

REPORT SNO 4286-2000

**M**elamchi Water Supply  
Project-Nepal  
Loan Appraisal  
**Mission Report**

## Norwegian Institute for Water Research

## REPORT

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**Abstract**

This is an appraisal of the Melamchi Water Supply Project in Nepal with special focus on the component earmarked for funding by NDF. The objective of the appraisal mission was to provide NDF with necessary information to support its decisions for further involvement in this project. The mission confirms that NDF's contribution will be allocated solely to the supervision of the construction of the Melamchi Diversion Scheme. This scheme consists of a water intake structure in the Melamchi River and a 26-km long tunnel for transferring of water from the river to the urban water supply system of the Kathmandu Valley. The appraisal concludes that significant progress has been made in filling the funding gaps of the Project since the last donor mission in July 2000. Moreover, all donors appears to agree that an obligatory condition for this project is the involvement of a private operator (PO) responsible for future operations and provision of water supply services. The construction supervision component of the Melamchi Diversion scheme is estimated to an upper ceiling of approximately UD\$11 million including the consultant's office and transportation costs. The supervision budget is higher than the current NDF's pipeline credit for this Component and filling of the gap has to be settled. The mission also clarified that the construction supervision will be subject to Nordic Competitive Bidding. In general, considerable efforts will be needed by the Asian Development Bank and the Nepalese Governmental Institutions to complete the remaining project preparations in keeping with a tight time schedule.

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2. Melamchi	2. Melamchi
3. Vannforsyning	3. Water
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# MELAMCHI WATER SUPPLY PROJECT - NEPAL

## **Loan Appraisal**

## **Mission Report**

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## 1. BACKGROUND

The purpose and scope of this NDF assignment is described in the “Agreement with Consultant” signed 19.09.2000 is concerning the appraisal of the Melamchi Water Supply Project ("the Project") in Nepal. The objective of the consultancy is to participate in the joint donor appraisal mission and to provide NDF with information and justified suggestions on specific issues of relevance. The findings of the mission shall serve as a tool for NDF in making a final decision concerning its further involvement in the Project. The focal issues and approaches for this consultancy are stated in the attached Working Programme (Appendix1). The NDF appraisal report places major emphasis on the Melamchi Diversion Scheme component having in mind the performance of the overall project preparations.

During the course of the mission, the consultant participated in formal and informal meetings with the people mentioned in Appendix 2 and a site visit to the Diversion Scheme areas. He has also worked in close consultation per e-mail, phone and fax with NDF Helsinki to discuss arising issues and suggestions of relevance relevant.

The Project is quite comprehensive with many interdependent components and activities that have to be planned and executed in a co-ordinated way to build a functional and long-lasting water and sanitation system for Kathmandu. Being the lead funding agency, ADB has the responsibility of ensuring the totality of the Project in co-operation with the Government of Nepal as well as the other funding agencies.

Project preparation is a dynamic process where assumptions, solutions and budgets are subject to improvement under way on the basis of studies and discussion between authorities, stakeholders and financiers. The major project documents at this stage of the Project are the Project Document (PD) and the Memorandum of Understanding (MOU) of the loan appraisal, and subsequently the RRP of the ADB. These draft documents will be forwarded to NDF. These and other background documents are listed in Appendix 3.

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## **2. FINDINGS AND RECOMMENDATIONS**

### ***2.1 Project Preparation Status and Financial Packaging***

#### Memorandum of Understanding

The latest status of the evolving project is reflected in the Draft Memorandum of Understanding (MOU) of 4 October 2000. This document, which should reflect all discussed and agreed issues, was handed out to the participants by ADB/MWSDB the day before the wrap-up meeting. All funding agencies commented verbally on the draft MOU at the plenary wrap-up meeting with MOF/MWSDP followed by written comments and suggestions from each agency. The comments of the NDF consultant were drafted and discussed with NDF the same day as the wrap-up and submitted to ADB with copies to MWSDB and NDF upon departure from Nepal. The comment paper is attached as Appendix 4 to this report. It was agreed that the ADB/MWSDB should adopt the proposed corrections in the revised MOU and PD and sort out the current inconsistencies between the two documents, especially when it comes to key issues like budgets, disbursement schedules and donor commitments.

#### Draft PD

The draft Project Document of September 2000 has been restructured and expanded compared to the July version. The project description is now following the logical framework "logframe" structure supported by annexed logframe matrixes for each project component. The cost estimates for all project components, except for the Diversion Scheme, have been changed in the September version. The financial and economic analysis have been substantially extended since the July PD. Consequently, the revised PD is substantially more voluminous than the previous version, although improvements are still needed.

#### Panel of Experts Report

The Panel of Experts has finalised its first visit to Nepal and submitted its findings and conclusions on various aspects of the Melamchi Diversion Scheme. The mission addressed key issues related to the choice and design of the intake and tunnel system, construction methods, operation and maintenance and engineering supervision. The panel recommended applying the same intake location; tunnel solution and alignment as proposed in the feasibility study carried out for MWSDB by Norplan. Due to the

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complexity of the tunnel and intake systems the panel of experts underscore the need for thorough explorations, modelling and diligence in connection with the engineering design in order to minimise all risks related to this component. The Panel of Experts also strongly recommended that the same consultant appointed for final design should also be given the task of construction supervision of these works.

### Budget and Financial Packaging

The ADB presented a total project cost of UD\$441 million in the MOU of which the foreign exchange is US\$259 million. (59%) and the local currency component is US\$182 million (41%). The Government has agreed to finance 25% and the external support agencies 75% of the total Project costs. The NDF appraisal consultant pointed out to ADB that the Melamchi Diversion Scheme base cost is US\$99.4 million (including supervision), not 94.1 as given in the MOU. There was no logic reason to change the costs of the diversion scheme in the September PD since no new studies have been finished since July to support possible changes.

### Closing of Funding Gaps

Notable achievements have been made towards closing the financial gaps and confirmation of the commitments of the funding agencies since the July meetings. The ADB has increased its credit from US\$80 to US\$120 million. NORAD/SIDA have also increased their contributions. Norway's financial commitment towards the implementation of the Project (the MDS component) is limited to USD 25 mill (the original USD 18 mill + the additional USD 7 mill). In addition to this USD 6 mill is made available for the preparatory consultancy work carried out by Norplan through the contract between MWSDB and the consultant. Out of the last amount approximately USD 3 mill is spent so far. The JBIC confirmed their satisfaction with the progress and their willingness to proceed with the funding preparations of the JBIC component. Also the World Bank confirmed their involvement in the sector reform (PO) and rehabilitation of water distribution networks.

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## **2.2 NDF's Role and Project Sustainability**

### **NDF's Role**

Although NDF's funding contribution is low in relative terms, the selected component Construction Supervision is of crucial importance to the successful construction and future operation of the overall water supply scheme. The Melamchi River Diversion Scheme will, together with the new treatment plant, cover the need for increase the raw water supply after the initial rehabilitation networks and extended number of connections have been completed. Hence, the NDF will play an important and integrated role in this complex project.

### **Project Sustainability**

The Diversion Scheme component is an integrated element of the Project, and its sustainability heavily relies on the sustainability of the whole Project. There are, however, some specific risks of technical nature affecting the construction progress, costs and future operation of this scheme that should not be ignored. Most of these risk factors, and possible mitigation measures to minimise them, have been explained in the report of the Panel of Experts. In summary, they comprise river intake structure stability, variable rock conditions along the tunnel, earthquake impacts, hydraulic capacity, siltation and sedimentation, and road construction progress. Therefore, the need for extensive efforts on the engineering design, model tests, exploratory investigations, and cautious construction supervision of the diversion scheme cannot be overstated.

## **2.3 Commitment on NDF's Project Component**

The MWSDB and ADB left no doubt that NDF is requested to finance the construction supervision of the Diversion Scheme.

## **2.4 Financing Need for Construction Supervision**

### **Cost Estimate of the Diversion Scheme**

The overall cost estimates presented in the MOU are attached hereto as Appendix 6. The table gives a cost estimate for the Melamchi Diversion Scheme of US\$94.7 million. This is not in accordance with the estimates in the September PD of \$99.4 million, which include US\$11 million for construction supervision (Appendix 5). The

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ADB was not able to give NDF an explanation of this inconsistency at the time of the wrap-up meeting. Such unjustified changes of budgetary figures complicate the economic and financial analysis of the project and may confuse the discussions. The point is raised in NDF's comments on the MOU (Appendix 4) which has to be followed up by ADB and MWSDB to ensure that the original figure of US\$99.4 million appears in the budgets of the final MOU. Possible budgetary revisions may however occur during the forthcoming feasibility and design stages of the Project. During the Loan Appraisal Mission it was agreed that the construction of the Diversion Scheme will be financed jointly by NORAD, SIDA and ADB. Different sharing models were discussed, but the selected alternative was that the NORAD grant and SIDA grant/credit will form the basis for funding and AFB will cover the remaining funding gap.

#### The Size of the NDF Credit

NDF's Board of Directors approved the original pipeline amount of SDR5 million on April 3, 1988. The envisaged size of the NDF credit has differed in the various documents during the course of project preparation as follows:

Document	Suggested NDF contribution (US\$ million)
PD July 2000	10
MOU 25 July 2000	7
PD September 2000	10
MOU 4 October 2000	7-11

During the appraisal mission, the NDF consultant made it clear that the MWSDB contribution still is equivalent to SDR 5 million, as he was instructed in the pre-briefing with NDF. Consultations with NDF during the mission confirmed that it is unlikely that NDF will raise its pledged credit of approximately US\$6.5 million. Nevertheless, the Executive Director of MWSDB informed the plenary donor meetings that NDF had indicated to him in Stockholm in August that the NDF credit possible could be raised to US\$10 million. It is recommended this issue be resolved directly between NDF and the MWSDB in the follow-up process immediately after the loan appraisal.

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### Cost Estimate of Construction Supervision

MWSDB was requested to provide a tentative engineering supervision budget of the diversion scheme as accurate as possible under the circumstances having in mind that the feasibility study is not yet completed. The MWSDB responded that a conservative budgetary ceiling is estimated to approximately US\$11 million by their consultant Norplan. The NDF consultant was informed that this cost estimate is based on proposed organisation of the supervision with 24 hours per day, 6 days per week construction works over 3.5 years according to the Project Document schedule. The tunnelling work is said to take place from four different sites simultaneously in addition to the head-works site. The supervision plan suggests that all these five sites will need teams of high-qualified international and national experts to continuously monitor the tunnelling and frequently carry out exploration to impose corrective measures without delays. The services also include preparation of working drawings as the works proceed and as-built drawings after completion. The construction supervision costs will be closely linked to the actual progress of the tunnelling. The planned tunnel construction progress is considered to be relatively conservative. The appraisal consultant was informed that out of the US\$11 million, approximately 3.4 million is expenses out of which about 1 million is meant for vehicles etc. The latter may be transferred to the construction budget.

The above supervision budget information was passed on to NDF. This budget needs to be checked and verified by an independent advisor to MWSDB. Therefore, the wrap-up meeting advised that the proposed supervision arrangements, staff requirements and budgets be checked and verified by the MWSDB in conjunction with the preparation of the ToR and bidding documents for the supervision services. The wrap-up meeting requested that the ToR for the construction supervision should be finished by the end of November 2000.

### Construction Supervision Funding Need

Given that the budgetary ceiling is about US\$11 million the uncovered funding gap will be in the order of US\$4 to 4.5 million. The NDF consultant made some informal inquiries to NORAD and ADB concerning the possibilities to cover this gap. It seems difficult for NORAD to fill this gap since their contribution to the project (construction) has already been increased and committed to the construction. The

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ADB would need to consider their total funding involvement before making any more commitments. SIDA was not asked, as they were not present at the wrap-up meeting. One possibility to fill the supervision gap could also be to explore bilateral export credit facilities.

### ***2.5 Project Implementation Schedule and Timetable for NDF Credit***

The overall project implementation schedule is presented in the PD of September 2000 but was not transferred to the draft MOU for the wrap-up meeting. The comments from NDF (Appendix 4) advise that the MOU should include overall indicative time schedules for all components. The processing of the NDF credit should basically be co-ordinated with the processing of the SIDA and NORAD contributions.

### ***2.6 Timetable for other Financiers' Commitment.***

It is important that all financiers prepare their contributions at the same pace. The envisaged board date for the ADB Credit is 21 December 2000, and timing of the other donors' commitments to the Diversion Scheme Component should be adjusted accordingly. The wrap-up meeting stated that the time for finalising the project preparations is quite limited, especially taking into consideration the now ongoing Nepalese holiday period. The ADB and MWSDB presented a 29-point project preparation checklist of tasks, responsibilities and deadlines to be met before the Board date of the ADB credit (21 December) followed by the other financiers including NDF. Part of these preparations will be the updating of the MOU, the PD and the RRP of the ADB.

It is important that NDF, SIDA and NORAD co-ordinate their approaches concerning funding approval preparations and conditions for effectiveness and disbursement and communicate their requirements to the ADB. The NDF consultant exchanged viewpoints with NORAD and SIDA that are doing their own appraisals of the Project with their respective team of experts covering many facets of the Project. The three teams have been discussing a broad number of common Project issues and by and by and large they are in agreement concerning approaches and critical factors of the Project. Some overall factors like water tariffs, economic and financial analysis, risk assessments, loan and disbursement conditions etc. are covered in this NDF appraisal

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report since they will appear in the appraisal reports of NORAD/SIDA. The deadline for these appraisals is October 20.

### ***2.7 Procurement Principles***

At the plenary donor meeting 26 September the ADB and MWSDB urged NDF to consider continuing the construction supervision based on direct negotiations with the current engineering design consultant by regarding this as an exceptional case. The message from NDF was that normal procurement procedures with NCB should be followed. At the wrap-up meeting, the Executive Director of MWSDB suggested applying the NCB principle for the procurement of a contractor for the Diversion Scheme Component, which was endorsed by the meeting. The MOF/MWSDB agreed to forward an official statement of the detailed supervision budget to NDF as a basis for NDF in decision-making and processing of its involvement in the Melamchi Water Supply Project. This statement will also include an explanation of the tender and procurement procedures to be followed and schedules for the re-bidding of the supervision package of the diversion scheme.

### ***2.8 Other Relevant Issues***

#### **Private Operator (PO)**

It seems to be an agreement between ADB and the other funding agencies that the contracting of a private lease operator for the rehabilitated and extended water supply and sanitation scheme is a mandatory condition for the Project. This is to secure an accountable management, operation, service delivery, and cost recovery of the new/rehabilitated water and sanitation systems. Such a condition is well justified taking into account the unsatisfactory performance of the existing and former utility organisations. The same condition will also apply for the diversion scheme part of the Project and as stressed by NORAD this shall be fulfilled before any tunnel works can start. This is to secure that there is a PO in place at the time of completion to take over and be responsible for the operation of the diversion scheme without disruption. The specific conditionalities and milestones related to this prerequisite will be further detailed in the revised MOU. The private operator issue is being handled under the

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auspices of the World Bank component, which also include the investments in distribution network rehabilitation and tariff structures.

### The Government's Political and Financial Commitment

Although the Government's commitment to the Project is implicitly in place through their signing of the MOU, NORAD, also representing SIDA, stressed the importance of the Government specifying in writing by the Ministry of Finance its political and financial commitment to the project. This statement should also reflect that the Project's national budgetary consequences and possible impacts on other national operations are well understood and accepted.

### Local Populations Affected by the Diversion Scheme

All donors emphasised the importance of the local populations being positive to the diversion scheme interventions. There are tendencies to political unrest in the villages along the rivers, where people express their suspicion to the central government. The field visit of the appraisal team to affected societies gave a sense of positive attitude towards the Project, especially concerning the possible the spin-off from the improved roads to their villages such as access to markets, schools health services. (See photos form this visit in Appendix 7). The Project has built-in mechanisms to compensate for water abstracted from the Melamchi River through a small raw water fee per m<sup>3</sup> that has to be added to the consumers' water bills. However, due attention has to be paid to the compensation principles of land expropriation for the roads to avoid inequitable practices. The Social uplift component will play an important role in explaining the project implications to the local settlements and provide positive support to the affected groups.

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### 3. NEXT STEPS

The planned timing of the immediate project activities and the necessary timetable for the processing of the planned NDF credit have been summarised in the following. The wrap-up meeting went through a checklist of tasks, deadlines and responsibilities. It is essential that the NDF, SIDA and NORAD co-ordinate their actions. Some important tasks and milestones are as follows:

<b>Event</b>	<b>Deadline</b>
NDF draft appraisal report	10 October 2000
NORAD appraisal report	20 October 2000
SIDA appraisal memorandum with recommendations	20 October 2000
MOF/MWSDB statement to NDF about the construction supervision component	Shortly after the appraisal
ADB/MWSDB updating of MOU, PD, RRP, EIA report and other critical elements	15 November 2000
Board Approval of ADB Credit	21 December 2000
NORAD/SIDA preparation of funding formalities	December 2000
NORAD/SIDA board approvals	January 2001
Envisaged tunnel construction start	December 2001

It is crucial that all written comments on the MOU of NDF (Appendix 4) and other funding agencies will be integrated in the signed version of the MOU. The ADB/MWSDB assured that both the MOU and the PD will be updated on the basis of the findings and recommendations of the loan appraisal mission before the 15 November 2000. As the ADB's Project Manager stated, "the appraisal is not finished until these amendments have been duly completed". A press conference was held in the afternoon of the wrap-up day. The article in the Kathmandu Post is attached as Appendix 8.

**APPENDICES**



## **APPENDIX 1: WORKING PROGRAMME**

### MELAMCHI WATER SUPPLY PROJECT APPRAISAL

#### **Tentative working programme for T. Damhaug's assignment**

##### ***Background***

The assignment is duly described in the "Agreement with Consultant" signed 19.09.2000. The Consultant shall provide consultancy services in connection with the joint donor appraisal for the Melamchi Water Supply Project ("the Project") in Nepal. This document outlines the tasks, approaches and working programme of the consultant, as called for in the ToR.

##### ***Objective***

The objective of the mission is to provide NDF with information and justified suggestions on specific issues of relevance to NDF's project contribution, which shall serve as a tool for NDF in making a final decision concerning further processing of the project.

##### ***Scope***

According to the ToR, the special issues to be addressed by the consultant are:

1. The status of the project, including financial packaging, as a result of the Appraisal Mission,
2. NDF's role in the overall project and the suitability of the planned NDF credit in the overall context of the Diversion Scheme Component;
3. A final commitment from MWSDB and ADB that NDF is requested to finance the Construction Supervision;
4. The estimated size of the needed financing for the Construction Supervision Component
5. the planned timing of the project activities and consequently the necessary timetable for the processing of the planned NDF credit;
6. The timetable for final commitments of the other financiers of the Diversion Scheme Component in particular;
7. The details and practicalities in relation to the procurement of a contractor for the Diversion Scheme Component;
8. Other relevant matters arising during the Loan Appraisal process.

##### ***Approach***

The consultant will work in close consultation per e-mail, phone or fax with NDF Helsinki to discuss findings, upcoming issues and suggestions to make NDF's views and position clear and obtain required instructions. He is not authorised to make any commitments on behalf of NDF.

##### ***Familiarisation***

The consultant started familiarising himself with NDF's policies and operational principles as well as NDF's history and position in the Project in an introductory meeting with Leena Saavalainen and Per Eldar Søvik of NDF in Oslo 18.09.00. NDF has indicated to the ADB and the Melamchi Water Supply Development Board (MWSDB) that it wishes to finance the Construction Supervision of the Diversion Scheme. The consultant received from NDF the following background material and project documentation as a basis for further preparations:

***(For complete list of documents, please refer to Appendix 3 "Background Documents")***

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***Meetings and fact finding***

The consultant is expected to arrange the meetings, which he considers relevant. The Melamchi Water Supply Development Board has prepared a tentative meeting programme for the Loan Appraisal process from 17 September to 4 October, hence the NDF appraisal will take place during the concluding phase of the Loan Appraisal activities. It is important that the consultant focuses on meetings and activities that most directly relate to the specific interests of NDF. Therefore, the work in Kathmandu will be a combination of participation in relevant scheduled meetings and direct contacts with individual informants and official representatives. The Consultant will discuss his findings with project personnel, Nepalese officials, including line ministries and water authorities, and representatives of the other co-financiers (particularly the Asian Development Bank, the International Development Association, NORAD and SIDA) during the assignment. Some identified key representatives and informants are as follows:

*(Please refer to Appendix 2 “People Met”)*

***Accommodation and communication facilities***

The consultant will stay on Hotel Malla in Kathmandu, Phone 977 1 410 320/382  
Fax 418 382. He can also be reached on: **damhaug@hotmail.com**

***Reporting***

The Consultant shall present a draft report with findings and recommendations in the English language by not later than Monday 9 October 2000. The final report, incorporating possible changes suggested by NDF, shall be prepared and sent to NDF in 5 copies within two weeks after the Consultant has received comments to the draft report from NDF. The final report shall become the property of NDF.

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**APPENDIX 2: PEOPLE MET**

<i>Name</i>	<i>Position</i>	<i>Affiliation</i>
Mr. Per Eldar Søvik	Vice President	Nordic Development Fund
Ms. Leena Saavalainen	Area Manager Asia	Nordic Development Fund
Mr. Dinesh Pyakural	Executive Director	MWSDB
Mr. Simon J. Allen	Advisor	Assigned to MWSDB
Mr. Arthur C. McIntosh	Senior Project Engineer Task Manager	Asian Development Bank
Mr. Richard Vokes	Resident Representative	Asian Development Bank
Mr. Arjun Goswami	Council	Asian Development Bank
Mr. M. Ali Sham	Program Manager	Asian Development Bank
Mr. Ian Walker	Economic Consultants	Consultant to ADB
Mr. Tashi Tenzing	Task Manager	IBRD (World Bank) Resident Mission Kathmandu
Ms. Thelma Triche	Privatisation & Regulation	Consultant to the World Bank
Mr. Jos van Gastel	Consultant Water Enterprise Development	Consultant to World Bank Washington DC
Ms. Ingrid Ofstad	Ambassador	Norwegian Embassy
Mr. Even Sund	Senior Adviser Energy	NORAD Oslo
Mr. Bjørn Lunøe	Consultant to NORAD	Scanteam International
Mr. Stein Hansen	Consultant to NORAD	Nordic Consulting Group
Mr. Ove Rusten	Project Manager	NORPLAN
Mr. Michael Söderbäck	Economist	SIDA
Mr. Satoshi Sugimoto	Assistant Director	JBIC

**APPENDIX 3: BACKGROUND DOCUMENTS**

- ◇ MOU between HMGN and ADB – Appraisal Mission 4 October 2000
  - ◇ Melamchi Water Supply Project – Project Document September 2000
  - ◇ NDF Procurement Guidelines;
  - ◇ Memorandum of Understanding between His Majesty’s Government of Nepal and Asian Development Bank for the Melamchi Water Supply Project (not received but will if needed be acquired in Nepal);
  - ◇ MWSDB: Melamchi Water Supply Project, Project Document, Draft July 2000;
  - ◇ MWSDB: Melamchi Diversion Scheme (MDS) Based on Water Supply Only – Brief Description of Project Components; Norplan 1 July, 2000;
  - ◇ MWSDB: Melamchi Diversion Scheme (MDS) Based on Water Supply Only, Preliminary Tunnel Design and Preliminary Analysis of Free Flow versus Full Flow Tunnel Report; Norplan 4 July 2000;
  - ◇ Draft Project Appraisal Report of NORAD, 01.08.2000-09-22;
  - ◇ Pipeline Styrelsesmøte II/98 24 april 1998 Helsinki;
  - ◇ Melamchi Development Board, Letter to NDF June 16, 2000;
  - ◇ NDF Letter to ADB 17 August, 2000;
  - ◇ NDF Standard Form (000127) Credit Agreement;
  - ◇ Letter from ADB to NDF with invitation and schedule for the Appraisal Mission;
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**APPENDIX 4: COMMENTS ON THE DRAFT MOU**

MELAMCHI WATER SUPPLY PROJECT  
LOAN APPRAISAL MISSION

## MEMO

Date: 4 October, 2000  
 To: A. C McIntosh, Asian Development Bank  
 cc: D. C. Pyakural, Melamchi Development Board  
 L. Saavalainen, Nordic Development Fund  
 P.E. Søvik, Nordic Development Fund  
 From: T. Damhaug, Consultant for NDF

**COMMENTS ON THE DRAFT MEMORANDUM OF  
UNDERSTANDING**

Reference is made to the draft MOU, which was received at the meeting with the Secretary/MOF 2 October and discussed at the wrap-up meeting 3 October. The table below gives some immediate comments and proposed actions. The memo has been cleared with NDF Helsinki, Finland.

<b>Para</b>	<b>Clause</b>	<b>Issue/Comment</b>	<b>Proposed action</b>
7.	4. Water Tariff Policy pp 4 last line	There were different views among the donors as to whether the block tariff or the uniform rate tariff system would be the most appropriate. Therefore, it is suggested that the MOU only should reflect the overall guiding principles about cost recovery etc. and that the Government decides on the tariff structure when the options and consequences have been analysed in connection with the completion of the Project Document.	Rewrite the clause to reflect this comment
10.	D. Cost Estimate and Financing Plan pp 5	The pledged NDF Credit is 5 million SDR (approximately 6.5 million USD at the current exchange rate) for the construction supervision of the diversion scheme. See comments on Appendix 11.	Correct the figure for NDF Credit to \$6.5 million
14.	E. Implementation pp 6	The construction supervision of the diversion scheme has not been mentioned in the draft MOU. The wrap-up meeting concluded that the Melamchi diversion scheme construction supervision should be subject to re-bidding according to	Write a new paragraph to reflect this comment

		agreed procurement procedures between the MWSDB and funding agencies. NDF has pledged about \$6.5 million for this component and additional funding to reach the supervision budget of about US\$ 11 million will be sought for example from other sources like ADB or bilateral credit facilities. Procurement details in the case of combined financing for the Construction Supervision Component will be looked into. The ToR for construction supervision will be prepared by MWSDB with the assistance of NVE by the end of November 2000.	
15.	4 Donor co-ordination and Reporting	This paragraph should be harmonised with the Donor Co-ordination clause of Appendix 11 item 9 – 13. Appendix 9 is redundant in the MOU.	Move Appendix 9 to the PD.
17.	6 Procurement including Appendix 10	The referred Appendix 10 “Indicative Procurement Packaging” do not reflect Construction Supervision for the diversion scheme.	The construction supervision package (US\$ 11 mill) to be included in Appendix 10.
18.	F. O&M	Footnote 6 does not add any value to the MOU	Delete footnote 6
	H. Insurance and Conditions pp 8	The stated conditions in H seem out of context. Appendix 11 could possible replace paragraph H. In general, the number of conditions should be reduced to a few mandatory ones instead of the long list. The wrap-up meeting addressed the pertinent details.	Consider using Appendix 11 in the main text (after having revisited the conditionalities) to replace H.
	I. Action Plan item (iv)	The implications of paying affected people through a water levy should be carefully assessed. This is not a common practice in handling of water rights in inter-basin transfers and it is necessary to make sure it does not set precedence for other national or international river basin projects of the ADB and other donors involved.	ADB to consider the consequences of the proposed arrangement and take necessary reservations.
	Appendix 3	The <u>Background</u> operates with a demand of 189 Ml/d for 1.4 million people, which gives an overall specific demand of 129 litres per capita per day (l/c.d). This is a fairly high figure taking into consideration the current average standard of living in the supply area. The <u>Objectives</u> operate with specific demands	Cross check and harmonise the specific design demands between Appendix 3 and the Project Document.

		in the order of 230 l/c.d derived from 600 MI/d and 2.6 million people in 2031.	
	Appendix 5 page 1	“Detailed Cost Estimates” should rather be “Summary Cost Estimates”. The table gives a cost estimate for the Melamchi Diversion Scheme of US\$94.7 million. This is not in accordance with the estimates in the September PD, which says \$99.4 million including \$11 million for construction supervision.	Ensure that the cost figures in the MOU are in accordance with the PD to ensure consistent base costs and avoid confusion.
	Appendix 5 page 2	The NDF financing should be US\$6.5 million at the current exchange rate between SDR and USD.	Change the figure
	Appendix 7	The engineering supervision of the diversion scheme has been omitted in the “Summary of Consulting Services”.	Include supervision of the diversion scheme
	Appendix 11 Conditions of Loan Effectiveness clause 5	The footnote 7 mentions \$7 (or rather 6.5) million for the engineering supervision of the diversion scheme. The footnote should also mention that additional funding is being sought to cover the additional funding requirements of the supervision package.	Consider changing the footnote.
Other Remarks and Suggestions			
a)	The MOU should contain overall activity and time schedules for all project components		
b)	The MOU should include an overall indicative timetable for the contributions of all funding agencies.		
c)	The appraisal consultant has not studied the RRP since it is assumed that all relevant changes made in the MOU will be transferred to the PPR.		
d)	NDF’s appraisal mission advises that MOF/MWSDB forward to NDF an official statement of the detailed supervision budget, explanation of the tender and procurement procedures and schedules for the re-bidding for the supervision package of the diversion scheme.		

## APPENDIX 5: SUMMARY OF CAPITAL EXPENDITURE AND TOTAL PROJECT FINANCING COSTS OF THE SEPTEMBER 2000

**Table 0.1 Summary of Capital Expenditure**

Annual Capital Costs by Component and Year (Base Costs) (2000 Prices)	Total \$m	FX \$m	LC \$m	2000 \$ '000	2001	2002	2003	2004	2005	2006	2007	2008
Base Project Costs.	98.4	62.9	36.6	0	4866	1953	17843	28547	28017	18192	0	0
Melamchi Diversion Scheme	5.7	0.6	5.1	0	101	760	1308	1498	1275	771	0	0
Social Uplift Program (SUP)	19.4	4.7	14.7	0	10698	8668	0	0	0	0	0	0
Access Roads	62.3	54.0	8.3	0	0	1000	2000	29625	29625	0	0	0
Water Treatment Plant	59.0	48.8	10.2	0	300	13046	13046	13020	19633	0	0	0
Bulk Distribution System	18.0	9.0	9.0	0	0	5000	6000	7000	0	0	0	0
Surface and Groundwater Water Improvements	54.3	37.4	16.8	0	0	0	4210	13394	13622	13017	5000	5000
Distribution Network Improvement	5.0	3.5	1.5	0	2500	2500	0	0	0	0	0	0
NWSC Urgent Distribution Works (OPEC)	12.0	8.4	3.6	0	2000	4000	4000	2000	0	0	0	0
Rehab and Other Distribution Improvements	3.0	2.4	0.6	0	600	750	510	450	390	300	0	0
PSMC Contract Payments	5.0	4.0	1.0	0	0	1250	1250	1250	1250	0	0	0
Optimising Water Use in KV	10.0	6.8	3.2	0	0	1500	1500	2000	2000	3000	0	0
Wastewater System Improvement	5.0	4.5	0.5	0	833	833	833	833	833	833	0	0
Project Management Consultants	358.0	247.0	111.0	0	21899	41260	52500	99617	96645	36113	5000	5000
Total ( Including physical contingencies )												

### Summary of Total Project Costs (Nominal prices)

Base Costs (plus physical contingencies)	358.0	247.0	111.0
Add Price Contingencies	29.6	20.4	9.2
Add Taxes and Duties	38.3	0.0	38.3
Add Interest During Construction	42.1	7.8	34.3
Total Financing Cost	468.0	275.2	192.7
	100.0%	58.8%	41.2%

Physical Contingencies - 10% of base costs

Taxes and Duties - 10% VAT on all expenditure plus 1% import duty on foreign costs

Price Contingencies - 2.4% per annum on foreign and local costs.

Interest During Construction - 8.0% interest on 50% of project costs including taxes and duties and price contingencies.

3. Summary Costs and Financ (2)

Tables 0.1,0.2

14-09-00

**Table 0.2 Total Project Financing Costs, Funding Sources, and Financing Gap.**  
(Includes price contingencies, taxes and duties and IDC - Nominal Prices)

Financing Cost by Component	Possible financing		Financing Terms to HMG/N	
	\$m	Rs m	\$ m	
Melanchi Diversion Scheme	129.3	9149	60.0	NORAD/SIDA/NDF
Social Uplift Program (SUP)	7.4	525	7.4	ADB
Access Roads	25.9	1835	8.6	OPEC
Water Treatment Plant	81.1	5735	60.0	JBIC
Bulk Distribution System	77.6	5488	69.5	ADB
Surface and Groundwater Source Improvement	23.7	1679	15.0	JICA
Distribution Network Improvement	70.1	4961	64.1	IDA
NWSC Urgent Distribution Works (OPEC)	6.7	475	5.4	OPEC
Rehab and Other Distribution Improvements	16.0	1129	12.8	IDA
PSMC Contract Payments	4.0	281	3.2	IDA
Optimising Water Use in KV	6.6	465	6.5	ADB
Wastewater System Improvement	13.0	920	10.0	ADB
Project Management Consultants	6.6	465	6.6	ADB
<b>Total</b>	<b>468.0</b>	<b>33108</b>	<b>329.0</b>	
<b>Possible Financing - 2001 to 2007</b>				
	\$m	Loan	Grant	
ADB	100.0	100.0		
IDA	80.0	80.0		
JBIC	60.0	60.0		
JICA	15.0		15.0	
OPEC	14.0	14.0		
NDF	10.0	10.0		
SIDA	25.0	12.5	12.5	
NORAD	25.0		25.0	
<b>Total</b>	<b>329.0</b>	<b>276.5</b>	<b>52.5</b>	<b>16.0%</b>
<b>Financing Gap / HMG/N Contribution</b>	\$m	% Total		
Financing gap to be met by HMG/N	139.0	29.7%		
Of which Taxes and duties and Local IDC	72.6	15.5%		
Project Financing to be met by HMG/N	66.4	14.2%		
Annual requirement ( over 8 years, 2001 - 08)	8.3			

( Note financing normally does not exceed 80% of a component)

SIDA mixed credit. Commercial loan \$12.5million, repayment over ten years no grace period at 10% rate of interest

Grant sources percent of total external funding.

1. Summary Costs and Finance (2)

Tables 0.1,0.2



APPENDIX 6: COST ESTIMATES AND FINANCING PLAN OF THE  
OCTOBER 2000 MOU

Appendix 5, page 1

DETAILED COST ESTIMATES

(2000) Prices	Total	FX	LC
	\$m	\$m	\$m
<b>Base Project Costs</b>			
Melamchi Diversion Scheme	94.7	62.5	32.2
Social Uplift Program (SUP)	4.0	0.5	3.5
Access Roads	21.9	8.3	13.6
Water Treatment Plant	48.0	40.8	7.2
Bulk Distribution System	59.6	47.1	12.5
Distribution Network Improvement	59.5	41.7	17.9
NWSC Tanks & Tankers etc	1.5	1.2	0.3
PO Rehabilitation Distribution	14.1	9.9	4.2
Other Env. and social improvements	6.4	0.8	5.5
Wastewater System Improvement	12.5	9.5	3.0
Project Management Consultants	16.2	8.1	8.1
<b>Total (Including physical contingencies)</b>	<b>338.4</b>	<b>230.4</b>	<b>108.0</b>
Base Costs (including physical contingencies)	338.4	230.4	108.0
Add Price Contingencies	29.8	20.3	9.5
Add Taxes and Duties	34.7	-	34.7
Add Interest During Construction	37.8	7.4	30.4
<b>Total Cost</b>	<b>440.8</b>	<b>258.2</b>	<b>182.6</b>
	<b>100.0%</b>	<b>58.5%</b>	<b>41.5%</b>

Physical Contingencies	-	10% of base costs
Taxes and Duties	-	10% VAT on all expenditures plus 1% import duty on foreign costs
Price Contingencies	-	2.4% per annum on foreign and local costs
Interest During Construction	-	8% interest on 50% of project costs including taxes and duties and price contingencies
Exchange Rate	-	US\$ = 73.25 NRs

**FINANCING PLAN DETAILS**  
(\$ million)

Item	FX	LC	Total	HMGN	Total	ADB	WB	JBIC	NORAD	SIDA	NDF	OPEC
Melamchi Diversion Scheme	70	52	122	32	90	25			29	25	11	
Access Roads	9	20	29	15	14							14
Social Uplift Program	1	4	5	1	4	4						
Water Treatment Plant	46	16	62	10	52			52				
Bulk Distribution System	52	25	77	20	57	57						
Distribution Network Improvement	48	33	81	16	65		65					
PO Distribution Improvements	11	8	19	4	15		15					
Wastewater System Improvement	11	5	16	4	12	12						
Project Management	9	11	20	6	14	14						
Other Env. and Social Improvement	1	7	8	2	6	6						
Immediate Improvements *	1	1	2	0	2	2						
<b>Total</b>	<b>259</b>	<b>182</b>	<b>441</b>	<b>110</b>	<b>331</b>	<b>120</b>	<b>80</b>	<b>52</b>	<b>29</b>	<b>25</b>	<b>11</b>	<b>14</b>
	<b>59%</b>	<b>41%</b>	<b>100%</b>									

Note: All amounts are tentative and based only on informal commitments in principle\* as of October, 2000.

\* Includes tanks and tankers for NWSC, training, hygiene education and water source studies.

ADB = Asian Development Bank, HMGN = His Majesty's Government of Nepal, JBIC = Japan Bank for International Cooperation, NDF = Nordic Development Fund, NORAD = Norwegian Agency for Development Cooperation, OPEC = Organization of Petroleum Exporting Countries Fund [OPEC Fund].

SIDA = Swedish International Development Fund, and WB = World Bank.

*APPENDIX 7: PHOTOS FROM THE MELAMCHI FIELD VISIT*



Improvised Public Meeting 1 by ADB in Mahankal Village



Improvised Public Meeting 2 by ADB in Mahankal Village



Camp Tala Marang



Melamchi Valley Children

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## APPENDIX 8: NEWSPAPER ARTICLE AFTER THE PRESS CONFERENCE



## Melamchi donors upbeat about project

### Post Report

KATHMANDU, Oct 3 - The donors funding the multi-million dollar Melamchi Drinking Water Supply Project may start sanctioning the loans from early 2001. Officials and donor representatives who held review meeting this week today said the outcomes were very much fruitful.

"The outcomes of the review and discussions have been very positive," Dinesh Chandra Pyakurel, Executive Director of Melamchi Water Supply Development Board told reporters Tuesday.

"Understandings have been reached amongst the financing partners including the government of Nepal on

the project's features, financing, implementation arrangements, donor coordination, policy issues and so on."

"It is now expected that ADB will present to its Board for consideration of approval a loan amounting to US \$ 120 million in December this year. This will be followed by approval from other donors for financing their respective commitments," he added.

Scheduled to be completed in 2006, the US \$ 430-plus million project will divert 170 million litres of drinking water (mld) daily to Kathmandu Valley whose over 1.5 million population suffer from acute scarcity of drinking water every summer. The project has been granted top priority by the government.

(See *Melamchi* page 8)

## Melamchi: Project

(Contd from page 1)

Representatives of almost all the donor agencies--Asian Development Bank (ADB), Norwegian development agency, NORAD, Swedish development agency, SIDA, World Bank (WB) and Japanese Bank of International Cooperation (JBIC) --who converged in the capital last week were part of the project's appraisal mission.

"We have made a lot of progress," ADB's Resident Representative to Nepal, Richard Vokes said shedding light on the outcomes of the meet. "The joint mission has gone very well...Now Nepal must ensure efficient and effective use of the Melamchi water."

ADB has committed to provide US \$ 120 million, NORAD and SIDA US \$ 25 million each (total US 50 million), Organization of Petroleum Exporting Countries (OPEC) US \$ 14 million (which will be channelled through ADB). World Bank "US \$ 150 plus US \$ 65 million" and JBIC US \$ 52 million for the project.

The government of Nepal is investing 25 percent of the total cost - US \$ 110 million - in the project.

Nepal is receiving the assistance provided by NORAD as grant, SIDA as mixed credit - meaning half grant half loan - and all the rest as soft loan.

Melamchi project was chosen as the best long-term alternative amongst the 22 alternatives studied since 1988 on technical, social, environmental and economic grounds, to ease the Valley's chronic water shortage.