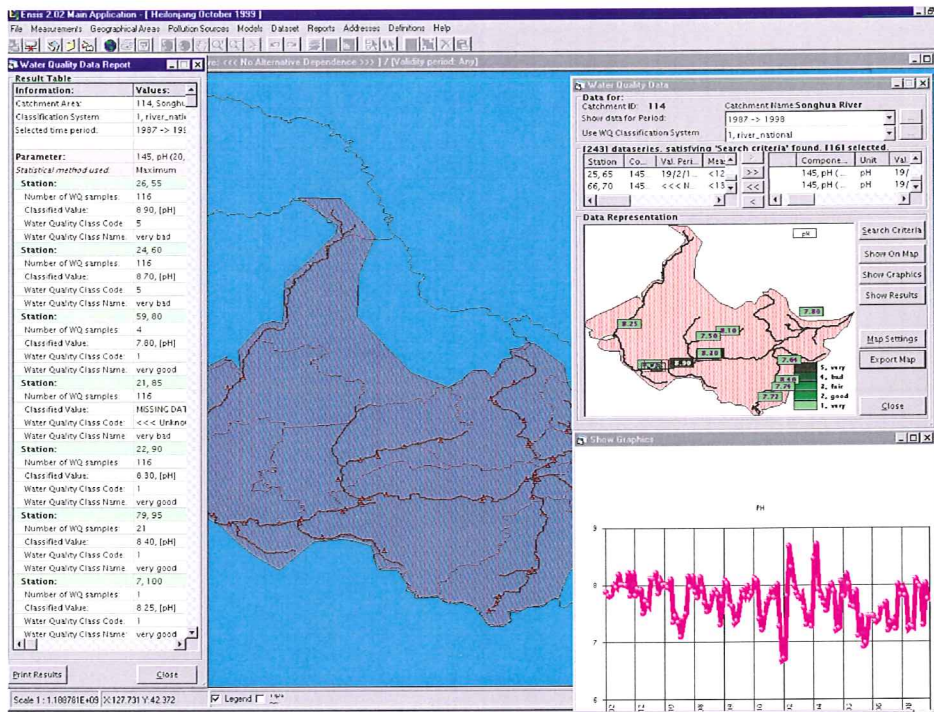




REPORT SNO 4752-2003

Inception Report on The Heilongjiang Consolidation Project

“Surveillance of Water Quality in
the Songhua River System in
Heilongjiang Province, P.R. of
China”



Norwegian Institute for Water Research

REPORT

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Abstract
This Inception Report describes the planned project activities for the consolidation of CHN 017 "Surveillance of Water Quality in the Songhua River System in Heilongjiang Province, P.R. of China". The report was produced as a result of the discussions and agreements at the Project kick-off meeting in Harbin, Heilongjiang 24 – 26 March 2003.

4 keywords, Norwegian	4 keywords, English
1. ENSIS	1. ENSIS
2. Overvåking	2. Surveillance
3. Vannressursforvaltning	3. Water resources management
4. Oppstartsrapport	4. Inception Report

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The Heilongjiang Consolidation Project

1. Background for the consolidation of the Heilongjiang Project

The project "Surveillance of the Water Quality in the Songhua River System in Heilongjiang Province, P.R. of China" was launched in November 1996, when an agreement was signed between the Norwegian Agency for Development Co-operation (NORAD) and The Ministry of Science and Technology P.R.China, (MOST).

The executive institutions of the project were from China, the Heilongjiang Environmental Protection Bureau (HEPB) and the Heilongjiang Environmental Monitoring Central Station (HEMCS). From Norway the co-operative institutions were the Norwegian Institute for Water Research (NIVA) and the NORGIT Centre.

The results of the project were evaluated at the Final Workshop for the project in Harbin in June 2000. The evaluation was based on the facts that an efficient and well functioning environmental management system consists of a whole chain of management activities:

- Design of monitoring strategies,
- Collection of data,
- Analysis of data,
- Quality assurance,
- Storing of data
- Data analysis and interpretation of results with help of statistical tools and graphics,
- Planning and management tools such as: Development of abatement strategies or individual measurements to control acute pollution, etc.

The Environmental Surveillance and Information System, ENSIS, can cover an important part of this chain, and be an efficient tool to reach environmental goals set. But sufficient time is needed to build up the relevant basis and routines for secure implementation of such a tool.

In accordance with the report given by an evaluator team to NORAD, it was concluded that more time was needed to implement the environmental monitoring and surveillance system adequately as a tool for environmental monitoring and management in the responsible institutions in Heilongjiang.

It was therefore decided between the executive institutions, to apply to NORAD for extra funds to consolidate the project for two more working years. In accordance to the elaborated application, an Agreement between MOFTEC and NORAD to support such a project was signed March 14th 2003.

Based on the said Agreement a Project Kick-off Meeting was held in Harbin, Heilongjiang 23 – 26 March 2003. Here the project work was discussed in detail, and the resulting plan and project framework is described in this report.

2. Goal, Objective and Outputs

Goal

The goal of the project is to improve the environmental management in the Heilongjiang Province. Through consolidation of the ENSIS system and the experience established in Heilongjiang, the project will contribute to a more active and sustainable use of ENSIS as a Planning and Assessment tool for environmental surveillance, management, and abatement activities in the P.R. of China.

Objective

The objective for the consolidation of the project is to secure a sustainable implementation of an environmental surveillance and monitoring system, which can be used as an operative tool for decision makers and planners to improve the environment.

Outputs

In order to obtain this objective the following outputs are necessary:

- Extend ENSIS to cover all monitoring data and pollution sources within Heilongjiang Province, and secure adequate training for the use of the system as a tool to manage water resources and initiate an Abatement Strategy Analysis for the whole Songhuajiang River System.
- Improve the management routines for the technical operation of the ENSIS system
- Establish a Maintenance Agreement for ENSIS to ensure a future use of ENSIS as a planning and management tool for the environment in Heilongjiang Province
- Upgrade the Water Model to cover both point and non-point sources
- Consolidate and extend the routines for the technical operation and maintenance of automatic monitoring stations.
- Establish sound quality assurance routines for laboratory by further participation in inter comparison studies, by evaluating existing quality assurance routines and suggest improvements, and by providing training in analytical methods.

3. Activities

3.1 Extension of the ENSIS Database

The activity aims at extending ENSIS to cover all monitoring data and pollution sources within Heilongjiang Province, based on the inventories in the two subsequent tasks 3.2 and 3.3. Work during the first task will also be important for the tasks 3.5 and 3.6 described below, to secure adequate training for the use of the system as a tool to manage water resources.

Based on experiences most of this job must be undertaken at the site, together with responsible personnel.

3.2 Establish a water quality monitoring data inventory for the whole Heilongjiang Province

All monitoring stations will be included in the project, and data belonging to these stations will be converted from the old water quality monitoring database and imported to the system. Also data from 1999 and onwards for the whole province will be imported to

the system (the current ENSIS database contains data up to 1998). Most of the job will be undertaken as part of the training. The water quality monitoring data inventory shall be in accordance with the relevant inventory of the central monitoring station.

3.3 Establish a Pollution Sources Inventory for the whole Heilongjiang Province

All major pollution sources within the category industry, domestic wastewater and diffuse sources in the province shall be identified and imported to the system.

In order to do so time and effort must be spent on identifying the sources to be imported, collect the relevant information which are missing, decide the structure in order to use the functionality in the system according to how data are organised and which information that is available, etc.

After the data have been collected, the data must be organised according to the structure decided on, and imported to the system. Most of the job will be undertaken as part of the training.

The pollution source monitoring data inventory shall be in accordance with the relevant inventory of the central monitoring station.

3.4 Adjust Maps to the whole province and improve the quality

Effort will be put on improving the digital map information. Resources have been allocated to buy new maps, and to adjust these before import to the system.

The necessary conversion of the database in order to comply with the new maps will also be undertaken as part of this task.

The Chinese personnel will be trained in how to use ArcView GIS in combination with ENSIS to prepare the maps for import. Also general training in the use of ArcView will be undertaken as part of this task. The Chinese side (central monitoring station) shall assist in the training of the use of Arc view. A Chinese ArcView licence will be purchased as part of the task.

3.5 Training in advanced use of the ENSIS System as a management tool and interactions with other tools and programmes.

This task will be solved as on the job training. All data will be imported at the site where the master copy of the database shall be located. The main effort will be put on how to build up the database with all relevant data, and how to use the data for different purposes within the management of water resources. It will be focused on among others, the following subjects:

- Water quality and quantity data (collected manually or through the new collection system for online data)
- Pollution sources
- Model runs and identification of main sources to pollution
- Statistical simulations and other tools to interpret data
- Graphical presentation to interpret water quality and quantity data
- Advanced use of the report generator and how to make standard reports.
- Use of the new data collection system for online measurements

It will be focused on how to use other tools and programmes in combination with ENSIS to manage the water resources.

As part of the training, a visit to Norway will be arranged for three Chinese experts. The visit will promote exchange of knowledge between the two countries, and a better understanding of their environmental surveillance and management routines.

3.6 Initiate an Abatement Strategy Analysis for the whole Songhuajiang River System and procedures for handling of acute pollution situation Use of ENSIS as a tool

An abatement strategy analysis for the Mudanjiang sub-basin was undertaken as part of the original project. This abatement strategy was meant to function as a pilot study and be an example for how such a strategy can be established for the whole Songhuajiang River and the Heilongjiang Province. Now this process will be initiated through the consolidation project. Particular attention will also be put towards how ENSIS can be used as a tool in situations with acute pollution.

3.7 Extend Management Routines for the Technical Operation of ENSIS

The Norwegian consultants will extend the already undertaken programme for training of technical personnel, in order to ensure long-term technical operation and maintenance of the system. Manuals will be adjusted, and translated to Chinese.

The training shall among others cover:

- Training in installation of ENSIS and Oracle
- Back up routines
- Configuration of server and clients
- Improve the Oracle knowledge
- Advanced training in the new ENSIS version
- Set-up and configuration of the network
- Technical management of the new data collection system for online measurements

3.8 Establishment of a Maintenance Agreement for ENSIS

The ENSIS system has been successfully installed in Heilongjiang during the first phase of the project. However, no agreements have been established for further maintenance, support and upgrading of the ENSIS system. ENSIS Maintenance Agreement should therefore be established with the institutions using the system to ensure further use of ENSIS for Environmental Management in these areas.

The content and response time of the Maintenance Agreement, and especially the response time of the support, will vary dependent on how the system is operated, and the background and experience of the operating group. Realistic Maintenance Agreements must be agreed upon taking into account the existing use of the system in the areas and the distance between the two countries. The maintenance of hardware is not included in the proposed tasks below since the Norwegian partner did not deliver this.

The content of the Maintenance Agreement in the three areas under the Consolidation Agreement can differ, and what is included must be agreed upon.

The Maintenance Agreement will include the services listed in table 1.

Table 1: Services included in the Maintenance Agreement

1) Common Services which apply to equipment and programs		Included
1a	Telephone or e-mail support	Yes
1b	Error correction by telecommunication or Internet	Yes
1c	On site assistance	Yes
1d	Consultancy services	Yes
1e	System supervision	Yes
1f	Equipment or programs for system supervision	Yes
1g	Training/user support	Yes
1h	Operation	Yes
1i	Reserve system	Yes
2) Services which apply to equipment only		
2a	Carry in service	No
2b	Preventive maintenance of equipment	No
2c	Consumables etc.	No
3) Services which apply to programs only		
3a	Correction of program errors	Yes
3b	Installation of program corrections etc.	Yes
3c	New Versions	Yes
3d	Installation of New Versions	Yes
3e	Obligation to provide updates	Yes

3.9 Upgrade the Water Model to cover both point and non-point sources

The model implemented through the original project mainly covers point sources, as well as the source categories included, and the work done concentrate on discharge from industry. Both for the sub basin of Mudanjiang and the huge area covered by the Songquajiang River System there is a need to include discharge from different sources in the modelling work. The model will be upgraded to cover source categories as municipal wastewater, industry and agriculture, which all are important. Different measures to reduce water pollution in order to obtain water quality objectives can be evaluated and then prioritised, taking into account both their costs and benefits.

3.10 Operation and Maintenance of Automatic Monitoring Equipment

The Norwegian consultants will follow up the training in technical operation and maintenance of the automatic monitoring stations. A manual covering operation of instruments, control and maintenance routines will be provided and translated into Chinese.

3.11 Review and revisions of Quality Assurance Procedures

The laboratory will be invited to participate in an international inter comparison study under the UN system run by NIVA. Based on the results, the laboratory procedures will be reviewed where relevant. Improvements in routines will be suggested based on the

findings. The Chinese trainee will participate in the process (see below).

3.12 Training in analytical methods for organic micro-pollutants

New requirements from Chinese authorities for sampling and analysis of organic micro pollutants were introduced in 2000. To help the analysts at HECMS to develop their skills in these analytical procedures, a Chinese trainee will stay at NIVA for 2 months (during autumn 2003 or spring 2004).

The trainee shall also, in co-operation with the laboratories in Heilongjiang, assist personnel from NIVA in the review of laboratory procedures.

4. Inputs

4.1 Project Management

The project manager shall ensure deliverables within the project's time and financial frames, and will as part of this task co-ordinate all sub projects within the project. The manager has the responsibility to report progress and co-ordinate the final reporting. There shall be prepared an Annual Report describing the progress after 12 months, to be finished in due time before the Annual Meetings between MOFTEC and NORAD. The Annual Report shall cover i.a. the following topics:

1. Status on the updated monitoring system for water quality,
2. Description of ENSIS 3.0.
3. Statistical evaluation of measurements.
4. Abatement strategy planning for water quality.

After Project meetings and Workshops, Agreed Minutes shall be prepared and signed by both Chinese and Norwegian side.

The project manager will plan and participate at the start up workshop and prepare a final detailed project plan. He/she will in addition attend at least one project meeting and be responsible for the final workshop. The project manager shall ensure that all relevant material is translated into Chinese.

A visit to Norway of an administrative leader will be organised. This will be an important visit to ensure sustainable knowledge of the project work and its results at the highest administrative level, and an important contribution in integrating the project results in the environmental management.

4.2 Work Organisation

Division in activities is shown in the table below.

	1. Project Management	2. ENSIS – User	3. ENSIS – Technical	4. Automatic Monitoring	5. Laboratory
Task 3.1		X			
Task 3.2		X			
Task 3.3		X			
Task.3.4		X			
Task 3.5		X			
Task.3.6		X			
Task 3.7			X		
Task.3.8	X				
Task.3.9		X			
Task.3.10				X	
Task 3.11					X
Task 3.12					X

The project organisation is shown on the next page.

4.3 Workshops and Project Meetings

2 workshops and 5 project meetings are planned to take place during the project, one of them in Norway. The plan for these project meetings is tentative and will be modified according to the progress of the project.

Kick-off - Project Meeting 1: (March 2003):

- Status of ENSIS; including hardware, software and instruments,
- Preparation of detailed project work plan
- Preparation of inception report
- Signing of contract, if possible

Workshop Start, after 2 months:

- Presentation of new ENSIS version, discussions on
 - Configuration/upgrading of server and clients
 - Maps improvement
- Update from ENSIS 2.02 to 2.05 version;
- Extension of the Database
 - Monitoring data
 - Pollution sources
- Adequate training
- Operational status on the monitoring system for water
- Discussions/negotiations of Maintenance Agreement

Project meeting 2: After 6 months:

- Installation of new ENSIS version
 - Configuration/upgrading of server and clients
 - Maps improvement
- Extension of the database(cont.)
- Training in advanced use of ENSIS

- Abatement Strategy Analysis
 - measures to improve air and water quality
 - discussions on future Environmental Action Plans
- Evaluate standard operational procedures for the monitoring programme
- Signing of maintenance agreement

Project meeting 3, after 12 months:

- Extended management routines for technical operations of ENSIS
- Operational routines for automatic Monitors
- Abatement Strategy Analysis
 - follow-up Action Plans and measures to improve water quality
- Finalise annual report

Project meeting 4 after 18 months

- Installation of final ENSIS
- Follow-up tasks
 - Extended management routines for technical operations of ENSIS
 - Operational routines for automatic Monitors
 - Abatement Strategy Analysis

Project meeting 5, after 21 months:

- Finalise all tasks from PM 4
 - discuss the results of abatement analysis
 - discuss the preparations for implementation of the selected measures;
 - technical operation of ENSIS
 - operation of monitoring network
- Prepare draft final report

Final workshop; after 24 months:

- Presentation of the project outcome to MOFTEC and SEPA:
 - ENSIS system; hardware and software
 - Monitoring data
 - Abatement Strategy Planning; scenarios for environmental management

In the table below, the tentative number of participants from the Norwegian side in Workshops and meetings are listed.

Table 2: The tentative number of participants from Norwegian side in Workshops and meetings for the Heilongjiang consolidation project

Sub-project	PM1 Kick-off	Workshop Start	PM2	PM3	PM4	PM5	Workshop Final
Project Management	(2)	(2)	(1)		(1)		(2)
ENSIS User	(1)	(1)	(1)	(1)	(1)	(2)	(1)
ENSIS Technical			(1)	(1)			(1)
Automatic Monitoring		(1)		(1)			
Laboratory							
Total	3	4	3	3	2	2	4

4.4 Time Schedule

An overview time schedule has been set up for the project. The overview time schedule is shown in table 2.

Table 3: Time schedule for the Heilongjiang consolidation project

	Activity	March 2003	May 2003	July 2003	Septmebr 2003	November 2003	January 2004	March 2004	May 2004	July 2004	September 2004	November 2004	January 2005	March 2005
1	Project Management													
2	ENSIS User													
3	ENSIS Technical													
4	Automatic Monitoring													
5	Laboratory													
	Milestones													
	Kick-off Meeting 1													
	Workshop Start													
	Project Meeting 2													
	Project Meeting 3													
	Project Meeting 4													
	Project Meeting 5													
	Workshop Final													

4.5 Costs

The table below shows the project costs to be covered by financial support from NORAD and the Chinese authorities. An amount of NOK 10.000 has been reallocated from spare parts to support of a Chinese leader to visit Norway.

Table8: Total costs for consolidation of the Heilongjiang project

TOTAL Costs	NORAD Norwegian part (kNOK)	NORAD Chinese part (kNOK)	HEMC Chinese part (kRMB)
Project Management			
Detailed Work Plan	30		5
Project Management and Coordination (including annual report)	150		10
Workshops and Project Meetings	80	30	50
Translation of Relevant Material into Chinese		30	
Subsistence	70		
Support for visit of Chinese administrative leader at province level		20	
International travels	60		15
Local travels	10		10
Miscellaneous	10		
Total Project Management	410	80	90

ENSIS-User			
Complete Water Quality Monitoring Inventory	30		
Pollution Source Inventory (Plan how old databases shall be converted and building up systematic)	75		
Adjust Maps and get better maps available	50	25	
Abatement Strategy Planning and use of ENSIS in other management situations	75		
Improve the Water Model	200		
Workshops (including conversion and import of data) , training, project meetings and preparation	220		20
Visit to Norway for 3 Chinese experts, 10 days (subsistence and travel costs)		60	
Arc View Licence		20	
Subsistence	125		
International travels	95		
Local travels	10		
Miscellaneous			
Total ENSIS-User	880	105	20
ENSIS-Technical			
Establishment of procedures	40		
Training and project meeting including preparation	40		
Subsistence	30		
International travels	40		
Miscellaneous			
Total ENSIS-Technical	150		
Automatic Monitoring			
Establishment of procedures for operation and maintenance	50		800
Training and project meeting including preparation	75		
Subsistence	25		
International travels	20		
Miscellaneous (spare parts)		105	700
Total Automatic Monitoring	170	105	1 500
Laboratory			
Review and revisions of quality Assurance Procedures	50		
Trainee (following up)	50		
Subsistence (2 months for trainee)		30	
International travels		10	
Local travels			
Miscellaneous	10		
Total Laboratory	110	40	0
ENSIS maintenance			
Agreements preparations	10		
Negotiations of maintenance contracts	40		
Technical maintenance	80		
ENSIS Maintenance Agreements (two years)	110		30
Travels for negotiations and support	50	10	
Project annual reports	30		
Total ENSIS maintenance	320	10	30
Total Project	2 040	340	1 640

The total costs funded by NORAD for the Heilongjiang consolidation project including ENSIS approval and maintenance is **NOK 2,380.000,-**. The contribution from the Chinese side will be **RMB 1,640.000,-** covering time resources and equipment.

The total budget has been divided into annual budgets for the working years 2003 - 2005. This

means that the budget costs for NORAD funds for 2003 should be NOK 990.000, and for 2004 and 2005 NOK 1190.000 and NOK 200.000 respectively.

5. Indicators

The following indicators can be used to determine if the objectives are met in the project at project closure:

- Has the project been completed within the time and financial resources available
- Does the database contain all relevant information with respect to water quality and pollution sources in order for HEPB and HEMC to undertake their tasks related to the management of water.
- Has the system been used to determine the most important pollution sources
- Are maps represented with a higher level of details than earlier
- Have data been displayed graphically with tools that are part of the ENSIS system and in combination with other graphical tools
- Have data been processed statistical within ENSIS and have other tools been used in combination with ENSIS to evaluate the data.
- Have an Abatement Strategy Analysis for the whole Songhuajiang River System been initiated
- Have an upgraded Water Model been implemented
- Does there exist a manual, which gives a detailed description of 1) backup routines, 2) UDB administration, and 3) necessary server and client settings in order for the system to function technically.
- Does there exist a manual for operation, control and maintenance of automatic monitoring equipment at the HEMC and at the sites.
- Is the ENSIS system integrated in the environmental management at HEPB
- Have spare parts been purchased for the automatic monitoring stations, and additional training in operation of the instruments been undertaken at each site in the province.
- Have quality assurance procedures for laboratory analysis been evaluated and corrections/suggestions for improvements been proposed.
- Have a trainee been trained at NIVAs laboratory for analysis of organic micro pollutants, and can this trainee undertake the analysis at the laboratory at HEMC (anticipating that the analytical equipment exist)

**APPENDIX A AGREEMENT BETWEEN THE
NORWEGIAN AGENCY FOR DEVELOPMENT
COOPERATION (NORAD) AND THE
MINISTRY OF FOREIGN TRADE AND
ECONOMIC COOPERATION OF THE
PEOPLES REPUBLIC OF CHINA (MOFTEC)**

A G R E E M E N T

between

THE NORWEGIAN AGENCY FOR DEVELOPMENT COOPERATION

('NORAD')

and

**THE MINISTRY OF FOREIGN TRADE AND ECONOMIC
COOPERATION OF THE PEOPLE'S REPUBLIC OF CHINA**

('MOFTEC')

regarding

**'Sino-Norwegian Cooperation on the Consolidation of Environmental
Surveillance and Information System'**

WHEREAS MOFTEC in an application dated 6 June 2002 has requested NORAD for assistance to the project "Sino-Norwegian Cooperation on the Consolidation of Environmental Surveillance and Information System",

WHEREAS NORAD has supported the Surveillance of Water Quality in the Songhua River, Heilongjiang Province, China through an agreement dated 8 November 1996 prolonged through an addendum dated 11 September 1997;

WHEREAS NORAD has decided to comply with the request,

NOW THEREFORE NORAD and MOFTEC have reached the following understanding, which shall constitute an Agreement between the Parties:

Article I Scope and Objectives

1. This Agreement sets forth the terms and procedures for NORAD's assistance to

the Heilongjiang component in the "Sino-Norwegian Cooperation on the Consolidation of Environmental Surveillance and Information System" as outlined in Annex I to this Agreement ("the Project").

2. The Project is further outlined in the Project Document 'Sino-Norwegian Cooperation on the Consolidation of Environmental Surveillance and Information System', received from MOFTEC 6 June 2002. The Project Document consolidates three separate projects.

The Goal of the Project is to improve the environmental management in the Heilongjiang Province. Through consolidation of the Environmental Surveillance and Information System ("ENSIS") and the experience established in Heilongjiang, the Project will contribute to a more active and sustainable use of ENSIS as a Planning and Assessment tool for environmental surveillance, management, and abatement activities in China.

The Objective of the Project is to secure a sustainable implementation of an environmental surveillance and monitoring system, which can be used as an operative tool for decision-makers and planners to improve the environment.

Article II Cooperation - Representation - Administration

1. NORAD and MOFTEC shall co-operate fully to ensure that the Goal and Objective of the Project are successfully accomplished. To that effect each Party shall furnish the other Party with all such information as may reasonably be required pertaining to the Project.
2. MOFTEC will have the overall responsibility for the Project, and shall supervise the implementation of the Project.

State Environmental Protection Administration ("SEPA") will have the overall policy responsibility for the Project, the responsibility for the technical quality assessment, and for the dissemination of the results of the Project.

All communication to NORAD in regard to this Agreement shall be directed to the Royal Norwegian Embassy in Beijing.

3. A contract regarding the financial and technical assistance to the Project ('the Contract') will be entered into between the following parties:

Heilongjiang Environmental Monitoring Central Station (HEMCS) and NIVA

The Contract and any subsequent amendments thereof shall be approved by MOFTEC and NORAD before signing and entering into force.

4. Representatives of NORAD, MOFTEC and SEPA shall have consultations (Annual Meeting) in Beijing each year in order to:
 - review the progress of the Project;
 - discuss possible revisions of plans and budgets for the Project;
 - approve work-plans and budgets for the next year;
 - discuss issues of special concern for the implementation of the Project.

The documentation specified in Article VII, Clauses 1, 2 and 3, below, shall form the basis for the consultations.

The Annual Meeting shall be called and chaired by MOFTEC.

Representatives from the Norwegian Ministry of Environment and the Royal Norwegian Embassy in Beijing will be invited to the Annual Meeting. The two Parties may in addition include others to be represented as advisors to their delegations.

Central elements of the discussions and all decisions from the consultations shall be recorded in Agreed Minutes. The Agreed Minutes shall be drafted not later than 14 days after the Annual Meeting.

Article III Contributions of NORAD

1. NORAD shall, subject to Parliamentary appropriations, and on the terms and procedures set out or referred to herein, make available a financial grant not exceeding NOK 2,380,000 (two-million-three-hundred-and-eighty-thousand Norwegian-Kroner) ("the Grant"), to be used exclusively to finance the Project in the planned period 2002-2004.

The Grant shall be made available to the Project according to the terms and conditions in the Contracts.

2. Any accrued interest on the Grant may be used for the benefit of the Project, as agreed by the Parties in writing.
3. Any funds not fully utilised for one activity may upon previous written agreement between the Parties be utilised for the benefit of other activities within the Project.
4. Any unspent disbursed funds and any unspent accrued interest shall be returned to NORAD upon the completion of the Project.

Article IV Contributions and Obligations of MOFTEC

MOFTEC, with the assistance of SEPA, shall make all reasonable efforts to facilitate the successful implementation of the Project, and shall hereunder:

1. have the overall responsibility for the planning, administration and implementation of the Project;
2. ensure that the Grant is reflected in the plans, budgets and accounts of the Ministry, and that accounts for the Project are kept in accordance with generally accepted accounting practices. The accounts shall include accrued interest, if any;
3. provide sufficient qualified local personnel and all financial and other resources that may be required over and above the Grant and the contribution of the Chinese part as stated in Annex I to this Agreement, for the successful implementation of the Project;
4. defray any customs duties, sales taxes and other taxes, fees and levies on all equipment, materials and supplies financed by the Grant and imported into China for the benefit of the Project;
5. exempt the property of Norwegian Experts for this Project, for the personal use (including one motor vehicle) imported in or exported from China;
6. grant all necessary permits, import licences and foreign exchange permissions that may be required in connection with the implementation of the Project;
7. promptly inform NORAD of any condition which interferes or threatens to interfere with the successful implementation of the Project;
8. permit NORAD's representatives examination of any relevant records, goods and documents.

Article V Procurement

1. MOFTEC undertakes to effect all procurements of goods and services for the Project and is responsible for the contracts to be signed. MOFTEC shall observe the highest ethics during the procurement and execution of the contracts.
2. All procurements shall be performed in accordance with generally accepted principles and good procurement practices, and in accordance with Chinese procurement regulations. Invitations to tender or to make offer as well as procurement contracts shall, respectively, include a clause stating that the tender/offer will be rejected and the contract cancelled, in case any illegal or corrupt practices have been connected with the award or the execution of the contract.

No offer, gift, payments or benefit of any kind, which would or could be construed as an illegal or corrupt practice, shall be accepted, either directly or indirectly, as an inducement or reward for the award or execution of procurement contracts. Any such practice will be grounds for cancellation of this Agreement and/or the procurement contract concerned.

In accordance with the procurement regulations of China Norwegian suppliers shall be given the same opportunities to compete for deliveries and/or participate in the bidding as other suppliers.

Article VI Disbursements

1. The Grant will be disbursed as follows:

Upon receipt of a request NOK 750 000 will be transferred after signing the Agreement.

The remaining part of the Grant shall be made available to the Project according to the terms and conditions in the Contract.

2. Transfer of the funds will be undertaken upon NORAD's approval of the request to a separate RMB bank account of the three contracts and be available for the Project immediately.

Chinese side shall immediately, in writing, acknowledge receipt of the funds.

Article VII Reports

1. MOFTEC shall see that the HEMCS will submit to NORAD an Annual Report on the implementation of the Project no later than 3 weeks before the Annual Meeting. A format for the Annual Report is given in Annex II hereto.

The Annual Report shall include:

- progress report, giving information on actual outputs compared to planned outputs, work-plans and time schedules, use of inputs, problems encountered or foreseen and other information related to the implementation;
 - project accounts related to the agreed budget, specifying income from all sources and all expenditures.
2. As a preparation for the consultations mentioned in Article II, Clause 4, above, MOFTEC shall within three weeks before the Annual Meeting submit to NORAD:
 - work-plans with planned outputs and time schedules for the next year;
 - a budget for the next year of the Project, showing all income and expenditures;
 - budgets for the individual institutions receiving funds under this Agreement, showing all income and expenditures.

These documents together with the Annual Report and the audit opinion shall provide the basis for the discussions and decisions in the Annual Meeting.

3. MOFTEC shall submit to NORAD an audit opinion on the Project accounts not later than two months after each financial year.

The audit shall be performed by an external, independent chartered auditor firm acceptable to NORAD, and the audit opinion shall certify:

- the principles adhered to during the audit;
- the total flow of funds, from receipt by the relevant central authority to final use on the various activities;
- the correctness and completeness of the figures in the accounts and that the accounts reflect the actual situation in the Project;
- any essential findings from the audit.

The audit shall be carried out in accordance with the above requirements and internationally recognised audit principles and practises, which shall be stated in the opinion.

Along with the above prescribed audit opinion copies of any other reports from the auditor regarding or significant to the implementation or follow-up of the Project shall be submitted to NORAD.

The cost of the audit shall be covered from the Grant.

4. MOFTEC shall submit to NORAD a final report within six months after the completion of the Project, and in any case not later than April 2005. If the Project is not completed by then, a status report shall be submitted to NORAD by the said date.

The final report shall give a summary of outputs and activities undertaken, achievements compared to Goal and Objective and an assessment of the efficiency of the Project.

5. NORAD shall respond within 6 weeks upon receipt of the reports mentioned above.

Article VIII Reservations

1. NORAD reserves the right to withhold disbursements at any time in case i.a.:
 - the Project develops unfavourably in relation to the Goal and Objective;
 - substantial deviations from agreed plans and budgets occur;

- resources to be allocated by the Chinese side are not provided as agreed;
 - the documentation specified in Article VII, above, is not delivered as agreed;
 - the financial management of the Project is not satisfactory.
 - the contract referred to in Article II, Clause 3, above, are breached or terminated before all obligations therein are fulfilled.
2. NORAD reserves the right to claim repayment in full or in part of funds from the Grant if the funds or part of the funds are found not to be used in accordance with the terms and conditions of this Agreement or not satisfactorily accounted for.
 3. Before withholding any disbursements or claiming repayment the Parties shall consult with a view to reaching a solution in the matter.
 4. NORAD will cancel this Agreement or portion of this Agreement and have the right to demand the cancellation of any contract financed under this Agreement, with immediate effect if it determines, with respect to any contract to be financed under this Agreement, that corrupt or fraudulent practices were engaged in by representatives of a beneficiary of the aid funds during procurement or during the execution of the contract without having taken timely and appropriate action satisfactory to NORAD to remedy the situation.
 5. NORAD and MOFTEC agree to co-operate on preventing corruption within and through the Project. NORAD and MOFTEC undertake to take rapid legal measures in their respective countries to stop, investigate and prosecute in accordance with national law any person suspected of corruption or other intentional misuse of resources.

Article IX

Information - Evaluation - Reviews

In accordance with Article X of the Main Agreement the Parties will agree upon measures for information, evaluation and reviews of the Project.

The following reviews shall be carried out:

- end review

The cost of the reviews shall be covered by NORAD over and above the Grant.

Article X
Distribution of the present Agreement

The Parties shall distribute copies of the present Agreement to the respective ministries, authorities and other institutions involved in the Project or otherwise in need of information on its content.

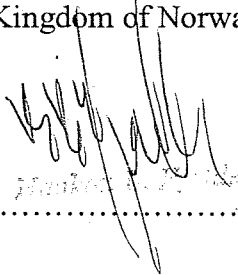
Article XI
Disputes - Entry into Force - Termination

1. If any dispute arises relating to the implementation or interpretation of the present Agreement, there shall be mutual consultations between the Parties with a view to secure a successful realisation of the Agreement.
2. This Agreement shall enter into force on the date of its signature and shall remain in force until both Parties have fulfilled all obligations arising from it. Whether these obligations shall be regarded as fulfilled shall be determined in consultations between the Parties.
3. Notwithstanding the previous clause both Parties may terminate the present Agreement by giving three months written notice to the other Party.

In witness whereof the undersigned, acting on behalf of their respective Governments, have signed the present Agreement in two originals in the English language.

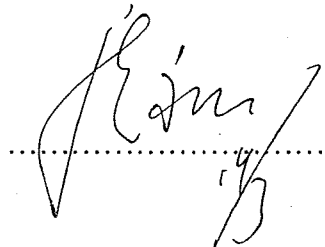
Done in *Beijing* the *14th* day of *March*, *2003*

For the Government of the
Kingdom of Norway



.....

For the Government of the
People's Republic of China



.....

ANNEX I

Project Summary of Consolidation Project

PROJECT TITLE:

The Heilongjiang component of the 'Sino-Norwegian Cooperation on the Consolidation of Environmental Surveillance and Information System'

IMPLEMENTING INSTITUTION:

- **Heilongjiang** Environmental Protection Bureau (HEPB)/ Heilongjiang Environmental Monitoring Central Station (HEMCS) and NIVA

PROJECT DESIGN:

Goal

To improve the environmental management in the Heilongjiang Province. Through consolidation of the ENSIS system and the experience established in Heilongjiang, the project will contribute to a more active and sustainable use of ENSIS as a Planning and Assessment tool for environmental surveillance, management, and abatement activities in China.

Objective

To secure a sustainable implementation of an environmental surveillance and monitoring system which can be used as an operative tool for decision makers and planners to improve the environment.

Outputs

- Extend ENSIS to cover all monitoring data and pollution sources within Heilongjiang Province, and secure adequate training for the use of the system as a tool to manage water resources and initiate an Abatement Strategy Analysis for the whole Songhuajiang River System.
- Improve the management routines for the technical operation of the ENSIS system
- Establish a Maintenance Agreement for ENSIS to secure a future use of ENSIS as a planning and management tool for the environment in Heilongjiang Province
- Upgrade the Water Model to cover both point and non-point sources
- Consolidate and extend the routines for the technical operation and maintenance of automatic monitoring stations.
- Establish sound quality assurance routines for laboratory by further participation in inter comparison studies, by evaluating existing quality assurance routines and suggest improvements, and by providing training in analytical methods.

Inputs

NORAD funds: 2.380.000 NOK

Chinese funds: 1.640.000 RMB

ANNEX II

ANNUAL PROGRESS REPORT FORMAT

1. PROJECT TITLE:
2. IMPLEMENTING INSTITUTION:
3. PROJECT DESIGN (Goal, Objective, outputs):
 - As stated in Agreed Project Summary
4. PROGRESS OF IMPLEMENTATION:
 - Expenditure in relation to budget. A comparison between budget and actual costs as presented in the Statement of Accounts (specifying inputs from all sources including NORAD's contribution).
 - Actual outputs compared to planned outputs. Planned outputs are described in the Annual Work Plan. Deviations from plans must be explained.
 - Problems or risks; identification of specific challenges to the Project (e.g. sustainability and issues related to external factors).
5. ASSESSMENTS:
 - Efficiency of Project activities. The extent to which inputs are converted into planned outputs.
 - The need for adjustments to activity plans and/or planned inputs.
 - Relevance of the Project compared to defined needs and concerns (as expressed in the Objective).

**APPENDIX B . AGREED MINUTES FROM THE
FIRST PROJECT MEETING ON THE
HEILONGJIANG CONSOLIDATION PROJECT**

Agreed Minutes for the first Project Meeting on

The Heilongjiang Consolidation Project “Surveillance of Water Quality in the Songhua River System in Heilongjiang Province, P.R. of China”

Present from Chinese side: Mr. Guo Yuan, Ms Meng Xiannan, Mr Zhang Zhijian, HEPB
Ms Chen Aifeng, HECMS

Present from Norwegian side: Ms Bente M. Wathne, Mr Tor Haakon Bakken, NIVA
Mr Torstein Skancke, IC ENSIS/Norgit

Agenda for the meeting was as follows:

1. Preparation of a detailed project work plan
2. Preparation of an Inception Report
3. Evaluate status of ENSIS; including hardware, software and instruments
4. Discussions of the signed Agreement between NORAD and MOFTEC, and the drafted contract between HEPB and NIVA
5. Signing of contract, if possible

Opening of the Meeting

Mr. Guo Yuan opened the Project Meeting and welcomed warmly the Norwegian experts. Also the Norwegian experts looked forward to start the co-operative project in Heilongjiang again, and all participants expressed their appreciation regarding the signed Agreement between MOCTEF and NORAD. It was agreed to follow the suggested agenda.

Preparation of a detailed project work plan and an Inception Report

The existing Project Document was discussed and the necessary changes to update and detail the project work plan were agreed. The following activities were noted with high priority for the coming weeks:

- Preparation of a hardware list to get an overview of the hardware used for the ENSIS system at HEMCS. For comparison, a list describing the minimum hardware for the new ENSIS version was delivered to the Chinese experts.
- Preparation of a list of spare parts to be purchased under the NORAD supported part of the budget. This list is expected to be finished within two weeks and agreed upon, so that the Chinese side can order the necessary equipment for a full operation of the online monitoring equipment.
- Before the next Workshop, also a list of the most important map themes shall be prepared. Better maps are important for the project work, and the Chinese experts promised before the said Workshop to investigate the possibilities for providing better maps.

Some tasks to be taken into consideration and preparation to be made before the next Workshop are shown in Annex 1.

Evaluate status of ENSIS including hardware, software and instruments

Based on a site visit to the Heilongjiang Monitoring Centre (HEMCS) and discussion with the technical expert, a hardware and software list showing installed equipment at HEMCS was prepared. See Annex 2. The main conclusion is that the server and two clients seem to function/run properly and according to intentions. However a hardware and software upgrading is recommended.

A status check of the monitoring instruments showed that purchasing of spare parts will be necessary to have the instruments in full operation.

Discussions of the signed Agreement between NORAD and MOFTEC, and the drafted contract between HEPB and NIVA

The signed Agreement between MOFTEC and NORAD was discussed, and this Agreement referred to a contract to be signed between HEMCS and NIVA, whereas the former project had been based on a contract between HEPB and NIVA. Therefor the preparations for a Consolidation project contract had been made with the intention to be signed between HEPB and NIVA. This change in policy needed some consideration, and the organisation to actually sign the contract needed clarification.

The content of the drafted contract was still discussed and after minor changes, agreed upon. Due to the implications described above the contract was not signed, even if the content was agreed between the Chinese and Norwegian side.

After contacts for clarification with the Norwegian Embassy in Beijing, it seems that this change of signing partner on the Chinese side was due to a general policy from SEPA.

During the discussions of the co-operation between our two institutions, the issue of Norwegian soft loans for environmental projects and investments were raised from the Chinese side. NIVA promised to investigate the possibilities for such support, and be of help in the applying process.

Harbin 26/3-03
(place and date)

哈尔滨 03-26/3
(place and date)

For Norwegian Institute for
Water Research (NIVA)

Heilongjiang Environmental
Protection Bureau (HEPB)

Bente M. Wathne

Guo Yuan

Bente M. Wathne

Guo Yuan

Preparations ahead of start-up workshop and intended activities during the work shop

Preparation ahead of the start-up workshop:

- Make the original monitoring data available (xx – 1997) for quality assurance of ENSIS database content
- Make the new monitoring data available (1998 – now + monitoring stations skipped during previous project)
- More detailed maps in shape format
- Pollution sources data
- Repeat the basics of ENSIS (internal ENSIS training)
- Ensure the availability of key persons (ENSIS operators + translator) and computers

Activities during the start-up workshop:

- Upgrade to the latest version of ENSIS (from ENSIS 2.02 to ENSIS 2.05)
 - *Improved search for data*
 - *Additional functionality (eg. linking of external data sources, improved import routine)*
 - *Reorganised/simplified dialogues*
 - *Bug fixes*
- Quality assurance of work done during previous project (important !)
- Fixing of potential errors/mistakes in the data
- Import of new monitoring data (more recent data + new monitoring stations)
- Improvement of maps
- Preparation of import of pollution sources

Annex 2.

Inventory and status of installed ENSIS-related hardware and software at HEMCS

Harbin, March 26th, 2003

Based on a site visit to the Heilongjiang Monitoring Central Station (HEMCS) and discussion with the technical expert, the following hardware and software is found installed at HEMCS:

Server side

CPU	Intel Pentium II 300
Hard disk	3*4.0 GB SCSI hot-swap
RAID adapter	
RAM	128 MB
Graphical adapter	32 MB
Network	TP – 10/100 Mbit
Monitor	15" supports 1024*768
Case	Tower
Other hardware	Keyboard, scroll mouse, backup cassette
Back up	
Operative system	MS Windows NT 4.0 Server, professional English, SP 5
Oracle version	7.3
ENSIS Application	ENSIS 2.02 Main Application, Version 2.0.3 Wednesday May 31, 2000
Status on operation	The server seems to function/run properly and according to intentions

Client-side

CPU	Intel Pentium II 333
Hard disk	IDE 6.4 GB
RAID adapter	
RAM	128 MB
Graphical adapter	32 MB
Network	TP – 10/100 Mbit
Monitor	17" supports 1024*768
Floppy disk	1.44 MB
CD	CD-ROM
Case	Tower
Other hardware	Keyboard, scroll mouse, com port, parallel port and USB port
Operative system	MS Windows NT 4.0 work station, SP 3
Oracle version	Oracle 7.3 client
ENSIS Application	ENSIS 2.04 Main Application, Version 2.0.4 08.06.00
Status on operation	The clients seem to function/run properly and according to intentions within the LAN

No of clients = 2

These clients are identical in terms of hardware, but Chinese MS Windows 98 is in addition installed on one of the clients.

**APPENDIX C . CONTRACT BETWEEN NIVA
AND HEPB REGARDING THE
HEILONGJIANG CONSOLIDATION PROJECT**

C O N T R A C T

between

Norwegian Institute for Water Research (NIVA)

and

Heilongjiang Environmental Protection Bureau (HEPB)

regarding

The Heilongjiang Consolidation project

VERSION 4, 3 March, 2003

1. Preamble

WHEREAS the Norwegian Agency for Development Cooperation (“NORAD”) and the Ministry of Foreign Trade and Economic Cooperation of the People's Republic of China (MOFTEC) have entered into an agreement (the “Agreement”) dated March 14th 2003 regarding Consolidation of the NORAD projects CHN013, CHN014, CHN017. This Contract covers the Heilongjiang Consolidation Project, CHN017 (the “Project”);

WHEREAS NORAD, on the terms and conditions of the Agreement, will provide a grant (the “Grant”) to be used exclusively to part-finance the Project;

WHEREAS representatives of NORAD and MOFTEC shall meet annually (the “Annual Meeting”) to review the implementation of the Project/Programme, assess the priorities, approve the financial requirements for the coming year and other tasks/activities to be included in the Project;

WHEREAS MOFTEC will have the overall responsibility for the Project, and shall supervise the implementation of the project.

WHEREAS SEPA will have the overall policy responsibility for the Project, the responsibility for the technical quality assessment, and for the dissemination of the results of the Project. HEPB will be responsible for the implementation of the Project in Heilongjiang Province.

WHEREAS NIVA and HEPB, as stated in Article II.3 of the Agreement, will enter into a contract (the “Contract”), regarding institutional co-operation on the implementation of the Project;

WHEREAS the Agreement will take precedence over this Contract;

NOW THEREFORE HEPB and NIVA have agreed as follows:

2. Scope and Objectives

2.1 Goals

The main goals for this consolidation phase are:

- to consolidate and improve the environmental management in the Heilongjiang Province.
- ensure further use of ENSIS in the province (support and maintenance)

Through consolidation of the ENSIS system and the experience established in Heilongjiang, the project will contribute to a more active and sustainable use of ENSIS as a Planning and Assessment tool for environmental surveillance, management, and abatement activities in the P.R. of China.

2.2 Objectives

- to secure a sustainable implementation of the environmental management system ENSIS to be used as an operative tool for decision makers and planners to improve the environment
- to establish maintenance agreements for technical and scientific support of ENSIS as a maintained management system in China.

2.3 Outputs

In order to fulfil the objective the following outputs are necessary:

- Extend ENSIS to cover all monitoring data and pollution sources within Heilongjiang Province, and secure adequate training for the use of the system as a tool to manage water resources and initiate an Abatement Strategy Analysis for the whole Songhuajiang River System.
- Improve the management routines for the technical operation of the ENSIS system
- Establish a Maintenance Agreement for ENSIS to ensure a future use of ENSIS as a planning and management tool for the environment in Heilongjiang Province
- Upgrade the Water Model to cover both point and non-point sources
- Consolidate and extend the routines for the technical operation and maintenance of automatic monitoring stations.
- Establish sound quality assurance routines for laboratory by further participation in inter comparison studies, by evaluating existing quality assurance routines and suggest improvements, and by providing training in analytical methods.

- 2.4** The Grant, which is subject to appropriations from the Norwegian Parliament, will not exceed NOK 2.380.000,-. The budget allocations for the tasks to be covered by the Grant (including allocations to be provided by HEPB/MOFTEC) are given in Annex II to this Contract. The allocations are final as far as distribution of NORAD funds between the Norwegian and Chinese side is concerned. They can

be considered tentative as far as distribution between tasks is concerned, and this may be changed according to agreements reached between the Chinese and Norwegian side.

3. Project Management and Co-ordination

3.1 Project organisation

Project organisational chart

The tentative organisational chart for the Project is included in Annex I to this contract, as it appears in the Project Document. The purpose and mandate of the various organisational levels is described in the Project Document. A final organisational chart will be provided in the Inception Report.

3.2 Project meetings and workshops

HEPB and NIVA shall carry out meetings according to the following plan and schedule:

Project Plenary Meetings / Workshops

Workshops and project meetings will be held during the project:

A Kick-off workshop

- preparation of detailed project work plan
- preparation of an Inception Report

Project meetings as agreed in the detailed project plan to:

- demonstrate the functions of the new ENSIS version;
- follow-up of measures to improve water quality;
- evaluate standard operational procedures for the monitoring programme;
- discuss the Abatement Strategy Analysis for the whole Songhua River System;
- implement the upgraded water model;
- install the final ENSIS version

A Final Workshop to:

- evaluate and disseminate the project results

Organisational meetings will be carried out according to the final organisational chart to be provided in the Inception/kick-off Report.

Task and Sub-task Meetings

These will be held as appropriate during the project period, in connection with the workshops, and at other times. Minutes from these meetings shall be finalised by the task group leaders within 3 weeks after the meetings (including a commenting round by those involved), and copies sent to the Project Manager for information. In case these meetings result in changes in the task work plans, the Project Manager shall give approval.

4. Obligations and Responsibilities of the Parties

4.1 Information

The Parties shall keep each other currently informed about all matters of importance relevant to the overall co-operation and the implementation of the tasks to be performed under this Contract.

4.2 Personnel

NIVA shall make available sufficient and qualified personnel and shall carry out their obligations in accordance with the highest professional standards. If any problem arise or is expected to arise, HEPB shall be notified immediately in writing.

HEPB shall make available sufficient and qualified personnel to co-operate with NIVA and its personnel on the activities to be implemented under this Contract, and shall facilitate and make sure that the personnel is available for carrying out necessary preparations and follow-up tasks in connection with the co-operation. If any problem arise or is expected to arise in this respect, NIVA shall be notified immediately in writing.

Should it become necessary to replace NIVA or HEPB personnel, the Party concerned shall forthwith arrange for replacement with a person with comparable experience.

The Party requesting the replacement shall be responsible for the financial consequences thereof, except in cases when such personnel are replaced for reasons of misconduct, incapability to perform or violation of instructions and local laws and regulations in which case the Party concerned shall be responsible.

4.3 HEPB

4.3.1 HEPB is responsible for the implementation of the Project and for the adherence and implementation of the decisions taken and budget allocations approved at the Annual Meetings referred to in Article II.4 of the Agreement.

4.3.2 HEPB shall:

- Have the main responsibility for producing the Reports from the Project (as referred to in Clause 6, and further detailed in lists in the PD and the Inception Report), and to provide a translation into English of these reports.
- Provide NIVA with access to all available and relevant reports, data and other information required undertaking its tasks. Data and information available only in Chinese language shall be translated into English.
- Assist NIVA in obtaining all necessary permits, licences and permissions referred to in Article IV.6 of the Agreement.
- Provide, adequately sized, furnished, serviced, and heated/air conditioned office accommodation for the personnel of NIVA. The office facilities shall be

equipped with or have easy access to e-mail facilities with international connection. There should be no extra expenses to NIVA for these services.

- Provide transport facilities for efficient local transport in Harbin and other cities within the province as necessary.
- Assist NIVA locally on practical issues such as hotel booking, acquiring necessary office consumables etc.

4.4 NIVA

4.4.1 NIVA shall:

- Co-operate fully with HEPB and HEMCS to ensure that the Goal and Objective of the Project/Programme (alt. tasks referred to in Clause 2.3 above) are successfully accomplished and co-ordinate the services to be performed by the Norwegian Institution.
- Assist HEPB and HEMCS in producing the reports from the project, according to agreed division of responsibility for the various parts of the reports.
- Assist HEPB and HEMCS personnel in obtaining accommodation facilities when visiting Norway, including visa and other permissions necessary for their stay in Norway.

4.5 International travels

All international travels shall be agreed upon between the Parties (and shall be formalised through an Inception Report, which shall include a work plan and budget.)

5. Procurement

- 5.1** All procurements shall be performed in accordance with generally accepted principles and good procurement practice, and in accordance with Chinese or Norwegian procurement regulations. Invitations to tender or to make an offer as well as procurement contracts shall, respectively, include a clause stating that the tender/offer will be rejected and the contract cancelled, in case any illegal or corrupt practices have been connected with the award of the execution of the Contract.
- 5.2** HEPB and NIVA shall agree on the technical specifications of the goods and equipment to be procured before procurement of such goods and equipment are effectuated.

6. Reporting

The reporting requirements from the Project include:

- An Inception Report to be finished one month after the kick-off workshop.
- Progress reports to be produced and approved at the Project Meetings.
- An ENSIS Maintenance Agreement to be signed at the Project Meeting after 6 months.
- A draft Final Report shall be available 2 months before the end of the Project.
- Sub-reports, to be finally specified in the Inception Report.

This list of sub reports, as well as report deadlines, is to be finalised in the Inception Report. The contents of the reports are to be outlined in the Inception report.

The reports shall be written by Chinese experts, with assistance and guidance from Norwegian experts.

Appropriate reports shall be ready in draft form by the time of the Annual meetings between MOFTEC and NORAD.

7. Remuneration

NIVA shall be paid for the services performed and the costs incurred in conformity with the procedure set out in Clause 8 below and at the rates set out or referred to in the Clause 7.1 below.

The basis for the remuneration of NIVA shall be Clause 2.4 above, and reports from NIVA, following each invoice, on the work carried out, with reference to the agreed work programme in the Inception Report and later agreed modifications.

The total remuneration to NIVA shall not exceed the total allocation to the Norwegian side given in Annex II.

7.1 Short term personnel

The services carried out in Norway by the personnel of NIVA and co-operating institutions will be remunerated on the basis of the following hourly rates:

Name/Position	Rate
Bente Wathne/ Project co-ordinator, Norwegian side/ Water Quality Scenario Analysis Advisor/	NOK 820,-
Per Håvard Kraggerud Information Technology Advisor/	NOK 820,-
Tor H. Bakken/ Research scientist water quality/	NOK 800,-
Kim Sundqvist/ Information Technology Consultant/	NOK 800,-

Other advisors/experts from NIVA and co-operating institutions might be allocated using the time rates specified above.

Fieldwork will be paid on a weekly basis based on 42 hours and the above rate(s). There will be no payment for overtime.

In addition two travel days á 7 hours per intercontinental return flight will be remunerated.

The rates applied may be adjusted annually in accordance with the annual Norwegian consumer price index adjustments.

7.2 Long term personnel

There is no personnel posted more than 6 months in P.R. China under this contract.

7.3 Travels and Subsistence allowance

Travel expenses, per diem and night allowances in connection with international travels will be covered in accordance with the applicable Norwegian Government Regulations (as already worked into the budget) and Tourist/Economy Class, preferably "Excursion" or "Euro" tickets, shall be used when possible. HEPB shall be informed about the per diem allowance rates.

7.4 Miscellaneous costs

Other expenses up to the limits set forth in the budget in Annex II (referred to in Clause 2.4 above) or included in annual budgets approved at the Annual Meetings will be reimbursed at cost, upon documentation.

Unforeseeable expenses can only be utilised in agreement with the HEPB.

8. Invoicing

8.1 NIVA will submit auditor-certified invoices quarterly to HEPB for approval.

The person responsible for the Project in NIVA shall certify the invoices stating that the invoiced expenses are in accordance with this Contract.

8.2 The time sheets and the original documentation will remain at NIVA, but copies will be submitted to HEPB. For travels the invoices shall, in addition to the total cost, provide name of person, duration and purpose for each trip.

8.3 HEPB shall, upon approval of the invoice by HEPB, within 20 days, submit the invoice to NORAD.

8.4 NORAD shall effect payments to NIVA within 20 days after it has received the approved invoices from HEPB.

8.5 All payments shall be made directly to the bank account designated by NIVA.

8.6 If any item or part of an invoice rendered by NIVA is disputed or subject to question by HEPB, the payment by NORAD of the remainder of that invoice shall not be withheld on these grounds.

8.7 All costs with regard to the activities of the Chinese side in connection with this Contract, except those to be covered by NORAD according to Annex II, shall be covered by HEPB.

9. Contracts with entities outside NIVA and HEPB ("Sub-contracts")

9.1 Any Sub-contracts to be entered into by NIVA and/or HEPB shall be made with duly qualified entities and the sub-contractors shall retain full responsibility for all services it is committed to render under this Contract.

9.2 The partner (HEPB or NIVA) entering into a subcontract shall immediately inform the other partner (NIVA or HEPB) about the contents and extent of the subcontract.

10. Liability

10.1 HEPB shall not be liable – economically or in other ways – to firms or individuals engaged by NIVA and its sub-contractors.

11. Copyright

11.1 The copyright of all documents etc. prepared by NIVA under this Contract stays with HEPB. However, NIVA and NORAD shall not be liable to pay any royalties for the use of any documents.

11.2 Results and materials from the project cannot be published by any party under this contract, without prior permission from HEPB.

12. Compliance with local laws

12.1 While carrying out the assignment under this Contract the personnel and entities engaged by NIVA shall comply with the laws of P.R. China and NIVA will take prompt corrective action with regard to any violation by such personnel and entities. The same applies to the personnel and sub-contractors of HEPB when carrying out assignments in Norway.

13. Execution of the Contract

13.1 The Parties declare their commitment to counteract corrupt practices in the execution of the Contract. Further, the Parties commit themselves not to accept, either directly or indirectly, as an inducement or reward in relation to the execution of the Contract, any kind of offer, gift, payments or benefits, which would or could be construed as illegal or corrupt practice.

14. Amendments

14.1 No amendments of this Contract shall be made unless by written agreement signed by the parties. Such amendments will become effective when approved in writing by NORAD and MOFTEC.

15. Entry into force and Duration

- 15.1 This Contract shall enter into force when signed by both Parties and approved in writing by NORAD and MOFTEC.
- 15.2 This Contract shall remain in force until the expiration or termination of the Agreement, or as agreed between the Parties.

16. Termination

- 16.1 Each Party may terminate this Contract by giving three months' written notice to the other Party, with copy to NORAD and MOFTEC.
- 16.2 Upon receipt of such notice of termination, both Parties shall exert their best efforts to bring the work to an end in a rapid, orderly and economical manner, and will deliver to each other any plans or documents completed as part of this Contract.
- 16.3 In the event of termination NIVA shall be entitled to payment for services satisfactorily performed and expenses properly incurred prior to the date of termination.

17. Settlement of Disputes

- 17.1 If any dispute arises relating to the implementation or interpretation of this Contract, there shall be mutual consultations between the Parties with a view to secure a successful implementation of the Project.
- 17.2 Any disputes in connection with this Contract, which cannot be solved amicably, shall be referred to the Annual Meeting referred to in Article II 4 in the Agreement. The Parties shall accept the decisions taken at the meeting.

In witness whereof, the undersigned, acting on behalf of their respective institutions, have signed this Contract in two originals in the English language. This Contract shall enter into force when approved in writing by NORAD and MOFTEC.

Oslø 30. Dec 03
.....
(place and date)

2003. 9. 3
.....
(place and date)

For Norwegian Institute for
Water Research (NIVA)

Odd Stegeman
.....

For Heilongjiang Environmental
Protection Bureau (HEPB)

[Signature]
.....