organisation
IMPACTS =Integrated Monitoring Program on Acidification of Chinese Terrestrial systems
KfW = Kreditenanstalt fur Wiederaufbau
LEG = Lead Expert Group (of CCICED)
LFA = Logical Framework Approach
MoE/MD = Ministry of Environment, Norway
MFA = Ministry of Foreign Affairs, Norway
MOF = Ministry of Finance (China)
MOFCOM = Ministry of Commerce (China)
MOFTEC = Ministry of Foreign Trade and Economic Cooperation (China)
MOST = Ministry of Science and Technology (China)
MoU = Memorandum of Understanding

NBS = National Bureau of Statistics of China
NCB = National Competitive Bidding
NDRC = National Development and Reform Commission
NEEC = Norwegian Energy and Environment Consortium
NEPA = National Environment Protection Administration of China
NHO = Næringslivets Hovedorganisasjon
NIJOS = Norwegian Institute for Soil Research
NILU = Norwegian Institute for Air Research
NINA = Norwegian Institute for Nature Research
NISK = Norwegian Institute for Forest Research
NIVA = Norwegian Institute for Water Research
NOK = Norwegian kroner
NPC = National Planning Committee
NULS = Norwegian University of Life Sciences
NUPI = Norsk Utenrikspolitisk Institutt
ODA = Official Development Assistance
OECD = Organization on Economic Cooperation and Development
PMO = Project Management Office
PPM = Particles per Million
RMB = Chinese Currency
SARS = Severe Acute Respiratory Syndrome
SEIC = Shanxi Environmental Information Centre
SEK = Swedish Kroner
SEPA = State Environment Protection Administration of China
SIDA = Swedish International Development Agency
SINTEF = Stiftelsen for Industriell og Teknisk Forskning ved NTH
SSB = Statistics Norway
SSTC = State Science and Technology Commission
UiO = University of Oslo
UNCED = United Nations Conference on Environment and Development
USD = United States Dollar

1 EXECUTIVE SUMMARY

1.1 Introduction

This report presents the outcome of a review of environmental development cooperation between Norway and China. The review covers the 10 years from 1996 – 2005 following the signing of a Memorandum of Understanding between the National Environmental Protection Agency (NEPA) of China and the Norwegian Ministry of Environment (MD) on November 1995 (MoU-1995) and a subsequent MoU in May 2001 (MoU-2001) regarding technical co-operation for promotion of the environmental development of the China signed between the Norwegian Agency for Development Cooperation (Norad) and the Chinese Ministry of Foreign Trade and Economic Cooperation (MOFTEC) .

The main purpose of the review has been to assess the outcome of the cooperation with focus on the implementation of the MoUs, and give recommendation on how to further the co-operation.

A sample of projects were selected for in-depth analysis as input to the assessment of the overall cooperation in general, its outcome and institutional arrangement,

The review commenced in August 2006 with a desk review of documentation and initial consultations with Norwegian partners implementing projects jointly with Chinese counterparts. This phase of the review was concluded with a presentation of an inception report presenting an overview of the portfolio of projects during the ten years with some 117 environmental projects classified as institutional or commercial cooperation projects depending on which budget line in the Norwegian aid budget they received funding from. It is the budget line Norway has chosen for funding which is the main difference between the labels *institutional* and *commercial* cooperation, not the project content or objective. Accordingly, this review has covered the entire portfolio of projects under both labels.

In the subsequent phase the review team conducted a two week mission in China for consultations with Chinese stakeholders and partners in the cooperation as well as other country representatives with cooperation arrangements related to environment.

When reviewing the cooperation with China due consideration has been given to the fact that Norway is a very small partner for China, also when compared to other countries promoting environmental cooperation.

1.2 Main findings

The important issue for the cooperation with China has not been the financial contribution Norway has made in resolving environmental problems but the access to *knowledge and technology from Norway* that the arrangement has facilitated (Norway's financial contribution to China constitutes only 0.45% of total official development assistance and 0.004% of China's public revenue). Thus the cooperation with China should not be considered from a traditional aid management perspective, but from the perspective of fostering regular bilateral cooperation as with any other country (like other OECD countries or countries in Eastern Europe).

Findings from this review suggest that in most cases and for most projects *the objectives have been successfully achieved*. This is evident from the sample of projects subject for a more detailed review as well as for the portfolio in general when consulting project-specific review reports. Comparing this finding with other similar arrangements with other countries, the success can to a large extent be attributed to the fact that the partnership has been between professional parties with highly qualified managers with Chinese partners being "professional buyers of services". In countries with less skills and resources for effective management of projects and cooperation in general, the outcomes are usually more mixed.

The projects have *responded to demands for knowledge-sharing and expertise* in resolving critical environmental problems. They have to a large degree responded to demands from various partners in China who initially elaborated proposals for consideration by Norway. In response, Norway has in several cases funded project preparation/appraisal processes which have brought the proposals forward to qualify for funding and serving as guidance for the partnerships in implementation. Thus the projects have largely been identified and implemented by partners through a demand driven process in which several Chinese (e.g. MOFCOM and SEPA) and Norwegian authorities (e.g. MoE and the Norwegian Embassy) have served as facilitators for promoting partnerships with relevant Norwegian companies and institutions.

The Norwegian contribution has first and foremost been visible and made an impact through the *project outcomes* while the general policy dialogue under the framework of the MoUs has had limited impact. The MoUs have also only to a limited extent served as effective tools in guiding the cooperation. Changes in content of the cooperation have instead partly been due to reduced funding (in which some thematic areas like cultural heritage were discontinued) and promoting Norwegian state institutions as partners, to some extent by discontinuation of existing partnerships with Norwegian research- and consultancy companies/institutions.

The management arrangement for the cooperation was in the initial years highly fragmented, in particular on the Norwegian side with different institutions, and departments within them, involved separately in the dialogue surrounding different MoUs, in different parts of the cooperation and different sources of funding from the aid budget. Since 2004 this has *significantly improved with the Embassy in Beijing serving as the focal point* for the cooperation.

While the portfolio of projects has been diversified and changing over time, there is no clear trend related to a particular field or form of cooperation (commercial, institutional, research cooperation). The classification applied also reflects first and foremost *which budget line in the Norwegian aid administration that has been used as a source of finance* rather than the actual content and form of cooperation. This is evident by the fact that some of *the same institutions and consultants have been suppliers to projects in all categories* even for the same services and projects with similar content; sometimes been funded as commercial cooperation and sometimes as institutional cooperation.

One characteristic of the cooperation is that in most cases the projects and partnerships established have been *too short term.* This finding follows our analysis of the project portfolio and the fact that ongoing projects have not been granted support beyond the initial phase of 3-4 years, when in fact it is after this initial phase that the benefits will be produced. In fact, successfully established partnerships with e.g. Norwegian consultants/researchers appear to be substituted with new partnerships, increasingly with Norwegian state institutions, with the risk

of losing the value invested in the initial partnerships which have contributed to an overall successful outcome of ten years of cooperation. Shifting of partnerships may create a risk that new partnerships become less successful. Building trust and efficient partnerships takes considerable time and patience in P.R. China, and to fully reap the benefit requires many years of sustained cooperation beyond the 3-4 years each project is allocated funding.

In recent years *more efforts have been put into the promotion of a wider and longer term cooperation* taking the opportunity of past successful partnerships already established. This will however require time and funding to be sustained in the longer run. One major constraint in this respect is the funding and linked to this the approach in managing the cooperation by Norway. While Norway has throughout the study period relied on one source of funding for the cooperation, namely the aid budget, other countries use a variety of instruments in promoting their cooperation. *The Norwegian cooperation has accordingly been subject to a narrow aid agenda with shifting objectives, strategies and priorities due to frequent and unpredictable changes in Norwegian aid policies and management*, *while other countries have managed the cooperation with a much broader, predictable and consistent framework.*

In the early 1990 with the Labour Governments, an Asia strategy for wide and long-term cooperation and transfer of Norwegian environment friendly technology, to a large extent aid financed, was launched, and (non-committing) MoUs for cooperation with China in the field of environment were signed. This was abruptly reversed by the following Governments which had other geographic and thematic priorities. Then with the new labour Government in place since 2005, the scope has again changed, and environment cooperation with China has again become important.

Norway has first and foremost *managed the cooperation as "development assistance*" to China, as reflected by the fact that the Norwegian aid administration has been given a prominent role in decision making, and the funding has entirely been sourced from the aid budget. In contrast, other countries have predominantly used regular state funding for cross border cooperation (both commercial and institutional cooperation) which applies to bilateral cooperation in general. This funding has to a large extent also been funded by grants but not constrained by criteria to be classified as Official Development Assistance (ODA). The above may serve to explain the excessive time it takes on the Norwegian side from project design to approval for funding since various issues that are only relevant in a conventional development policy context had also to be addressed despite that it is of less relevance for the cooperation.

In the case of institutional cooperation projects it has almost entirely been an arrangement made through a joint design process between Chinese and Norwegian partners. The contractual arrangement has been made through a direct negotiation process. None of the projects have been subject to a *competitive process among potential partners*. This stands in contrast to the approach used by other donor countries that jointly identify projects with the Chinese authorities, and subsequently apply a national tendering process for the selection of the external technical partner for the Chinese project executing agency.

While most of the projects under the Norwegian cooperation have been subject to appraisals as input to decision making, they have rarely been subject to a *full assessment of cost efficiency*, often because the budgets and accounts for the projects have in most cases not been presented in a way enabling assessment of efficiency. This is an important issue in particular for projects not subject to any competitive selection of partners/suppliers. This may serve to explain why the projects sometimes appear to have been designed with a generous volume of

Norwegian inputs when comparing total cost with actual outcomes.

The critical *need for establishing cross-sector and province-to-Central* Government communication is a lesson learned from the large and complex technology projects at an early stage of the cooperation. This has now been taken into account in the design of the new Cement Kiln Project for destruction of hazardous waste with SINTEF and the Mercury measurement and monitoring project with NIVA. Here it has been agreed that from 2006 there shall be bi-monthly progress reports conveyed to the stakeholders and the Central Government, shall explain why they want a certain standard and how a project meets SEPA priorities.

1.3 Recommendations

Based on the findings from this review the following main recommendations can be made;

- The focus of the cooperation should be on promoting bilateral cooperation in a regular sense, *not guided by the traditional aid agenda*. The main issue is not aid for financing development, but finance for promotion of knowledge sharing and technology transfer regardless of whether it takes place through non-commercial or commercial cooperation. Frequent shifts in the development policy agenda may not be compatible with a desire to promote long term cooperation on environmental issues.

- While a major step has been taken with the Norwegian Embassy acting as the focal point on the Norwegian side for the above, it remains constrained by the fact that Norway up to now appears to only have considered funding of the cooperation under the framework of aid. Thus either the aid administration needs to manage funding in a much wider and consistent approach serving the needs of the partners (similar to other countries cooperation with China, and Norwegian funding of cooperation with Eastern European countries), or *Norway would need to consider allocating resources which can be applied without the rules and regulations guiding the aid budget* constraining the application of funding. The Government should revisit the present setting for environment cooperation with China against the findings of this review including the alternative approaches established by some other donor countries.

- It is the project outcomes that have served to influence the environment agenda in China, not the policy dialogue surrounding the annual discussion of the MoUs. The *MoUs have not served as tools in guiding the cooperation* and MoUs with different institutions in Norway related to the same issue have only served to reflect the fragmented management approach by Norway in the initial years of the cooperation. Accordingly, Norway and China should consider establishing future MoUs with clear long term vision for the cooperation and with guidelines which can be operationalized.

- The above may serve to protect the agenda against *unpredictable shift due to frequent shift in the development agenda*. The aid budget and other sources of funding are only to serve as tools for promoting the cooperation, not as instruments to determine content and objective for the cooperation. Accordingly, there should be no requirement for a specific MoU related to development cooperation in general.

- The cooperation has been determined more by different Chinese demands for which they could find highly qualified technical partners from Norway as suppliers, rather

than a process in which the MoUs has had strong influence on what projects to be developed. It has only been when Norway has indicated limitations in funding and changes in priorities that funding for some existing successful partnerships has been substituted by new projects with Norwegian public sector institutions. The former has proven a successful approach and should be continued ("market based approach" in which demand for expertise are supplied by the most qualified suppliers regardless of a specific field) rather than trying to enforce a specific field of cooperation and partnership due to shifting political preferences (a "regulated or planned approach").

- Many of the projects supported should *be considered in a longer term* than 3-4 years, and be used more proactively as a point of departure for wider cooperation with other partners in Norway with relevant expertise and technology. The initial investment in the partnership will then create benefits for a much longer term than what has been the case so far. It means allocating even more time and resources to the work already initiated by the parties for this promotional work.

- On the Norwegian side, it means to apply *one management approach to foster cooperation jointly*, be it commercial or none-commercial. The form of cooperation should be determined on the basis of what serves the project identified in the best way, not on the basis of which agency or department in Norway is involved or which source of funding is being used. It means for the Embassy to work as a joint entity promoting all approaches to cooperation in one comprehensive approach.

- The approach in developing partnerships could be adjusted *along the lines of other bilateral cooperation arrangements between China and other countries*. It may include more frequent use of tendering processes in Norway, or at least more open invitations to relevant commercial and non-commercial institutions.

- In cases of "direct contracting" - the approach only applied so far - it should as a minimum be subject to a *more comprehensive assessment of cost efficiency*. This will in turn require presentation of budget and accounts in a more comprehensive way than what has been required so far.

- This review faced several challenges in documenting ten years of cooperation due to the fact that the institutional arrangement has changed several times during the period with loss of institutional memory. More importantly, the cooperation could have benefited from external reviews in deciding on changes. Accordingly, it is recommended to conduct overall reviews of the cooperation more frequently (e.g. every 3 – 5 years) partly to inform the decision makers on options for the future, partly because the policy agenda changes frequently and partially because China is a fast developing country with new national plans every five year also setting the priorities in the field of environment.

2 BACKRGOUND AND SCOPE OF REVIEW

2.1 Background

The purpose of the environmental cooperation according to the MoU was to;

- Maintain and enhance bilateral co-operation in the field of environment and sustainable development.
- Initiate and implement concrete projects for the implementation of international environmental commitments, which may include activities such as exchange of information, exchange of experts, arrange seminars and research
- Co-operation in relevant international environmental forums.

The projects were funded from the Norwegian development assistance budget managed by the Norwegian Ministry of Foreign Affairs (MFA) and the Norwegian Agency for Development Cooperation (Norad).

In May 2001 a new MoU regarding technical co-operation for promotion of the environmental development of the China was signed between Norad and MOFTEC. The scope was to:

- Maintain and enhance bilateral co-operation in the field of environmental affairs.
- Give priority to West China.
- Give priority to air and water pollution, alternative energy, biologic diversity and cultural heritage preservation.
- Emphasise building of institutions and competence.

The management authority for funding of the projects was delegated to the Norwegian Embassy in Beijing in 2004.

2.2 Scope of review

The main purpose of the review has been to evaluate the Sino-Norwegian environmental development co-operation during the 10 years from 1996 – 2005 with focus on the implementation of the MoUs, and give recommendation on how to further the co-operation. The tasks included but were not limited to:

√ An assessment of the overall outcome of the co-operation and which influence it may have made on Chinese and Norwegian environmental policy.

√ Analysis of the development of the Chinese environmental challenges, awareness and policy within the 10 year period as expressed in the relevant Five Year Plans and how the MoUs meets the challenges today.

√ An evaluation how and to which extent the co-operation has been a support to the work and role of SEPA.

√ A comparison of the Sino-Norwegian co-operation to the bilateral co-operation between China and a sample of other countries in the field of environment and development, more specifically Sweden, Canada and Italy.

√ An evaluation of the organisation of the work including the project-selection

process.

- √ An assessment of to what extent project activities have contributed to the fulfilment of the objectives of the MoUs.

- √ Give recommendations on the way forward in order to strengthen and improve the co-operation.

Within the above tasks the review was to focus on issues related to:

- √ What fields related to sustainable development/protection of the environment that China look to Norway for best practice, experience and competence and to what extent the implementation of the MoUs contributed to any change in this over time.

- √ What the key factors have been for promoting the institutional cooperation between Chinese and Norwegian entities and what will be the key factors for these to be sustained and strengthened.

- √ To what extent projects have been selected to reflect the changing priorities under the MoUs and the country-respective priorities in the fields of environment and sustainable development.

- √ To what extent Chinese "ownership" has been established at local-, provincial- and national levels to the projects implemented in collaboration with Norwegian institutions.

- √ To what extent the MoU of 2001 between Norad and MOFTEC has had any impacts on the cooperation between SEPA and the Norwegian Ministry of the Environment.

- √ To what extent an assumed difference in competence between SEPA and the Norwegian Ministry of the Environment (e.g. climate change and cultural heritage preservation) has had any impacts on the Sino – Norwegian cooperation.

- √ To what extent project selection under the MoUs been donor driven or demand driven including assessment of how the identification of and initiatives for projects under the Co-operation agreement has taken place, and to what extent these processes have been transparent and open to competition among domestic expert groups on both sides.

- √ What evidence there is on how outcomes of the projects have influenced Chinese and Norwegian awareness and facilitated policies, plans and actions in the areas covered by the MoUs.

2.3 Project sample

In addressing the above issues a sample of projects was selected by the Norwegian Embassy in Beijing for in-depth review. The project sample selected is presented in the table 1 below. Except for CHN-008 (China Council..), all of the projects in the sample have been completed

and several of them subject to mid-term- or other periodic reviews.

Table 1 –Project sample for review (ODA figures for 1996 – 2005 in 1000 NOK)[1]

Project no	Project title	Duration	ODA from Norway in 1000 NOK	% of total ODA from Norway to China	Rank in size among the projects in the portfolio[2]
CHN-030	Acid rain - IMPACTS	1997-2004	31,639	9 %	1
CHN-008	China Council for International Cooperation on Environment and Development	1996-	17,427	5 %	2
CHN-040	Master plan air pollution - Shanxi province	1997-2003	10,331	3 %	14
CHN-007	Environmental statistics	1996-2001	8,117	2 %	16
CHN-047	ISO14000 standard co-operation project	1998-2004	7,261	2 %	19
CHN-044	EEIA Handbook and training programme	1997-2004	5,006	1 %	26

In total, these projects account for 23% of total funding for environmental projects even though they constituted only 4% percent of the total number of projects, i.e they represent larger scale projects compared to the total portfolio of many smaller scale interventions.

The sample represents a broad range of thematic areas (environmental sub-sectors) as well as involvement of several Norwegian institutions. However, as for representativeness of the sample in relation to the overall project portfolio, the sample is skewed, and the Embassy decided to compose the sample of the two largest, three in the upper middle range (no. 14, 16, and 19 in size), and one in the middle range (no. 26). None of the projects are, however, labelled commercial cooperation although some of the institutions have received support for projects in both categories. The label applied have been a question of what point of entry in the Norwegian aid administration they have chosen in promoting the project rather than the nature of the cooperation or type of project.

2.4 Approach

The review has been undertaken by a team of three consultants; Professor Wu Xiaofu, Mr. Jens Claussen and Mr. Stein Hansen (team leader).

The review is based on a variety of sources. First, a desk review of documentation of the sample of projects was conducted (starting with project agreements, then progress reports, final reports, and post-completion reviews, where available). The documentation was collected from project files at MFA/Norad as well as project documents made available to the Review Team by the institutions reviewed and visited in Norway and China. It was a specific

[1] Official Development Assistance (ODA) from Norway

[2] According to amount of funding from Norway compared to total amount of funding for all projects.

challenge to get access to all relevant documentation due to the fact that the Norwegian aid administration and management responsibility for funding has been changed several times during the 10 years subject for the review. Although in principle, all documents from before September 2004 is the responsibility of the archive in Norad, and after that date, the Embassy has been responsible for keeping the archives complete, following the shift in responsibility, in practice project level information was split between the Norwegian Embassy in Beijing, Norad and MFA. However, with the professional assistance of staff at the Embassy and in Norad, supported by additional inputs from Chinese and Norwegian cooperating partners, most of the key documents were accessed.

In addition, other country representatives, in particular Sweden, Germany (GTZ), Italy and Canada provided additional documentation enabling comparison of the overall Norwegian cooperation with their arrangements for cooperation with China as well as comparison of project related cooperation in the same fields.

In addition to review of documentation, the process included consultations with Norwegian stakeholders related to environmental development cooperation between Norway and China. This included interviews with representatives of the project executing institutions who had been responsible for the sampled projects, as well as officers of MFA, Norad and MoE in Oslo, including environment advisors from MoE and MFA who had served their terms between 1995 and 2005 in charge of the MoU-governed environment cooperation at the Norwegian Embassy in Beijing. These discussions covered not only the six sampled projects, but also the MoU-based cooperation more generally in order to get a broader picture to draw conclusions from.

The Review also included a two week mission in China for consultations with Chinese stakeholders and partners in the cooperation, and with the responsible Norwegian Embassy staff, as well as other country embassy- and foreign aid representatives with responsibility for cooperation arrangements related to environment (ref. annex IV and V with list of persons consulted). The discussions included a broader set of themes than those covered by the project sample.

3 OVERVIEW OF COOPERATION

3.1 The setting for the cooperation

Following UNCED1992 (the "Rio Conference") where Norway had participated with a high profile (Prime Minister Gro Harlem Brundtland as a keynote speaker), awareness of the rapidly growing environment challenges confronting Asia in general and China in particular surfaced, and were identified as a concern to the world at large. Several OECD countries took initiatives to an environmental policy dialogue with China as a basis for establishing cooperation on capacity building, awareness raising and transfer of environment friendly technologies, policy reforms and associated domestic institutions development. Against this background Norway launched an Asia Plan for cooperation in these fields, and a strategy for environment-related cooperation with China was developed in the mid 1990s[3].

This culminated in Norway agreeing to a legally non-binding cooperation agreement with China in the field of environment during the Prime Minister's official visit to China in 1995. A follow-up visit was made to Norway by the leader of China's State Science and Technology Commission (SSTC) the same year which played an important role for how the bilateral environment cooperation were to develop.

The cooperation agreement took the form of a Memorandum of Understanding (MoU) signed on behalf of Norway by Norway's Minister of Environment (MoE) in November 1995 and China's National Environment Protection Agency (NEPA) which in 1998 became SEPA (the State Environment Protection Agency). Norway then allocated NOK 50 million from the aid budget for environment cooperation in 1995 in order to develop projects for Norwegian institutions in cooperation with Chinese institutions. This was increased to NOK 150 million in 1996 so that complete projects could be developed, approved and implemented based on a series of pre-project proposals that had been prepared by Norwegian institutions for cooperation with potential Chinese partners.

Initially, Sino-Norwegian environment cooperation was on pollution prevention technology transfer (the IMPACTS- and ENSIS projects) financed with the above allocation. The institutional agreement was with the SSTC which in 1998 became the Ministry of Science and Technology (MOST). This SSTC/MOST cooperation link was retained for the duration of these projects, but after SSTC became MOST, and MOFTEC (later MOFCOM) was designated by the State Council to handle all foreign aid, new environment cooperation projects were agreed with SEPA trough MOFTEC.

In order to strengthen the capacity to prepare and monitor a work program under the MoU, it was decided to establish a position as Environment Counsellor based at the Norwegian Embassy in Beijing, with a MoE-officer taking up this post from the autumn of 1996. The cost of this position was shared between MFA and MoE, but activities under the MoU were to be selected so as to qualify as ODA for financing over the Norwegian aid budget. Norad was authorized to manage the environment project portfolio for MoE.

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[3] Stortingsproposisjon No 1 (1995-1996), " Tilskudd til særskilte miljøtiltak i Asia", and Stortingsproposisjon No 1 (1996-1997), " Tilskudd for utvidet miljøsamarbeid".

The first work programme under this MoU was presented in 1997, and the second from 1999 was signed by SEPA and Norway's Minister of Environment. Project agreements were signed by Norad for Norway and SEPA, MOST and other relevant ministries on behalf of China.

The Norwegian Government consultancy company, Statskonsult, in 1999[4] reviewed Norwegian environmental MoUs with China, Indonesia and South Africa, and recommended the transfer of coordination and operational follow up of projects under the work programme from MoE (Norway) to Norad (as was done and reflected in the MoU between MOFTEC and Norad in 2001). However, Norway has extensive bilateral environment oriented development cooperation with China managed by Norad beyond what is covered by these MoUs. This cooperation involves many different participants, and Statskonsult recommended a dialogue with SEPA/MOFTEC (where Norad was delegated the Norwegian role by MFA) on how to best secure an integrated perspective on this cooperation based on a 3-5 year rolling plan horizon revised and updated in annual meetings, while at the same time drop the practice of two year work programmes.

A new MoU regarding ODA-eligible funding of technical cooperation including the promotion of the environmental development of China was signed between the two countries in May 2001, but this time the MoU was between Norad and MOFTEC with Norway's MoE and China's SEPA being invited to participate in the annual meetings.

In 2004, as part of an overall reorganisation process in the Norwegian aid administration, MFA decided to decentralize the MoU cooperation responsibilities from Norad to the Embassy in Beijing where the Environment Counsellor and two aid officers proposed and managed the bilateral ODA, while at the same time tried to link projects and policy dialogue closer together. The main responsibility remained with the MFA-appointed staff at the Embassy. The environment counsellor served and continues to serve in the capacity as an environment advisor in close contact with the other embassy staff as well as Norad for quality assurance of all agreements.

Parallel to the bilateral environmental MoUs, China and Norway also have MoUs under which Mixed Credits and other budget lines can be used for commercial projects, among which environment focused projects have played a major role since the beginning of the study period. In reality the same players (Norwegian commercial- and research entities) have received funding from different budget lines of the aid budget for the same type of projects where convenient; i.e. "wearing different hats" under different agreements in order to seek optimal concessional finance for the projects agreed upon. The distinction between research, institutional and commercial cooperation is not so much a question of content of the project or who is supplying the services from Norway, but rather a question of which budget line in the aid budget the funding is stemming from.

3.2 The role of the MoUs in the environmental cooperation

These non-binding but well-intentioned MoUs on environmental cooperation are written and signed as a result of policy level meetings between authorities of the two countries. It is a typical "instrument" promoted by the MoE of Norway having promoted similar MoUs also

[4] Referanse: Statconsult Report 1999:23

with other countries (Indonesia, South Africa). These MoUs are a result of Norwegian and/or Chinese initiatives, and signing them indicates good intentions and will to cooperate bilaterally in the area covered by the MoU. The above MoUs with Norway reflects that environment cooperation is an area considered by the parties suitable for establishing a dialogue on issues related to foreign policy- and commercial cooperation.

The MoUs are intended as an overall framework for cooperation, operationalized by means of periodic work programmes consisting of specific projects financed over the aid budget. The MoUs covers five years at a time, and are automatically renewed unless one of the signatory parties wishes otherwise.

However, since the MoUs are non-binding and the Chinese government does not place much significance on the exact formulation of MoU paragraphs and content, they have only to a limited extent served as operational guidelines. However, they may have facilitated the policy dialogue and thus helped create a venue for discussing environmental cooperation in general and the portfolio of projects to be supported by Norwegian aid in particular.

Following the changed organization of this cooperation in 2004 with Norway's operational responsibilities being moved to the Embassy, SEPA and MOFTEC (now MOFCOM) are formally responsible for developing and presenting concrete project proposals for cooperation with Norwegian entities to be financed by Norwegian aid. Implementation and reporting are the responsibility of the Chinese partner, while MFA's embassy staff shall secure a holistic perspective on what is approved, assess cost-efficiency and effectiveness, and a scope for synergies from the overall Norwegian cooperation in this field.

3.3 Organization of the cooperation

The present environment cooperation is entirely funded from the Norwegian aid budget. Since these are ODA flows to China, the formal MoU agreements are between Ministry of Commerce (MOFCOM), and Norad since MOFCOM is the general window responsible for international aid/ODA-fund affairs. For dealing with the bilateral cooperation on environmental issues between Norway and China, MOFCOM as the competent authority works, together with the State Environment Protection Agency (SEPA), on:

1) Coordinating political dialogue with Norway (MoU, annual meetings, daily communications)

2) Making final decisions on which project proposals should be forwarded to the Norwegian Embassy based on the list of proposals selected or approved by SEPA.

3) Monitoring the management and implementation of the projects (at different levels)

4) Reviewing/evaluation of the cooperation work

5) Passing the final reports to the Royal Norwegian Embassy

6) Arranging workshops/forum/activities at national levels

SEPA is the state authority directly under the State Council responsible (with both political and technical duties) for setting environmental priorities for international cooperation on

environmental issues and leads the process of projects selection under the international aid cooperation agreements. SEPA and the local (provincial) Environment Protection Bureaus (EPBs) choose among the donors based on perceived technical competence on the topic in question before contacting a specific donor for assistance to a project.

SEPA and MOFCOM have internal screening meetings to decide which projects to propose to which donor, based on the requirements from the relevant parties. MOFCOM and SEPA emphasise the importance of designing the projects so that one can transfer knowledge and disseminate project experience from one province to other provinces.

SEPA is invited to participate in the MoU dialogue with Norway alongside Norway's MoE in the annual meetings. SEPA's role is:

1) Providing political/technical support in the dialogue with Norway (MoU, annual meetings, daily communications).

2) Preparing a list of project proposals (numbered in order, with suggestions) for MOFCOM after screening of received proposals (with assistance from the Foreign Economic Cooperation Office affiliated to SEPA (FECO) in project identification/selection).

3) Monitoring the management and implementation of the projects at different levels, with assistance from it's affiliate FECO in project control and promotion, and it's research "arms" such as China Research Academy for Environmental Science (CRAES) to take responsibility for technical monitoring of concrete projects under SEPA.

4) Reviewing/evaluating the cooperation work (with assistance from FECO in organizing the review and evaluation work).

5) Passing through MOFCOM the final reports (originally collected by FECO) to the Norwegian Embassy.

6) Arranging workshops/forum/activities at national levels (usually FECO is assigned to conduct the concrete work).

In international environmental matters SEPA and other ministries share the responsibilities for making the integrated decisions on degree of national involvement, including planning and implementation of the global environmental conventions.

FECO was originally an office of NEPA, but with the ministerial reform in 1998 it became a non-profit agency affiliated to SEPA responsible for the daily work relating to:

1) Participation in political/technical dialogue with Norwegian Embassy, MOFCOM and SEPA, with duties to provide information/report/relevant assistance for SEPA and MOFCOM. While they can give direct policy advice to SEPA, their technical project implementation advice to SEPA requires approval from MOFCOM.

2) Calling for project proposals on behalf of SEPA and providing for SEPA (Department for International Cooperation and Exchange, SEPA) a list of project proposals after first screening.

3) Participating in integrated management and implementation of the cooperative projects as a coordinator with assignments from SEPA. FECO was for example involved in with NIVA and CRAES in the installation of the five IMPACTS monitoring stations, and helped organize the raising of funds for project completion. FECO is also involved with "Direktoratet for Naturforvaltning" (DN) and Hunan EPB in implementation of the Dongting Lake project.

4) Providing assistance for SEPA in project control and promotion.

5) Providing assistance for SEPA in project review/evaluation.

6) Providing assistance for SEPA in arranging workshops/forum/activities at national levels.

FECO receives some of it's financing from MoF, some from SEPA for supporting project activities, project administration and for acting as controller, and some from projects. FECO collects all project documentation on SEPA projects, write summary reports and disseminates to stakeholders.

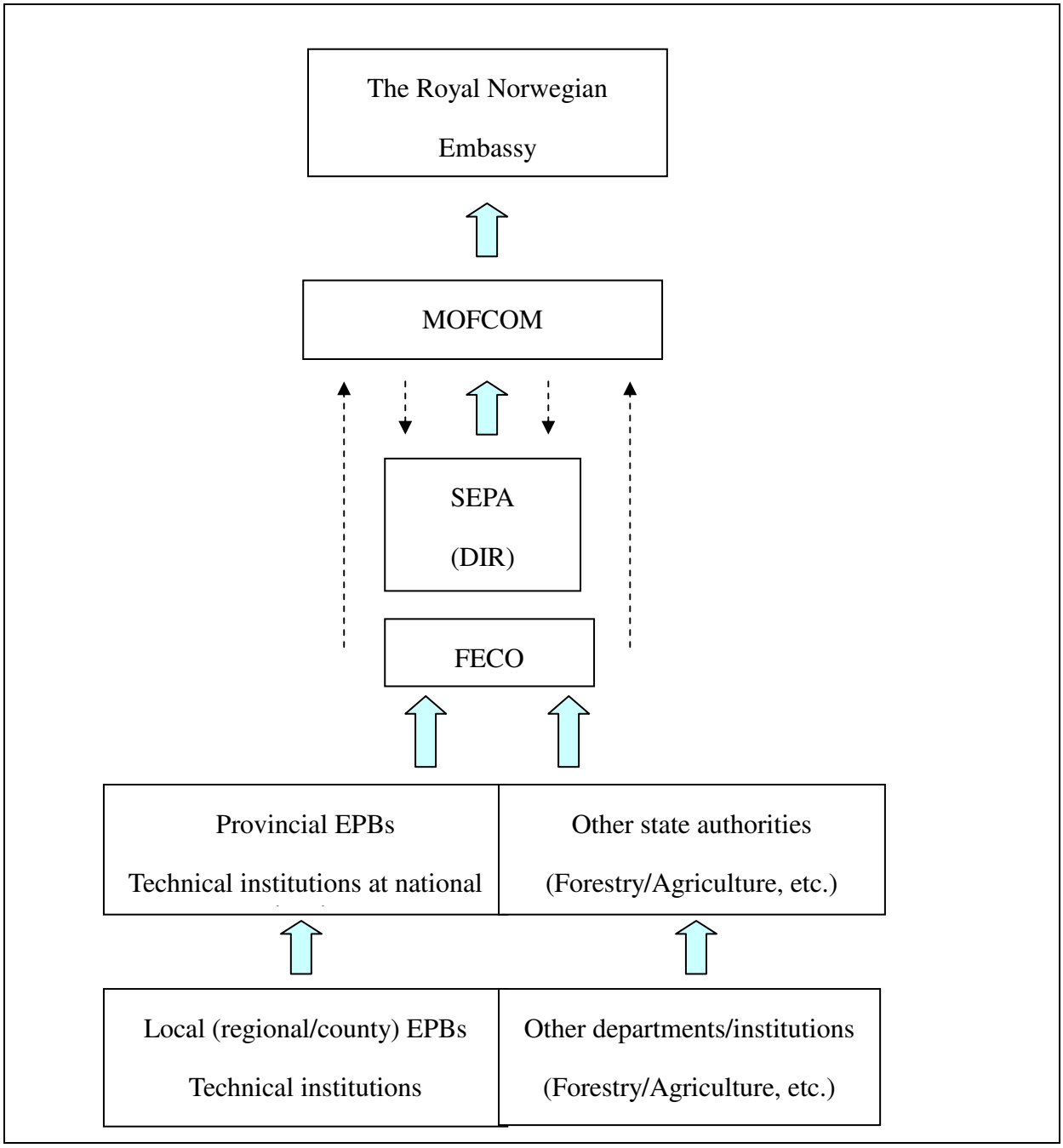
Whereas the Norwegian financed environment projects in the pollution reduction technology field were initially agreed between Norad and SSTC – with little involvement of NEPA – the setting for such cooperation changed when MOFTEC was given responsibility for coordination of all foreign relationships funded by official finance (ODA and other official flows).

At that time SSTC became MOST**,** and NEPA became SEPA in 1998. MOST's role has since been to formulate policies, guidelines and laws regarding research and development, stimulate research leading to social and economic development, development of programmes for efforts for basic research, implementation of "Law of Technological Contracts", and monitoring of the technological development in other countries, through scientific attaches at the Chinese embassies around the world.

Since the Chinese administrative reforms in 1998 with transfer of responsibility to coordinate and oversee environmental cooperation activities to SEPA through MOFTEC, MOST has shown limited interest in new aid financed project operations, and to a very limited extent interfered directly in project activities.

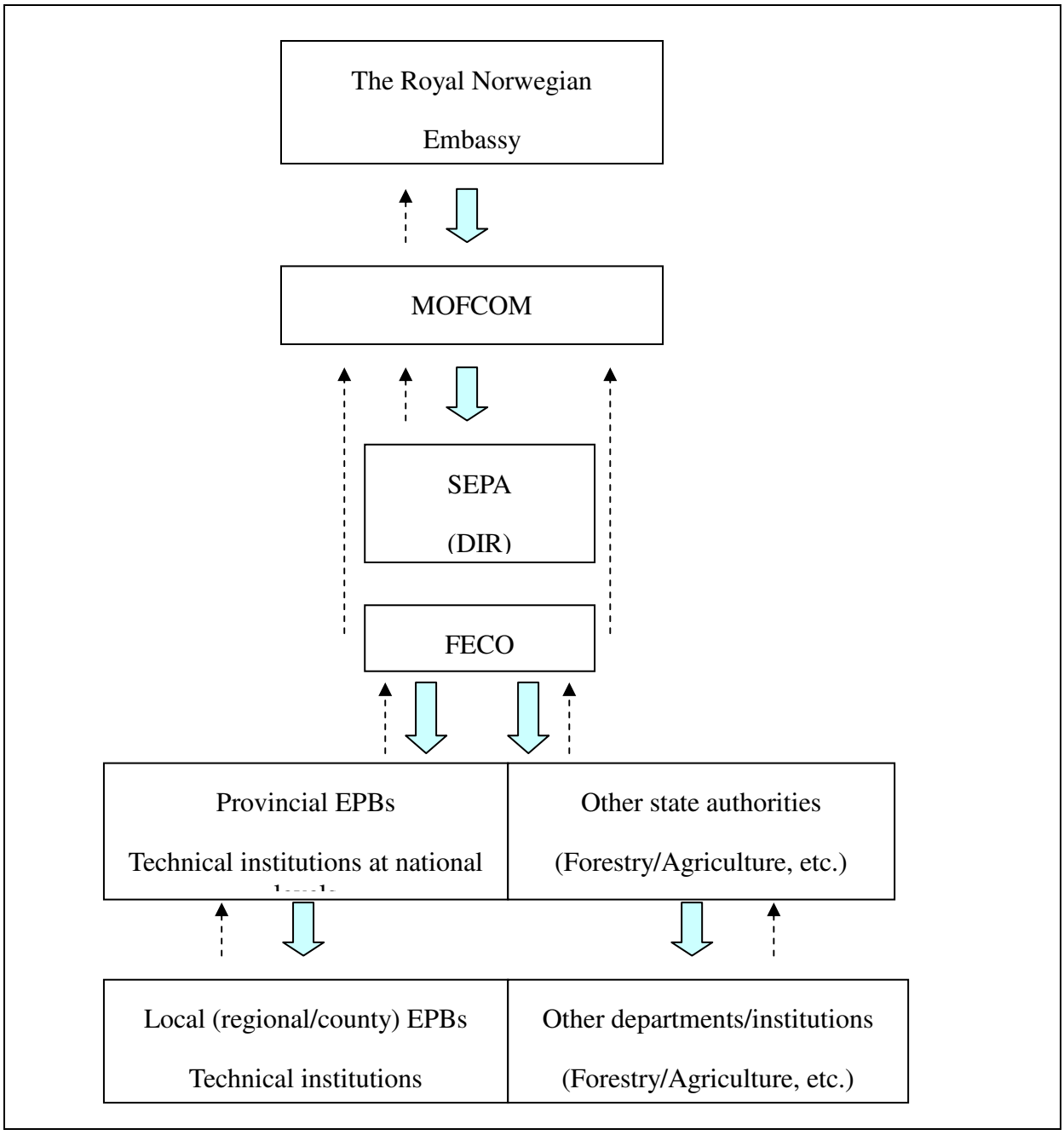
Since 2000, all initial project identification and formulation are done by Chinese entities such as SEPA and local EPBs. For proposals sent by a provincial EPB, MOFCOM consults with SEPA on technical matters. SEPA then sends their comments back to MOFCOM in the list of prioritized projects, sometimes together with their own proposals. For the projects proposed directly by SEPA, this SEPA consulting stage in the screening process will be saved.. During the screening process the issue of source of funding/which country to present it to is being considered. Finally, the projects selected as projects which may be of relevance for Norwegian funding are presented to the Royal Norwegian Embassy. SEPA reports there is close cooperation and coordination in the form of frequent meetings between SEPA and MOFCOM during identification and formulation of all initial projects. This process is illustrated in figure 1 below for a project under SEPA.

Figure 1: The project selection process



The dotted lines in figure 2 below illustrate the structure of project management, implementation and reporting.

Figure 2. Project management, implementation and reporting



The bilateral environment aid is tied. This also applies for Norway, except for some 10% which is submitted untied as budget support to the China Council for International Cooperation on Environment and Development (CCICED) through its Canadian secretariat.

Norway has focused on local (provincial) projects under provincial control, and these projects report only to the provincial EPBs and not directly to SEPA. The degree to which SEPA is informed of progress and problems on the projects varies from one to another, depending on the communication between SEPA and the provincial EPB.

For some small special environment projects Norway has entered into direct agreement with

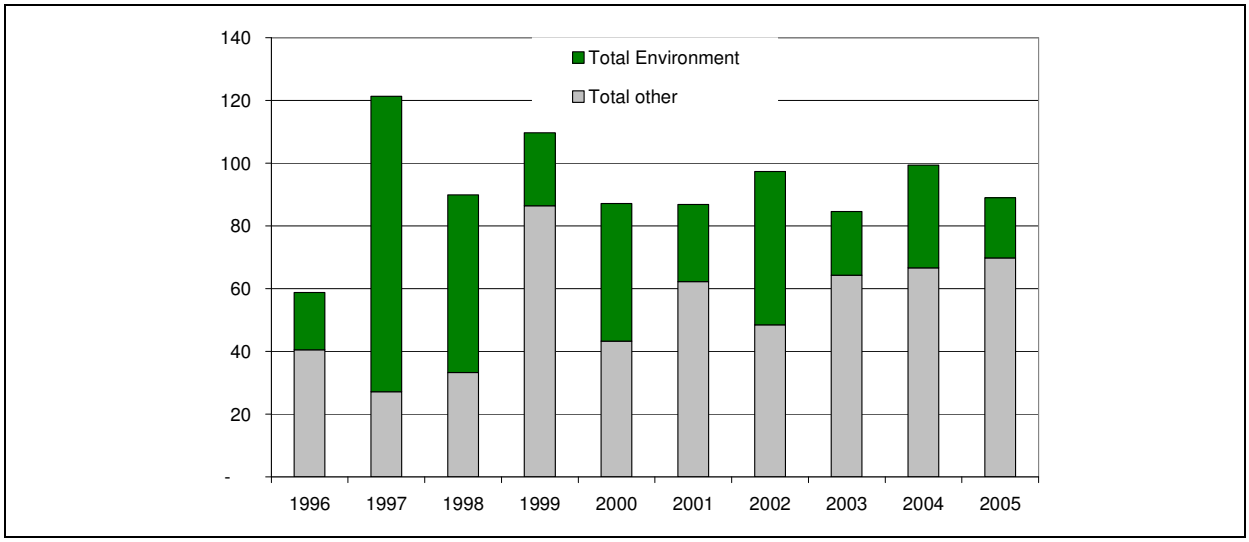
the executing agency without involving MOFCOM. For bilateral aid cooperation where there are ten or more projects annually, it has been common practice to manage these by setting up donor-specific Project Management Offices (PMOs) in or close to SEPA. Germany, Italy and Japan have set up such project management offices. To build up a PMO would be decided by the size of the projects and the desires of both parties.

Norway has had no such PMO so far since the increase in transaction cost that it implies cannot easily be justified with the relatively modest activity in the environment field. However, establishing a Norwegian PMO could perhaps be considered in view of the new Norwegian Government's increased focus on environment cooperation with China.

3.4 Overview of the portfolio of activities

During the period 1996 – 2005 subject for this review Norway has contributed 924 million NOK to more than 500 project/program agreements related to bilateral development cooperation funded from its aid budget. Of this amount 342 million NOK (41%) has been disbursed through program/project agreements for which the main focus has been related to environmental cooperation (ref. figure 3 below).

Figure 3 – Total Norwegian bilateral development assistance to China 1996 – 2005 (in mill NOK)

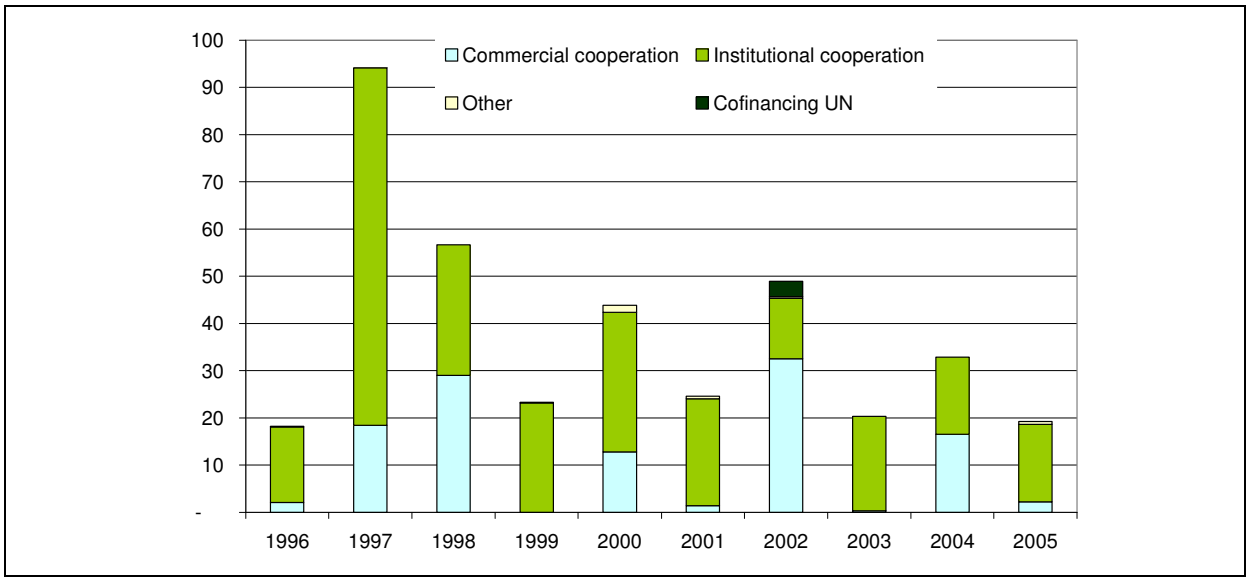


The total number of *environmental* projects has been 117. The number of agreements and financial contributions has fluctuated substantially during the period. The fluctuations in number of environmental projects and level of disbursements are mainly due to the fact that the cooperation with China has been driven by demand for funding generated from cooperation between Chinese and Norwegian institutions/companies rather than the more conventional bilateral development cooperation in which the bilateral cooperation have been pre-programmed through a consultation between the Norwegian aid administration and the host government.

It has been the Norwegian institutions/companies in collaboration with their Chinese institutional partners that have developed and promoted the projects for approval by the Chinese authorities and funding by the aid administration, not the Government's of China and Norway that have agreed on a programme of cooperation. The portfolio of projects is

accordingly reflecting areas were Norwegian companies and institutions have actively been promoting services of relevance to Chinese institutions, however, within the framework of the previously mentioned MoUs.

Figure 4 –Norwegian environmental development assistance to China 1996 – 2005 by type of cooperation (in mill NOK)



The bilateral cooperation with China can be claimed to have had a strong environmental focus both in financial terms and judging form the number of agreements. The cooperation has been characterised by a mix of projects promoted by the Norwegian business community and Norwegian consultancy/research institutes (including Norwegian government institutions).

Environmental projects supported under the label of commercial cooperation have been regular supply of goods and services or numerous feasibility studies to assess opportunities for joint venture with partner companies in China. Environmental projects supported under the label of institutional cooperation have been dominated by some few research/consulting companies and government institutions in Norway, most prominently NIVA, NILU and Econ.

The largest 25 environmental projects has accounted for 80% of total funding of which 7 were commercial cooperation projects and the remaining 18 institutional cooperation projects. Among those are the 6 projects selected for in-depth assessment during this review.

While the portfolio of projects has been diversified and changing over time, there is no clear trend related to a particular field or form of cooperation (commercial, institutional, research cooperation). The classification applied also reflects first and foremost *which budget line in the Norwegian aid administration that has been used as a source of finance* rather than the actual content and form of cooperation. This is evident by the fact that some of *the same institutions and consultants have been suppliers to projects in all categories* even for the same services and projects with similar content; sometimes been funded as commercial cooperation and sometimes as institutional cooperation.

The main change in the overall portfolio has been the discontinuation of support to culture heritage projects under the Ministry of Culture, a technical cooperation within fisheries management with the Bureau of Fisheries under the Ministry of Agriculture, and two projects

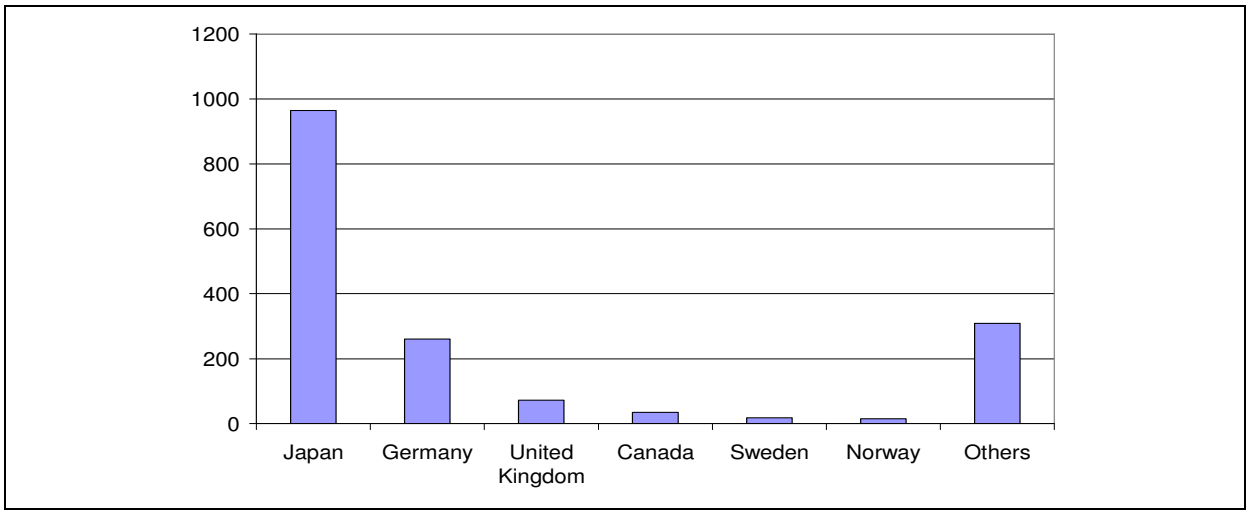
related to health (SARS and HIV/AIDS). These projects had all been going on for many years, and come to a conclusion according to their agreement, so that their phasing out followed a natural process. At the same time was a decision to focus on projects supporting SEPA. Another is the promotion of Norwegian government institutions as cooperation partners rather than research institutions/consultants even though the content and form of cooperation (consultancy type contracts) are the same.

3.5 Norway – a small partner to China

While China is a major political and economic player in the international scene, Norway is a small open economy with limited international influence. This is also reflected by the bilateral cooperation with China in general and the environment cooperation in particular.

Norway's environmental cooperation with China takes place partly at the policy level through policy dialogue, partly through commercial and institutional cooperation. The cooperation subject to this review is the bilateral cooperation with ODA which has been fully funded by MFA since September 2004, and up to that time by Norad.

Figure 5 – Bilateral Official Development to China 2004 (million USD)[5]



In terms of the resources made available by Norway from the aid budget for the promotion of cooperation in general, it constitutes only a minor resource compared to other countries, as illustrated in figure 5 (0.9% of total ODA to China) and an insignificant share of resources when compared to China's GDP (0.0007%) and public sector resources (0.004 %).

The following may serve as illustrations of this level of insignificance;

- √ In 2004, China's central government expenditure on environmental protection was approximately the equivalent of 12 billion NOK (not including provincial investments where apparently the major share of environmental protection measures is undertaken), while the total public and private sector investments including all provinces were the equivalent of 238 billion NOK.

[5] Source: OECD/DAC online database.

- √ In Shanxi province alone, one of the provinces were Norway has supported a 4 year cooperation between a Norwegian consortium of institutions and the provincial Environment Protection Bureau (EPB) with a total contribution of 10.3 million NOK, the FYP-11 (2006 – 2010) estimates the equivalent of 13.8 billion NOK in public and private sector investments related to environmental protection.

The above serve to support the statement made by the Chinese authorities when consulted by the review team that there is no lack of areas of cooperation in which Norwegian partners may play a role. The question is more to what extent Norway has capacity and resources to meet the demand for technical cooperation from China.

In total, the above may serve to suggest that Norway as a partner have limited influence both politically and financially as a major player in cooperation with China. It is through technical cooperation in areas were Norway can prove to have a comparative advantage in knowledge sharing and create a platform for sustained cooperation in areas which China and Norway has invested in and built up a relationship, that Norway may influence and contribute to development in the field of environment in China.

3.6 Norway's role relative to that of other cooperating countries

Norway's approach to cooperation appears to have been limited to cooperation in an aid management context rather than in a wider context like other countries which have recognised to a much larger extent that there are significant opportunities which requires a much more diverse set of instruments.

While Norwegian aid and aid in general from all countries constitute an insignificant share of overall resources to China (total ODA is only 0.07% of China's GDP and 0.45% of public sector revenue in China), a significant feature of Norwegian resources for all forms of cooperation is that they are to a large extent limited to aid resources while other countries apply many different financial instruments in their cooperation with China as illustrated in table 2 below.

According to the OECD/DAC disbursement data for 2004, of the total receipts to China from Norway, approximately 99% were stemming from the aid budget. This stands in contrast to the fact that for the largest donor to China (Japan), ODA resources constituted only 13% of the total official financial flows. The same observation can be made for other countries promoting similar arrangement in environmental cooperation. The above suggest that while most other countries have a much wider set of instruments to promote cooperation, Norway appears to only focus on cooperation within a developmental framework since the only financial instrument applied is official development assistance.

Table 2 – Total receipts and ODA flows to China 2004 (in million USD)[6]

Country	Total receipts	ODA	ODA in percent of total receipts
Japan	7,366	965	13%
Germany	1,610	261	16%
United Kingdom	1,408	72	5%
Sweden	300	18	6%
Italy	206	14	7%
Canada	165	35	21%
Norway	15	15	99%[7]

There are limited data available to compare the Norwegian contribution labelled environment cooperation with other countries promoting the same and China's own public resource allocation for environment and private sector investments in environmental protection. Based on interviews and documentation received the following observations are made:

A common characteristic of the provisions of funds from the main donors to environment projects in China is their consistent transparent practice of national competitive bidding (NCB). In contrast, Norway's Embassy and Norad selects Norwegian project partners directly without organizing invitations through open tender among qualified competitors.

Japan is by far the largest provider of receipts and ODA eligible funding for China's development. Japan has established a large Sino-Japanese Friendship Cooperation Centre i.e. a Project Management Office (PMO) with more than 300 staff affiliated with SEPA. It has a policy dialogue and handles project implementation. The Japanese receipts amounted to almost USD 7.4 billion in 2004, of which almost USD 1 billion (13%) was ODA grants.

Italy has established a direct Ministry of Environment agreement with SEPA since 2000 with focus on air pollution and the international environmental conventions. Since the funds are not ODA, it does not involve MOFCOM in the agreement process. This simplifies procedures and makes for a more direct dialogue with bureaucratic involvement.

Italy has a comprehensive cooperation with a high number of projects and funding to justify the Italian PMO linked to SEPA as a management entity for the cooperation. The PMO is a separate management unit not linked to any public institution in China but cooperates with SEPA, MOST and others on projects jointly identified by them. The PMO wants Italy to focus the portfolio on one province only, and even focus in one area within that province, considering the size of the provinces and the impact they may realistically generate from the cooperation. With this approach they may be able to generate impacts leading to cooperation beyond initial funding from the programme.

The management of procurement for services from Italy is delegated to a research institute in Italy who manages a National Competitive Bidding process. Currently 35 Italian companies/institutions have provided services to a wide range of projects. These have among others supported implementation of Air Quality monitoring in two provinces. Italy provides

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6 Source: OECD/DAC online database.

7 The figures on actual transfers are rounded and accordingly it may appear as 100%.

funding for environment cooperation through mainly three sources;

- Concessional credits for supply to investment projects (ODA funding).
- Cofinancing various environmental protocols related multilateral trust funds (ODA funding).
- Bilateral cooperation starting in 2000 with funding from the Italian Ministry of Environment which has delegated management responsibility to the Sino-Italian Trade Commission which in turn funds the Programme Management Office (PMO) of the programme (none ODA funds) with a five year programme of 100 mill. Euro and 1.4 mill. Euro in PMO operational expenditure per year (approx. 7% of overall allocation for project management).

Italy has established a Steering Committee for the bilateral environment cooperation consisting of SEPA, the Embassy and Trade Commission.

Italy contributes to capacity building in the field of environment by providing for 1500 Chinese to study environment sciences in Italy for 3 years.

Germany focuses it's cooperation with SEPA only at national level projects and the scope is sufficient to justify having a PMO linked to SEPA. The focus for the 2007-2010 period is on environment legislation and law enforcement.

The German bilateral cooperation is guided by a MoU between Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung; i.e. the German Ministry for Cooperation and Development. GTZ is in charge of the technical cooperation with a total programme budget of 20 mill. EURO in 2006 with 7 out of 11 projects listed in the GTZ catalogue in the energy field. GTZ cooperation partners are MOFCOM and the relevant Chinese institutions as project partners. 6 million EURO were committed for a new project in the environment field in 2006. The main stakeholders for this project are SEPA, NDRC and CCICED, and 2.5 million EURO of this was allocated for SEPA.

In addition, KfW provides concessional loans for investment projects including environment of approx. 130 mill. EURO for solar, wind and health projects.

GTZ is currently involved in more than 65 projects and programs with the following projects currently being implemented related to the field of environment:

1. Environmental policy advisory service and environment management for enterprises
2. Supporting the work of the China Council for International Cooperation in Environment and Development (CCICED).
3. Environment-friendly urban energy systems.
4. Eco City planning and management in the Province Jiangsu.
5. Environment-oriented Enterprise Consultancy Zhejiang.

6. Reducing environmental pollution from Chinese coal-fired power station by modernising their in-plant monitoring techniques.

7. Energy efficiency & modernisation of electricity distribution.

8. Rural infrastructure and vocational training in Tibet.

9. Renewable energies in rural areas.

10. Strategy for seam fire fighting in coal fields in PR China

11. Research and training centre for wind energy.

The environmental policy advisory service project consists of 4 components with some components linked to areas of Norway's cooperation with China:

- √ Policy advise – related to legislation and innovation to test new interventions for implementation.

- √ Environmental Management Standards – assisting SEPA in revision of the more than 100 environmental standards issued.

- √ Capacity building through training, internships and scholarships.

- √ ISO 14000 training of trainers and auditors.

The latter project was implemented in 1998 – 2000 with a total budget of 3 million DEM (approximately 12 million NOK), during the time that the Norad funded DnV ISO 14000 project (CHN-0047) was developed and which was subsequently implemented three years later. GTZ did not initially know about the emergence of the related DnV project before it started its implementation and then GTZ was in the final stage of their project.

The adoption of ISO 14000 standards by enterprises has grown substantially over the years and started even prior to the introduction of these two projects, which evidently increased the capacity for certification and training in application.

Sweden has projects with SEPA both through SIDA and Swedish MFA. Sida's cooperation has been guided by 5 year strategies coinciding with China's Five Year Plans during the last ten years. The last FYP was subject to an evaluation which guided the development of their new strategy for 2006 – 2010. These strategies have covered development cooperation in general of which environment cooperation is one of two priority areas (the other being Human Rights).

The new strategy is not presented as an exit strategy despite that ODA funded cooperation is to be phase out. This is an important issue since phasing out ODA funding is not equivalent to phasing out cooperation in general (as it would be for Norway with only ODA funded cooperation).

The latest ODA-financed environment cooperation program is for the 2007-2010 period. It has a grant budget of SEK 25 million channelled through MOFCOM with a focus on water and chemical issues. Sweden is presently considering the possibility of establishing a PMO.

In contrast to Norway, Sweden has established a clear, simple and unambiguous cooperation model with China guided by an overall 5 year strategy for cooperation aligned with China's five year plans. SIDA has one MoU for the cooperation with MOFCOM, and not separate MoUs for different sectors. Since SIDA has the full management authority delegated from their Ministry of Foreign Affairs, it has throughout only been one decision maker and focal point in Sweden for the cooperation. Unlike Norway decision making is not delegated to the Embassy and there is no representation or separate channel of communication or MoU with their Ministry of Environment. Their annual meetings focus on cooperation in general and the specific fields identified. There is no policy discussion separate from the cooperation funded through their programme.

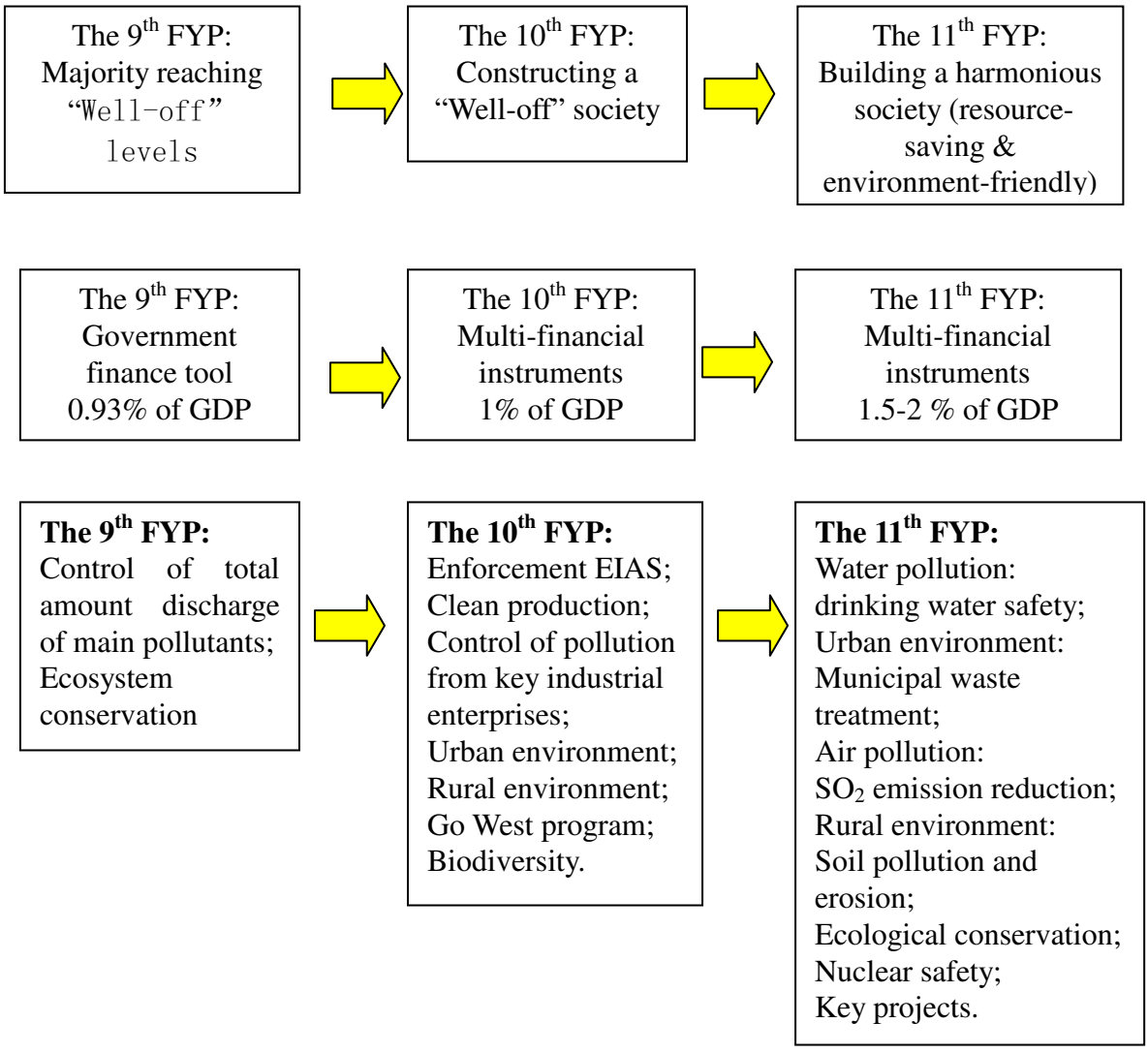
The Embassy on behalf of SIDA proactively identifies areas of cooperation with SEPA guided by the strategy. Then SEPA submits proposals through MOFCOM for Sida funding. Sida then (in contrast to Norway) in most cases uses national competitive bidding (NCB) to identify Swedish cooperating partners for service delivery to the projects.

4 REVIEW OF THE COOPERATION

4.1 Evolution of Chinese Environmental Challenges 1996 – 2005

The evolution of environment awareness, incorporation and prioritization of environmental challenges in the last three Five Year Plans (FYP-9, FYP-10 and FYP-11) can be summed up in figure 6 below:

Figure 6 - Evolution of Chinese environmental challenges 1996-2005. Shift in policies, goals and priorities in the period 1996-2005:



4.1.1 The 9th Five Year Plan Period (1996 – 2000)

The strategy of sustainable development was addressed in "*Agenda 21st Century, China*", and "*Compendium of Agenda 21st Century*" presented in July 1992 by the National Planning Committee (NPC) and SSTC and then further emphasized in "*White Book of Population, Environment and Development - Agenda 21st Century*" published in 1994.

These strategic documents provided the background for how environmental challenges were addressed in the 9th Five Year Plan (FYP-9). However, the overarching target for national economic development in FYP-9 was to raise the income of the majority Chinese to a "Well-off" level, see SEPA (2001).

In FYP-9 the general Chinese policy relating to environmental issues was to stress *the equal importance of pollution control and ecosystem conservation*, see SEPA (2001). On implementation of "*FYP-9 for Total Amount Control on Main Pollutants Discharge"* and "*China Trans-Century Green Project Plan"*, major efforts were put on reduction of pollution from enterprises and establishment of natural reserves at both national and provincial levels, see SEPA (2000).

In order to meet the targets for total amount discharge of listed pollutants set up by SEPA, approximately 90% of the existing enterprises established proper treatment systems while those failed to fulfil the national standards were closed down. By the end of this period (2000), when the national economic growth continued to increase at high rate, the total amount discharge of main pollutants was reduced to a level lower than that in 1995, see SEPA (2000).

Protection of ecological environment/system was one of the key tasks listed in the "Go West Policy" program. Progresses were made in construction and management of natural reserves and conservation of biological diversity in west provinces and regions, see SEPA (2000).

Another important aspect was the implementation and enforcement of a series of environmental laws and regulations including *"Air Pollution Prevention and Control Law", "Water Pollution Prevention and Control Law", "Marine Environmental Protection Law", "Noise Pollution Prevention and Control Law", "Implementing Rules of Law on the Prevention and Control of Water Pollution"* and *"Regulations on the Administration of Construction Project Environmental Protection"*., see SEPA (1999) and SEPA (2000)

The total investment on environment protection and sustainable development in this period was 360 billions Yuan, accounting for 0.93% of GDP (up from the 8th FYP period of 0.73%), see SEPA (2001).

4.1.2 The 10th Five Year Plan Period (2001-2005)

Addressed in" *Sustainable Development Report of the People's Republic of China*" the target for national economic development in the 10th Five Year Plan (FYP-10) was to construct a ***"Well-off society in an all-round way"***. The concept of "circular economy" was also introduced in this period, see State Council (2005).

Important policies in this FYP-10 period related to environmental issues included, see SEPA (2001):

1. Enforcement of Environmental Impact Assessment System and "Three-simultaneity System", "Installations for the prevention and control of pollution for a construction project must be designed, built and commissioned together with the principal part of the project",

2. Promotion of clean production

3. Control of pollution from key industrial enterprises (coal mining, electric power, metallurgy, petrochemical industry, etc.), as a continuation of control of the total discharge amount of the main pollutants.

4. Improvement of urban environment quality with focus on prevention of water and air and solid waste pollution.

5. Environmental protection of small towns and rural areas.

6. Protection of environment and ecosystems of west China.

7. Conservation of biodiversity.

Main achievements during FYP-10 are reported to include, see SEPA (2006):

1. Implementation of "*The Natural Forest Protection Program*", "*The Shelterbelt Forest Development Program", and "The Conversion of Farmland to Forest and Pasture Program",* which have resulted in significant increase in forestry coverage and more effective control of water & soil erosion.

2. Established 18 national Eco-Function Sanctuaries, the key projects in the "Go West" program.

3. Established numbers of natural reserves at different administrative levels, with a total area of 1.5 million sqm, accounting for 15% of the total national land area.

4. Preparation of (by SEPA) *"China's Third National Report On Implementation of the Convention on Biological Diversity", "Cartagena Protocol on Biosafety", "National Bio-safety Framework of China", "China's First Batch of Alien Invasive Species List"*.

5. Promulgation of *"Environmental Protection Law", "Radioactive Pollution Prevention and Control Law", "Law on the Promotion of Clean Production", "Law on Desertification Control", "Water Pollution Prevention and Control Law", "Air Pollution Prevention and Control Law", and "Environmental Impact Assessment Law"*.

6. Prevention of further increase in total discharge amount of 11 types of pollutants listed as main pollutants. Discharges were kept at levels below the national standards.

The total estimated investment on environment protection and sustainable development in this period was accounted for 1% of GDP, up from 0.93% in FYP-9, see State Council (2006).

4.1.3 The 11th Five Year Plan (2006-2010)

The general target in the FYP-11 was to build a harmonious socialist society, defined as a "*resource-saving & environment-friendly society*", stated in the documents: *"The National 11th Five Year Plan on Eco-Environmental Protection Issues"*, see SEPA (2006), *"Plan for Rural Well-off Environmental Protection Action"*, see SEPA 2006a), *"Decision on Fulfilling the View of Scientifically Development and Strengthening Environmental Protection"*, see State Council (2005a), and *"National 11th-Five Plan for Economic and Social Development"*, see State Council (2006).

In April, 2006, the 6th National Environmental Protection Conference held in Beijing addressed the Promotion of *"Three Transformations"* in the FYP-11 period:

1. Transformation of the development mode focusing on both economic growth and environmental protection, using protection of environment as an important tool for economic restructuring and growth pattern shifting.

2. Transformation of the situation of environmental protection lagging behind economic growth into a new stage at which the two keep the same pace, through change of the old pattern "pollution first, cleaning afterwards", trying as much as possible to solve all historical/existing problems and leave no more negative impacts on environment.

3. Transformation of the past approach dominated by administrative tools into one that combines legal, economic-, technical- and as well necessary administrative methods for improvement of the environment.

The main targets of environmental protection in the coming five years are, see SEPA (2006) and SEPA (2006a):

1) Essentially improving the quality of the environment and ecosystem in major cities/urban areas by 2010, along with stable increase in national economy.

2) Decreasing the energy consumption per GDP by 20% (compared to that in the 10th FYP), reducing the total discharge amount of the main pollutants by 10%, raising the forest coverage rate from 18.2% to 20%.

Seven Key Tasks are ***s***pecified in the Decision of the State Council on "*the Implementation of the Outlook on Scientific Development and Strengthening Environmental Protection"*:

1) Prevention and control of water pollution with focus on drinking water safety and key river basin protection;

2) Prevention and control of urban environmental pollution;

3) Prevention and control of air pollution focusing on reduction of total SO_2 emission;

4) Rural environmental protection focusing on prevention and control of soil pollution and erosion;

5) Ecological conservation focusing on the harmony between man and nature;

6) Nuclear and radiation environmental safety focusing on the supervision and management of nuclear facilities and radioactive sources; and

7) Implementation of key national environmental projects (i.e., eight planned programs on environmental monitoring and management competence building; disposal of hazardous wastes/substance; treatment of municipal sewage; treatment of municipal solid wastes; desulphurization of power plants; competence building of national reserve protection and management; and Nuclear safety).

Among the 7 key tasks listed above, drinking water safety is given the highest priority, see State Council (2005), Zhou Jian (2005), and SEPA (2006).

The estimated national budget for environmental protection: 1370 billions Yuan.

Total investment (from different sources) predicted: 1.5-2% of GDP up from 1% of GDP in FYP-10, (based on an estimated GDP of 85000 billions Yuan), see State Council (2006a), Zhou Jian (2005), and SEPA (2006).

4.2 How the MoUs have matched Chinese Environment Priorities

The first MoU between NEPA (now SEPA) and the Norwegian Ministry of Environment (MoE) was signed in 1995 with the main purpose to maintain and enhance bilateral co-operation in the field of environment and sustainable development. Article II of this initial MoU listed cooperation activities to include the following forms:

- √ Exchange of information on research, monitoring programmes, laws, regulations, institutional arrangements as well as policies and regulatory practices in the field of environment;
- √ Exchange of environmental scientists, experts, and environmental management personnel;
- √ Jointly conducted projects;
- √ Joint organization of symposia, seminars, lectures and training courses;
- √ Collaborative research on subjects of mutual interest; and other forms of cooperation which are mutually agreed.

The Agreed Work plan 1999-2000 between SEPA and MoE signed on 15th March 1999 added new activities to the above list for the remaining FYP-9 period and for FYP-10, such as undertaking analysis and organizing workshops or seminars on topical environment political issues in areas such as:

- √ International environmental relations, conventions and negotiations;
- √ Environment and trade;
- √ International and regional environmental cooperation;
- √ Comparison of Chinese and Norwegian environmental policies;

- √ Case studies of policies within the areas like ecological environmental management and protection of basin environment

More specifically, the Agreed Work plan 1999-2000 stated that "*the cooperation should in particular focus on capacity building in the management of environment and issues related to global environmental conventions and agreements"*. The first immediate question arising from such broad statements on areas of cooperation is what type of cooperation is *not eligible* under the MoU?

The thematic composition of the portfolio of projects and activities which materialized in the two two-year Work Plans following this MoU clearly shows that the MoU did not serve to focus the cooperation on specific themes, issues and/or types of cooperation. It was driven by a combination of active identification of projects between Norwegian and Chinese partners, and priorities by Chinese authorities when consolidating proposals from many partner countries and technical partners. This may serve to illustrate that that the MoU did not play a significant guiding role (if any at all) for the cooperation. The particular focus agreed on in the 1999-2000 Work plan is hardly reflected in the portfolio of projects and activities selected for implementation (ref. the project list in the appendix and the discussion in section 3.3 above).

Furthermore, the first four bullet point items added in the second Work Program (1999-2000) do not reflect the FYP-9 and FYP-10 priorities, but rather what Norway wanted to emphasise as part of its international agenda. Since it was agreed on, this may suggest that having an MoU is important politically for China, but the wording and content of it is of secondary importance so long as the text is general in nature. Consultations with many of the Norwegian staff involved in the process also suggest that it was Norway who was in the driver's seat for promoting the MoUs rather than China. One must therefore question the extent to which the MoU of 1995, and the work plans based on it, have served any practical purpose beyond that of facilitating consultations between the parties.

The second MoU regarding technical co-operation for promotion of the environmental development of the People's Republic of China was signed on 8th May 2001 between Norway and China by Norad and MOFTEC, and for all practical purposes (but not formally) replaced the 1995 MoU between MoE and SEPA. The team's consultations with Norwegian and Chinese authorities however, revealed that there was no consensus as to whether the 1995 MoU still serves as a reference document or whether it is to be considered replaced by the 2001 MoU. The general purpose of the 2001 MoU was to maintain and enhance bilateral co-operation in the field of environmental affairs. In contrast to the 1995 MoU between MoE and SEPA, the scope of this new MoU clearly reflected China's FYP-10 environmental priorities (see above) by giving priority to activities in Western China; to air and water pollution, to alternative energy, to biological diversity and cultural heritage preservation. The emphases in all these fields were to be assistance in the strengthening of institutions and competence. One may conclude that the MoU scope fits well into the focal areas of FYP-10 and FYP-11.

4.3 Norwegian aid and environment priorities 1996 – 2005

When the Norwegian Government presented it's Report No. 19, 1995 to the Norwegian parliament "*A changing world – Main elements of Norwegian policy towards developing countries",* a new programme for extended environment cooperation was established. This programme was explicitly designed with emphasis on a few Asian countries because

environmental measures had already been established as an essential element of the overall Norwegian plan for increased involvement in Asia.

China was listed as one of four Asian countries to focus on under this new programme due to its serious pollution and resource management problems and important role from a global environmental perspective. This programme was designed to include environmentally-oriented aid – including the transfer of relevant environmental technologies utilizing Norwegian expertise and suppliers – and in this way contributing towards:

- Limiting soil, air and water pollution;
- Utilising waste; and
- Improving the management of various eco-systems, including the conservation and sound utilisation of biological diversity.

The signing of the Environmental MoU with China in late 1995 and the accompanying significant aid budget allocation for projects was a direct consequence of establishing this new programme.

With changing Governments, geographic and thematic priorities also changed significantly and abruptly. In MFA's Stortingsmelding No. 35 (2003-2004), "*Felles kamp mot fattigdom – en helhetlig utviklingspolitikk",* there is no longer any explicit reference to an environment programme with focus on Asia. In reality, this Government had reduced its focus on aid-financed environment cooperation with China. This was reflected by the fact that only two new projects under the environment MoUs with China were launched and approved under this Government between 2001 and 2005.

This Government emphasized its poverty reduction commitment both in choice of country categories and thematic areas. Environment support to a rapidly growing country such as China was no longer a priority area, even if such bilateral cooperation was listed as an area for continued support. This change in focus was also reflected in the new environment MoU between Norad and MOFTEC of 2001 which explicitly focused on projects in the poor provinces (Western, and from 2003 also north-east areas) in accordance with China's FYP-10. It was during this period that it was decided that the budget available and the staffing to manage it was too small to effectively handle all relevant project areas covered by the MoUs. This resulted in the phasing out of cultural heritage and fisheries as focal areas under aid financed environment cooperation despite that they were promoted for continuation by the Chinese partners, in the case of cultural heritage evident by the fact that the Chinese contribution constituted a much larger share than in other joint projects.

The new Norwegian Government that took office in October 2005 presented their *"Norwegian action plan for environment in development cooperation"* in June 2006. It reflects the rather significant change compared to the former Government. Whereas the former Government had virtually phased out aid funded environmental cooperation with large and significant partner countries from an international environmental cooperation perspective such as Brazil, China and India, the new Government lists these three countries explicitly as targets for increased technical cooperation in the field of clean energy promotion and low-carbon technology investments, energy efficiency measures to reduce emissions of greenhouse gases, and support to enable these countries to make use of the clean development Mechanism

(CDM). This focus is in line with the seven Chinese environment priorities stated by the State Council in FYP-11 for the 2006 – 2010 period and one of the two target areas listed by SEPA (2006) and (2006a) (ref. chapter 4.1 above). It corresponds well to the third of the four thematic priority areas listed in Norway's strategic profile, and there are several Norwegian producers, institutions and consultants who represent frontier technology and extensive experience from collaboration in China under the cooperation agreement in this field.

As an illustration of the above mentioned, the State Council has clearly given drinking water safety the highest priority, where prevention and control of water pollution with focus on drinking water safety and key river basin protection is listed as the first of the seven priority areas. This corresponds with the second thematic priority area in Norway's strategic profile and with opportunities for cooperation with Norwegian suppliers of technology and management services with frontier technology and extensive experience from collaboration in China.

The fourth thematic priority area of Norway's environmental development cooperation strategy is hazardous substances, which is listed as the seventh of the Chinese environment priority areas. New cooperation projects have been launched in this field and this is in line with what China demands and where Norway has frontier technology to offer.

However, the new strategic profile of Norway then states (page 9) that "*our main efforts will be directed towards conservation of biological diversity and sustainable management of natural resources*". This is also in line with the fifth of the seven stated priorities by the State Council, but it is not the main Chinese priority area (ref. chapter 4.1 above). It is interesting to note that this is given such a high profile in Norway's environmental development cooperation strategy, since this is an area where Norway is challenged domestically and abroad for lagging behind other country efforts[8].. If Norway is unable to commit to such sustainable ecosystems management and allocate resources to such pressing tasks at home, it may be questioned why Norway then promotes this area as a priority in environmental development cooperation in other countries unless it is for the purpose of obtaining assistance and expertise *from* others rather than being a provider of expertise and services *to* others.

In conclusion, stability and predictability is not what has characterized Norway's aid agenda towards China. Shifting aid policies and priorities are one of the main features of Norwegian aid policy in general which has also affected the cooperation with China dominated by aid funded activities. In the early 1990 with the Labour Governments, an Asia strategy for wide and long-term cooperation and transfer of Norwegian environment friendly technology, to a large extent aid financed, was launched, and (non-committing) MoUs for cooperation with China in the field of environment were signed. This was abruptly reversed by the following Governments which had other geographic and thematic priorities. Then with the new labour coalition Government in place since 2005, the scope is again changed, and environment cooperation with China has again become a priority.

As discussed under section 4.2, the activities listed under the two MoUs are so broad and wide-reaching that anything related to environment and cultural heritage could be listed as

[8] Ref. e.g. the major feature articles in Aftenposten on December 06, 2006 on Norwegian allocations compared to those of Sweden to endangered species protection and ecosystem management.

reflecting the environmental and cultural challenges listed in Norway's development cooperation reports to the Norwegian parliament and the Chinese FYP-10 and FYP-11. The MoUs are so general and all-inclusive that their relevance has been resilient to the unpredictable changes in Norwegian aid policy orientation and priorities.

4.4 Relevance of cooperation; the matching of interests

Our observations and findings in this and following sections are based on a general review of the total portfolio of projects as well as a detailed review of the sample of six projects (ref. annex VII).

As previously mentioned, the cooperation between Norway and China has taken place predominantly at two levels;

1. Through annual consultations between Norwegian and Chinese authorities on policy and program related issues including management and allocation of financial resources to specific projects.

2. Through technical cooperation for implementation of projects between Norwegian and Chinese partners.

As illustrated by the sample of projects subject for review, in most cases the projects have been identified and promoted by contacts established between Norwegian and Chinese partners. The projects have first and foremost been the result of identified needs and planned interventions by respective Chinese partner and subsequently been developed further jointly by the Chinese and Norwegian partners; partly to improve on the proposals to serve as operational tools for implementation and partly to satisfy requirements for the Norwegian aid administration. In some cases Norad has funded external consultants in the preparation process in order to formulate the proposal in line with standard donor type terms (like logical frameworks and addressing typical aid policy issues).

The demand for technical cooperation from China far exceeds what Norway has been able to offer. However, the cooperation during these 10 years has exposed some Chinese partners to some of the available relevant expertise in Norway, both in technical competence and experience in managing projects in different country environments. Accordingly, the cooperation may be claimed to predominantly have been driven by Chinese priorities and demand for expertise.

It has led China, as reflected in the consultations with the authorities as well as in the annual consultations between Norway and China, to suggest that the cooperation should be considered in a longer term based on the experiences gained with qualified Norwegian partners. However, while the demand from China to continue the cooperation in many fields has been evident, many of these arrangements have been discontinued. This may be partly due to the limitations in Norwegian aid funding resources, and partly because Norway appears to have promoted a shift of focus from some thematic areas to other thematic areas which to a larger extent appear to reflect changing Norwegian environmental priorities. Thus at times there has been a mismatch of priorities for areas where China clearly demand expertise and Norwegian "priorities" as reflected in the agreed minutes from the annual consultations and consultations with the review team.

As reflected in the agreed minutes from annual consultations and in consultations with the review team, China has continued to emphasise the opportunity to continue cooperation in the fields of water and air quality management, environmental economics and statistics, even the area of cultural heritage based on among others the success of eco-museums; areas in which they have successfully identified highly qualified Norwegian partners. With successful partnerships established they have indicated that this may serve as a basis for a wider cooperation in the same fields including promotion of other forms of cooperation like commercial cooperation.

However, from the evolution of the overall project portfolio, it appears that Norway instead has chosen to gradually focus more on promoting Norwegian state institutions with limited prior exposure and experience in project management and cooperation with China. With limited resources available it has subsequently led to the discontinuation of some of the ongoing projects and partners in the cooperation.

Against these observations *the relevance of the cooperation has gradually evolved from highly relevant project interventions guided first and foremost by demands from China to more emphasis on Norwegian preferences*, even if the MoUs are very general and all-encompassing.

4.5 Effectiveness and impact of the cooperation

In short, this review finds that along several dimensions, the sample of completed projects reviewed in Annex VII, have proven effective in achieving many of their goals and have had impacts as intended; some of which may not have taken place, or would had happened only at a later point in time, had the Norwegian funded project not been initiated and implemented. Annex VII provides concrete evidence of this.

However, the gradually emerging mismatch in priority appears to have had impact on the portfolio of aid financed environmental cooperation activities. From a review of the portfolio of projects it appears that ongoing successful long term cooperation has been discontinued prematurely. Instead it appears as new partnerships with less exposure and experience has been promoted in China with the risk of loosing initial investments and existing partners. Rather than building on successful partnerships already established, and use them as a platform for a wider cooperation, considering the significant demand there is in these fields, the cooperation has instead changed with new Norwegian public sector partners. Such an approach creates a risk that investments made in existing arrangements might be lost and substituted with new partnerships in new fields with a more uncertain outcome.

The MoUs as such may only to a limited effect have had any impact on the cooperation; they are wide and general in scope and have limited influence in guiding the cooperation; in fact contrary to their explicit listing in these MoU some sub-sectors have unilaterally been phased out by Norway (like cultural heritage).

FECO wants to concentrate the Sino-Norwegian cooperation in fewer areas, particularly in those where they experienced high level services delivered by Norwegian partners. For the coming years water pollution would stand out as one such area where the geographic spread of the challenges are overwhelming, and where SEPA has decided that Norway has frontier expertise on hand. Norway should take serious notice of this suggestion which indicates a Chinese preference for building on already well established and trusted relationships, rather than experimenting with establishing new ones in areas where perhaps other donor countries

may have establish a long lasting high quality working relationship.

FECO emphasises training as a priority area linked to whatever field such bilateral cooperation is selected for future cooperation. Ideally, a certain number of Chinese experts should be allowed to visit relevant Norwegian institutions for training every year. An explicit training programme should be designed in a way compatible with the Sino-Norwegian environment cooperation strategy (assuming this strategy is prepared in such a way that one can distinguish explicit priorities from it).

The embassy, on the other hand, has found it frustrating that the people selected by Chinese institutions for training (especially for training abroad) are in many cases not those who would be most relevant from an institutional training need that would strengthen the likelihood of technical and operational sustainability of the project. Rather, it seems that those granted training opportunities are often senior staff whose direct involvement in project design and execution, and subsequently in training of trainers, is rather marginal. An argument for their inclusion, however, could be that their decision making role is such that they could influence on the scope for establishing ownership of such projects and methods of work, but there is little documentations to substantiate such effects. The embassy suggests, and the Review Team agrees, that Norwegian institutions should play a much more direct role in the screening of who should be eligible for such project related training.

Such lessons (ref. review comments from FECO) from the early technologically complicated projects (the ENSIS projects, CHN-0030 and CHN-0040) learnt the hard way from these large early cooperation projects have been taken into account in the design of the new Cement Kiln Project for destruction of hazardous waste with SINTEF and the Mercury measurement and monitoring project with NIVA. Here it has been agreed that there shall be bi-monthly progress reports conveyed to the stakeholders. Starting in 2006, the Central Government has to send recommendation letter to the embassy and explain why they want a certain standard and how a project meets SEPA priorities.

The trust and good relationship established as a result of long-term predictable collaboration in the fields of air-, water- and soil pollution with e.g. NILU and NIVA (trusted relationship to Norwegian colleagues and high quality science-based reports prepared and delivered) has been a main reason why China chose Norway only for collaboration on the sensitive mercury (domestic and cross boundary) pollution project. Likewise, the collaboration with Statistics Norway has proven highly effective and such relationships need to be kept active and alive.

More specifically this Review concludes as follows regarding the key issues raised in the Terms of Reference:

- √ The overall outcome of the co-operation is seen as constructive and valuable for both China and the Norwegian participants. It has “opened the door” to China for many (but perhaps too few?) Norwegian institutions and companies and provided considerable experience and learning in how to more effectively establish good working relationships in China.

- √ A process was initiated with the MoU with MOFCOM from 2001 to (a) focus on projects in the western provinces of China, according to Chinese priorities for development assistance, and (2) to initiate a concentration of new projects to Guizhou, which is one of the poorest provinces. These projects are selected

in dialogue with Chinese authorities, and resulted in the Zunyi project.

- √ It is doubtful that such a small allocation for cooperation in the field of environment has resulted in any measurable influence on Chinese and Norwegian environmental policy.
- √ The review of the sample projects in Annex VII suggests that there is evidence that the outcomes of most of the projects have influenced Chinese awareness locally and/or centrally, and facilitated policies, plans and actions in the areas covered by the MoUs.
- √ It is less clear if it has had a similar effect on Norwegian environment awareness and international environment policies, since these have kept changing in unpredictable ways throughout the study period.

- √ It appears doubtful that the MoU of 2001 between Norad and MOFTEC has had any impacts on the cooperation between SEPA and the Norwegian Ministry of the Environment in terms of affecting effectiveness, outcome and impact of individual projects. The MoU has only served to facilitate the climate for a dialogue about cooperation in broad areas under the environment label, and then help set the agenda for discussions about which project to include and seek Norwegian funding for.

- √ China looks to Norway for best practice, experience and competence in those fields related to sustainable development/protection of the environment where China has experienced that Norway can provide frontier technology and expertise, such as the early ENSIS projects covering air-, water- and soil pollution, comprehensive environmental master planning and the necessary set up for collecting data and monitoring environmental indicators as a basis for policy advise and decision making, along with establishment of environment statistics at national and local levels and development of operational policy oriented analytic impact models using such data.

- √ The implementation of the MoUs has probably not contributed to any change in what fields related to sustainable development/protection of the environment that China look to Norway for best practice, experience and competence over time. However, various interested institutions and companies in Norway continuously seek entry into this market. The "market" has been determined more by demand from China for which they could find highly qualified technical partners from Norway as suppliers, rather than a process in which the MoUs has had strong influence on what projects to be developed. It has only been when Norway has indicated limitations in funding and changes in priorities that funding for some existing successful partnerships have been substituted for new with Norwegian public sector institutions. The former has proven a successful approach while it remains to see the outcome of the latter.
- √ The co-operation has been a support to the work and role of SEPA, since SEPA was a young and weak agency at the time when the first MoU was signed and MOST was the dominating partner for such cooperation. Several of the projects have had extensive media coverage of their findings and results, and this has drawn attention to SEPA and increased the awareness in China about

SEPA and its role. At the same time much of the cooperation has been with provincial and local EPBs and institutes, and these do not always have a close working relationship with SEPA.

√ The key factors for promoting the institutional cooperation between Chinese and Norwegian entities has been (a) for the Chinese: the competence and technologies possessed and developed by the Norwegian institutions, and which the Chinese institutions have wanted to access and install for use, and (b) for the Norwegians: the attractiveness of *tied grant aid offered on terms not requiring any open tender* for use in the world's fastest growing market for such technologies and services. This preferential selection treatment notwithstanding, there has also been a mutual process of learning and research, which has benefited both partners in the form of competence building in both countries, and it has resulted in joint professional publications.

√ The key factors for these to be sustained and strengthened (e.g. project cooperation, exchange of experts, meetings at political level, cooperation in international fora etc.) will be clear establishment of Norwegian competitiveness in the above fields of expertise, since many other countries also offer similar expertise to China. Since China is a rapidly growing economy, one cannot expect aid funds to continue to be available for such cooperation for long. Norway therefore need to consider doing what other donor countries have done; apply none-ODA public funding mechanisms for such cooperation attractive to Chinese partners.

√ In this context of alternative complementary approaches for future collaboration in the environment field, the Review Team would like to draw attention to the commercially-based Norwegian Energy and Environment Consortium (NEEC) established in late 2005 as a network of energy and environment businesses, consultants and academic institutions in Norway, organised as a multi-client project, and financed by the industry, and not by ODA. However, this is not part of the Norwegian Government System which is responsible for the ODA funding. NEEC is hosted and operated by Innovation Norway which actively promotes NEEC by means of workshops, seminars and partnering events in Norway and China serving as a marketing mechanism. It promotes partnerships by creating a competitive edge for the members through collaboration (Ref. www.neec.no for more details).

4.6 Efficiency

The issue of efficiency in the cooperation has been addressed with focus on three issues;

√ To what extent the overall approach to the cooperation has been consistent through time to fully reap the benefits of the initial investments in establishing successful partnerships (economy of scale).

√ Has the management arrangement been designed to minimise transaction costs.

√ Have the projects used least cost approaches in implementation, first and foremost by an assessment of to what extent the budgets for the project

partnerships have been maintained at competitive levels as reflected by time allocated for activities and costs of key inputs.

4.6.1 Efficiency in approach

As previously mentioned the cooperation promoted under the arrangement has proved to produce important benefits for China and met demands for expertise and knowledge sharing in areas given priority under the cooperation frameworks. On the Norwegian side the cooperation has been facilitated by financial support to joint projects of 3-4 years duration.

As illustrated by the sample of projects however, the timeframe for the cooperation on existing projects has been too short to ensure a sustained joint working relationship although it is recognised that new proposals for extension of the cooperation in many cases now are under consideration. Despite this, the change in the portfolio of projects over time suggests that there is a Norwegian preference to introduce new partners in the cooperation before fully reaping the benefit of existing arrangements and partnerships, and even further the exiting partnership to promote other partners into cooperation in the same field. This is also constrained by the fact that Norway has not mobilized funds to promote such partnerships beyond the aid budget.

4.6.2 Efficiency of management arrangement

The management arrangement for the cooperation has changed and become much more structured over time. Initially there were several institutions (and within them several departments) involved in coordinating decision making from Norway (i.e the Ministry of Foreign Affairs, the Ministry of Environment, Norad, and within Norad departments for Environment and for Commercial Cooperation, and the Norwegian Embassy in Beijing facilitating the process for all of them). The practical division of tasks and responsibilities between Norad and MOE was obscure.

MoE considered itself the environmental expertise responsible for selecting projects, but never had funds, and the MoU did not involve any funds. The MoU with NEPA (later SEPA) of 1995 is an intention for cooperation, but does not regulate the development assistance. Norad and MoE has met and cooperated in annual meetings in Chian, but Norad through it's Environment Project provided the funding and therefore assumed the management and authority of final approval or rejection of what MoE had proposed. While MoE had a preference for projects implemented by their own agencies/directorates, Norad favoured the use of more autonomous institutions and consultants such as NILU, NIVA and Econ for projects implementation.

While MoE had direct contact with their Chinese counterpart NEPA (later elevated to SEPA) through the MoU, Norad initially partnered more closely with SSTC (later reduced to a ministry, MOST) since the large initial aid-financed technology-oriented pollution reduction projects (IMPACTS and ENSIS) involving Norwegian pollution management institutions such as NILU and NIVA were derived from initial agreements with MOST. In 2001 Norad signed an MoU with MOFTEC (later MOFCOM) because this Ministry has the responsibility given

by the State Council to coordinate all development assistance to China.[9]. Clearly, such fragmentation of the two sides of the same Government did not provide for efficient implementation of the cooperation when such fragmentation between technical knowledge and funding responsibility took place at the same time in both Governments.

As a result of this rather complex arrangement, combined with the massive allocation of grant aid funds for such cooperation in Asia (NOK 50 million in 1995, increased to NOK 150 million in 1996) to be used during the initial cooperation years, projects between the same partners and in the same fields would approach different institutions and departments in Norway pending what source of funding they were attempting to mobilise. As reflected by the portfolio, this led to the same partners receiving funding for the same type of projects from different sources independently of each other (among others NIVA and NILU).

Gradually, however, delineation of responsibilities for such cooperation agreements were clarified, first on the Chinese side since all ODA eligible donor funds were to be coordinated by MOFTEC, and then, since 2004 the Norwegian arrangement has changed by delegating responsibility to the Embassy representing all of the Norwegian institutions on their behalf. Previously there were many delegations from different Norwegian institutions involved in the dialogue with the various respective Chinese partners with as many as up to four annual general consultations between respective Chinese and Norwegian government institutions all partly or directly related to environmental cooperation[10]. This has now been streamlined with one line of communication on the Norwegian side related to the different MoUs. This has ensured that a more consistent and efficient approach is maintained in decision making.

The Embassy has experienced the outcome of the decentralization of powers and authority as resulting in a significant reduction in the project preparatory time from on the average 2.5 years to now 1.5 years (but still with significant variation from one project to another, depending to a large extent on how well the project dialogue with the Chinese partner has been established before a proposal is submitted). This is claimed to be much faster than e.g. in the case of Swedish projects where such delegation of decisions to the Embassy has not been implemented.

The challenge ahead is how to fully reap the benefit of having one focal point on the Norwegian side to take full charge on all aspect in the cooperation regardless of whether the environmental cooperation is labelled as research, institutional or commercial cooperation and regardless of whether it is promoted under the framework of aid or not. It is a challenge for the organisation of the work internally in the Embassy combining different resources and moving away from the past approach by separating the issue of promoting and monitoring aid funded cooperation from other forms of cooperation.

The MoUs do not directly serve as tools guiding the bilateral cooperation with China. However, in China the MoUs are crucially needed to operate successfully. The MoU-1995 (to be renewed in 2007) regulates the cooperation between MoE and SEPA. It is a basis for

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[9] MOST does not have this responsibility.

[10] MOE/Norad/SEPA related to the 1995 MoU and the 2001 MoU on environmental cooperation supported by aid, MOFCOM/Norad related to aid funded activities in general, Norad/MOST related to aid funded activities including environment and Norad/MoF related to mixed credits.

intentions of a close cooperation, and for a policy dialogue, bilaterally and multilaterally. Such an MoU goes beyond development aid, and ties two environmental ministries friendly together, whereas the MoU-2001 with MOFCOM is regulating the official ODA, and follows the same budget process as in Norway. MOCOM reports on the ODA to the State Council.

4.7.3. Cost efficiency of projects

Although it was beyond the scope of this review to conduct a full scope evaluation of the individual projects, some observations has been made in respect of how they were designed and implemented, in particular related to costing of services and the process in selecting partners. In this context it is important to remember that the criteria applied to classify different forms of cooperation are linked to what budget line in the aid budget has been charged, not what type of project or Norwegian institution is involved in implementing them. The difference between commercial and institutional cooperation is only an aid management issue, it does not reflect the content of a project, the approach to implementing it or what type of Norwegian institution is involved in the partnership.

In the case of *institutional* cooperation projects it has almost entirely been an arrangement made through a joint design process between Chinese and Norwegian partners. The contractual arrangement has been made through a direct negotiation process, but often of no cost to any of the parties signing the contract. The cost has in several cases been covered by Norad and the Chinese state budget (except for the in-kind contribution estimated at factor cost by the Chinese partner, cost which mostly include allocation of time for personnel involved in project implementation). This is a major difference from similar projects labelled *commercial* cooperation were a significant share of costs (usually 50%) has to be borne by other sources (the partners themselves or through other funding agencies). The latter approach will in most cases serve as a strong incentive to maintain costs at a minimum.

Judging from project appraisal reports of the funding agencies (first and foremost Norad and the Embassy), it appears that the issue of resource input (both time and fees) has not been considered a major issue and most of the reviews of institutional cooperation projects appears not to have made a full assessment of cost efficiency. The fact that a competitive process has not been applied, neither on the Chinese side nor on the Norwegian side, is not unique, but typical for Norwegian support to institutional cooperation in other countries as well. This is linked to the approach taken in which often the partnership has been established before the project is promoted for funding.

The above stands in contrast to the approach used by other countries promoting institutional cooperation with China. Under these arrangements, the Embassies/representative offices of countries like Italy, Sweden and Germany jointly identify projects with the Chinese authorities which may be considered for a partnership arrangement between respective country institutions/companies and executing agencies in China. Then these project proposals are developed into project documents that can serve as tender documents for a national tendering process in the respective country. It is through this national tendering process the external technical partner for the Chinese agency is selected.

Whether or not the national tender process described above contributes to higher quality partnership and services at lower costs can not easily be verified without access to documentation describing the different projects. It can also not be easily verified if a process

with higher transaction costs (tendering) than direct contracting is justified by potentially higher quality/reduced costs. It has also been questioned if a tendering process would be a justified procedure in Norway based on the assumption that it would in any case only be one or very few institutions/companies that would have the relevant know-how and technology to offer.

When reviewing the project portfolio, it appears that resources (time and fees) varies significantly between projects, even for projects with the same technical content and with input from the same Norwegian institution/company. For some few projects the issue of cost efficiency has been an integrated part of the appraisal process. In some cases it has led to reduction in costs by using the outcomes of the appraisal process in negotiation of the finance agreement (funding from Norad/MFA).

However, *in most project appraisals and reviews cost efficiency do not appear to have been an issue high on the agenda*. This may be due the fact (as reflected in these appraisals and reviews) that presentation of budgets and accounts has not enabled assessment of actual costs by cost component (economic classification) and activity (functional classification). In most cases costs have not been presented in a schedule by year but only as totals for the duration of the project. The costs have sometimes also only been presented for the activities/components funded by Norway, and sometimes only details for the Norwegian partner inputs are available i.e. the total costs of the entire project presented in a schedule by year and activity has not been available which is a minimum requirement to assess cost efficiency.

When reviewing the project portfolio it can be claimed that in most cases there are more than one supplier who could have delivered the services requested from Norway and in all cases that there are several who could deliver part of the services (like supply and installation of monitoring systems, data modelling, economic analysis and management advisory services). Thus *the argument that there is only "one supplier of services" could be challenged*. In some cases it has even been argued that since a Norwegian partner was involved in the preparatory phases and initial studies, then the same partner should be awarded the contract for subsequent phases. In some cases it appears that the initial phase(s) have been implemented with a modest budget followed by a significantly more generous financial frame in subsequent phases.

Some partnership agreements include several Norwegian partners with one acting as the lead. Some of them have been managed through a complex management arrangement which has lead to high the transaction cost of the cooperation compared to others. Despite limited information from other projects in China to make a direct cost comparison, *it is evident that some projects have been implemented with generous resource allocation even if rates applied for personnel input has been maintained within competitive rates.*

While we would argue that a tender process is the best approach to promote cost efficiency and quality of inputs, *it should as a minimum be required to submit budgets and statement of accounts that shows total resource use by economic and functional categories presented for each fiscal year in accordance with agreed standards*.[11] This would then enable an assessment of cost efficiency, an issue which should be addressed more fully in the appraisal process as

[11] Ref. annexes in "DAC Task force on Donor Practices" Financial reporting and auditing, 30 april 2002, Torun Reite and Jens Claussen, Nordic Consulting Group.

basis for negotiating amount of funding required and in reviews for assessment of actual performance.

4.7 Sustainability

Outcomes judging from the sample of projects reviewed appear to have been sustained, but this Review has also expressed concern over the tendency of the Norwegian Government to terminate funding of the cooperation once it has been established, and instead shift funding for new relations and partners. This stands in contrast with the Chinese preference for long-term stability in relationships and cooperation, and have impact on the efficiency and sustainability of valuable project outcomes and impacts.

There is a genuine risk related to the observed Norwegian practice and strategy of closing ongoing relationships prematurely, and introducing "Norwegian priorities" with less political ownership on the Chinese side. The Norwegian practice has been to terminate the projects prematurely, before one has been assured of a lasting Chinese ownership of the findings and recommended actions. There is a need to pay more attention establishment to genuine local ownership of projects and their results, and this requires patience and time. This has not been done so far in the agreed and completed projects. One needs to monitor projects for e.g. five years after completion in order to provide the necessary data for documenting impact and sustainability. Such commitment should be built into project agreements and budgets.

In the field of measuring and monitoring environmental change long time series of reliable data is needed (three years is far too little). However, in order to establish for such long term data collection and policy relevant analysis, one would need stability and predictability in the working relationship between the two countries and partners implementing the projects. Such stability and predictability has been missing in Norway's development cooperation policy since the first Sino-Norwegian environment cooperation MoU was signed in 1995.

ANNEX I - TERMS OF REFERENCE

21 JULY 2006

TERMS OF REFERENCE

for a review of the Sino-Norwegian

environmental cooperation 1995-2005

Background

Norway's environment and development cooperation with P.R. China began in 1995-96. It was formalised by a MoU between NEPA (now SEPA) and the Norwegian Ministry of Environment, signed Nov 6, 1995 by Chinese Minister of Environment Xie Zhenhua and Norwegian Minister of Environment Thorbjørn Berntsen.

The purpose of the environmental cooperation, as laid down in the MoU, is to

- Maintain and enhance bilateral co-operation in the field of environment and sustainable development
- Initiate and implement concrete projects for the (Chinese) implementation of international environmental commitments, which may include activities such as exchange of information, exchange of experts, arrange seminars and research
- Co-operation in relevant international environmental fora

A work plan, to be revised biannually, was to be annexed to the MoU. The co-operation projects, financed by the Norwegian Ministry of Foreign Affairs, were in the follow-up however not signed by NEPA (SEPA) and the Norwegian Ministry of the Environment, but by SSTC and Norad.

A MoU regarding technical co-operation for promotion of the environmental development of the People's Republic of China was 8 May 2001 signed between Norway and China by Norad and MOFTEC. The scope is to:

- Maintain and enhance bilateral co-operation in the field of environmental affairs
- Give priority to West China
- Give priority to air and water pollution, alternative energy, biologic diversity and cultural heritage preservation
- Emphasise building of institutions and competence

Norad and MOFTEC (now MOFCOM) were the competent authorities. The status as competent authority on the Norwegian side was in 2004 transferred from Norad to the Norwegian Embassy.

Funds for the co-operation projects have been allocated from the Norwegian Ministry of Foreign Affairs, leading i.e. to the establishment of an "Environmental Project" in Norad. China has mainly contributed by in-kind support, channelled through SEPA and MOFCOM.

Purpose

The main purpose of the review is to evaluate the Sino-Norwegian environmental and development co-operation with focus on the implementation of the MoU's, and give recommendation on the further co-operation, including:

- An assessment of the overall outcome of the co-operation and which influence it may have made on Chinese and Norwegian environmental policy.
- A brief analysis of the development of the Chinese environmental challenges, awareness and policy within the 10 year period, i.e. as expressed in the Ninth and Tenth Five Year Plans and how the MoU's meets the challenges today, i.e. in the Eleventh Five Year Plan.
- An evaluation how and to which extent the co-operation has been a support to the work and role of SEPA.,
- A brief comparison of the Sino-Norwegian co-operation to the bilateral co-operation between China and a sample of other countries in the field of environment and development, more specifically Sweden, Canada and Italy
- Describe and evaluate how the organisation of the work including the project-selection process has contributed to the implementation of the objectives of the MoU's and the purpose for the funding of the co-operation.
- Assess to what extent the concrete project activities have contributed to the fulfilment of the objectives of the MoU's, properly reflecting the timing of projects signing the MoU activities to be focused on at the time of signing.
- Give recommendations on the way forward in order to strengthen and improve the co-operation.

Key issues to be addressed

Under the above purpose headings the review will focus on – but not be limited to – issues related to the following.

- In what fields related to sustainable development/protection of the environment does China look to Norway for best practice, experience and comptetence? Has the implementation of the MoUs contributed to any change in this over time?
- What has been the key factors for promoting the institutional cooperation between Chinese and Norwegian entities and what will be the key factors for these to be sustained and strengthened (e.g. project cooperation, exchange of experts, meetings at political level, cooperation in international fora etc.) ?
- Have projects for financing been selected so as to reflect the changing priorities under the MoUs and the country-respective priorities in the fields of environment and sustainable development?
- To what extent has Chinese "ownership" been established at local-, provincial- and national levels to the projects implemented in collaboration with Norwegian institutions?
- To what extent has the MoU of 2001 between Norad and MOFTEC had any impacts on the cooperation between SEPA and the Norwegian Ministry of the Environment? Has this affected effectiveness, outcome and impact of individual projects?
- Has the difference in competence between SEPA and the Norwegian Ministry of the Environment (e.g climate change and cultural heritage preservation) had any impacts on the Sino – Norwegian cooperation?

- Has project selection under the MoUs been donor driven or demand driven?
- How have identification of and initiatives for projects under the Co-operation agreement taken place?
- Have these processes been transparent and open to competition among domestic expert groups on both sides?
- Is there evidence that the outcomes of the projects have influenced Chinese and Norwegian awareness and facilitated policies, plans and actions in the areas covered by the MoUs?

Format.

Information concerning the projects is available from the archives of the Norwegian Embassy. The archive together with supplementary or additional documentation will be made available for the review team. A brief overview of the co-operation projects under the MoU's are found in Annex I.

The different aspects or evaluation criteria to be covered by the evaluation shall to the extent practicable be based on the Norad's Development Cooperation Manual, see Annex II.

The review should take account of results from previous evaluations of projects under the Sino-Norwegian environmental cooperation programme.

In addition to relevant documentation, the team should conduct interviews with relevant personnel of SEPA, MOFCOM, the Norwegian Embassy, and Norwegian Ministry of the Environment, Norwegian Ministry of Foreign Affairs, Norad and personnel from Norwegian and Chinese institutions/companies involved in the various relevant projects. A list of persons to be interviewed is found in Annex III.

The review team

The members of the team shall consist of:

- Two Norwegian experts with expertise in environment and development issues in general and of such issues in China in particular.
- A Chinese expert with expertise in environment and development issues.

The members shall not have any economical interests in the previous, current or planned development funded bilateral environmental cooperation projects with P.R. China.

If appropriate, a reference-group for the review may be organised by the Norwegian Embassy and Norad.

The Norwegian Embassy will be the focus point for the review. Norad will be responsible for the contracts.

Reporting and the working period

The working period is between 30. August 2006 until 31. December 2006. Initial document reviews and interviews will take place in Norway during September and October by the Norwegian consultants and in China by the Chinese consultant. Field work constituting interviews and visits to a sample of 4 of the projects financed under this Co-operation Project will take place during first half of November 2006.

A Report of the review shall be made containing an executive summary on the major findings, conclusions and recommendations.

A progress report shall be presented to the Embassy by primo November 2006.

The draft final report shall be ready by 31. December 2006.

The review team shall have a debriefing meeting with the Norwegian Embassy, upon conclusion of the work. A draft final report shall be presented to the Norwegian Ministry of Foreign Affairs, Norwegian Ministry of Environment, Norwegian Embassy, Norad, MOFCOM, SEPA and MOST for comments, before the presentation of a final report.

If any work-shop or seminar is organised on the 10 years of Sino – Norwegian environmental and development co-operation, the review team can be requested, as a part of the evaluation, to make a presentation of its work.

Annex I: Overview of environmental projects 1995 – 2005: See separat Exel Sheets

Annex II

The review shall as far as possible be undertaken in accordance with the recommendations given in Norad's *Development Cooperation Manual*. This implies that the following evaluation criteria shall be used:

- Efficiency
  - Output related to technical as well as financial input
- Effectiveness
  - Implementation in relation to plans and available financial frames, as well as achievements in relation to purpose and objective
- Impact
  - All changes caused by the project directly or indirectly
  - To which extent has the environmental programme influenced the dialogue between Norwegian and Chinese authorities?
  - Has the programme had any effect on the Chinese 5-year plans?
- Relevance
- Whether the objectives are still coherent with local and national priorities and needs To which extent has the priorities and needs changed during the programme period? Sustainability
  - Institutional (including policy support measures)
  - Technical
  - Economic
- Risk management
- Particular concerns to be kept in mind
  - Chinese institutional co-operation
  - Performance of Norwegian institutions
    - organisational
    - technical
    - administrative
  - Copyrights

- Dissemination (national/regional co-operation, commercial continuation)
- Gender aspects
- Learning elements and experience gained

- Audit
  - Anti-corruption measures

Annex III: List of persons to be interviewed: To be developed

ANNEX II – SINO NORWEGIAN PORTFOLIO OF ENVIRONMENTAL PROJECTS 1996 – 2005

PROJECT TITLE	DISBURSED (1000 NOK)[12]
Institutional Cooperation	
SSTC; Cleaner Production In China	435
Research Vessel	253
SSB Environmental Statistics	8,117
China Council	17,427
Green Globe Yearbook	2,735
WWF Environmental Projects	1,037
Bio-Gas Energy Pre Study	477
Air Quality Planning Guangzhou	14,825
Air Quality Planning In Tianjin	13,909
Sozhou Creek Shanghai Rehabilitaion	4,812
Water Monitoring Songhuajiang	14,661
EPA; Shanxi Feasibility Environment Study	1,725
Zhuzhou City Environment Action Plan	12,231
Axing City Project Wastewater	6,813
Ecomuseum Guizhu Province	6,014
Cleaner Production Industry	1,838
Xi'an Urban Preservation Project	5,253
Bei Dou Research & Fish Managing Project	11,543
Haikou Garbage Treatment Project	200
Pollution Control In Jiangsu	323
Yunnan Environ Management Project	700
Acid Rain - Impact	31,639
Television Program Environment	223
Shanghai Wastewater	3,273
Xiaoshan Wastewater Transfer Technology	5,497
Master plan Air Poll Shanxi Province	10,331
Inner Mongolia Lake Restoration	8,414
Evaluation of Control Environmental Effects	3,660
Handbook And Training Programme	5,006
State of The Environment Report	2,608
ISO 14000 Standard Co-Op Project	7,261
Water Supply Project Hainan Province	11,619
Waste Water Treatment Tianjin	11,252
Culture Monument Protection Tibet	319
Water Treatment Jiangsu	7,894
Supply To Smoke Cleaning Plant	6,162
Scholarships Yunnan	234
Poverty Alleviation - Yunnan	3,750
Biodiversity, Hunan	1,127
Environmental Law Training Courses	8

[12] Actual disbursement during 1996 - 2005

PROJECT TITLE	DISBURSED (1000 NOK)[12]
Clean Energy Action	921
Capacity Building Zunyi EPB	1,241
National Monitoring System	3,500
Biodiversity, Tibet	111
Environmental Decision Making	4,100
Green GDP	700
Oil Pollution Measures Shanghai	3,718
Commercial cooperation	
Frank Mohn; Yantai control marine oil	670
Elkem; Micros industrial waste	175
Samfunnsplan: Zhencheng Ddgs plant	12
Goodtech Ami; Waste Water Management	15
Solberg & Andersen; Water Supply Project	24
Elkem Materials; Gansu Clean Production	25
D N Veritas; Quality Control Services	408
ABB Miljoe;Thermopower	680
Kvaerner Water Systems; Wastewater Treatment	921
Oceanor;Maritime: Environmental Surveillance System	160
SINTEF; Taiyuan,Shanxi Air & Water Pollution	346
Polar International; Magnetic Water Treatment	94
Norsk Hydro; Production of Ammonia Nitrate	96
Moeller Energi; Hydro Power Project	235
International Project Development Consultancy	14
Kvaerner Energy; Production of Turbines & Generators	15,200
Goodtech Ami; Hefei Water Supply Project	9
Frank Mohn; Oil Spill Control	41
Degremont Norge; Ton gren City Water Supply	179
Lai Bergen Holding; Refrigeration Filter Production	214
Kvaerner Water Systems; Sewage Treatment	883
Siemens; Gansu Substation Project	5,019
Goodtech Ami; Water Supply Project	7,510
Goodtech Ami; Sewage Treatment Plan	13,391
Advisory Group; Ertan Hydroelectric Project	2,378
Environment Protection Equipment	705
South West Waste Water	12,543
Energy Saving And Treatment ff Pollution	227
Yanji City Wastewater Treatment Project	15,141
Infrastructure for environment	954
Feasibility Study Water Treatment Plant	345
Feasibility Study for Water Cleaning Company	214
Storm Weather Centre	772
Waste water management	350
Feasibility Study For Establishment of Energy Efficiency Centres	113
Project for promotion of new Environmental Technology from Norway	160
Other	
Environmental Strategy China	17
Workshop Water Quality Fudan University	200
Workshop-Climate Change, Beijing	4
Final seminar, Guizhou June 2005	150

PROJECT TITLE	DISBURSED (1000 NOK)[12]
Environmental Law Training Courses f	180
Environmental seminar	60
POP Seminar	37
Participation from China in China Environmental and Energy Conference	100
ENSIS WORKSHOP	163
WS Atmospheric pollution	35
Eksporthuset; Evaluation Kvaerner Energy	91
Hestmark,S; Evaluation of Storli-Dalian	41
Consultancy assistance	304
Environment and Antipollution	474
Sichuan Cleaner Production	159
End review ENSIS and appraisal hazardous waste	139
MOST Projects review	220
Urban renewal	200
Ecological museums	415
F Nansens Institute: Norwegian China Forum	25
UNDP: Clean Energy Action	3,300

ANNEX III - PROJECT SAMPLE

Project no	Project title	Project Description	Duration	Main Norwegian partners	ODA from Norway in 1000 Nok
CHN-030	Acid rain - IMPACT	The purpose of this project was to implement a programme for the collection and registration of data concerning deposition and ecological effects of acid rain in 4 provinces in China. This would subsequently form the basis for Chinese authorities to prepare and implement cost-effective projects to reduce acid rain in China.	1997-2004	NILU, NIVA, SINTEF, NUPI	31,639
CHN-008	China council	CCICED was established based on a Canadian CIDA initiative following the Rio Summit in 1992 as a high level advisory body to the Chinese Government. The purpose was to strengthen cooperation and exchange between China and the international community in the field of environment and development. CCICED has evolved over three five-year phases. Gradually, a number of funding agencies have contributed to the council's work, including Norad, which have provided budget support for the CCICED work.	1996-	Untied contribution channelled through the Canadian CCICED Office	17,427
CHN-040	Master plan air pollution - Shanxi province	The project was carried out during the period 2001-2004 as a cooperation between Shanxi Environmental Information Centre (SEIC) and in the Norwegian Institute for Air Research (NILU) in cooperation with ECON, CICERO and GND. The project established an air quality management system for three cities in Shanxi Province as well as at the province level at SEIC, and to used it to develop an Air Pollution Master Plan.	1997-2003	NILU, NIVA, ECON	10,331

Project no	Project title	Project Description	Duration	Main Norwegian partners	ODA from Norway in 1000 Nok
CHN-007	Environmental statistics	This project was implemented as an institutional cooperation arrangement between Statistics Norway (SSB) and the State Statistical Bureau of China on an institution-to-institution basis for transfer of knowledge and sharing of experiences. The purpose was to support the State Statistical Bureau of China in the development of statistics and accounts of natural resources and environment compliant with international standards. By production of environmental statistics, analysing trends and cross sector data, publication and dissemination, it would eventually inform policy makers on key issues that needs to be addressed.	1996-2001	SSB	8,117
CHN-047	ISO14000 standard co-operation project	The overall goal of the project was to improve the long-term environmental performance in Chinese industry through strengthening the environmental administration (SEPA/CCCI) and local environmental protection bureaus (EPBs) in their work on developing and implementing ISO 14000 standards. The project designed and delivered network training programs in three industry sectors and four provinces and developed three ISO 14001 industry sector implementation guidelines.	1998-2004	DnV	7,261
CHN-044	Handbook and training programme	The project assesses the problems and prospects of introducing economic valuation into the EIA process in China, and uses four case studies of environment economic impact assessment (EEIA). The project aims at establishing guidelines in the form of a handbook and a training programme. Norwegian participants in the project included ECON Analysis, NULS (Dept of Economics and Resource Management). The Chinese participants included SEPA (Policy Centre for Environment and Economy), Institute of environmental Economics (IEE), School of Environment and Natural Resources, Renmin University, and College of Environmental sciences, Peking university.	1997-2004	ECON	5,006

ANNEX IV – MEETINGS IN NORWAY PRIOR TO DEPARTURE FOR CHINA

Date	Project No	Project Name	Institution	Person(s) met
24.10.2006	CHN-0040	Master plan Air Pollution Shanxi	NILU	Steinar Larssen
26.10.2006	CHN-0007	Env. Statistics and Analysis	SSB	Knut Alfsen and Solveig Glomsrød
26.10.2006	CHN-0030	IMPACTS (integrated acidification study)	NUPI	Valter Angell
27.10.2006	CHN-0040	Masterplan Air Pollution Shanxi	UiO	Daisheng Zheng
27.10.2006	CHN-0047	ISO 14000	DNV	Tim Lund (now at Norfund)
30.10.2006	CHN-0030	IMPACTS (integrated acidification study)	NIVA	Espen Lydersen
30.10.2006	Several	Several (ENSIS, IMPACTS, etc)	NCG	Tore Laugerud
31.10.2006	CHN-0047	ISO 14000	DNV	Anne Cathrine Johnsen
01.11.2006	Several	Several	MD	Inger Johanne Wiese
27.11.2006	Several	Several	NHO	Tori Tveit
12.12.2006	Several	Several	Norwegian Embassy, Hanoi	Leiv Landro

ANNEX V – MEETINGS IN CHINA

Day	Meeting
Monday 06.11	11:00 Internal meeting at Embassy with evaluation team 15:00, Meeting with SEPA and MOFCOM **in MOFCOM** Individual meeting with MOFCOM following the start up meeting
Tuesday 07.11	15:00 meeting with SEPA at SEPA
Wednesday 08.11	14:00 FECO at Embassy
Thursday 09.11	09:30 CHN-0007, Environmental Statistics, NBS, in NBS. 18:00CHN-0044, IEA, Prof. Ma Zhong and Håkon vennemo, Econ Analysis
Friday 10.11	Winlot Consultants at Winlot Office Review Team work and meeting with Embassy staff
Monday 13.11	In Taiyuan (Project 0040 Shanxi). Contact person Mr. Zhang Baohu tel. (0351-6371141), mobil 13803455699

Day	Meeting
Tuesday 14.11	09:30 Meeting with Prof. Earl Drake, CCICED Canadian secretariat 10:30 Meeting with Sino-Italian Cooperation Program for Env Protection 11:45 Meeting with Swedish Embassy 14: 00, CHN-0030, IMPACTS, CRAES at Embassy, Contact person: Mr. Tang Dagang 16:00 GTZ, Edgar Endrukaitis, at GTZ
Wednesday 15.11	10:00, CHN-0030, IMPACTS, Thorjørn Larssen at Embassy 14:00, CHN-0047, ISO 14000 at Embassy, Mr. Zhou Hong 16:00 NEEC - Innovation Norway with Vibeke Skajaa and Werner Christie, Embassy
Thursday 16.11	11:00 – 14:00 Debrief meeting in Embassy, MOFCOM, SEPA, FECO

ANNEX VI – SELECTED REFERENCE DOCUMENTS

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State Council (2006a), “The National 11th Five Year Plan for Economic and Social Development”, March 14, 2006.

Zhou Jian (2005). “Investment demand on Environmental Protection and priority analysis in the coming five years”, The 1st International Environmental Forum in Jiuzhai Heaven, Oct. 28, 2005.

Annex VII - Review of the project sample

CHN-0007: ENVIRONMENTAL STATISTICS

Background

The Sino-Norwegian Project on Environmental Statistics and Analysis was initiated in late 1997, following a visit in 1996 to Statistics Norway (SSB) by the Chief of National Accounts and the State Statistical Bureau of China (now National Bureau of Statistics of China (NBS)). The project was implemented between 1997 and 2001 as an institutional cooperation arrangement between SSB and NBS based on a partnership arrangement contract in 1998 on an institution-to-institution basis for transfer of knowledge and sharing of experiences. The purpose was to support NBS in the development of statistics and accounts of natural resources and environment compliant with international standards. By production of environmental statistics, analysing trends and cross sector data, publication and dissemination, it would eventually inform policy makers on key issues that needs to be addressed.

Findings

The project set out to achieve the following:

- Build NBS-capacity in the field of natural resource accounting;
- Enhance the capacity of NBS to prepare environmental statistics;
- Help NBS develop analytic tools for linking natural resource use to economic activity and environmental impacts;
- Help NBS develop more comprehensive and widespread publications and improved methods of presentation;

Relevance: The project was listed as one of the priorities in the environmental cooperation between the two countries, and was *highly relevant* to China's environment management priorities in FYP-9 and FYP10.

Effectiveness and Impact: From review of documentation and consultations with the Norwegian partner SSB, it appears that the project was successful in establishing the system for environmental statistics as well conducting analysis presented through some research publications. The statistics are still being produced after completion although questions are raised regarding the extent to which analyses are being conducted and results disseminated and adopted for use in policy making and long term priorities of Five Year Plan activities.

A convincing evidence of NBS taking ownership to the outcome of the cooperation was that:

- NBS established a large project apparatus and pulled in several NBS-departments and in addition, provincial departments as well as universities, for awareness raising and enlisting them in the process of concrete project cooperation so as to establish full and thorough ownership of creating and maintaining these new energy and emission statistics, learning to analyze how these emissions originate, and then using these information for planning and policy purposes.

- NBS has 3-5 experts full time engaged in the project and had several staff sent to SSB in Oslo for extensive training in all aspects of data collection, processing, and accounts productions, presentation and subsequent economic and impact analysis for use by decision makers. The project thus consisted in part of conventional statistics training including analysis of collected data on emissions and damages due to these, and including such knowledge into macro-economic planning and policy analysis. Scenarios for Chongqing where the health costs of emissions were estimated using the collected data, were prepared for connection to a CGE model being developed and adapted as part of the cooperation.

- In this way, NBS had their first experience in developing national energy accounts and in the wake of this, emission accounts. In this context they developed and applied an advanced emissions model.

- The stability and continuity of responsible staff throughout the project made it possible for the NBS staff to be responsible for preparation of the final report and for establishing the basis for the first time for regular comprehensive national environmental and energy statistics, and the establishment in 2000 of a new NBS department responsible for such data collection, processing, analysis and publishing in the form of an annual yearbook. This is a significant and sustainable achievement of the project. In addition, several joint research papers were produced on the emission and environment economic topics jointly between NBS and SSB researchers. Prior to the start of this project China had no national environment statistics. SEPA only had on file the emission concessions granted, but no statistics on actual emissions.

- The project resulted in the of compilation of energy accounts for China for 1987, 1995 and 1997 covering 33 industrial sectors, two household sectors and included 25 major energy carriers. This was the beginning of establishing the environmental statistics of China and compilation of energy accounts for China.

- It resulted in mainstreaming the compilation of energy accounts into the regular and routine NBS statistical works and publications.

- Next, the project resulted in the development of a long-term analytic model for environmental and economic development.

- Several papers were prepared in the course of the project. SSB publications were translated into Chinese for use in the training and awareness raising of Chinese staff, and the CGE-model was translated. The project has thus contributed to substantial capacity building inside and outside of NBS.

- This has also raised awareness and facilitated strengthening of the national policy formulations towards more energy friendly and environment friendly growth. The project has had a very timely and measurable impact on NBS and on Chinese statistics and its use by planners.

- It has extended the cooperation between NBS, SEPA, MOFCOM and Ministry of Agriculture – to mention some – and has extended cooperation within and outside NBS.

- In FYP-11, NBS has contributed explicitly with energy use- and emissions statistics as a basis for policy formulations, plans and actions, and this is directly derived from the SSB cooperation project. FYP-9 and FYP-10 had no such at data at their disposal.

- At the end of the project NBS used project funds to purchase the GAMS analytic package for computable general equilibrium (CGE) modelling.

Then in 2001 the project was terminated long before all relevant Chinese NBS staff had received the full and required training. The reason apparently was that SDPC (now NDRC) decided this was an area outside of NBS's area of responsibility since it dealt with global climate change issues, and NBS was declined the request to publish the data and analytic results. This outcome terminated the formal project collaboration on these important activities with SSB for several years. However, this incidence notwithstanding, the *overall effectiveness and impact* are evident and highly visible in the form of capacity for data collection, compilation, analysis and dissemination.

Efficiency: Norad had earmarked funds for this SSB task. No other Norwegian institution would be qualified to do it. In addition, SSB is known worldwide as a frontier National Statistics Bureau with pioneering experience and expertise in the field of setting up and implementing systems of environmental statistics and their use in monitoring of environment indicators and in impact analysis of environmental- and other policy issues. The contract was with NBS's Department of International Cooperation, but it was subordinated SEPA so that all payments to NBS had to go through SEPA.

A main feature of this project is that there was continuity throughout the project on both the NBS and SSB side in terms of responsible staff, and there were frequent visits from both institutions to secure proper establishment of processes and management of joint efforts promoting transfer of knowledge.. The project was managed and monitored so that all involved parties were continuously updated on progress, problems and events, and actions were taken when necessary. A steering committee was established, but due to the close cooperation between the researchers, this committee had little practical influence on events. Overall, the project was implemented efficiently when comparing benefits produced to human resource inputs and financial costs.

Sustainability: The close NBS-SSB relationship is sustained after the project was completed in 2001. NBS and it's Environment Statistics Division continue to collect environment data, process and analyse the data and publish annual environment statistics reports. NBS has continued to expand its environmental statistics and analysis, and in this context also expanded into producing environmental statistics at provincial level. This is now fully mainstreamed into NBS' program of data collection, processing and analysis, and the collaboration with SSB-Norway is given instrumental credit for this development. Even if such development would eventually have taken place, this agreement certainly speeded up these activities and had them implemented many years earlier than would otherwise have been the case.

However, NBS staff could not with certainty verify if SEPA is actively using the outputs (energy accounts and CGE model analysis) in SEPA's planning and policy work, but they reported that they have now (after the project termination in 2001) started cooperation with SSB on the establishment of a system of Green National Accounts. Based on the level of expertise and energy accounting established from the SSB cooperation, NBS has recently

entered an agreement with Statistics Canada furthering their energy accounts work. Having institutionalised energy accounting, completed comprehensive training and secured a significantly broadened awareness of this field, *sustainability of such NBS-activities and their mainstreaming into FYP-preparations seem to be secured.*

CHN-0008: CHINA COUNCIL FOR INTERNATIONAL COOPERATION ON ENVIRONMENT AND DEVELOPMENT (CCICED)

Background

CCICED was established based on a Canadian CIDA initiative following the Rio Summit in 1992 as a high level advisory body to the Chinese Government. The purpose was to strengthen cooperation and exchange between China and the international community in the field of environment and development. CCICED has evolved over three five-year phases. Gradually, a number of funding agencies have contributed to the Council's work, including Norad, which has provided untied budget support of approximately NOK 17 million for the CCICED work channelled through it's Canadian Secretariat throughout the entire duration of the bilateral MoU on environment cooperation between Norway and China.

Findings

Norway's ODA contribution to CCICED has – unlike the rest of the ODA funding for environment cooperation with China under the environment MoUs – consistently been untied. The Canadian CCICED secretariat considers this a role model way of contributing to effective and efficient operation of CCICED, and has asked other CCICED donors to consider adopting this Norwegian financing model.

Since Norway's contribution has been budget support, one cannot meaningfully identify specific activities that would not have taken place or been implemented with less effect or impact or in a less efficient way without the Norwegian support. However, the Norwegian untied contribution has clearly facilitated the freedom of CCICED to search for the best expertise available – independent of country of origin – to serve on thematic Working Groups and Task Forces during the three CCICED five year phases, and will continue to do so in the fourth phase.

CCICED was evaluated by a joint Canadian, Swedish, Norwegian team of experts during the first half of 2006[13], and the findings from the review constitutes the main input for this review as regards what Norwegian funding of CCICED over the MoU allocation has contributed to. The following summarises the main review conclusions.

Relevance: Clearly, the Council has proven relevant to the Government of China – and perhaps the best indicator of this is the continued commitment on the part of a Government of China senior leader, usually the Premier, to meet with Council members following the Annual General Meeting (AGM) in order to hear directly its recommendations. Moreover, due to its governance structure through the Executive Bureau – headed by Council Chair and Vice Premier, and on which sits the minister of SEPA and a vice-minister of the National

[13] Kim Forss, Stein Hansen and Lucie D. McNeill (2006), "CCICED Phase III – Operational Review Report". May 31st. 2006.

Development and Reform Commission as well as a top National People's Congress representative – the Council as a project is assured to remain in tune with beneficiary needs and priorities. The policy recommendations conform to the reality of China's development challenges and the relevant authorities attach great importance to them.

Effectiveness and impact: The Council provided some 400 recommendations to the GOC during the third phase alone. Many of these have been timely and relevant, and there is also evidence that several of them have had an impact. The review could define five major categories of impact coming from the recommendations; (1) use in the policy formulation process by the Government of China, (2) new legislation on environmental issues, (3) new organisational structures set up to work with environment and sustainable development, (4) continued research on technical, economic, or other issues, (5) implementation of projects based on suggestions from the Task Forces and the Annual Meeting of the Council.

However, the Review found that the quality of the recommendations varies greatly. Some were found to be rather general and obvious, others were technically very narrow. Some recommendations do not reflect a full understanding of the Chinese situation. At times, the focus of the Council was not aligned to the development plans and the rallying concepts of Chinese policy-making.

The effectiveness of the AGM depends on the preparatory work conducted by the LEG and the Secretariat. Clarification of roles and responsibilities should help improve AGM productivity. There is a need to improve the quality of the policy recommendations in order to optimize project effectiveness and long-term results. In short, CCICED should:

- Focus on fewer Task Forces and fewer recommendations, but with higher quality and more substantive discussion on each topic;
- Have more flexible operations. The AGM proceedings, Task Force terms, Lead Expert Group (LEG) composition etc), must more actively take into account the need to be responsive and to ensure a good fit with different research areas;

Efficiency: The Council has been too large (i.e. 54 are too many members, and many never show up). A screening in order to seek out some 30 among the best qualified external partners and the key political positions in the Government of China, could make its contributions more effective by cutting down on idle time and repeated "motherhood statements" and tautologies at annual general assembly meetings where recommendations are presented and approved.

The Review recommends a clearer division of labour and distinctions between the organisational entities that are part of the Council, that is, the Bureau, Secretariat, the LEG, the membership and the Task Forces. The Canadian Office has been set up to administer CIDA's project funds and should increasingly be viewed in that light – with the Secretariat clearly responsible for CCICED support functions. In addition, several donors have also concluded that the management of their support for CCICED activities is still most efficiently managed by channelling it through the Canadian office. This office has fulfilled its responsibilities in an unassuming manner, remaining quietly in the background. It has stepped back and allowed the secretariat to take over most key functions of logistical support. This trend needs to continue throughout Phase IV in order to support greater CCICED sustainability.

The Secretariat (located in SEPA) is a small organisation and as such sensitive to personnel turnover. Its performance has been variable in the past, but the recent turnover has brought

with it an improvement in performance. The Review team found that the Secretariat's most important role is to serve the organizational needs of the Bureau, the LEG, and the Task Forces. The role is not always clear, and the division of labour between the LEG, the Task Forces, and the Secretariat needs to be reviewed. The Review team recommended that the Secretariat focuses efforts on its administrative and management support functions. More substantive work should be left to an augmented LEG. For tasks that call for skills that are not presently found among Secretariat staff, the Review team recommended outsourcing to other departments of SEPA or other (private) service providers, as needed.

Sustainability: Bilateral funding agencies contribute more than 90% of the project funds, and Review respondents express the view that the Government of China could shoulder a greater portion of the project costs, and in this way prove that it takes genuine ownership of the CCICED and this form of international dialogue in the field of environment and development. In the long run, the only way for the Government of China to ensure it gets unbiased and relevant policy advice is to manage the process on its own, without reliance on the international donor community. The Review team recommended that donors should monitor local contribution to the project during Phase IV, with a view to assisting in the increasing localization of the CCICED.

CHN-0030: ACID RAIN – INTEGRATED MONITORING PROGRAM ON ACIDIFICATION OF CHINESE TERRESTRIAL SYSTEMS (IMPACTS)

Background

The purpose of this project was to implement a programme for the collection and registration of data concerning deposition and ecological effects of acid rain in 4 provinces in China. Prior to the project, China had two separate and uncoordinated non-communicating acid rain monitoring networks. One was with SEPA's monitoring institute with urban monitoring only, while the other was with China Meteorological Institute which also had some non-urban sites. However, both monitoring programmes were very simple and based on collecting rain water. IMPACTS, on the other hand, was designed to locate five monitoring stations in remote areas and peri-urban areas where no such data had previously been collected, and it was designed to monitor a much more advanced and comprehensive set of impact indicators. This would subsequently form the basis for Chinese authorities to prepare and implement cost-effective projects to reduce acid rain in China.

Findings

The basis for this project emerged initially from contacts between University of Oslo and Tsinghua University, Beijing in the 1980s, and was gradually formulated as a follow up to the World Bank RAINS Asia programme in the form of a pilot project in 1997. A large Norwegian delegation of researchers then visited the "acid rain region" of China to identify suitable monitoring sites and suitable Chinese partners, and based on these preparations they prepared the initial IMPACTS project proposal in 1998, which was submitted to SEPA. They assigned the China Research Academy of Environmental sciences (CRAES which is a subsidiary of SEPA) the responsibility for finalizing the proposal jointly with NIVA and submitting it to MOFTEC (MOFCOM since 2003) in 1999 for NOK 30 million of Norwegian financing, and NOK 10.4 million of Chinese contribution for a five year period. It resulted in an agreement and a contract between NIVA and CRAES that was approved that same year.

The project was subject to a Mid-Term Review in 2004, and the assessment in the following draws on this review and the interviews the present Review Team had with key Chinese and Norwegian project staff and with SEPA and FECO in November 2006.

Relevance: The project was focused on measuring the impacts on China of acid rain, in particular the impacts on forests, agriculture and ecosystems. It is considered highly relevant since it was very much in line with the stated environmental priorities listed in FYP-9 and then in FYP-10.

Effectiveness and Impact: The project was successful in establishing 5 monitoring stations[14]. The project is claimed by Chinese authorities to have made impact on decision makers by the introduction of new regulations since the project produced additional critical evidence on the impact of acid rain. FECO also reports that that data produced under IMPACTS have been used in formulating environmental priorities under the FYP-11.

The Norwegian partners (NILU, NIVA, NIJOS, NULS, NUPI, the Norwegian Forest and Landscape Institute) assisted and provided training to their Chinese partners (MOFTEC, SEPA, CRAES, CAF, Peking University, Tsinghua University, CNEMC and the provincial EPBs in Chongquing, Guizhou, Hunan and Guangdong) in collecting and analysing data.

The project addressed effectiveness problems but faced challenges similar to those revealed during the Shanxi Master Plan against air pollution project (CHN-0040) and all the other ENSIS projects (CHN-0014, CHN-0017, and CHN-2070). This included a critical lack of communication with- and relation to SEPA and the Central Government from the Provincial EPBs and project offices.

This is a generic problem in China, especially in the field of environment (and much more so than with regard to provincial trunk highway and railway projects implemented and executed at the province department level, but in close communication with the Ministries of Communication and Railways respectively). This lack of SEPA/EPB communication and lack of communication between SEPA and e.g. the Forestry Directorate was explicitly addressed from the very preparation of the project in order to enhance effectiveness and national level impact. Since acid rain has severe impacts on ecology, biodiversity and forest cover, IMPACTS requested cooperation with the Forestry Directorate. This resulted in two groups from the Chinese Academy of Forestry being involved in the project and this has resulted in a lasting and sustainable cooperation at scientific level, which was not in SEPA's original plans. An important contributing in the form of an extra grant facilitated establishing and sustaining this new SEPA-forestry sector link. This made the scope for more effective cross-sector use of the data since the data are compatible.

Two significant "trickle down" effects can be attributed to the successful cooperation on IMPACTS. The first is the invitation for NIVA staff to serve as visiting professor at Tsinghua University to continue with IMPACTS-related research. The second was that the IMPACTS cooperation experience established a trusted and professional relationship which led to the preparation of a joint Mercury project proposal to which Chinese authorities immediately took ownership so that it could be approved quickly.

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[14] Three of the monitoring stations are still producing data, but two were damaged by flood and are not yet back in operation.

In retrospect, the IMPACTS staff realizes that they could have done a better job at communicating what IMPACTS was all about to SEPA during project implementation. As a result, IMPACTS appeared as too much research focused, with too little communication to the stakeholders on how the findings could play a policy making role. Lack of experience with the developing cooperation approach to projects further complicated the public relations aspects of the project. However, considering the obstacles they project faced the overall conclusion as regards impacts and effectiveness is one of significant achievements and progress.

Efficiency: The project was approved for tied aid funding, and there was no competition for the project. While CRAES is the Chinese managing partner and NIVA the Norwegian co-manager, the project organisation and management is complex and involves many partners in China and Norway. Administration and travel costs have been generous (40% of the Norwegian NOK 30 million budget); beginning with the large fact-finding delegation visit. The financial progress reporting format kept changing from plans/budget to accounts, and made it virtually impossible to follow accounting in detail. The different partner institutions were allowed to use different accounting modalities, so that the financial reporting could not serve as an adequate management tool and tool for financial monitoring.

Sustainability: In Chongquing the program is producing high quality data, and it may be established by SEPA as a national monitoring site. If China commits to running the monitoring sites, Norway could perhaps commit to finance assistance in analysis towards policy advice.. Norway has a particularly strong competence and experience in addressing SO2 and NOx impacts, and is therefore well positioned to guide China's policy on where to locate or relocate power plants and how to design and equip them to minimize the environmental, health and economic damages from their emissions. A serious issue that needs addressing in this context is that China needs to start using critical loads concepts and reduce SO2 and NOx in ecologically vulnerable areas. This, however, conflicts with the "Go west" investment initiative in the FYP-11, whereby new power-plants should be built in the west, where SO2 and NOx will have the most damaging effects on vulnerable ecosystems and biodiversity.

FECO is concerned that the project outcomes may not be sustained and that there is insufficient relevant experience on both the Norwegian and Chinese side. Sustainability is more likely to be established if the achievements of the projects at province level are conveyed to SEPA, FECO, MOFCOM and Norwegian Embassy through regular progress reporting according to a set of well defined project performance progress indicators, and a modality for communication on project progress and problems established accordingly.

The poor communication of project content and achievements to SEPA could be a threat to its sustainability. The Phase II proposal – considered crucial for establishing sustainability by the project partners – has been halted by SEPA, where some key decision-makers perceive the IMPACTS project as research and therefore irrelevant from a SEPA perspective. However, in SEPA's technical department responsible for air pollution control the Phase II of IMPACTS is considered a key area for SEPA involvement. The final outcome as regards a possible IMPACTS Phase II has yet to be determined, and it would be premature to claim that the outcome is sustainable.

CHN-0040: MASTER PLAN AIR POLLUTION - SHANXI PROVINCE

Background

The project concept was initiated when a former director of Shanxi EPB visited SINTEF in 1995. SINTEF acquired funding for a joint feasibility study of establishing a monitoring system as basis for input to a Master Plan for the province. The feasibility study was implemented in 1997 with the main outcome being an application to SEPA and Norad for funding of a Master Plan with the cooperation of SINTEF and NILU, the latter by establishing the AirQUIS system in 3 cities of the Shanxi province and setting up a Shanxi Environmental Information Centre (SEIC) for consolidation of data and formulation of the Master Plan.

Norad commissioned a consultant to assist in developing the proposal in accordance with Norad's Logical Framework Approach (LFA) requirements following an appraisal by the consultant. The revised proposal was subsequently approved in 2001 and the project implemented during the 4 years of 2001 – 2004 as cooperation between Shanxi Environmental Information Centre (SEIC) and in the Norwegian Institute for Air Research (NILU) in cooperation with ECON, CICERO and GND.

The project experienced one year with limited activity due to outbreak of Severe Acute Respiratory Syndrome (SARS).

The project established an air quality management system for three cities in Shanxi Province as well as at the province level at SEIC, and used it to develop an Air Pollution Master Plan.

Findings

The project resulted from a Chinese initiative and visit to SINTEF in 1995 emerging out of the Shanxi Province EPB's lack of a policy support system for dealing with its air pollution problems. It took approximately one year (from 1996 to 1997) within SEPA to move the SEPB proposal from bottom to top priority, and then two years (until 1999) of modifications to the original proposal to meet Norad's requirements for applications. The project negotiations (where Norad wanted China to pay for a larger share of the hardware purchases) were finally completed for start-up in October 2001. The project was finished in March 2005.

Relevance**:** The project goal was to reduce air pollution in Shanxi Province, in order to improve living conditions – especially in urban areas, and limit the negative effects from air pollution on natural and man-made environment, including cultural heritage. As for the Master Plan the project specified the goals for environmental quality and modernization of environmental management. The project should develop a fully operational air quality monitoring and management system suitable for the whole province and use it to develop a Shanxi Air Pollution Master Plan.

Shanxi Province is the leading coal producing province in China (and the world) and experiences excessive air pollution as a result of this. The Shanxi Provincial authorities therefore attach the highest priority to the project, and so does Chinese Central authorities. They have expressed a need for improving and updating the environment management and decision-making systems where ENSIS and AirQUIS focusing on data handling, reporting, analysis, and abatement planning of air and water pollution at different administrative levels, provides highly relevant tools for the decision making. The project is fully in line with areas

of environment management and control where Norway has frontier competence and it can therefore be considered highly relevant.

Effectiveness and impacts: The project was completed in 2004 with the finalisation of the Master Plan using the AirQUIS model to forecast scenarios of among others SOx and NOx emissions based on 2004 data collected. SEPB has throughout collected data from existing monitoring stations and processed data manually. The Master Plan project, however, installed new monitoring stations in three cities which have the opportunity to transfer data automatically to PCs for processing using the AirQUIS data program (Oracle based).

This automatic transfer feature (the transfer protocol and input module for the Oracle database) was never installed and accordingly data still has to be manually recorded. Accordingly, the AirQUIS has so far only been used for developing the Master Plan, not for monitoring. The monitoring is still based on a national system with less parameters and a different interface. To make use of the new monitoring stations it will also require a "translation module" to ensure compatibility in data formats with the national system consolidating information from all provinces in SEPA.

The project has helped SEPB gather much more refined emission data, including a broader and more detailed range of pollution by sources. A significant outcome of this is that with this more detailed mapping of pollution by source, SEPB has been able to increase annual collection of emission fees from 0.5 billion RMB before the project to 1.2 billion RMB as a result of it.

Furthermore, the project achieved considerable capacity building and training of professional staff. The SEPB staff can now operate and install the system in the other Shanxi cities, but the environment management system (EMS) still require some Norwegian expert advise in addition.

Local ownership of the project is convincingly documented since a proposal is currently being prepared for expanding the project to 8 new cities in the province (within the framework of the 11th Five Year Plan 2006 -2010). This proposal includes the transfer modules described above. The Shanxi EPB has plans for developing this into a fully automatic water and air quality monitoring system covering 4000 enterprises and 10000 sources of pollutants. It is even envisaged that this control system could enable them to immediately close down production facilities that exceeds thresholds according to regulations, by immediately cutting of their power supply! The system would thus be a real time online system with full authority of SEPB to execute control from their PC stations.

Phase II of AirQUIS is currently being drafted by NILU and will be submitted by Shanxi EPB to SEPA for approval and consideration for Norwegian funding.

SEPB has an operational budget of 16 mill. RMB (2005). The implementation of the Environmental Protection at a provincial scale as described above would require 11 billion RMB in the 11th FYP in investments to comply with environmental regulations. This is a combination of investment costs to be borne by the enterprises and government investments for network and monitoring systems. Comparing this to the total cost of the AirQUIS project of approx. 13 mill. RMB during 3 years makes the project cost insignificant also when compared to the potential economic value of gains from the Master Plan and improved monitoring (if this activity was fully implemented).

SEPB has had other donor cooperation projects, among others with USA (Waste Disposal) and Japan (Sulphur Cleaning), but none of these focus on information processing.

While the project initially focused on addressing Shanxi-specific problems and challenges, it has proven to have a much wider general and value, and is likely to be repeated elsewhere in China. There was in fact a planned activity for dissemination and replication through dissemination seminars in other provinces. However, the timing of these seminars coincided with a six month Party ideology training period for the staff in question. This dissemination effort has therefore been postponed.

There is no doubt that this project has had *significant impact*. FECO claims that data produced under the project have been used in formulating environmental priorities under the FYP-11 which is also evident from the Shanxi Province Five Year Plan. The End Review dated June 2006 concluded positively as regards impact and effectiveness, although they were hesitant to accept the Master Plan as meeting the standard of a comprehensive Master Plan since it lacked presentation of actions to be taken and costing of activities which is an important issue in prioritising activities.

Efficiency: Shanxi EPB only requested what kind of services they needed, and not who in Norway they wanted to carry out the project (even though they had already a good references established with NILU and SINTEF based on their ongoing Norwegian financed pollution work in Yantai and Guangzhou). This was decided by Norad with no open tender or competition for the contract. Comparing the cost of this Master Plan to other projects with a Master Plan as the main output, and given the limitations to the plan as described above, the cost of the project is comparatively high (similar Master Plans developed with external technical assistance has had total cost budget of 0.9 – 1.1 mill USD which is below the 1.7 mill USD for the Shanxi Master Plan).

Sustainability: From review of documentation and consultations with the main Norwegian partner NILU, it appears that the project was successful in establishing the management system as well as training key personnel in maintaining the system, analysing data and using them for monitoring and control purposes. The project could have served as a pilot for replication in other provinces if it had been subject to a wider dissemination process. If this dissemination process is taken up, wider sustainability is likely to be established.

Similar to other projects, FECO is concerned about the generic lack of communication between provincial EPBs and SEPA on project results and outcomes in the provinces and how such results and findings can be disseminated and used in a wider national context.

CHN-0044: ECONOMIC HANDBOOK FOR ENVIRONMENTAL IMPACT EVALUATION

Background

The project commenced in 1998 with a preparatory phase proposing to present a handbook for economic analysis in environmental impact assessment. The project has assessed the problems and prospects of introducing economic valuation into the environment impact assessment (EIA) process in China. The Norwegian partner in the project was Econ Analysis. The Chinese participants included SEPA (Policy Centre for Environment and Economy), Institute of Environmental Economics (IEE), School of Environment and Natural Resources, Renmin

University, and College of Environmental Sciences, Beijing University. The project Phase II from 2000 was concluded in 2002 after having conducted several workshops as input to the SEPA work on integrating economic analysis in EIA.

Findings

The "main phase" of the project started with the identification of four EIAs (three investment projects and one regional plan) already undertaken to demonstrate the result of including economic analysis in EIAs. The work started in 2000 and the case studies were presented in a series of workshops with EIA-certified companies and SEPA. SEPA used this as a process for input to the development of new guidelines of EIA in which economic analysis would be included. Renmin University and Econ were charged to formulate inputs to SEPA which they also would apply in the certification system of companies conducting EIAs.

Relevance: Demonstrating the usefulness of expanding the EIA process to value the impacts in economic terms, however, should be considered *relevant* since it would facilitate consistent comparison of projects of widely different nature in terms of environment impacts along a monetary scale, and with severely limited budget for mitigation and control of emissions and ecosystem-damaging activities, such valuation methods could make prioritisation and comparison of impacts and their incidence on stakeholders more clear.

Effectiveness and impacts: The handbook was completed in 1999 and submitted to SEPA and Norad[15]. It provides clear guidance on how to use it, and describes the potentials and limitation of the approaches to economic valuation of environmental effects described in the handbook.

Some EEIAs are claimed to have been implemented as a result of this project with the focus now of environmental action/sector plans as input to the 11th Five Year Plan (FYP-11), including city EEIAs for Dalian, Wuhan and Guangzhou and at provincial level, but there has been no documentation submitted to the Review Team of the actual use and role of such EEIAs.

This project has among others produced an article forthcoming in the "Environment Impact Assessment Review" 2006 on "*Environmental economic impact assessment in China: Problems and prospects"*.

In view of the limited information received as regards achievements and actual use of the EEIA handbook, the Review Team cannot provide any substantive conclusions regarding effectiveness of this use of grant aid funds under the MoU.

Efficiency: The project was proposed by Econ in collaboration with Renmin University based on a working relationship established on previous MoU funded cooperation projects. As for the other projects reviewed, Norad did not consider a tendering process for cost-efficient

[15] Econ (1999), "*Economic and financial analysis of projects under China Trans-Century Green projects Programme*", Econ Report 48/99, Commissioned by FECO of SEPA, Beijing to Econ Centre for Economic analysis, Oslo.

selection of the Norwegian partner. Econ had previously prepared a handbook and course in economic analysis of projects for MFA, and that this formed an important background and input to the development of the EEIA handbook. The NOK 5 million budget was approved without inviting alternative proposals and as such cost-efficiency has not been an issue in project design and implementation.

Sustainability: As for the question of sustainability of this activity, it was not clear if the method and the handbook was being applied in new investment projects. Interviews with potential users indicated that such a sophisticated supply driven EEIA method perhaps was being prematurely introduced to potential Chinese users, and that the practical use of such a handbook would stop once donor funding of the case projects stopped.

CHN-0047: ISO 14000 IN CHINA

Background

Following a Chinese delegation visiting DnV in Norway, DnV prepared an application for pre-study financing in 1997 and was as part of this process connected to the SEPA-affiliated China Centre for Environmental Management Systems (CCEMS). A joint final application was completed and submitted to SEPA and MOFTEC in 1999. Following lengthy negotiations after the completion of the pre-study, the main project contract was signed in 2000.

The overall goal of the project was to improve the long-term environmental performance in Chinese industry through strengthening the environmental administration (SEPA/China Centre for Certification Incorporated (CCCI)) and local environmental protection bureaus (EPBs) in their work on developing and implementing ISO 14000 standards. The project delivered network training programs in three industry sectors and four provinces and developed three detailed step-by-step operational ISO 14001 industry sector implementation guidelines.

The project agreement between Norad and MOFCOM was signed in June 2000 for technical cooperation Det norske Veritas (DnV) and CCEMS[16] for capacity building in environmental management according to ISO 14000 in China. The project was completed in 2004.

Findings

Relevance: The project was conceived and designed very much in line with the industrial pollution reduction and prevention goals stated in FYP-10 in order to prepare Chinese producers of goods and services for exports to western markets where ISO 14000 certification would mean facilitated market entry and a competitive advantage. The project was thus *highly relevant* despite the fact that China already had a similar ISO 14000 certification upgrading and training going with Germany's GTZ. There are simply too many provinces and polluting industries in China for two small donor contracts to reach out to all provinces.

Effectiveness and impacts: From review of documentation and consultations with the Norwegian partner DnV it appears that the project was successful in developing detailed, step-

[16] CCEMS was a SEPA subsidiary, but was later made an autonomous entity and incorporated under the name of China Centre for Certification Incorporated (CCCI).

by-step ISO 14001 standards (guidebooks[17]) as well as training of trainers in application of them to achieve a wide outreach in the application of these guidelines.

FECO considers project CHN-0047 project with DnV a success story. It developed very good guidelines and implemented extensive training of all categories of people to be involved in ISO 14000 relevant work in public sector, certifying institutes and industry, including the training of trainers. It has spread the ISO 14000 "Gospel" nation-wide, and has been pioneering in awareness raising about the merits to industry and importance to the nation of ISO 14000 certification. With Chinese DnV experts directly involved, the project eliminated potential cultural and communication problems with CCCI (their Chinese counterpart) and finished the project on time in a well managed manner. However, FECO could not be explicit regarding the genuine value added by DnV in this dynamic process. This could be linked to the fact that Germany through it's aid agency GTZ had financed training in ISO 14000 certification in the years just prior to the signing of the Norwegian contract with DnV. Based on the interviews with GTZ, DnV and CCCI this Review Team concludes that since both the companies and provinces reached were different (and complementary) in the GTZ- and Norad-funded projects, there was no overlap, and the need for such capacity building and awareness raising on the Chinese side was very obvious.

In retrospect one may now conclude that the DNV-CCCI project addressed and met the following four goals in a satisfactory way[18]:

- Strengthen the central environmental administration (SEPA/CCCI) and local environmental protection bureaus (EPBs) in their work on developing and implementing ISO 14000 standards in China.

- Build institutional capacity to provide advisory, training and certification services related to ISO 14000, as support for industry in the long term.

- Increase the competitive position, generate environmental awareness and improve environmental performance of Chinese industry by adopting environmental management systems based on the ISO 14000 international standards.

- Provide and disseminate information, knowledge, and experiences on ISO 14000 for industry and institutions in China.

Efficiency: The project was finalized in accordance with the total project budget. A delay in completion due to the SARS outbreak cannot be blamed on DnV and CCCI. DnV efficiently used their local staff in China and Hong Kong to prepare the project for implementation. Having Chinese speaking DnV-staff on hand was crucial for the *efficient implementation* of the project and the logistics of gathering so many participants from all over the country.

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[17] Three guideline publications by DnV and CCCI (2004), "*Environment management system implementation guideline for.....(auto/automobile industries in China), (Electric and electronic industries in China) and (tourism industries in China).*

[18] See also the Overall Report of June 2004 from DnV and CCEMS "*Capacity building in environmental management according to ISO 14000 in China"* for achievement statistics.

The project was negotiated as tied aid i.e. with Norwegian partners. While many institutions in Norway could have designed and implemented a training program for ISO 14000, they would in any case have been using inputs from DnV thus a process of national competitive bidding may seem less relevant for this project and the cost of the project compares favourably with unit costs of other similar projects producing guidelines and conduct training in their application.

Sustainability: With the GTZ-funded ISO 14000 project already completed and the commitment of CCCI to follow up the DnV/CCCI project, there is every reason to assume domestic ownership of the ISO 14000 certification process. After the end conference in 2004, CCCI has continued to conduct training and capacity building for the China Certification and Accreditation Body, and the many new certification bodies and training centres set up for ISO 14000 since 1999, and the number of certified companies has increased rapidly.

It seems reasonable to assume that the ISO 14000 process would have developed irrespective of the Norwegian-funded collaboration project, but the process and spreading of capacity building to train trainers and certify industries would have been slower.