

OVERSEAS DEVELOPMENT ADMINISTRATION



ARCHIVE

## HYDROMETRY PROJECT – SOMALIA

### Inception Report Phase 3

**Sir M MacDonald & Partners Ltd**  
Consulting Engineers  
Demeter House, Cambridge CB1 2RS  
United Kingdom

in association with

**INSTITUTE OF HYDROLOGY**  
Wallingford, Oxon OX10 8BB  
United Kingdom

**April 1988**

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## **1. INTRODUCTION**

The Terms of Reference for the project require Progress Reports from the Consultant at six monthly intervals, together with a Final Report at the conclusion of the two year project period. In view of the length of time which has elapsed since the end of the previous phase, Phase 2, of the project, it is considered that a brief Inception Report would be useful to establish project priorities and in particular to identify any areas in which additional resources in terms of time or money may be required.

## **2. EQUIPMENT**

### **2.1 Equipment from Phases 1 and 2 of the Project**

All the equipment procured using ODA funds during the earlier phases of the project (November 1983 to June 1986) was handed over to the Ministry of Agriculture (MOA) in June 1986, except for certain items which were handed over later following repair or replacement in England. Much of this equipment is unfortunately either unavailable to the project or in an unsatisfactory condition.

The computer had almost reached the end of its useful life by the end of Phase 2, primarily because of the harsh operating conditions, and it had been agreed that a new computer would be required for Phase 3. The original project Land Rover is still in use at the Ministry of Agriculture, but is not at present available for the project. However, this was only intended to be back-up facility to the new Land Rover acquired for Phase 3.

The remaining equipment comprises a range of hydrology field equipment (current meters and associated parts) and hydrometric station equipment (gauge boards, tools and construction materials/hardware). To date there has not been sufficient time for a thorough check, but a few minor items appear to be missing and the condition of some others is poor. Deterioration was to some extent inevitable in the Somali environment. A detailed check will be carried out in due course; it seems probable that some replacements will be required.

### **2.2 New Equipment Under Phase 3**

A substantial quantity of new equipment has been ordered and was due to be shipped to Somalia on or after 28th March 1988. The major items are a new diesel Land Rover and a replacement computer system which is based on the most up-to-date range of IBM computers (PS/2 Model 50). Further field and laboratory equipment will allow the range of field observations to be extended to include sediment monitoring.

In accordance with the budget provisions, a 500 VA uninterruptible power supply (UPS) with a 10 minute battery back-up is included. This will provide full protection for the computer equipment from likely mains fluctuations, and will also avoid loss of data if the mains supply should fail during program operation. Because the mains voltage in Mogadishu is generally low (often about 160 V) an additional transformer will be required for the air-conditioner. A full voltage stabiliser or UPS to run such high power consumption equipment would be prohibitively expensive. However, many other offices in the Ministry of Agriculture have air-conditioners supported by local transformers (purchased in Mogadishu) which generally operate successfully. It is considered appropriate to purchase such a transformer locally. This should be treated as a priority so that the air-conditioner can be operating as soon as possible after the computer arrives in Mogadishu.

The major equipment not yet ordered is the set of radio transceivers for the transmission of data to and from Mogadishu for flood warnings.

Discussions on this have already taken place in Mogadishu and a quotation is expected shortly. It is intended that this equipment will complement that already in use by the Flood Early Warning System (FEWS) Project at the Ministry of Agriculture.

## **2.3 Additional Equipment**

The poor office environment of the Hydrology Section has undoubtedly contributed to the problems with the computer and to the occasional low morale and poor attendance record of the counterpart staff. With the UPS and air-conditioning, it is expected that the new computer will prove to be more robust than the previous one. However, the office itself will be unsatisfactory for project staff unless new desks and chairs are provided. A lockable bookshelf/cabinet is also required if the offer of books from British Council funding is to be accepted. Calculators provided previously are no longer working reliably, and there is a complete dearth of minor office consumables such as pens, pencils, and notebooks. The relatively minor investment required to improve office facilities should be amply rewarded through increased productivity of project staff. Since it is unrealistic to expect local funding for these items, it is strongly recommended that provision be made within the project budget.

## **3. CURRENT PROCEDURES AND IMMEDIATE REQUIREMENTS**

### **3.1 Fieldwork**

Very little fieldwork has been undertaken since the conclusion of Phase 2 in June 1986. This is primarily due to the unavailability of transport/fuel/money for Hydrology Section staff. A substantial backlog of fieldwork therefore exists on the resumption of the project. This includes the replacement of a number of gauge plates at Afgoi, Audegle, and Bulo Burti and repainting of plates throughout the network, in addition to the reinitialisation of the automatic recorders.

### **3.2 Office Work**

For a period after Phase 2, the project computer continued to function and further entry of data to the database was undertaken by Section staff. Final breakdown of the computer occurred in November 1986. Despite extensive efforts by the MMP hydrologist during a visit to Mogadishu on other business in March 1987, it did not prove possible to restart the machine.

In the absence of the computer, routine filing of incoming data has continued. Figures 1 to 3 show data received for 1986 to 1988. No quality checks have so far been carried out. It can be seen that for most stations the data return has been good; exceptions are Mahaddey Weyn where data are believed to be with the district co-ordinator and Bulo Burti where most of the gaps are due to missing staff gauge plates. It is too soon to know whether the poor returns for early 1988 represent a deterioration in data collection or simply the slow return of data to Mogadishu.

Two further stations, Kamsuma and Kurten Waarey, are excluded from the figures because virtually no data are available. During Phase 2 the station at Kamsuma was rehabilitated and a new station was created at Kurten Waarey, but no



## Audegle

## Data Returns from Primary Gauging Stations 1988

[illegible]



observers have been appointed by the Ministry of Agriculture. The appointment, training and paying of observers at these two hydrologically important sites should be regarded as a most urgent requirement of the Hydrology Section.

#### **4. PROJECT IMPLEMENTATION**

##### **4.1 Staffing**

During the first two phases the project was staffed by visits of between one and four months by the MMP hydrologist and IOH programmer/hydrologist. The intermittent nature of these inputs was found to be somewhat unsatisfactory and it was agreed that a continuous consultant presence in Somalia was desirable. Accordingly, the programme provides for an MMP field hydrologist to be based in Mogadishu throughout the project, supported by shorter inputs from IOH and MMP staff.

The Consultants have further studied the programme since the resumption of the project and have proposed a minor amendment to the IOH component of the workload. This entails a reduction in the amount of UK development work in order to increase the emphasis on work in Somalia. This would involve a visit by a senior hydrologist who was closely involved in the development of the Shebelli model during Phase 2. The views of ODA and the Government of Somalia on this adjustment of the original programme are awaited.

##### **4.2 Timing of Inputs**

Following a meeting in Nairobi with the Engineering Adviser to the British Development Division in East Africa (BDDEA), the MMP field hydrologist arrived in Mogadishu on March 16th. With mid-tour leave due in late September 1988, his 10.5 month input in Somalia (comprising half the total allocated to the field hydrologist) will end in late February 1989.

The IOH input in Somalia will begin as soon as is practicable after the arrival of the new computer. It is hoped that this will be at the beginning of May 1988. The timing and distribution of IOH inputs during the overall project period will be determined after discussions between the Consultants, MOA and BDDEA.

The consultant hydrologist (MMP) has two short inputs in Somalia. It is tentatively planned that the first will be arranged to overlap with the six-monthly monitoring visit by BDDEA. It is expected that the IOH programmer/hydrologist will also be in Somalia at that time.

##### **4.3 Reporting Dates**

Some slight changes to the reporting dates are expected because the date for the Final Report in Clause 6 of the Contract is considerably before the scheduled conclusion of the project. The Consultants propose the following approximate schedule for reports:

Early April 1988	Inception Report
Early September 1988	1st Progress Report
End February 1989	2nd Progress Report
August 1989	3rd Progress Report
End February 1990	Final Report

#### 4.4 Liaison With National Water Centre

In accordance with the Terms of Reference a link has already been established with the National Water Centre (NWC) which was established in 1986. Both the Hydrology Section and NWC have expressed enthusiasm for close co-operation. During the earlier parts of the project there was close co-operation in both office and fieldwork with the Ministry of Jubba Valley Development; it is hoped that similar co-operation with NWC will also be mutually beneficial.

The MMP hydrologist has also had meetings at the British Embassy with Mr R. Huxley (Charge d'affaires) and with Mr C. Ramsden of the British Council. As referred to earlier, the British Council has allocated money to the Hydrometry Project in order to extend the Department's library. A book list is currently being prepared.

#### 5. FINANCIAL CONSIDERATIONS

The Contract includes a substantial financial contribution from the Government of Somalia (GOS) amounting to over two million Somali shillings (approximately £12 000) per year. This was due to cover fuel and other vehicle costs and counterpart field allowances. However, it now appears likely that finances from GOS will be not more than SoSh 300 000 per year which would cover part but not all of the field allowances. GOS will be unable to contribute towards vehicle costs. The shortfall in allowances may necessitate some adjustment to the proposed field programme. Some of the fuel costs can be covered under Clause 18 of the Contract, but for full implementation of the project programme some additional finance will be required for costs in Somalia.

The Contract includes an allowance for contingencies: it is proposed that part of this should be used to increase the allowance for Consultants' vehicle running costs (Tables 1.1D, 1.2D and 1.3C) to £450 per month. It should be noted that part of the contingency has already been allocated to cover the hire of a Land Rover for the period until the new vehicle is delivered; the hire costs together with the above proposed increase would account for about £5 500 to £6 500 out of the total contingency of £28 471, the exact amount depending on the delivery date of the new Land Rover.

Some of the contingency sum could also be required to cover increases in some equipment costs between the original proposal and procurement, together with possible equipment replacement, the transformer and office furniture referred to in Sections 2.1 to 2.3 respectively. However, it is believed that there may be some savings on the budget cost for the radio transceivers: because the network already operated by the FEWS Project includes installations at Lugh Ganana, Bardheere and Beled Weyn it should be possible to reduce the required number of transceiver sets.

The Terms of Reference provide for an extension of the network of automatic recorders after an assessment of the operating performance of the existing recorders. The budget sum allocated to cover additional recorders and consumables (such items as paint, angle iron and cement) is £15 000. A considerable part of this sum will be needed for the recorder installation at Kurten Waarey, which was not completed before the end of Phase 2. The possibility that further money may be required for repairs to the other four installations will be investigated as soon as field visits can be arranged. Unless major rehabilitation is required there should be sufficient balance for several additional recorders. The potential sites for these will be discussed with MOA in due course, but because this year's low flow period is almost over, installation work is scheduled for early 1989 and hence this is less urgent than much of the other planned work.

## 6. CONCLUSIONS

A number of potential financial adjustments have been identified. At this early stage of Phase 3 it is considered likely that all can be accommodated within the existing overall budget, partly by re-allocating some of the equipment costs and partly by using a component of the contingency allowance. The first Progress Report in September 1988 will include a more detailed assessment of costs for the remainder of the project, particularly with reference to the existing and planned automatic recorders.

The priorities for the initial month are to rehabilitate staff gauges and to improve the flow of data from observers to Mogadishu, and to improve the office environment. Thereafter (when it is hoped that the computer will have arrived), there will be a massive backlog of office work to be undertaken; fieldwork will continue in parallel with this, with current metering being resumed.

