

PD-ABS-311  
105269

**EMERGENCY MEDICAL ASSISTANCE TO DAMAGED AND  
LOOTED HEALTH ZONES, SONABATA AND NGIDINGA  
HEALTH ZONES, LUKUYA DISTRICT, BAS CONGO,  
DEMOCRATIC REPUBLIC OF CONGO**

**OFDA FINAL REPORT**

**MAY 2000**

**Directors** Peter Elwes (Chairman), Baroness Cox of Queensbury, Dr Penelope Key, George Littlejohn, Nicholas Mellor, Dr John Porter, Mark Sater, Charles Stewart-Smith, Dr Christopher Besse

**Patrons** Sir Donald Acheson, Professor June Clarke, Christophèr Deuters, Mrs Jessica Douglas-Home, Mrs Mary Fagan, Martin Griffiths, Lord McColl of Dulwich, Eric Newby,

Sir Peter Ramsbotham, Professor Sir Leslie Turnberg

**MERLIN (Medical Emergency Relief International)** Registered charity no. 1016607 Merlin Board Limited, a company limited by guarantee

Registered in England and Wales under company no. 2823935 Registered company address: 95 Aldwych, London WC2B 4JF

## Table of Contents

<b>I. EXECUTIVE SUMMARY</b>	<b>3</b>
<b>II. PROGRAM OVERVIEW</b>	<b>7</b>
A. Goals And Objectives Of The Program As Outlined In The Proposal	7
B. Profile Of Targeted Populations And Needs Identified	8
<b>III. PROGRAMME PERFORMANCE</b>	<b>9</b>
A. Program Performance Vis-À-Vis Objectives	9
B. Positive Effects Of Program On Target Populations	21
C. Effect On Overall Program Performace Of Unforeseen Circumstances	21
<b>IV. RESOURCE USE / EXPENDITURES</b>	<b>23</b>
A. Summarization Of Resources Committed	23
B. Breakdown Of Expenditure By Objectives	24
<b>V. CONCLUSION</b>	<b>25</b>

## I. EXECUTIVE SUMMARY

### Final Report

Organisation:	Medical Emergency Relief International ( <b>Merlin</b> )
Mailing Address:	5-13 Trinity Street, Borough, London SE1 1DB
Date:	29-05-00
Contacts:	Anne Nolan (Operations Manager) Linda Doull (Senior Health Advisor)
Telephone:	(44) 020 7378 4888
Fax:	(44) 020 7378 4899
E-mail Address:	hq@merlin.org.uk

Programme Title:	Emergency Medical Assistance to Damaged and Looted Health Zones, Bas Congo
Country:	Democratic Republic of Congo
Disaster/Hazard:	War affected population, damaged and looted health facilities.
Time period covered by Report:	19 <sup>th</sup> February to 31 <sup>st</sup> December 1999 (Includes 2-Month Non-Cost Extension)

### SUMMARY OF ACTIVITIES UNDERTAKEN AND PROGRESS MADE IN REPORTING PERIOD

Between February and December 1999, Merlin has re-established access to basic health care services at the primary and secondary level in parts of Sonabata and Ngidninga health zones, Bas Congo, DRC. This has been achieved through the supply of equipment (including laboratory and cold chain), affordable essential medicines, training, support and technical supervision of health staff, minor repairs to physical infrastructure and the rehabilitation of water and sanitation systems. Health facilities targeted for such support were:

- 1 hospital, 1 reference health centre and 4 health centres in Sonabata health zone
- 1 hospital and 6 health centres in Ngidinga health zone

Despite security, geographical and logistical constraints limiting access to some of the targeted facilities and causing often severe implementation delays, Merlin has been able to complete the project objectives as planned with isolated exceptions. Support to Kindompolo HC ceased mid-project due to increasing insecurity close to the Angolan border. Activities in Mbanza Mbata HC were not completed following structural collapse.

During this health project, Merlin has focused on the 5 most common causes of morbidity and mortality in the supported health zones. A combination of training, supervision and technical support has been the major strategy used to achieve quality improvements in the diagnosis and treatment of these diseases. Merlin has trained all the nurses in supported facilities who are in charge of outpatient consultations.

Merlin has also assisted the central MoH and BCZS implement an improved epidemiological surveillance system in supported health facilities. Whilst there have been signs of improvement in the quality of reporting during this short intervention, more work is required for this system to activate appropriate response to disease outbreak such as diarrhoea and measles, which continually threaten the population of both health zones.

Merlin has worked closely with the BCZS and UNICEF in order to re-activate EPI services, which were badly damaged during the conflict. New cold chain equipment has been supplied to existing stock sites as well as newly identified sites with the aim of improving supplies and increasing access to good quality vaccines. Merlin also provided logistical assistance during the 3-phase National Immunisation-Days.

In view of the increased threat from diarrhoeal disease in both health zones, Merlin improved the water supply, general hygiene and waste disposal at all supported facilities. These facilities are often used by community members for household use. This improvement was achieved through a number of activities implemented by Merlin in close collaboration with communities and health staff including the construction of VIP latrines, waste pits, rain-water collection systems and repair of existing water storage tanks.

Merlin's assistance to the health sector in Sonabata and Ngidinga, was based on active participation with the local health structure and its longer term partners including, Catholic Relief Services (CRS), Bureau Diocesain Oeuvres Medicales (BDOM) and 'Societe Solidarite Protestante Belgique'. From the outset of this short-term intervention Merlin openly discussed their intention to effect a planned withdrawal of activities once the emergency was over and immediate needs addressed. Subsequently, Merlin withdrew from Ngidinga health zone in December following a smooth transition of responsibilities and activities to BDOM. Political problems within Sonabata health zones and the subsequent departure of Solidarite Protestante negated the opportunity for a similar handover. Merlin therefore handed back responsibility to the BCZS, mid-December.

**Objective # 1: To re-establish basic health care delivery capacity of 10 health centres and 3 hospitals in Sonabata and Ngidinga Health Zones affected by recent events**

**Indicator and Current Measure:**

**1. Number of target facilities re-established**

**Sonabata** - 1 hospital, 1 referral health centre and 4 health centres as originally planned.  
(Equal to 9% of total facilities in health zone)

**Ngidinga** - 1 hospital and 4 out of 6 health centres originally planned. (Equal to 20% of total facilities in health zone)

Lack of access to Kindompolo (security reasons) and collapse of Mbanza Mbata building prevented re-establishment.

**2. Number and percentage of health workers using standardised diagnostic and treatment protocols**

**Sonabata** - 6 (100%) Merlin supported facilities have access to and use standardised protocols

**Ngidinga** - 5 (100%) Merlin supported facilities have access to and use standardised protocols.

**3. Number and Percentage of the static population using the supported facilities**

**Sonabata** - 35 consultations/per 100 persons/year at Merlin supported facilities

**Ngidinga** - 38 consultations/per 100 persons/year at Merlin supported facilities.

**4. Number and percentage of health facilities with re-established diagnostic facilities**

**Sonabata** - diagnostic facilities re-established in 1 hospital, 1 RHC and 4 HCs (100% of target)

**Ngidinga** - diagnostic facilities re-established in 1 hospital and 4 out of 6 Hcs (71% of target)

**5. Number and percentage of BCZS with functioning cold chain**

Central cold chain re-established in 2 (100%) Merlin supported BCZS.

**6. Number and percentage of health facilities with functioning health information system (HIS)**

**Sonabata** - 4 out of 6 (66%) supported health facilities have functioning HIS.

**Ngidinga** - 5 out of 7 (71%) supported health facilities have functioning HIS.

**7. Number of health facility staff trained during the project period**

**Sonabata** - 18 participants attended health management training in June

20 participants trained in use of standard diagnostic and treatment protocols during  
*August*

8 participants attended laboratory training during December

**Ngidinga** - 12 participants attended health management training in June

19 participants trained in use of standard diagnostic and treatment protocols during  
*September*

6 participants attended laboratory training in December.

**Objective # 2: To carry out emergency water and sanitation repairs in health facilities to reduce the risk of cross-infection and contamination**

**Indicator and Current Measure:**

**1. Number and percentage of health facilities with one or more functioning flush toilet/VIP latrine**

Sonabata - 6 (100%) of supported facilities have functioning toilet/latrine

Ngindinga - 4 (66%) of supported facilities have functioning toilet/latrine

**2. Number and percentage of health facilities with safe waste disposal pit**

Sonabata - 3 (50%) of supported facilities have safe waste disposal pit

Ngindinga - 3 (50%) of supported facilities have safe waste disposal pit.

**3. Number and percentage of health facilities with supply of potable water**

Sonabata - 6 (100%) of supported facilities have potable water supply

Ngindinga - 4 (66%) of supported facilities have potable water supply

**4. Number and percentage of hospitals/RHCs with functioning water tanks**

Sonabata - 2 (100%) of supported hospital/RHCs have functioning water tank.

Ngindinga - 1 (100%) of supported hospitals has functioning water tank

**Objective # 3: Restitution of cold chain facilities in Ngindinga and Sonabata Health Zones**

**Indicator and Current Measure:**

**1. Number of sites in each health zone where vaccine effectively stored**

Sonabata - Functioning cold chain available in 1 BCZS and 3 strategic health centres

Ngindinga - Functioning cold chain available in 1 BCZS and 3 strategic health centres

**2. Availability of vaccine in both health zones**

Sonabata - vaccine available on a monthly basis in 6 (100%) of supported health facilities

Ngindinga - vaccine available on a monthly basis in 5 (71%) of supported health facilities

## II. PROGRAM OVERVIEW

### A. GOALS AND OBJECTIVES OF THE PROGRAM AS OUTLINED IN THE PROPOSAL

**Overall Project Goal:** Re-establish a functioning health system in Sonabata and Ngidinga health zones, Bas Congo, to ensure accessible health care for all

**Objective #1:** To re-establish basic health care delivery capacity of 10 health centres and 3 hospitals in Sonabata and Ngidinga health zones affected by the recent events.

**Illustrative Activities:**

- To restock war affected health facilities with essential medicines and essential medical equipment
- To provide laboratory equipment and materials
- To supply materials for cold chain at central levels
- To undertake small rehabilitation work in co-operation with CRS
- To re-establish basic health information systems in each health facility
- To provide supervision and re-fresher training of health and laboratory staff

**Objective #2:** To carry out emergency water and sanitation repairs in health facilities to reduce the risk of cross infection and contamination.

**Illustrative Activities:**

Working with affected communities:

- To provide basic materials and technical support for reconstruction of latrines
- To provide basic materials and technical support for waster disposal pits
- To carry out essential repairs to 3 damaged water sources
- To repair water tanks at Sonabata hospital

**Objective #3:** Restitution of cold chain facilities in Ngidinga and Son-Bata health zones

**Illustrative Activities:**

In close co-operation with UNICEF:

- To establish central cold chain facilities in the Bureau Central (BC) of each health zone
- To provide logistical and transport support for the initial supply of vaccines from Kinshasa whilst BC transport is re-established

## B. PROFILE OF TARGETED POPULATIONS AND NEEDS IDENTIFIED

The Democratic Republic of Congo (DRC) has experienced two politically motivated wars in the past three years and remains gripped by ongoing conflict despite a peace agreement negotiated in Lusaka in 1999. The inhabitants of the southern Bas Congo region have been affected by this conflict since August 1998 when a major offensive by rebels and subsequent counter-offensive by pro-Kabila allies disrupted the area. Fighting continued until 24th September 1998 after which there were sporadic outbreaks before the area was secured by Zimbabwean troops.

During the fighting there was large-scale population movement from the border areas of Lukaya District as people sought refuge from the conflict. Ngindinga and Sonabata health zones<sup>1</sup> were most affected due to their proximity to the Angolan border and main route to Kinshasa. During September 1998, many families returned to their villages to face widespread damage and looting of personal possessions, property and food stocks. Health facilities were extensively damaged. As most of the population spending their meagre resources on food, vital repairs and the purchase of basic household items, their ability to pay for medical care was severely diminished. The vulnerable status of the population was further compounded by the deteriorating socio-economic situation within DRC resulting in severe shortages of food and basic commodities.

Re-establishing access to basic health care at primary and secondary levels was therefore an immediate priority to prevent further deterioration of this war affected populations health status.

Merlin assessed the area in November 1998 and following consultation with BDOM and CRS submitted proposals to OFDA and DfID with the overall objective of 'kick-starting' the previous health system, which by Congolese standards, had functioned relatively well. By rapidly re-establishing basic curative and preventive services, Merlin aimed to reduce the threat from the main causes of morbidity and mortality in both health zones, namely: malaria, diarrhoea, acute respiratory infection and malnutrition.

## C. Geographical Locations Of Major Program Activities

Date: February 1999  
Country: Democratic Republic of Congo.  
Total Target Population: 194,869

Admin 1	Admin 2	Place	Lat/Long	Sector/ Activity	Start	End	Target Pop
Bas Congo	Lukaya District	Sonabata	4°53'S/ 15° 09'E	Health	19/2/99	31/12/99	116,755
Bas Congo	Lukaya District	Ngindinga	5°37 'S/ 15° 17'E	Health	19/2/99	31/12/99	78,114

<sup>1</sup> Sonabata and Ngindinga comprise two out of five health zones in the district.

### III. PROGRAMME PERFORMANCE

#### INTRODUCTION

In the immediate aftermath of the conflict (October 1999), UNICEF and BDOM performed a health needs assessment throughout Bas Congo region during which they identified 135 health centres and hospitals in need of medical support. During this assessment, basic kits of essential drugs were supplied through BDOM to Sonabata and Ngidinga hospitals, Massa RHC and other health centres. Following discussion with the BCZS and UNICEF, Merlin agreed to maintain support to both hospitals, Massa RHC and re-establish basic health services through rehabilitation and provision of essential support to an additional 6 health centres in Ngidinga and 4 health centres in Sonabata health zones outlined in Table 1. These were prioritised on the basis of a returned population, returned health staff, safe access and identified needs.

**Table #1: Health Facilities Originally Identified For Merlin Support**

Sonabata Health Zone.	Ngindinga Health Zone
Sonabata Hospital	Ngidinga Hospital
Massa RHC	Malele HC
Ngomina HC	Kimpemba HC
Lukungu HC	Kinkosi Luidi HC
Mvululu HC	Mbanza Mbata HC
Ntampa HC	Kindompolo HC
	Sadi HC

During the project period, 2 health centres in Ngidinga health zone were removed from the original portfolio. The Mbanza Mbata clinic building collapsed during the March rains and was not rebuilt during the project timeframe despite an agreement having been made between the community and INGO responsible. Access to Kindompolo HC became increasingly difficult due to its proximity to Angolan border and associated military activity. By mid-project it was no longer possible to maintain support. In addition, the physical rehabilitation and re-equipping of Sadi HC was carried out by BDOM during the period between Merlin's assessment and commencing activities. Therefore in this location, Merlin's activities were limited to water and sanitation repairs and installing EPI equipment.

#### A. PROGRAM PERFORMANCE VIS-À-VIS OBJECTIVES

**OBJECTIVE #1: TO RE-ESTABLISH BASIC HEALTH CARE DELIVERY CAPACITY OF 10 HEALTH CENTRES AND 3 HOSPITALS IN WAS AFFECTED HEALTH ZONES OF SONABATA AND NGINDINGA**

**Illustrative Activity 1: To restock war affected health facilities with essential medicines and essential medical equipment**

Despite the provision of significant emergency supplies by UNICEF/BDOM and Memisa, many of the health facilities suffered serious drug and material shortages at the beginning of 1999 due to increased demand. Merlin responded by placing immediate orders with UNICEF Copenhagen and other European suppliers with an expectation of delivery in early April. However unfulfilled promises by donors and suppliers led to serious delivery delays. These were offset by a donation from Keymed (UK based private trust which supports Merlin) which allowed Merlin to provide health centres and hospitals with a one and two month supplies respectively in May.

The initial order of essential medicines and basic medical equipment purchased by Merlin/ODFA were finally cleared from DRC customs authorities on July 20<sup>th</sup>, and were delivered to all the Merlin supported health facilities<sup>2</sup> by late August. Subsequent distributions occurred in October and December. All donations were made directly to the BCZS for further distribution to peripheral facilities in compliance with the existing cost recovery system.

Following distribution, Merlin worked with health centre staff and BCZS to encourage accurate diagnostic and rationale prescription practices. Supervision of practice during monthly visits by Merlin and the MCZ highlighted a lack of knowledge of case definitions, the over-prescribing of antibiotics and the irrational use of injectable vitamin supplements. These issues were addressed on-site and during formal staff training sessions. Minor alterations were made to the existing drug management system to improve the quality of data from which monthly consumption was calculated. A report of each supervision was given to the BCZS and a copy subsequently sent to each site enabling internal monitoring of any improvements noted and provided the opportunity to act on the recommendations made. By the end of the project period, relatively accurate and competent utilisation of stock control procedures and prescription practice was observed in the majority of health centres. This could not be said of the hospitals, as staff were more reticent about observed practice and sharing documentation.

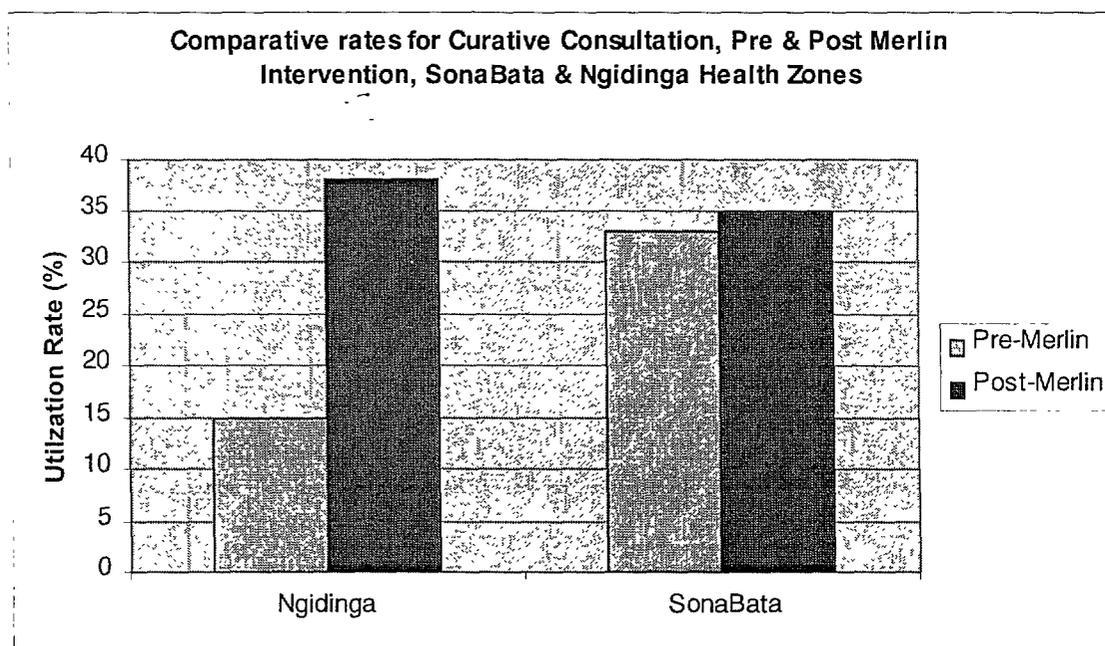
The concept of cost-recovery (CR) was well established, if not fully functional, in both zones prior to the destruction of health services. Sonabata BCZS revitalised CR immediately drugs became available. Ngidinga BCZS required greater assistance from Merlin, as CR was not standardised throughout the health zone. Despite extensive discussion with both BCZS' it proved impossible to standardise treatment tariffs across both zones. This was largely due to the increased delivery costs incurred by Ngidinga. However, setting fixed tariffs for indigents proved more successful, and were established in all Merlin supported facilities by May. Throughout the project, staff at Massa RHC battled with the constant demand for free drugs by the military. Whilst this demand diminished as their presence decreased, it remains an unresolved issued.

A variety of equipment was supplied on basis of initial need assessment. Several of the health centres in Ngidinga required complete re-equipping having taken the full brunt of wanton destruction by the military. Roadside clinics in Sonabata suffered the same fate. Equipment supplied included delivery tables and kits, standard dressing kits, kerosene stoves and pressure sterilizers, a basic medical reference library, basic stationary supplies, cleaning and hygiene equipment. Inventories were supplied by BCZS following each delivery and stocks checked during supervisory visits. In addition, Merlin donated a bicycle to both BCZS and all supported health facilities to facilitate the transport of medicines, essential medical equipment and cold chain supplies.

---

<sup>2</sup> With the exception of Mbanza Mbata health centre which unfortunately collapsed during the March rains.

**Figure #1: Comparison of Annual Utilisation Rates for Sonabata & Ngidinga Health Zones 1998 -1999**



The extent to which these donations have had an effect on increasing access to health care is outlined in Figure #1. Utilisation rates in Sonabata show little difference from pre-Merlin intervention rates. The most likely cause of this is poor management from the BCZS and withdrawal of support from their long-term partner Solidarite Protestante. By comparison, there has been a dramatic increase in utilisation rates in Ngidinga. It is noteworthy that centre specific analysis of utilisation rates shows a cumulative rate of 47% in Kindompolo, which was one of the most inaccessible facilities and virtually destroyed during the recent conflict. (Table #2)

**Table #2: Centre Specific Utilisation Rates (Cumulative) for Curative Consultations Ngidinga Health Zone, June - November 1999**

Health Facility	No. New Cases	Target population	Utilisation Rate (%)
Kimpemba	1 848	4074	45
Mbanza Mata	237	1152	21
Kindompolo	433	930	47
Malele	630	1830	34
Kinkosi*	(19)	(2 316)	n/a
Sadi	756	2148	35
Ngidinga Hospital	534	1699	31
Total	4 438	11 833	38

\* = Data from 1998

**Table #3: Centre Specific Utilisation Rates (Cumulative) for Curative Consultations Sonabata Health Zone, June - November 1999**

Health Facility	No. New Cases	Target Population	Utilisation Rate (%)
Lukungu	593	1212	49
Ntampa	375	1128	33
Mvululu	420	1482	28
Ngomina	222	954	23
Massa RHC	N/A	(4533)	N/A
Sonabata Hospital	636	1650	39
Total	2246	6426	35

**Illustrative Activity 2: To provide laboratory equipment and materials**

Although available in Kinshasa, Merlin decided to purchase the necessary laboratory equipment and reagents from Europe due to extortionate in country costs. This equipment was expected to arrive in April with the original drug consignment, however on its release from customs in July, many of the laboratory items were found to be missing despite guarantees by the supplier that it had been sent. The HIV test kits which did arrive were distributed during August. Through a twist of fate, the re-submitted order was destroyed when the plane carrying Merlin's combined freight<sup>3</sup> crashed on landing at Ndjili airport in Kinshasa on 16th October, causing major disruption to the planned timetable. The consignment was fully ensured which facilitated immediate re-ordering. The items were distributed to a total of 11 laboratories in early December following appropriate staff training.

**Illustrative Activity 3: To supply materials for cold chain at central levels**

Refrigerators, maintenance items and fuel were delivered to each BCZS following plans agreed upon with Merlin and UNICEF outlined in Objective 3. In addition bicycles were supplied to all supported health facilities to facilitate the transportation of vaccines.

**Illustrative Activity 4: To undertake small rehabilitation work in co-operation with CRS**

The overall rehabilitation of damaged and destroyed health facilities was the responsibility and primary objective of the CRS project in Sonabata and Ngindinga health zones. Merlin's role was therefore to assist with minor repairs to ensure a secure environment for patients, staff and donated supplies in all Merlin supported facilities. As a result, the following work was carried out:-

- Massa hospital      theatre block cleaned, painted and roof & ceiling replaced
- Ngomina HC          roof, walls and doors repaired and painted
- Lukunga HC          roof repaired

As relationship between Merlin and CRS was defined a clear division of work emerged with CRS concentrating on structural rehabilitation whilst Merlin focused its non-medical activities on improving water and sanitation facilities. These are outlined fully in Objective 2.

<sup>3</sup> The majority of items lost were for Merlin's other ECHO funded project in Bas Congo (Luozi & Mangembo).

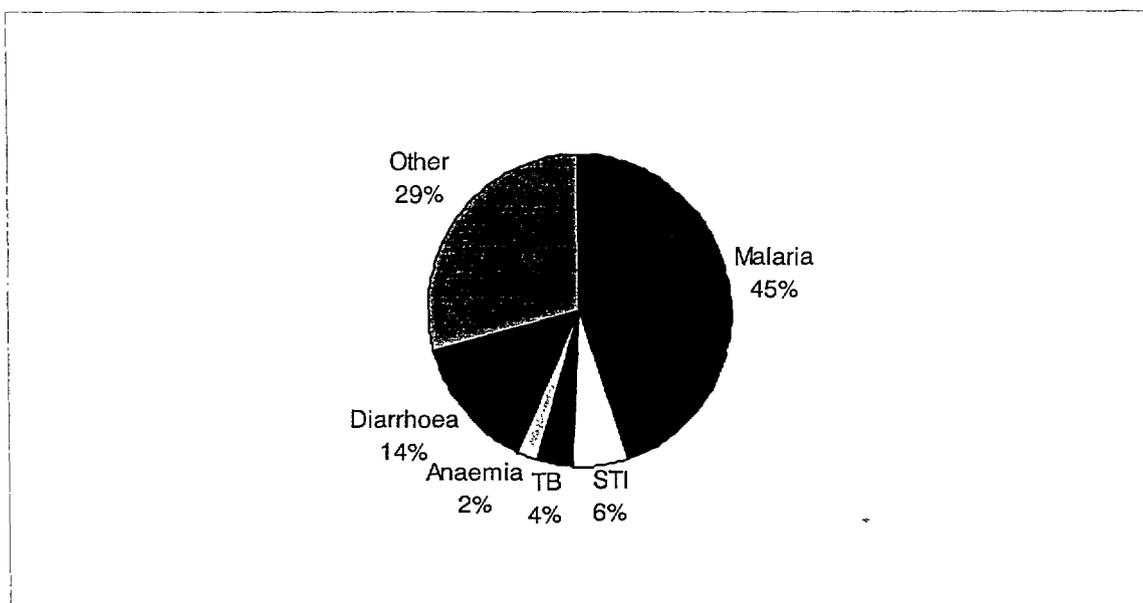
**Illustrative Activity 5: To re-establish basic health information systems in each health facility**

Standardised diagnostic and treatment protocols had been introduced to the MCZs by UNICEF and BDOM during a 5-day training course in December 1998. Since then, insufficient monitoring of their implementation and effectiveness has resulted in poor quality consultation practice and inaccurate recording of morbidity and mortality. In addition, the health surveillance system in place at the beginning of this project was lengthy and complicated resulting in a lack of accurate and timely epidemiological data.

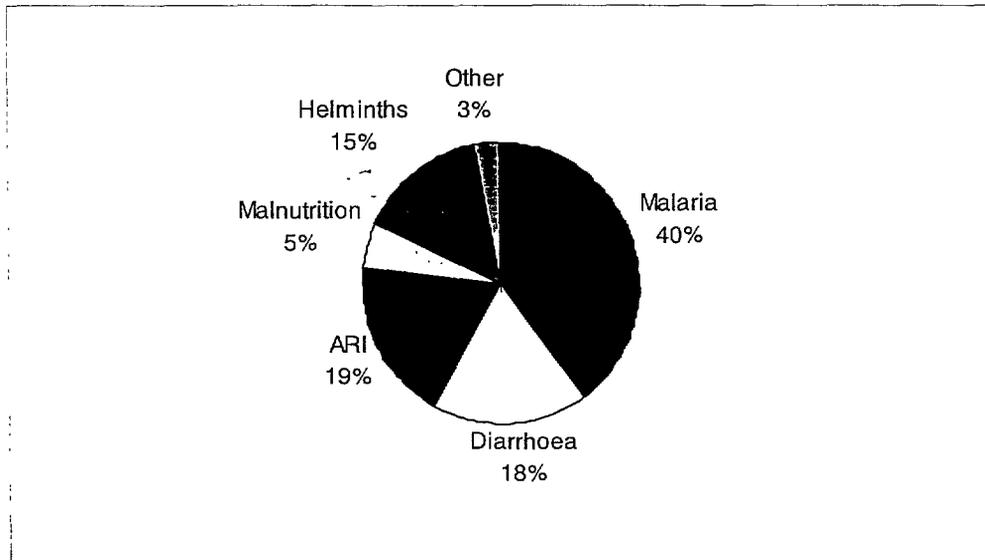
On Merlin's arrival, the central MoH and BCZS were already in consultation about improving this system by introducing a revised 'Système Nationale d'Information de Statistique de Sante' (SNISS). Merlin therefore offered to support and encourage this process in all the supported facilities. This included providing assistance in designing and printing the simplified surveillance form, training staff in its use and supervising its implementation in the clinics. Additional time was spent with the BCZS nurse supervisors in order to improve their assessment and training capabilities to ensure continual improvements in practice and accuracy once Merlin departed.

By September, the revised SNISS had been introduced to all clinic staff. At project end, it was being routinely used in all Merlin supported health facilities with the exception of Massa Hospital and Sonabata HGR where ongoing internal management irregularities impeded its use and effectiveness. The standard of reporting has improved throughout the project period although there is still room for improvement, particularly with respect to timely submission. From the data collected during this project period, the most common causes of morbidity consistently reported were preventable diseases outlined in Figure #2 & 3.

**Figure #2: Morbidity: Over 5 Years, Sonabata & Ngidinga Health Zones**  
July - November 1999



**Figure #3: Morbidity: Under 5 Years, Sonabata & Ngidinga Health Zones**  
July - November 1999



It proved impossible to accurately calculate mortality rates due to the lack of any community monitoring system. Leading causes of mortality among hospital in-patients were malaria, malnutrition, anaemia and diarrhoea among the under five age group with TB featuring regularly among adult deaths.

**Illustrative Activity 6:** *To provide supervision and re-fresher training of health and laboratory staff*

The first formal training workshops undertaken by Merlin, focused on raising community awareness about the vital role they play in the management of local health care, the health centre and its environment. Senior nurses and at least one health committee member from each of the Merlin supported health facilities (total of 30 participants) attended training from 21-24th June in Sonabata and 5-8th July in Ngidinga. At the end of each training, each health area were asked to produce a six month plan of action outlining perceived needs, priorities and resources required. Once submitted, these were reviewed jointly by Merlin and the BCZS, appropriate resources provided and progress monitored during monthly supervisory visits.

Merlin continued the work started by UNICEF and completed staff training in standardised essential diagnostic, treatment and drug management protocols during regular supervision and formal training workshop held in Sonabata between 24-28th August and in Ngidinga between 2nd-6th September 1999. The workshops were attended by a total of 39 participants.

Laboratory training for both health zones was originally planned for September and October following the arrival of the new laboratory equipment from Europe. Serious delays were incurred following the destruction of this equipment in the plane crash in October and subsequent delivery delays. The training of 14 laboratory staff eventually took place in December, performed by the head of medico-technical services at Kimpese hospital, the main reference hospital for Bas Congo. On completion of the course, new laboratory equipment was donated to the health facilities.

**1. ACTUAL ACCOMPLISHMENTS**

- Re-equipping of 6 health facilities each in Sonabata and Ngidinga health zones with essential materials.
- Establishing a regular supply of essential drugs and establishment of cost recovery systems in both health zones.
- Introduction of subsidised treatment fees for indigents in both health zones.
- Minor rehabilitation of 3 health facilities
- Training of all Merlin supported health centre staff in national diagnostic and treatment protocols for leading causes of morbidity and mortality.
- Re-activation of central cold chain in both BCZS.
- Re-activation of basic laboratory services in 11 supported health facilities through the supply equipment and reagents
- Assisted in the introduction of revised health information system (SNISS) in all Merlin supported facilities.

**2. COMPARISON OF ACTUAL AND PROPOSED ACCOMPLISHMENTS**

The supply of essential drugs and materials proposed by Merlin was intended to be directly complimentary to the emergency supplies provided by UNICEF and Memisa in the immediate post conflict period in October 1998. However, Merlin experienced major problems with the initial order and supply due to late withdrawal of donor funding and supplier delays. Whilst Merlin was able to provide a 'stop-gap' with drugs borrowed from KEYMED, this outcome was an inappropriate response to the level of need and an initial lack of confidence in Merlin from the BCZS and communities.

Due to the collapse of Mbanza Mbata HC during the rains in March 1999 planned activities were not completed. Negotiations held in April resulted in agreement with CRS and the community to re-build on the same spot. However due to conflicting priorities CRS were unable to fulfil this obligation within the project timeframe. As a result the populations only access to health care was 15kms away.

The late delivery of laboratory items and subsequent delayed training precluded any opportunity for follow-up of practice. The need for continued support in these areas was strongly emphasised to BDOM during the transfer of responsibilities from Merlin.

**OBJECTIVE#2: TO CARRY OUT EMERGENCY WATER AND SANITATION REPAIRS IN HEALTH FACILITIES TO REDUCE THE RISK OF CROSS INFECTION AND CONTAMINATION**

**Illustrative Activity 1: To provide basic materials and technical support for reconstruction of latrines**

Project Site	Identified Needs	Project Site	Identified Needs
Sonabata Hospital	Improve hygiene & maintenance	Ngindinga Hospital	Improve hygiene & maintenance/rehab
Ngomina	Improve hygiene & maintenance	Sadi	VIP latrine construction x 1
Lukunga	VIP latrine construction x 1	Kimpemba	VIP latrine construction x 2
Mvululu	Improve hygiene & maintenance	Kinkosi Luidi	Improve hygiene & maintenance
Ntampa	VIP latrine construction x 2	Mbanza Mbata	Improve hygiene & maintenance
Massa	Flush toilet/shower construction x 3 & septic tank/soakaway		

Where latrines were required, the alternating VIP design was recommended. Although more expensive than other models due to the purchase of cement and corrugated iron sheeting, this cost is off-set by their operational life span of 3-4 years capacity before emptying. All the above latrines were successfully constructed and fully functional except for Lukunga health centre where the health committee were not sufficiently organised and motivated to supply the bricks and sand which was a pre-condition before construction could commence. The work at Mbanza Mbata did not take place for reasons previously stated.

**Illustrative Activity 2: To provide basic materials and technical support for waste disposal pits**

Assessment indicated that each health facility had an existing square pit for the disposal of medical waste, with many of the covers in a state of disrepair. Both hospitals also had rudimentary incinerators which were not used due to the lack of fuel. In light of this Merlin, considered covering existing pits to be the most appropriate action to prevent the entry of dogs, vermin and children. Despite initial agreement obtained from health staff and committees, this intervention met with very limited success with only six out of the original twelve planned being completed. This occurred in Ngomina, Mvululu, Massa, Ntampa, Sadi and Kimpemba. It appears that solid waste was not a high priority for the health committees in the project sites, despite extensive information and promotion on the subject. The remaining materials allotted to waste pit covers were re-allocated to latrine and water tank construction.

**Illustrative Activity 3: To carry out essential repairs to 3 damaged water sources**

During the initial evaluation, a thorough survey was carried out to determine the existing water supply, associated health and contamination risks, and local preferences. The existing supply ranged from piped tap water, to under-ground water tanks and distant springs. Apart from the three hospital water supplies originally identified as being in great need of repair, Merlin soon

realised that all health centres lacked an on-site water supply. Instead, water was often drawn from unprotected wells situated up to 2 kilometres from the clinic.

Merlin's main objective was therefore to improve the quantity and quality of water actually used and consumed in all the supported health facilities. Given the high rainfall throughout 9 months of the year a rainwater harvesting system was considered an appropriate and cost-effective intervention for each facility. On project completion, Merlin had installed such system at each facility with the exception of Sonabata hospital, Lukunga and Mbanza Mbata.

Other locally constructed rain water systems in the Bas-Congo region commonly exhibited leakage due to poor design. Where the logistical and security situation permitted, Merlin provided training to local 'village' technicians for the construction of 10,000 litre rainwater tanks. These tanks were of the low-cost and structurally sound 'ferro-cement' design. A total of, seven water tanks were constructed.

Water use management was another focus as existing situations demonstrated little control over storage and access to water. A tap lock and padlock was supplied to the health centres with newly constructed water tanks as it was noted that the local community would empty the tank during the night. The users in the project sites were also encouraged to use the stored rainwater only for drinking and clinical washing purposes. For all other purposes, use of the existing source was encouraged.

This intervention met with high motivation and enthusiasm, perhaps reflecting the strongly felt needs of the health committees in this area. All seven tanks were fully functioning on project completion. A pre-fabricated plastic tank was supplied at the Ngomina site due to its remote location and consequent logistical difficulties.

#### **Illustrative Activity 4: *To repair water tanks at Sonabata hospital***

Initial assessment of Sonabata Hospital identified the complete lack of a mains water supply, a dis-functional water pump due to lack of electricity supply and two badly damaged rain collection cisterns. As a result the level of hygiene throughout the hospital was well below acceptable standards posing a serious threat of iatrogenic infection to patients, relatives and staff alike.

Merlin repaired both 21m<sup>3</sup> water cisterns by providing new cement linings and constructing new concrete covers. To overcome the problems associated with chronic fuel shortages, Merlin chose to replace the electric pump with a hand operated one. Broken guttering and down pipes were also replaced to improve rainwater collection overall.

The hospital ancillary staff were trained in the operation and maintenance of the new water supply. In addition, discussions held with the hospital administration and senior health staff to adopt hospital hygiene as a priority. To further encourage this process, Merlin supplied protective clothing and essential equipment for the cleaners.

## 1. ACTUAL ACCOMPLISHMENTS

Health Facility	Results Obtained
Sonabata Hospital	Hygiene improvements; 4x concrete covers to water tanks; Addition of 1x hand pump & concrete lining to existing tanks.
Ngomina	Rain water harvesting & 1x 1,200 litre pre-fab. Plastic water tank; Rehāb. To ceilings, foundation doors, painting to centre; 1x waste pit cover.
Lukungu	Cement lining to existing water tank; Replacement of damaged roofing; provision of protective clothing.
Mvululu	Rain water harvesting & 1x 20,000 litre brick water tank; hygiene improvements; 1x waste pit cover; provision of protective clothing.
Ntampa	2x VIP latrines; rainwater harvesting & 1x 10,000 litre 'ferrocement' water tank; 1x waste pit cover.
Massa	3x flush toilet/shower & septic tank & soak-away; rain water harvesting & 1x 10,000 litre ferro-cement water tank; 1x waste pit cover; replacement roofing for operation room.
Ngidinga Hospital	Replacement guttering & piping for water tank; construction of concrete floor to latrine block; roofing for showers; Installation of 8x 'Turkish W.C.s' to improve hygiene; Provision of protective clothing.
Sadi	1x VIP latrine; rainwater harvesting & 1x 10,000 litre ferro-cement water tank; 1x waste pit cover; protective clothing for workers.
Malele	1x VIP latrine; rainwater harvesting & 1x 10,000 litre ferro-cement water tank; 1x waste pit cover.
Kimpemba	2x VIP latrine; rainwater harvesting & 1x 10,000 litre ferro-cement water tank; 1x waste pit cover.
Kinkosi Luidi	Rain water harvesting & 1x 10,000 litre water tank; Hygiene improvements.
Mbanza Mbata	Project deferred because planned health centre was not constructed prior to the interventions foreseen by Merlin.

## 2. COMPARISON OF ACTUAL AND PROPOSED ACCOMPLISHMENTS

The water and sanitation activities undertaken by Merlin slightly exceeded those outlined in the original proposal. The additional needs were identified by the team as they gained better access to the project site and became aware of the extent of damage and general lack of facilities at all the Merlin supported health centres. Given the increased threat from diarrhoeal disease, Merlin considered it appropriate to address these needs within the original budget limit and with guaranteed support from local health staff and community members.

Activities in Ngidinga were originally interrupted in late May by a two-week temporary withdrawal for security reasons. The concurrent change over of expatriate technical staff extended this by a further six week. This shortfall was addressed immediately by the incoming wat/san engineer whose effort and immense activity resulted in meeting objectives within the agreed timeframe.

The disinterested response by health staff to the waste pits was disappointing and something of a surprise following their initial agreement. Merlin recognises that changes in knowledge, attitude and practice often require a longer period of transition than the 8 months available during this project. It is hoped that additional discussion and training by BDOM will lead to a more positive result.

None of the stated objectives were met in Mbanza Mbata for previously stated reasons. Reconstruction plans were outlined with CRS and the community, however these remained unrealised due to conflicting priorities. Communication with the Manza Mbata community with respect to hygiene education were further hampered by the start of the rainy season when the single route of access became impassable by 4x4 vehicle.

### **OBJECTIVE #3: RESTITUTION OF COLD CHAIN FACILITIES IN NGIDINGA AND SONABATA HEALTH ZONES**

**Illustrative Activity 1:** *To establish central cold chain facilities in the Bureau Central (BC) of each health zone*

The Sonabata and Ngidinga cold chain had been badly damaged through looting and wanton destruction resulting in severe disruption and complete cessation of activities respectively. A joint needs assessment was performed by UNICEF, BDOM and Merlin in May. During the subsequent joint planning session, the strategic placement of new equipment was agreed upon to maximise access to the cold chain by reducing distance and travel times. The sites identified in Ngidinga health zone were Kimpemba, Sadi and Kinkosi health centres and Makunkga, Mputu and Kifuma health centres in Sonabata health zone.

The amount of equipment required to re-establish the cold chain exceeded UNICEF's quota therefore Merlin agreed to provide additional refrigerators, fuel, syringes and bicycles. Every effort was made to ensure the equipment purchased was standardised and conformed to national EPI policy. Most of the equipment was in place prior to the start of the NIDs in August, with the remaining equipment installed in September. Health staff received refresher training in the use and maintenance of this equipment. By project end, monthly immunisation sessions were being held in all supported facilities with the exception of Mbanza Mbata and Kindompolo. Each supported health facility was supervised three times by the completion of the project. The coverage rates for selected antigens outlined in Table #4 were calculated from the vaccination numbers and estimated catchment population of each supported health facility.

**Table #4: Estimated Vaccination Coverage rates at Merlin supported facilities**

<b>Antigen</b>	<b>Coverage Rate (%) Sonabata Health Zone</b>	<b>Coverage rate (%) Ngidinga Health Zone</b>
BCG	119	86
Polio 3	71	52
DPT 3	75	47
Measles	54	54

Whilst these figures initially appear encouraging, Merlin consider them to be an over-estimation due to the lack of accurate population data and non-existent outreach activities prior to the recent NID's. The discrepancies between coverage rates for Polio 3 and DPT 3 highlight the need for additional training and supervised practice.

**Illustrative Activity 2:** *To provide logistical and transport support for the initial supply of vaccines from Kinshasa whilst BC transport is re-established.*

To ensure a regular supply of vaccines to both BCZS, Merlin facilitated their transport from the central cold chain in Kinshasa. In addition, Merlin provided a rented vehicle for each health zone to ensure delivery to peripheral health facilities. This was discontinued once each health facility received a bicycle. Merlin also assisted in the re-building of the 4WD vehicle owned by Sonabata BCZS by supplying necessary vehicle parts. However, due to continued internal conflict between the BCZS and their partner, Solidarite Protestante, the vehicle was re-possessed by the latter in September and by the end of the reporting period the health zone remained without a vehicle. Merlin participated in NIDs during August, September and October by supplying a rented vehicle to transport equipment and staff.

#### 1. ACTUAL ACCOMPLISHMENTS

During this reporting period Merlin has:

- Provided bicycle to each supported health facility to improve vaccine transportation
- Provided fuel for supervisory visits and maintenance of cold chain in Sonabata and Ngidinga health zones
- Provided transport to Sonabata BCZS to increase coverage during NIDs
- Re-trained health staff in all supported facilities in national immunisation protocols
- Supervised vaccination practice in all supported health facilities on a 2 monthly basis
- Re-established EPI reporting in all supported health facilities

#### 2. COMPARISON OF ACTUAL AND PROPOSED ACCOMPLISHMENTS

All necessary equipment identified was supplied to BCZS and other strategic sites as planned, but only after significant delays. As a consequence, potential gains in increasing EPI activity were not achieved, although analysis of site -specific vaccine delivery shows an average increase of 11%. Due to time constraints, Merlin was unable to perform a more extensive coverage survey. Whilst the regular transport of vaccines from Kinshasa remained problematic at project end it was agreed that BDOM would continue to provide a courier service to Sonabata until the larger vehicle issue is resolved.

## ***B. POSITIVE EFFECTS OF PROGRAM ON TARGET POPULATIONS***

The relative calm in Bas Congo since October 1999 encouraged the return of the local population of Lukaya district. As a result the demands on a severely damaged health care system increased significantly. During the past 8 months, Merlin has endeavoured to support the health sector in Sonabata and Ngidinga health zones.

The recent external input by Merlin has been fundamental in re-establishing affordable basic primary and secondary level health services to a highly vulnerable population. Significant health needs remain in both health zones, requiring additional logistical and technical support. Nonetheless, the improved access to basic health care achieved during this immediate post emergency phase, has been a major and positive consequence of Merlin's support to the health sector in these zones.

Despite Merlin's short presence in Lukaya district, the team established strong links with communities, local health representatives and other international partners. This facilitated a well planned approach to rehabilitation, avoiding unnecessary duplication of activities and enabled the smooth handover of activities to the MoH and BDOM in Sonabata and Ngidinga health zones respectively. Having initiated the process of health sector recovery, Merlin consider the continued input of longer term agencies to be more appropriate at this point in time, as many of the outstanding problems stem from chronic under-development and support of the health system

## ***C. EFFECT ON OVERALL PROGRAM PERFORMANCE OF UNFORESEEN CIRCUMSTANCES***

### **FUNDING ISSUES & CONSTRAINTS**

Due to the prolonged OFDA funding approval period, there was a significant delay between the initial needs assessment and the start of the project. As a result the situation on the ground had changed considerably, thereby necessitating some strategic re-adjustments in project implementation. Delays by DfID in considering funding the medical supply side of the project also resulted in difficulties in ensuring overall co-ordination and implementation of all three project objectives as alternative donors for essential drugs were sought. This already difficult situation reached crisis point when after five months consideration, DfID decided not to co-fund the project.

Whilst OFDA kindly agreed to fund the medical component, many of the items originally proposed could not be covered under the additional OFDA support including several local staff posts, a second 4WD vehicle, motorbikes and communications equipment. These shortages compromised the team's ability to work at full capacity despite the often innovative and practical solutions they found.

As a result of the above, Merlin commenced the project only in February 1999, concentrating on the elements included in the original OFDA grant namely, rehabilitation, training and medical supervision. In particular medical supervision has been hampered due to the extremely late delivery of essential medicines and basic equipment.

## **RESTRICTED ACCESS**

A sensitive military situation has prevailed throughout the project period. During the initial month's authorisation to travel to Ngidinga health zone was frequently denied due to the suspicious attitude of the Zimbabwean allies securing this sensitive border area towards international organisations in the region. On several occasions, the highly charged political situation also prompted Merlin to limit access to certain sites to reduce risks to vehicles and personnel. The most serious security incident experienced during the project resulted from misunderstandings with the military, which resulted in threats to national and expatriate staff and the appropriation of a Merlin vehicle for one night (later recovered). As a result Merlin's activities in Ngidinga were temporarily halted for two weeks in May.

Gaining authorisation to those areas where access was permitted was an immensely time consuming for both national and expatriate personnel, frequently resulting in late departures to field sites and occasionally postponed visits.

Physical access to both health zones has been a major challenge due to difficult road conditions. The roads beyond Kisantu to all the project sites in the region of Ngidinga and around Sonabata are non-surfaced and range from unstable and deep sand to slippery clay. Already difficult in the short dry season, these were often rendered impassable during the rainy season commencing in October. This has resulted in high maintenance demands on the Merlin project vehicles as well as an increased travel time between project sites. Trucks, which are hired for bulk delivery of materials, are frequently delayed and expensive due to the maintenance costs incurred en route.

## **DELIVERY DELAYS**

Despite timely forward planning by Merlin, numerous events conspired to cause lengthy delays in delivering essential programme items. The late withdrawal of expected funding and subsequent lengthy negotiations to secure replacement funding halted the submission of pre-prepared orders. Orders placed with UNICEF, Copenhagen were never realised due to bureaucratic and capacity issues within UNICEF. Renewed orders placed with other European suppliers were not delivered to the freight forwarder until one month later than agreed. Transportation difficulties (mechanical problems) and shifting priorities in Kinshasa resulted in a backlog of goods destined for Kinshasa resulting in Merlin's freight being offloaded twice. These goods were finally despatched two weeks later. The destruction of these goods in the Ndjili airport crash on 16th October brought only further delays.

Inevitably the cumulative effect of these delays had a negative impact on achieving project objectives as insufficient time was available to fully supervise and monitor the use and effect of these donations on the quality of health care provided in the health facilities.

## **HUMAN RESOURCES**

Difficulties in recruiting appropriately skilled expatriate staff for the logistical position in the field and administrative position in Kinshasa had a cumulative negative effect on the project. The former led to delays in implementing the water and sanitation activities for almost two months. This was finally resolved by the arrival of a highly competent wat/san engineer in August who, despite restricted access and material shortages, completed the set objectives within the extended project timeframe. The lack of administrator in Kinshasa resulted in a dramatic increase in the project Co-ordinators workload thereby reducing the number of field visits planned for monitoring purposes.

In addition, the flight to Kinshasa of most of the technically competent national technicians resulted in a serious lack of qualified national counterparts to oversee project activities. As a result language and differing cultural perceptions caused unnecessary delays and prevented a more participative approach.

The difficult working partnership between Sonabata BCZS and the 'Solidarité Protestante' personnel frequently hampered discussion and progression of activities.

### **SOCIO-POLITICO-ECONOMIC DETERIORATION**

The degree of socio-political and economic deterioration experienced during this project period has been immense, forcing most of the DRC population ever deeper into poverty, whilst confronting INGO's with major implementation challenges. Uncontrolled hyperinflation and the government imposed ban on dollar transactions greatly affected project budgeting and activities. Purchasing in Congolese francs only exchangeable at official fixed rates resulted in a 300% price rise for most essential items. The greatest impact of this on the project has been the severely limited availability of essential rehabilitation items such as fuel and cement. Inevitably some delays in rehabilitating health facilities were incurred but resolved during late November and December.

## **IV. RESOURCE USE / EXPENDITURES**

### **A. SUMMARIZATION OF RESOURCES COMMITTED**

#### **1. International staff**

Uncontrolled hyperinflation and a government imposed ban on dollar transactions greatly affected project budgeting in general. Purchasing in Congolese francs, only exchangeable at official fixed rates, resulted in a 300% price rise for most essential items. This affected expatriates' living costs and contributed to the 15% overspend compared to the initially planned budget for this section.

#### **2. National staff**

Local communities' contribution in terms of manual labour slightly reduced funding needs for this staff category.

#### **3. Equipment**

- Lost freight: for transparency's sake, all the financial transactions related to the goods affected by the plane crash were registered, i.e. cost of the goods initially bought, reimbursement received from the insurance company, replacement cost of destroyed goods.
- This section was generally affected by the hyperinflation phenomenon as described above, resulting in an overall 3.6% overspending.

#### **4. Transport**

- 4WD truck rental:

The extremely bad road conditions resulted in very expensive truck rental prices because of a high maintenance demand. Furthermore, rampant inflation particularly applied to fuel, which contributed to overspending the budget initially attributed to trucking by 53%. Problems encountered in using air transport (see Freight cost) increased the use of trucks as an alternative transportation means.

- **Freight cost:**

The local authorities were not co-operative in providing authorisation for plane transportation. As a result, only 41% of the allocated budget were spent under this section, with additional use of truck rental compensating for this.

**5. Office costs & Warehousing**

These costs could be reduced through the contribution made to Kinshasa office and storage costs from other project activities carried out in the last quarter of 1999.

**6. Administrative costs**

The initial budget was established with a 12.50% ICR. The first cost extension stated a 10.20% rate, and the second a 12.50% rate. The overall rate calculated on the basis of the average for the total budget is 12.00%.

The previous reports were submitted before the approval of the second cost extension, consequently using the average rate of the initial budget plus the first cost extension only (11.93%).

In order to keep the 12.00% overall rate, a 12.22% ICR was used for overheads calculated on expenditure from 07/01/99 to 12/31/99.

**B. BREAKDOWN OF EXPENDITURE BY OBJECTIVES**

Please See Attached Sheets

## V. CONCLUSION

During this project period, Merlin has supported Sonabata and Ngindinga health authorities to re-establish accessible, affordable emergency care to a vulnerable population in order to minimise preventable morbidity and mortality. This has involved the supply of essential drugs, medical materials, cold chain equipment and performing structural rehabilitation to:

- 1 Bureau Central, 1 hospital, 1 referral health centre and 4 health centres in Sonabata health zone
- 1 Bureau Central, 1 hospital and 4 health centres in Ngindinga health zone.

By the end of this reporting period, 85% of the health facilities originally proposed for Merlin support have been re-habilitated and functioning for several months. This has been achieved despite continued interruption to project activities resulting from largely unforeseen delays. As a result of these delays, the level of improvement in access to and quality of health services provided is somewhat less than originally anticipated. However it seems fair to deduce that many of the patients who attended the state health structure have received a better level of health care than could have been provided by unsupported local health authorities. This is due to the availability of good quality essential drugs and increased access to services by vulnerable groups through the introduction of fee reductions. In addition, support to referral facilitates has ensured a timely response to those most in need. Improvements made to the cold chain, health information system and staff training, providing much need motivation and encouragement among many of the staff, however the longer term impact will only be felt if the systems and acquired knowledge are regularly maintained, monitored and acted upon.

Throughout the project Merlin continually emphasised their short-term goals and presence and the overall responsibility of the respective BCZS and community representatives in maintaining long term stability of their health system. Merlin considers this approach to have resulted in the more appropriate rehabilitation and use of supported health centres. The support of PATS in association with BDOM planned for the next 18 months will be crucial in maintaining the gains achieved during Merlin's intervention.

The future of Sonabata health zone was uncertain at the time of Merlin's departure due to the withdrawal of the main BCZS partner 'Solidarite Protestante' however with the Italian NGO, COOPI, expressing positive interest in assisting primary health care activities in the region, Merlin remain hopeful that the positive achievements of the last eight months will be maintained.