

**ウガンダ共和国
医療機材保守・管理プロジェクト
運営指導調査報告書**

平成 20 年 1 月
(2008 年)

独立行政法人国際協力機構
人間開発部

人 間
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序 文

独立行政法人国際協力機構（JICA）は、ウガンダ共和国の保健医療サービス向上の一端を担う「医療機材保守・管理プロジェクト」を2006年6月から2009年5月の3年間の予定で実施しています。これは医療機材の適切な保守管理の実施体制の整備と持続的な機材の活用を目標としており、保健システムの一部を担うプロジェクトです。

今般、協力開始から1年6カ月が経過したところで、同プロジェクトの運営指導調査を実施するために、2007年12月に調査団を派遣し、ウガンダ共和国関係機関との間でプロジェクトの進捗の確認と今後の方向性に係る協議を行いました。本報告書は、その調査結果を取りまとめたものです。

ここに、本調査にご協力を賜りました関係各位に対しまして深甚なる謝意を表すとともに、引き続き本プロジェクトの実施・運営にご支援をお願いする次第です。

平成20年1月

独立行政法人国際協力機構
人間開発部長 西脇 英隆

略 語 表

JICA	Japan International Cooperation Agency	独立行政法人国際協力機構
PDM	Project Design Matrix	プロジェクト・デザイン・マトリックス
PO	Plan of Operations	活動計画表
R/D	Record of Discussions	討議議事録
C/P	Counterpart	カウンターパート
DANIDA	Danish International Development Agency	デンマーク国際開発援助機構
M/M	Minutes of Meetings	協議議事録
MOH	Ministry of Health	保健省
HID	Health Infrastructure Division	保健インフラ課
JCC	Joint Coordination Committee	合同調整委員会
NACME	National Advisory Committee on Medical Equipment	国家医療機材諮問委員会

プロジェクト位置図



保健省インフラ課・中央医療機材ワークショップ

Kampala

地方医療機材ワークショップ

Mbale, Soroti, Hoima, Fort Potal, Kabale, Gulu, Arua



保健省での M/M 署名



国家医療機材諮問委員会
(NACME) との協議



ムバレ病院視察

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プロジェクト位置図

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第1章 運営指導調査団派遣概要

1-1 調査団派遣の経緯と目的

ウガンダ共和国（以下、「ウガンダ」と記す）の保健医療サービス向上の一端を担う「医療機材保守・管理プロジェクト」を2006年6月から2009年5月の3年間の予定で実施してきた。これは医療機材の適切な保守管理の実施体制の整備と持続的な機材の活用を目標としている。

今般、協力開始から1年6カ月が経過したところで、プロジェクト活動状況を確認するとともに、残り1年半の期間で取り組むべき中心活動について、ウガンダ保健省とプロジェクトの方向性について確認することを主な目的とした調査団を派遣することとした。

2007年7月に派遣された杉下短期専門家より、医療機材政策・ガイドライン策定のための指導とともに、ウガンダ保健省と今後のプロジェクトの方針について協議を行った結果、今後のプロジェクトの活動にガイドラインの改訂を位置づけるという方向性が提示された。また、同ガイドラインを活用するためのハンドブック作成も提案されている。本運営指導調査では、本提案についても踏まえつつ、先方と協議をしながら必要に応じてPDM、POの見直しをすることとする。

なお、本プロジェクトは小規模案件であることから、中間評価調査団ではなく、中間評価に準じた運営指導調査団という形式で調査を実施した。

1-2 調査団の構成

氏名	担当分野	期間	所属先
洲崎 毅浩	団長	2007/12/7	JICAウガンダ事務所 所長
高野 晋太郎	協力計画	2007/11/30～12/9	JICA人間開発部保健人材育成チーム

1-3 調査日程

月日	曜日	内容	宿泊先
11月30日	金	移動	
12月1日	土	ウガンダ着、プロジェクト専門家との打合せ	カンパラ
12月2日	日	協議資料作成	カンパラ
12月3日	月	保健省表敬訪問 在ウガンダ日本国大使館表敬訪問 JICAウガンダ事務所訪問	カンパラ
12月4日	火	医療機材政策・ガイドラインに係る国家医療機材諮問委員会（NACME）との協議 移動（カンパラ ムバレ）	ムバレ
12月5日	水	ムバレ病院・ムバレワークショップ視察 移動（ムバレ カンパラ）	カンパラ
12月6日	木	保健省インフラ課との協議	カンパラ
12月7日	金	保健省との協議、M/M署名 JICAウガンダ事務所報告	カンパラ
12月8日	土	移動	
12月9日	日	日本着	

1 - 4 主要面談者

< ウガンダ側 >

(1) ウガンダ保健省 (MOH) 関係者

Dr. Lawrence N. Kagwa	Director Health Service
Eng. S.S.B.Wanda	Assistant Commissioner, HID
Eng. C.Sitra Mulepo	Senior Engineer
Dr. John Tumwesigye	Manager, Central Workshop

(2) 国家医療機材諮問委員会 (NACME) 関係者

Dr. E.K. Naddumba	Senior Consultant, Orthopaedic
Dr. Christopher Magimbi	Medical Consultant, Ophthalmology
Eng. E. Kataaha	Senior Engineer
Dr. J.V.B. Tindimwebwa	Senior Consultant, Anaesthesia
Dr. Sam Kalisoke	Senior Consultant, Obstetric&Gynaecology
Mrs. Edith N. Nshimye	Principle Nursing Officer
Dr. G. Tumweoheire	Senior Consultant, ENT
Prof. M.Kawooya	Radiologist
Dr. Fredrick Mboli	Dental Surgeon
Eng. Sitra Mulepo	Senior Engineer
Mr. Steven Aisu	Laboratory Technologist
Dr. David Basangwa	Medical Consultant, Psychiatry
Dr. A.M. Gakwaya	Senior Consultant, Surgeon
Dr. J. Tumwesigye	Manager, Central Workshop

< 日本側 >

(1) 在ウガンダ日本国大使館

亀田 和明	参事官
板倉 言葉	書記官

(2) JICAウガンダ事務所

洲崎 毅浩	事務所長
吉田 耕平	所員
杉林 瑞穂	企画調査員

(3) 青年海外協力隊員

福田 恵子	医療機器隊員
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1 - 5 調査内容

(1) プロジェクトの進捗確認

プロジェクト開始から1年6カ月が過ぎ、残り1年半の活動で目標を達成することが必要となる。各活動の進捗の確認と、必要に応じて活動の実施促進のための助言を行う。

(2) 予算執行方法の改善可能性

プロジェクト開始前に改善を申し入れているワークショップへの予算配分について、改善の可能性について協議するとともに、再度改善を求める。

第2章 プロジェクトの実績と現状

本調査の主要目的は、これまでのプロジェクトの進捗や外部条件等を確認し、必要に応じてプロジェクトの基本計画であるPDMを改訂することであった。現時点でのプロジェクトの実績と現状は、以下のとおりである。

2 - 1 投入実績

2 - 1 - 1 日本側投入

(1) 専門家

プロジェクト開始以降から2007年11月末現在までには、長期専門家1名と短期専門家4名が派遣された。指導分野や派遣期間は以下のとおりである。

1) 長期専門家

氏名	指導分野	派遣期間	派遣前の所属先
丹羽 明子	機材情報収集 / 業務調整	2006/6/1 ~ 2008/5/31	なし

2) 短期専門家

氏名	指導分野	派遣期間	派遣前の所属先
伊達 卓二	機材情報収集 / 計画立案	2006/6/1 ~ 7/29	なし
伊達 卓二	研修計画	2006/11/11 ~ /12/17	なし
杉下 智彦	ガイドライン / IEC資料作成 / 研修計画	2007/7/5 ~ 14	JICA 国際協力専門員
伊達 卓二	研修計画	2007/11/17 ~ 12/16	なし

注) 伊達短期専門家(2007年研修計画)が本中間評価時にウガンダ派遣中であったことから、同短期専門家より本調査に対する技術的助言を得た。

(2) 供与資機材(2006年度)

機材項目	購入単価	購入数
一般機材工具	5,036,384	206
一般機材工具(重機)	4,761,992	35
各工具セット	4,441,949	1,312
冷蔵庫用工具	4,854,049	231
ワークショップ管理PC等	1,753,207	24
合計	¥20,847,581	

(3) 在外事業強化費

	2006年度 (実績)	2007年度 (07年度実施計画額)	合計
在外事業強化費	¥10,522,298	¥8,786,000	¥18,927,763

2 - 1 - 2 ウガンダ側投入

(1) カウンターパートの配置

R/Dでは、以下のとおり規定されており、本プロジェクトにかかわっている。

- 1 . Commissioner for Health Services (Clinical Services)
- 2 . Assistant Commissioner (Health Infrastructure)
- 3 . Senior Engineer/Medical Equipment
- 4 . Assistant Workshop Manager, Central
- 5 . Managers of Regional Workshops
- 6 . Other personnel mutually agreed upon as necessary

1) 保健省インフラ課

Project Director : Eng.S.S.B.Wanda
(Assistant Commissioner, Health Infrastructure)

Project Manager : Eng.C.Sitra Mulepo
(Senior Engineer, Medical Equipment)

2) 中央 / 地方ワークショップ

Managers of the Central/Regional Workshops

Central (Assistant Manager) : Mr.Munyanja

Arua : Mr.Peter Kute

Gulu : Mr.Thomas Echomu

Hoima : Mr.Bob Sekaita

Kabale : Mr.Zephania Kalule

Mbale : Mr.Prosper Kaggwa

Soroti : Mr.Makombe

Fort Portal : Mr.Mutahakana

(2) 施設

保健省インフラ課の施設の一室がプロジェクトオフィスとして提供されている。

2 - 2 活動実績（PDM1に基づく）

活 動	実 績
成果1 保健省インフラ課により問題解決指向型の計画が策定され、実施される。	
1-1 インベントリーの強化	<ol style="list-style-type: none"> 1. ワークショップの技術者たちによる 政府系の11の中核レファラル病院、43の総合病院、78のヘルスセンターにて保有医療機材調査を実施。 2. 医療機材情報の更新をワークショップの日常機材維持管理活動とすることで合意。中央およびホイマワークショップにてパイロット活動を実施。 3. 医療機材調査と同時期に、保健省情報センター（Resource Center）においてインフラデータベース作成が開始され本プロジェクトもそれを支援。 4. 各ワークショップにおける活動管理および情報管理のためのPCを購入。
1-2 現状改善のための計画作成	<ol style="list-style-type: none"> 1. 中核レファラル病院からヘルスセンターのすべてのレベルに流布されたガイドラインが医療機材に関する政府方針の基本として定められているにもかかわらず、その役割・使い方についての理解が不十分であることが確認され、指導が必要と判断された。 2. しかし、現行のガイドラインは現場の実情が十分反映されておらず、また改訂の時期にあたることから、改訂が必要と判断された。
1-3 作成した計画の実施	<ol style="list-style-type: none"> 1. 各ワークショップに維持管理のための工具を購入。 2. 各ワークショップでの活動管理ツールを開発し、中央ワークショップで使用を開始した。
成果2 中央ワークショップのリファラル機能が強化される。	
2-1 現状分析	<p>中央およびホイマでの上記パイロット活動から、中央ワークショップは機材保守管理活動および情報管理における一定の能力があることが判明した。しかし、地方ワークショップに配分される予算は、保健省や地方行政機構から直接配分されるものではなく、地方行政機構から医療施設に配分された予算の一部が拠出金としてワークショップに拠出されることとなっている。しかし、それも適切に拠出されておらず、計画に基づき活動を行っていくことは極めて困難な状況である。</p> <p>なお、この予算配分の方法についてはプロジェクト開始前に保健省側で改善が決定されていたものであり、プロジェクトもそれを前提に計画していたが、未だ予算配分の改善はなされていない。</p>
2-2 ニーズアセスメント	<p>予算配分方法が改善されれば、プロジェクトのアプローチも変わってくることが想定されるが、現状では、下記の能力向上は必要であることが見出されている。これらは医療機材を修理するための技術ではなく、地方ワークショップの上位機関としてのマネジメント機能を強化するためのものである。</p> <ol style="list-style-type: none"> 1. 1-3で開発した管理ツールの使用法に関する、ワークショップマネージャーおよび技術者向けPCトレーニング 2. 医療機材および施設マネジメントに関する、ワークショップマネージャーおよび病院管理者向け啓発

2-3 研修参加	<p>以下の研修に参加し、保守管理およびマネジメント力の向上を図った。</p> <ol style="list-style-type: none"> 1. ORBIS training 2. Basic X ray Training 3. Participation in user training under Eastern Uganda GA 4. Participation in X ray Installation in Fort Port Regional Referral Hospital 5. In house PC training for technicians in Wabigalo
<p>成果3 地方ワークショップの医療機材保守管理能力および病院・地方保健局の技術者に対する指導能力が強化される。</p>	
3-1 現状分析	<p>中央およびホイマでの上記パイロット活動から、中央ワークショップには機材保守管理活動および情報管理における一定の能力があることが判明した。しかし、2-1に記載された理由により、計画に基づき活動を行っていくことは極めて困難な状況である。</p>
3-2 ニーズアセスメント	<p>予算配分方法が改善されれば、プロジェクトのアプローチも変わってくることが想定されるが、現状では、下記の能力向上は必要であることが見出されている。これらは医療機材を修理するための技術ではなく、ワークショップ機能を強化するためのものである。</p> <ol style="list-style-type: none"> 1. 1-3で開発した管理ツールの使用法に関する、ワークショップマネージャーおよび技術者向けPCトレーニング 2. 医療機材および施設マネジメントに関する、ワークショップマネージャーおよび病院管理者向け啓発
3-3 研修参加	<p>以下の研修に参加し、保守管理およびマネジメント力の向上を図った。</p> <ol style="list-style-type: none"> 1. ORBIS training 2. Basic X ray Training 3. Participation in user training under Eastern Uganda GA 4. Participation in X ray Installation in Fort Port Regional Referral Hospital 5. In house PC training for technicians in Wabigalo
3-4 修理に係る業務記録の様式作成、記録の実施	<p>各ワークショップでの活動管理ツールを開発し、中央ワークショップで使用開始。</p>
3-5 多くみられる故障原因の特定	<p>現段階では未特定。</p>
3-6 病院および地方保健局の技術者に対するアドバイスの実施	<p>医療機材マネジメントに関する指導を行う必要があると判断されている。今後、医療機材政策・ガイドライン策定とともに指導を実施していく計画を策定。</p>

2 - 3 プロジェクト目標の達成状況

プロジェクト目標とされている「保健省インフラ課および医療機材ワークショップのマネジメント能力および医療機材保守管理能力の強化」については、ワークショップへの予算執行方法に大きな課題があることから、現段階では、個々人のレベルで着実な強化が達成されていると評価するにとどめざるを得ない。組織としての強化については、今後の予算執行方法の改善の可否に大きくかかわるものであり、今後も引き続きプロジェクトから予算執行方法の改善を求めていくことが必要である。

2 - 4 成果達成状況

成果1 保健省インフラ課により問題解決指向型の計画が策定され、実施される。

計画策定の基となる医療機材政策・ガイドラインの改訂の必要性が確認され、今後改訂される計画である。また、各医療施設での医療機材稼働状況が把握されたことにより、各ワークショップが計画を策定するための情報は収集されている。

現状では、予算配分方法に大きな課題が残されていることから、計画策定、実施とも進んでいない。まずは予算配分方法の改善が早急になされることが必要である。

成果2 中央ワークショップのリファラル機能が強化される。

中央ワークショップのリファラル機能については以下のように評価される。

技術：プロジェクト内での技術研修等の結果、保守管理に係る技術力は向上しており、一定の技術力は有していると評価することができる。

マネジメント：機材情報収集、管理ツール作成・使用、PCの使用等の能力は向上していると評価することができる。

地方ワークショップへの指導：地方ワークショップからの活動報告の収集とそれに対するフィードバックが必要とされつつも実施されておらず、今後の課題となっている。

成果3 地方ワークショップの医療機材保守管理能力および病院・地方保健局の技術者に対する指導能力が強化される。

地方ワークショップの医療機材保守管理能力および病院・地方保健局の技術者に対する指導能力については以下のように評価できる。

技術：プロジェクト内での技術研修等の結果、保守管理に係る技術力は向上しており、一定の技術力は有している。

マネジメント：機材情報収集、管理ツール作成・使用、PCの使用等の能力は向上していると評価することができる。しかし、地方ワークショップからの活動報告の収集とそれに対するフィードバックが必要とされつつも実施されておらず、今後の課題となっている。

病院・地方保健局の技術者への指導：病院内の技術者および医療機材使用者への指導の重要性は認識しているものの、現在までに具体的な活動には至っていない。

2 - 5 プロジェクトの実施体制

日本人長期専門家1名の活動を中心に、短期専門家の活動を行っている。カウンターパート側も医療機材保守というものに対する知見およびビジョンを有しており、積極的かつ着実に活動を展開している。

なお、同時期に無償資金協力により、東部地域（ムバレ、トロロ）の地方レファラル病院の建設と機材整備が行われていることも、本プロジェクトの円滑な実施に大きく寄与しているといえることができる。

2 - 6 協議結果

調査団到着以前に、カウンターパートにより作成された活動進捗表およびプロジェクト専門家からの各種報告を基に、本邦においてプロジェクトの進捗について評価を行った。それを踏まえて協議を行った。

2 - 6 - 1 保健省インフラ課との協議

プロジェクトの進捗についてはガイドライン策定作業等に若干の遅れはみられるものの、概ね計画どおり進捗していると判断されることから、ウガンダ側の積極的なプロジェクトへの参画について高く評価している旨伝えた。その上で、いくつか改善が必要と思われる点について、調査開始前に言及した。

(1) ワークショップへの予算配分方法の改善

プロジェクト開始前のNational Assembly Meetingにおいて、保健省より直接、中央および地方ワークショップに予算配分することが合意されているが、現在までに未だ改善がなされていない。

現在は、地方分権化の進展に伴い、各州予算より各医療施設に対して予算が配分され、そのうちの一部が拠出金として地方ワークショップに拠出されることとなっているが、実態として、拠出を拒む医療施設もあり、機能していない状況にある。実際に拠出されるべき予算が得られないことから、各ワークショップとも、年間の活動計画を策定することもできず、更にはスペアパーツ、出張旅費等、日常業務に使用する予算すら不足している状況である。

本プロジェクトは、事前調査時点で、この予算配分方法の改善を前提として実施することとなっていることから、予算配分方法が改善されないことには、プロジェクトの成果も大きく限定されることとなる。

(2) 医療機材政策・ガイドライン策定

杉下短期専門家により提言された医療機材政策・ガイドライン策定へのプロジェクトの支援に関し、今後の活動の一つの柱として注力していくことを言及した。ウガンダ側も医療機材政策・ガイドラインを重要視しており、本方針について同意を得た。

(3) 医療機材の適切な使用促進のための指導者（ユーザートレーナー）研修

故障した医療機材を直すことよりも、適切に使用し、故障しないよう予防保守を行う

ことが費用の面で効率的であるとされており、本プロジェクトにおいても、医療機材の使用方法指導を行うユーザートレーナーに対する研修を行うこととしている。既にこのユーザートレーナーを活用した指導の促進は保健省の方針として実施されているものだが、各医療施設でのユーザートレーナーの任命が進んでいない状況にあった。プロジェクトの活動として実施していくことから、ユーザートレーナーの任命を進め、研修の実施可能な環境整備を保健省側に求めた。

また、現在、ムバレ病院に配属されている青年海外協力隊員（医療機器）とともに、現場で使用されやすい教材の作成についても可能性があり、今後具体的方策を検討することとした。

2 - 6 - 2 NACMEとの協議

NACME(National Advisory Committee on Medical Equipment: 国家医療機材諮問委員会)は、ウガンダ政府管轄の病院とヘルスセンターに配置する医療機材について基準を定め、保健省に提言を行う有識者組織である。保健大臣がメンバーを任命し、主にインフラ課職員とムラゴ病院の職員で構成されている。

本調査団とNACMEとの協議においては、医療機材政策・ガイドライン策定にあたっての計画を確認した。現段階では、NACMEメンバーが地方の現状を把握するための調査活動を実施することとなっており、プロジェクトはその支援を行うという位置づけにある。本来であれば調査計画策定もNACMEメンバーのみで実施されることが望ましいが、プロジェクトより今後のガイドライン策定計画案を提示している。

実施方針は概ね合意されているため、プロジェクトから調査活動等に遅延が生じないように、随時実施促進を行うこととする。

第3章 プロジェクト実施方針

3 - 1 調査結果の総括と今後の基本方針

活 動	実 績
成果1 保健省インフラ課により問題解決指向型の計画が策定され、実施される。	
1-1 インベントリーの強化	完了。今後は医療機材情報をDANIDA（デンマーク国際開発援助機構）が作成した保健情報システムに統合する方向で保健省側と合意している。
1-2 現状改善のための計画作成	NACMEの活動を支援するという位置づけで、医療機材政策・ガイドラインの改訂に注力する。 さらに、プロジェクトの直接の活動ではないが、保健省に対してワークショップへの予算配分方法の改善を強く求めていく。
1-3 作成した計画の実施	医療機材政策・ガイドラインの改訂と併せて、計画策定に対しても必要に応じて助言を行う。
成果2 中央ワークショップのリファラル機能が強化される。	
2-1 現状分析	完了。課題である予算執行方法の改善を求めていく。
2-2 ニーズアセスメント	完了。
2-3 研修参加	NGOや日本の無償資金協力で実施される研修に参加するものとする。
成果3 地方ワークショップの医療機材保守管理能力および病院・地方保健局の技術者に対する指導能力が強化される。	
3-1 現状分析	完了。課題である予算執行方法の改善を求めていく。
3-2 ニーズアセスメント	完了。
3-3 研修参加	NGOや日本の無償資金協力で実施される研修に参加するものとする。 プロジェクトとしては、地方ワークショップから中央ワークショップへの定期報告書の提出を行うための技術指導を行う。
3-4 修理に係る業務記録の様式作成、記録の実施	各ワークショップでの活動管理ツールを用いて、中央ワークショップへの定期報告が適切になされるよう指導を行う。
3-5 多くみられる故障原因の特定	引き続き故障原因の特定を試みる。
3-6 病院および地方保健局の技術者に対するアドバイスの実施	医療機材の適切な仕様促進をめざし、ユーザートレーナーへの指導を行う。

3 - 2 新PDM案に基づくプロジェクト基本計画

本調査団によって、注力すべき活動の整理と指標の修正が行われた。注力すべき活動は上記3 - 1のとおりである。特に中心的な活動となっていくのは医療機材政策・ガイドラインの策定であり、南アフリカ共和国の大学教授等、他国への視察により得られたリソースを活用して実施する方針である。また、地方ワークショップから中央ワークショップへの定期報告書の提出は、インフラ課およびワークショップの計画策定能力に関連する重要な事項であることから、プロジェクトより定期報告作成のための指導と促進を継続的に行うこととする。

一方、ワークショップに対する保守管理技術者研修については、中心的な活動とは位置づけず、予算の中で可能な範囲で実施する程度とする。これは、現時点でもある程度の技術力を持っており、緊急性を要しないこと、また保健省からワークショップに対しての予算配分方法の改善がなされることが、その技術力を活用するための前提であることが、理由である。

以上のとおり、今後残り期間においては、主に医療機材マネジメント強化に注力をする。

指標については、事前調査の段階で具体化されなかったものについて、プロジェクト活動を通じて把握された実情を踏まえて入手可能な指標を導入した。詳細は、付属資料1.M/M別添資料2 Midterm Review Progress ReportのAnnex4：PDMのとおりである。

付 属 資 料

1 . 運 営 指 導 調 査 団 議 事 録 (M / M)

2 . 1 オ リ ジ ナ ル P D M

2 . 2 オ リ ジ ナ ル P O

1. 運営指導調査団議事録 (M/M)

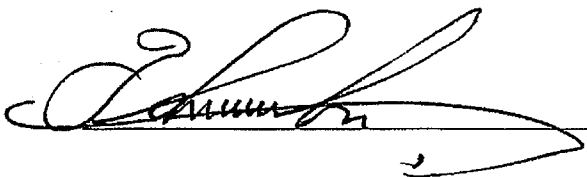
MINUTES OF MEETINGS
BETWEEN THE JAPANESE PROJECT CONSULTATION TEAM
AND THE AUTHORITIES CONCERNED OF THE MINISTRY OF HEALTH, REPUBLIC OF
UGANDA ON JAPANESE TECHNICAL COOPERATION FOR THE IMPROVEMENT OF
HEALTH INFRASTRUCTURE MANAGEMENT PROJECT

The Japanese Project Consultation Team (hereinafter referred to as “the Team”), organized by the Japan International Cooperation Agency (hereinafter referred to as “JICA”) and headed by Mr. Susaki, Resident Representative of JICA Uganda Office.

During its stay in the Republic of Uganda, the Team had a series of discussions with the Uganda authorities concerned on the matters related to the activities of the Improvement of Health Infrastructure Management project (hereinafter referred to as “the Project”)

As a result of discussions, both sides agreed upon the matters referred to in the document attached hereto.

Kampala, 7 December 2007



Mr. Takehiro Susaki
Resident Representative
JICA Uganda Office,
Japan International Cooperation Agency (JICA)



Dr. Lawrence N. Kaggwa.
For: Permanent Secretary
Ministry of Health
The Republic of Uganda

Attached Document

I. Background of Project

The three-year project started on June 1, 2006 for the purpose of improving the Health Infrastructure management.

In accordance with the Record of Discussions(R/D) signed on April 4, 2006 by both sides, 1 long term expert and 4 short term expert have been dispatched to Uganda. The Japanese side took necessary measures to provide equipment to facilitate the implementation of the Project.

In the above situation, JICA dispatched the Team to Uganda in order to review activities and progress of the Project.

As a result of a series of the discussions with organizations concerned and meeting with officials of the Ministry of Health, both sides reviewed the activities of the Project and agreed upon the modifications made in the plan of the Project.

II. Summary of Discussions

1. Summary Report of Activities

JICA consultation team submitted the summary report (ANNEX 1) summarizing the achievement of the project based upon the Midterm Review Progress Report (ANNEX 2) prepared by Health Infrastructure Division, Ministry of Health.

2. Modification of Project Design Matrix (PDM)

Both sides agreed to modify the PDM specified in R/D according to the changing environment and the progress of the Project. The Revised Master Plan (ANNEX 3) based on the revised PDM (ANNEX 4). Both sides reviewed Activities, Objectively Verifiable Indicators, Input, and Important Assumptions and specifically defined them and agreed to review them.

Based on the revised PDM, the Plan of Operation (PO) was also reviewed. The revised PO is attached as ANNEX 5.



3. Other Points Discussed

Both sides discussed and agreed on the following matters.

3.1 Funding for Regional Workshops

One of the major issues that should be solved is funding mechanism for regional workshops. Although medical equipment maintenance in Uganda has been through regional workshop structure, actual accessibility of the funds has been difficult. The regional workshops are therefore unable to carry out maintenance regularly. All the outputs of the project are strategically dependent on a reliable funding mechanism.

JICA therefore recommends that this issue is taken as a priority by the Ministry of Health. Without the appropriate and sustainable funding mechanism for maintenance activities, the project purposes would not be achieved and the health infrastructure management would not essentially be improved.

3.2 Reviewing of Medical Equipment Policy and Guidelines

As a result of consultation by Dr. Sugishita, JICA Senior Advisor, dispatched as a short term experts, the revision of medical equipment policy and guidelines was agreed. Medical equipment management system improvement was proposed as one of the major activities for the next half of project period.

On the discussions with National Advisory Committee on Medical Equipment (NACME), it was agreed that the review of the guidelines should take into account experiences from the field. Moreover, the master list for medical equipment format was shared as an idea by the Project coordinator.

3.3 Observation trip in Mbale by the Team

The Team visited the Referral Hospital and Regional Workshop in Mbale to consult on the progress of workshop activities. According to the interview conducted with hospital and JOCV staff, medical equipment management has improved.

However, the team observed that regular reporting by Regional Workshop need to be improved and supervision by the Health Infrastructure Division should be strengthened.

Regarding medical equipment management in the hospital, some break down of medical equipment was reported due to misuse. In order to prevent such cases, the Team recommend that user training should be done. The user training that was started previously is not functioning.



Tentative summary report of activities for the Improvement of
Health Infrastructure Management Project

Submitted by the JICA consultation team

1. Introduction

The Improvement of Health Infrastructure Management Project started from 1st of June 2006 for 3 years according to the record of discussions between the Governments of Japan and republic of Uganda.

This report is summarizing the achievements of the project based upon the "Mid Term Review Progress Report" submitted by Eng. Sitra Mulepo, the project manager, Health Infrastructure Division, Ministry of Health, in November 2007.

2. Three outputs of the project

1. Problem oriented planning is developed and implemented by Health Infrastructure Division.
2. The referral function of the central workshop is strengthened.
3. Capacity of the regional workshop is strengthened to carry out medical equipment maintenance and provide technical advice to users.

3. Budgeting support from JICA side for first one and half years

- Data collection and supervision activities for medical equipment: 71 million USH
- Equipping and renovation of eight workshops: 420 million USH
- Technical training: 62 million USH
- Running cost for JICA office in HID: 2 million USH

4. The main achievements

- Medical equipment data in health facilities are successfully collected from the 11 regional referral hospitals, 43 general hospitals and 77 health centers and the collected data has been sorted out by MS Excel file. This medical equipment data were analyzed and utilized for planning of maintenance activities. This inventory mechanism was presented on the conference of South African Federation of Hospital Engineering during 17-19 October 2007.
- Renovation and equipping the Central and 7 Regional workshops has been successfully achieved.



- Technical training focused on ophthalmology and x-ray imaging is conducted, and the training for various types of medical equipment installed in Mbale RRH and Tororo GH by the grant aid of Japanese Government has been implemented.
- The biomedical engineering network within the region such as Kenya, Malawi and South Africa is established.
- Few more technical staff members are appointed as the permanent status of the government staff in the regional workshops.

5. Things behind the schedule

- Revision of the financial mechanism of the Ministry of Health to Central and Regional Workshops was core for improving quality of maintenance from outset of this project. This financial mechanism was discussed on 27 October 2005 during the National Health Assembly and it was agreed that this is an action for Health Infrastructure Working Group in the financial year of 2006/07.
- “National Medical Equipment Policy” for the guidelines of medical equipment management has not been reviewed. The meeting will start soon for further development. It will be highly appreciate the budget, 50 million USH, from the Ministry of Health for regular activities of NACME. The JICA project has decided to support for budgeting about 116 million USH for supervision of situation analysis.
- The quarterly maintenance supervision and ad hoc repair work for the health facilities by Regional and Central Workshops are not properly documented. Documentation of maintenance work is the most important task to review and updating the medical equipment data for its inventory.
- Training of trainers, TOT, for user trainers are not implemented because the strategy for sustainable mechanism of user training supported by the hospital or local governments has not been developed yet. This is may be the reason of health facility managers have less attention to user training, consequently budgeting mechanism is not clearly defined.




**Minutes of Courtesy Call Meeting by Project Consultation Team
3rd December, 2007 at Ministry of Health Head Quarter Level 3 Board Room**

Attendance

Attendants from Ministry of Health:

Dr. Lawrence Kaggwa, Director Health Service, Planning and Development
Dr. Amandua Jacinto, Commissioner for Clinical Services
Eng. S.S. Wanda, Assistant Commissioner, Health Infrastructure, Project Director
Eng. Sitra Mulepo, Senior Engineer, Project Manager

Attendants from JICA:

Mr. Shintaro Takano, Project Supervisor, JICA Human Development Department
Dr. Takuji Date, JICA Short Term Expert
Ms. Akiko Niwa, Project Coordinator
Mr. Yoshitaka Inagaki, Assistant Resident Representative, JICA Uganda

Agenda

1. Communication from the chair
2. Debriefing the mission of the consultation team by JICA Project Supervisor
3. Discussion on the activities behind the project schedule
4. Closing Remarks by the chair

Min 01: Communication from the chair

- Chairman called the meeting to order at 11:20a.m. He welcomed members present and asked them to introduce themselves. Thereafter he briefed members the aim of the meeting and particularly welcomed the JICA consultation team. He expressed appreciation for Japanese Government for different health projects by grant aid. He noted that medical equipment management is challenging in Uganda, however this will benefit for not only Japanese Government but also other input for the health infrastructure.

Min 02 : Debriefing the aim of the consultation team by JICA Supervisor

- JICA Supervisor explained the purpose of the mission of the consultation team and the tentative summary report.

Min 03 : Discussion on the activities behind the project schedule

- Commissioner expressed the number of the technical staff is not enough to manage to cover the country. User trainers and user training mechanism are established during DANIDA project was functioning.



- Project Coordinator expressed that with respect to the sustainable management of medical Equipment, although budget size is important but accessible and predictable funding mechanism for workshop is vital.
- Asst. Commissioner explained that during the DANIDA project, the funding mechanism was working. However, the contribution to the regional workshops in 2006/2007 is below 30%.
- Director requested HID to prepare an official memo to PS for further process on improving the funding mechanism. Commissioner promised to implement the process for further steps with HID official memo.
- Director expressed that the Ministry has been concerned the current condition for activities of NACME regarding the National Medical Equipment Policy and Guidelines,
- Project Manager noted that NACME has started the meeting for the National Medical Equipment Policy and Guidelines.
- Project Manager expressed that pilot study for maintenance activities with simple format has been successfully achieved in central and Hoima region for documentation of maintenance activities. Each regional workshop has been already equipped with computers for documentation. The training for documentation by each workshop managers will be done in the December 2007.
- Director remarked that the User training for medical equipment of ICU in Mulago hospital has been successfully organized by the nurses for 10 years.
- Commissioner explained the function of user training may be taken over by the Human Resource Division.
- Project Manager expressed that one nurse needs to be appointed as a user trainer in each district for respective health facilities. The former national user trainer will be involved to improve the situation soon.

Min 04 : Closing Remarks

Consultation team and the participants of the meeting agreed to have further discussion about the above issues again in the meeting planned on 6th December. Project Coordinator requested the Director to arrange a participant from Planning and Development Department for the meeting on 6th December to discuss about progress of direct funding mechanism to regional workshops.




ANNEX2 : MIDTERM REVIEW PROGRESS REPORT

MID TERM REVIEW PROGRESS REPORT

November 2007

HEALTH INFRASTRUCTURE DIVISION (HID)

MINISTRY OF HEALTH (MoH)

Project Name: Improvement of Health Infrastructure Management in Uganda.
Project duration: 2006 to 2009.
Target Beneficiaries: HID and regional medical equipment maintenance workshops.
Target Group: Engineers, technician/artisans from hospitals and regional workshops, regional User trainers, equipment users and facility managers.
Overall Goal: To establish a more efficient and cost effective health infrastructure management and maintenance system for Uganda.
Specific Objective: To strengthen the Capacity of the HID and Regional Workshops to Manage Health Infrastructure and Maintain Medical Equipment
Overall Budget: US\$ 900,000.0 (JICA) plus 10% contribution from MoH/GoU.
Reporting Period: July 2006 to November 2007



1. Introduction

The Project for Improvement of Health Infrastructure Management (HIM) in Uganda is implemented by the HID in cooperation with Japan International Cooperation Agency (JICA).

The specific objective of the HIM Project is to strengthen the capacity of the HID and Regional Workshops (RWs) to Manage Health Infrastructure and Maintain Medical Equipment through training of available human resource, improving existing management systems and retooling the RWs.

Implementation of the HIM Project started in June 2006. At operational level, the HIM Project is managed by a Project Manager; JICA PC under close supervision of the Project Director (PD). The Macro Project organisational structure is attached as Annex 1.

2. Key Project Outputs

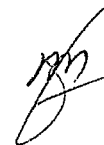
The HIDM project was designed to produce the following specific outputs in the short term:

- Problem oriented planning is developed and implemented by the HID and RWs
- The referral function of the central RW, Wabigalo is strengthened.
- Capacity of RWs is strengthened to carry out medical equipment maintenance and provide technical advice to users.

3. Planned Activities

A number of activities were planned to realise the set outputs highlighted above. For the period under review, the following key activities were carried out:

- Review of existing inventory data and data collection tools.
- Carry out medical equipment inventory in health facilities and prepare a database system for managing the inventory information.
- Plan and procure tools and equipment for RWs.
- Analyse medical equipment inventory data and use it to implement problem oriented planning for maintenance and supervision.
- Carry out training needs assessment and conduct training for HID and RW technicians and engineers.
- Establish a mechanism for evaluation and monitoring performance of medical equipment and the RWs.
- Review policy guidelines and specifications on medical equipment.



4. Specific Achievements and Status of Project implementation

For the first half of implementation of the project, the HID has been able to register the following achievements:

- Carried out inventory in fifty four (54) hospitals and seventy seven (77) health centres.
- Carried out analysis of data on equipment condition in the above health facilities and used the information for maintenance planning and scheduling (Annex 2 gives a summary of the findings).
- Successfully piloted implementation of problem oriented planning for medical equipment maintenance and inventory update in Central and Hoima region using Wabigalo RW staff.
- Carried out training for technicians and engineers in Ophthalmic equipment maintenance, basic x-ray imaging and maintenance, basic computer training for Wabigalo RW technicians on medical equipment inventory data entering and analysis.
- Sent one (1) technician for training in Philips patient monitors maintenance in Nairobi in collaboration with Philips medical systems, Kampala.
- Procured and distributed workshop tools and equipment to Arua, Hoima, Gulu, Soroti, Mbale, Wabigalo, Kabale and Fort Portal regional workshops.
- Collaborated with HSPS¹/DANIDA² to establish a list of medical equipment for the medical equipment credit line.
- Working with the Resource Centre and DANIDA to prepare a database system for health infrastructure inventory management.
- Initiated preparation of a plan for review of the National medical equipment policy document by NACME³
- Two (2) HID engineers and JICA PC attended a conference on Health Technology management in South Africa.

Annex 3 gives a detailed description of the specific status and achievements on each specific output.

5. Challenges

The implementation of the HIM project presented some challenges relating to funding and human resources capacity. The following challenges still remain outstanding:

- Need to review the funding mechanism for RWs is critical for realising predictable funding and

¹ HSPS - Health Sector Program Support

² DANIDA - Danish International Development Agency

³ NACME - National Advisory Committee on Medical Equipment



planning for equipment maintenance by RWs.

- Lack of an operation manual for RWs results in varied understanding by stakeholders of the mandate and functioning of the workshops.
- Training of engineers and technicians in Biomedical engineering remains under funded.
- Review of the NACME equipment policy document is critical for streamlining equipment acquisition, management (i.e. maintenance, replacement, and disposal).
- Streamlining user training in the district PHC activities is strategically the only sustainable way to ensure proper management of equipment. Training of competent ToTs at district level is critical in this case.

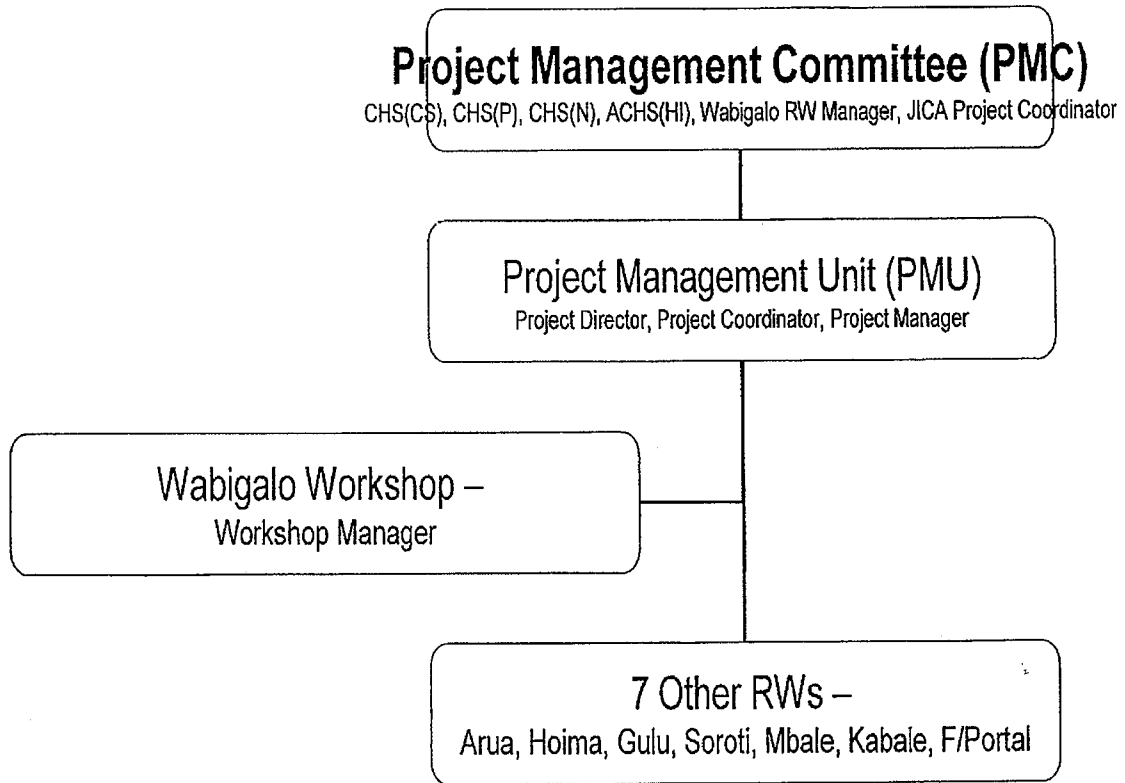
6. Conclusion

Implementation of the HIM Project has made good achievements over the first half of its project life. However, establishing a sustainable equipment management system will require involving other stakeholders and streamlining RW operations and policy review to emphasize:

- Budgeting for operation and maintenance costs
- User training as a routine district PHC activity
- Health infrastructure inventory taking and update
- Operational condition of equipment as one of the league table indicators.



Macro Project Management Structure



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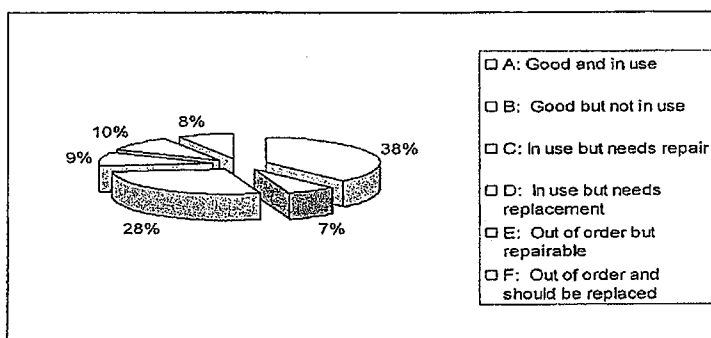
ANNEX 2: Equipment inventory data analysis

- A: Good and in use
- B: Good but not in use
- C: In use but need repair
- D: In use but need replacement
- E: Out of order but repairable
- F: Out of order & need replacement

District	Hospitals	Equipment Condition					
		A	B	C	D	E	F
Regional referral hospitals							
Arua	Arua RRH	43%	7%	22%	12%	7%	9%
Jinja	Jinja RRH	28%	10%	21%	17%	11%	13%
Masaka	Masaka RRH	50%	6%	25%	7%	6%	6%
Kabarole	Fort Portal RRH	47%	3%	32%	7%	5%	6%
Gulu	Gulu RRH	42%	13%	13%	11%	6%	15%
Lira	Lira RRH	43%	4%	26%	12%	10%	5%
Hoima	Hoima RRH	44%	1%	29%	11%	7%	8%
Mbarara	Mbarara GH	50%	4%	29%	2%	10%	5%
Kabale	Kabale RRH	54%	9%	16%	7%	7%	7%
Soroti	Soroti RRH	56%	6%	21%	7%	5%	5%
General hospitals							
Adjumani	Adjumani GH	63%	9%	14%	0%	11%	3%
Moyo	Moyo GH	38%	12%	31%	5%	7%	7%
Nebbi	Nebbi GH	32%	6%	30%	9%	8%	15%
Yumbe	Yumbe GH	44%	6%	27%	6%	13%	4%
Kamuli	Kamuli GH	40%	50%	3%	1%	5%	1%
Kayunga	kayunga GH	40%	1%	24%	13%	14%	8%
Mityana	Mityana GH	16%	8%	29%	20%	15%	12%
Mpigi	Gombe GH	33%	2%	34%	12%	12%	7%
Mubende	Mubende GH	27%	12%	40%	10%	7%	4%
Mukono	Kawolo GH	34%	3%	15%	24%	6%	15%
Nakaseke	Nakaseke GH	38%	3%	20%	21%	7%	11%
Rakai	Rakai General Hospital	32%	2%	26%	22%	12%	6%
Rakai	Kalisizo	54%	3%	21%	10%	6%	6%
Kasese	Bwera GH	40%	21%	25%	0%	10%	4%

District	Hospitals	Equipment Condition					
		A	B	C	D	E	F
Kasese	Kilembe GH	40%	4%	28%	14%	7%	7%
Bundibugyo	Bundibugyo GH	31%	8%	37%	4%	15%	5%
Apac	Apac GH	31%	2%	30%	13%	9%	13%
Kitgum	Kitugum GH	34%	2%	40%	5%	14%	5%
	Anaka GH	39%	6%	28%	13%	8%	6%
Kibaale	Kagadi GH	31%	8%	37%	4%	15%	5%
Kiboga	Kiboga GH	22%	5%	28%	12%	20%	13%
Masindi	Masindi GH	35%	8%	20%	9%	20%	8%
Masindi	Kiriyandongo GH	23%	5%	43%	3%	14%	12%
Bushenyi	Kitagata GH	32%	7%	29%	5%	17%	10%
Kisoro	Kisoro GH	76%	4%	11%	0%	5%	4%
Ntungamo	Itojo GH	33%	10%	30%	2%	20%	5%
Rukungiri	Kambuga GH	41%	8%	20%	12%	4%	15%
Mbale	Mbale RRH	30%	4%	28%	16%	10%	12%
Bududa	Bududa GH	25%	7%	51%	0%	8%	9%
Bugiri	Bugiri GH	30%	1%	50%	15%	2%	2%
Butaleja	Busolwe	28%	13%	38%	6%	2%	13%
Iganga	Iganga GH	30%	10%	31%	6%	12%	11%
Kapchorwa	Kapchorwa GH	37%	2%	33%	13%	9%	6%
Pallisa	Pallisa GH	38%	5%	27%	9%	11%	10%
Tororo	Tororo GH	39%	6%	28%	13%	8%	6%
Abim	Abim GH	12%	6%	34%	10%	14%	24%
Kumi	Kumi GH	48%	5%	26%	10%	4%	7%
Moroto	Moroto GH	34%	8%	30%	7%	11%	10%
	Atatur GH	37%	2%	37%	3%	15%	6%

Average for all equipment in hospitals



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ANNEX 2: STATUS OF ACTIVITY IMPLEMENTATION

PROJECT FOR THE IMPROVEMENT OF HEALTH INFRASTRUCTURE DEVELOPMENT AND MANAGEMENT IN UGANDA

Project Implementation Status Report

Output	Planned Activities	Status/Achievements	Remark
1. Project Implementation Unit (PIU) set up	1-1 Securing office space for JICA Expert(s)	<ul style="list-style-type: none"> Project Implementation Unit was set up, furnished and is fully operational with a JICA staff as Project Coordinator and HID Staff (engineer and technicians) A available data (collected in 2002) was assessed and determined not to be reflective of the existing situation in the health facilities. A available data collection tools were reviewed and the equipment operational conditions reduced from 7 to 6. PLAMAS database system introduced in 2001/2002 was found not in use and thus considered inappropriate. Revised data collection tools were prepared and used for collecting medical equipment inventory in hospitals and health centres. One (1) day training seminar was conducted for technicians of the central RW, Wabigalo on medical equipment inventory data collection using revised tools 	<ul style="list-style-type: none"> HID/MoH provided office space, furniture, a safe and has one vehicle available for project work. JICA provided computer equipment, photocopier, and one additional vehicle for project work
	1-2 Furnishing of PIU JICA office		
	1-3 Orientation for the PIU staff		
	1-4 Procurement of office equipment for the PIU office		
2. Problem oriented planning is developed and implemented by the HID and RWs	2-1 Review of existing data and accessing its adequacy	<ul style="list-style-type: none"> Available data collection tools were reviewed and the equipment operational conditions reduced from 7 to 6. PLAMAS database system introduced in 2001/2002 was found not in use and thus considered inappropriate. Revised data collection tools were prepared and used for collecting medical equipment inventory in hospitals and health centres. One (1) day training seminar was conducted for technicians of the central RW, Wabigalo on medical equipment inventory data collection using revised tools 	<ul style="list-style-type: none"> PLAMAS has been upgraded by developer of the software and is successfully being used in Malawi for health infrastructure management. Information collected can be used to assess operational condition of equipment and its utilisation. If hospital and district based technicians are to be involved in data collection, then it will be necessary to carry out similar training for them.
	2-2 Review of existing data collection tools and assessing their adequacy		
	2-3 Reviewing existing data management tools and system		
Problem oriented planning is developed and implemented by the HID and RWs	2-4 Preparing and printing revised data collection tools	<ul style="list-style-type: none"> Revised data collection tools were prepared and used for collecting medical equipment inventory in hospitals and health centres. One (1) day training seminar was conducted for technicians of the central RW, Wabigalo on medical equipment inventory data collection using revised tools 	<ul style="list-style-type: none"> Information collected can be used to assess operational condition of equipment and its utilisation. If hospital and district based technicians are to be involved in data collection, then it will be necessary to carry out similar training for them.
	2-5 Carry out a 1 day orientation workshop for technicians on data collection using developed tools		

3/11

<p>2-6 Carry out a medical equipment survey in hospitals & selected HCIVs</p>	<ul style="list-style-type: none"> Medical equipment inventory was carried out in 54 (11 RRH and 53 GH) and 82 health centres Inventory data collected was entered in a computer and analysis carried out for hospitals. Analysis of HC inventory data has started. 	<ul style="list-style-type: none"> Preliminary analysis shows 7% of available equipment in good operational condition is not in use Average of 38% of available equipment is fully functional and in use Up to 38% of available equipment needs maintenance/repair.
<p>2-7 Develop a database and inventory management system</p>	<ul style="list-style-type: none"> A database system is being developed in conjunction with the Resource Centre to manage health infrastructure data Successfully combined maintenance of equipment and inventory data update on a pilot basis in Central and Hoima regions. 	<ul style="list-style-type: none"> Version 2 of database software is ready for testing in the field using palm help computers to collect the data Need to train other RW managers, the concept of problem oriented planning using inventory data.
<p>2-8 Procuring equipment and software for setting up new data management and monitoring system in HID and RWs</p>	<ul style="list-style-type: none"> Computer equipment (PC⁴, printer, etc) was procured and distributed to all 8 RWs for report writing and inventory data management. 	
<p>2-9 Carry out support supervision for data collection and inventory update</p>	<ul style="list-style-type: none"> Support supervision visits were conducted to Jinja, Kawolo, and Kayunga hospitals during the equipment inventory survey exercise by technicians. 	<ul style="list-style-type: none"> There is need for HID to hold discussions with hospital staff to understand implication of the analysis results. HID needs to prepare and distribute guidelines on interpretation of equipment condition and actions required for each condition.
<p>3-1 Develop training modules & materials for data analysis, monitoring and management</p>	<ul style="list-style-type: none"> Central RW technicians trained in-house by OJPC trainer and PM, maintenance work reporting and evaluation. 	<ul style="list-style-type: none"> OJPC trainer resigned recently and there may be need to get a replacement
<p>3-2 Conduct training for technicians in inventory management and monitoring</p>	<ul style="list-style-type: none"> Central RW technicians trained in-house by OJPC trainer, data entry and basic data analysis Draft workshop reporting format prepared and introduced to central RW staff. 	<ul style="list-style-type: none"> More training will be required for all RW Managers and staff in data analysis and preparation of RW reports using new format.
<p>2 Capacity for problem oriented planning and infrastructure management developed within HID and RWs.</p>		

⁴ PC Personal computer

	<p>3-5 Preparing and printing guidelines for health infrastructure planning and management</p>	<ul style="list-style-type: none"> Plan for review of medical equipment policy document prepared by NACME List of essential equipment under the medical equipment credit line was prepared in conjunction with NACME and other stakeholders. No activity carried out yet 	<ul style="list-style-type: none"> Activity budget for this activity needs to reviewed to match budget requirements for adopted method of work to accomplish task. Review of existing user training manual will be the starting point.
	<p>3-6 Develop guidelines and IECs⁵ material for equipment users</p>	<ul style="list-style-type: none"> No activity carried out yet 	<ul style="list-style-type: none"> There is necessary to have a trainer for each district to reinforce the existing regional trainers.
<p>3 Capacity for problem oriented planning and infrastructure management developed within HID and RWs.</p>	<p>3-7 Conduct training of Trainers (TOT) for medical equipment</p>	<ul style="list-style-type: none"> No activity carried out yet 	<ul style="list-style-type: none"> A four (4) weeks training programme conducted by the University of Tshwane, S. Africa (UTSA) is recommended for new RW managers and newly recruited technicians in RRHs – it covers anatomy and physiology and wide range of basic medical equipment maintenance. A 4days training programme conducted by UTSA on Health care technology management is recommended for RW managers and hospital Administrators.
	<p>4-1 Conducting a technical training needs assessment for technicians & engineers in the RWs and HID</p>	<ul style="list-style-type: none"> Following areas were identified as challenging and requiring capacity building through training: <ul style="list-style-type: none"> Ultra sound & X-ray imaging equipment maintenance Laboratory equipment maintenance Dental equipment maintenance Theatre equipment maintenance Ophthalmic equipment maintenance Inventory and data management Health care technology and workshop management (for both RW managers & Hospital managers). 	<ul style="list-style-type: none"> A four (4) weeks training programme conducted by the University of Tshwane, S. Africa (UTSA) is recommended for new RW managers and newly recruited technicians in RRHs – it covers anatomy and physiology and wide range of basic medical equipment maintenance. A 4days training programme conducted by UTSA on Health care technology management is recommended for RW managers and hospital Administrators.
<p>4 Technical capacity to manage and maintain medical equipment improved.</p>	<p>4-2 Prepare training manual for medical equipment maintenance and management</p>	<ul style="list-style-type: none"> No work has been started yet but could be interlinked with NACME equipment policy review. 	<ul style="list-style-type: none"> Operational manual for RWs needs to be developed to guide operations of the workshops
	<p>4-3 Review and revise existing technicians' training curriculum for medical equipment maintenance</p>	<ul style="list-style-type: none"> Agreed on tailor made training programmes to address immediate training needs in the short term Participate in development of technicians training curriculum for technicians under the Protestant/Catholic medical Bureau /JMS⁶. 	<ul style="list-style-type: none"> There is need to harmonise training programmes with training needs of different cadre of technicians in the RWs, HSD⁷ and hospitals

⁵ IEC - Information education communication
⁶ JMS - Joint Medical Stores

<p>4-4 Conduct in-house training in medical equipment maintenance for technicians</p>	<ul style="list-style-type: none"> • 11 technicians from RWs and hospitals trained on Ophthalmic equipment maintenance through ORBIS⁸/MoH/JMS collaboration. • Conducted Basic X-ray imaging training course with Philips for 15 technicians and engineers from RWs and hospitals (including Mulago hospital). • Facilitated 10 technicians to participate in training on operation and basic maintenance of various equipment under the JICA Eastern Uganda Grant Aid Project (Mbale & Tororo hospitals) • Three technicians were facilitated to reinstall a Philips X-ray machine in Fort Port RRH⁹ under supervision of engineers from Philips, Uganda. • Two (2) engineers and JICA PC facilitated to attend a workshop on health care technology management in Port Elizabeth, South Africa. 	
<p>4-5 Carry out technical support supervision and monitoring in the RWs and hospitals</p>	<ul style="list-style-type: none"> • Support supervision and monitoring of RWs was largely carried out through the Area Team visits. • Specific visits were conducted to a few hospitals in Mbale, Hoima, Arua, Kabale and Soroti regions by JICA staff and HID engineers to attend RW meetings and disseminate inventory data analysis information. 	<ul style="list-style-type: none"> • More Program specific support supervision visits and meetings need to be conducted by staff of HID and JICA to evaluate and monitor the Project activities.

7 HSD
8 ORBIS
9 RRH

- Health Sub-district
- American international non governmental organisation with flying doctors who carry out eye surgery
- Regional referral hospital

ANNEX3 : REVISED MSATER PLAN

1. OBJECTIVES OF THE PROJECT

(1)Overall Goal

An efficient and cost effective health infrastructure management mechanism is established in the Republic of Uganda.

(2)Project Purpose

The capacity of the Health Infrastructure Division (HID) and the central/regional workshops to manage health infrastructure and maintain medical equipment is strengthened.

2. OUTPUTS OF THE PROJECT

- I. Problem oriented planning is developed and implemented by HID.
- II. The referral function of the central workshop is strengthened.
- III. Capacity of the regional workshops is strengthened to carry out medical equipment maintenance and provide technical advice to users

3. ACTIVITIES OF THE PROJECT

- I. Problem oriented planning is developed and implemented by HID.
 - I-1 Health infrastructure inventory management mechanism strengthening
 - I-1-1 Reviewing existing data
 - I-1-2 Collecting additional data
 - I-1-3 Up dating health infrastructure inventory
 - I-2 Planning for improvement of the current situation
 - I-2-1 Planning for training
 - I-2-2 Planning for development of guidelines and IEC materials
 - I-2-3 Planning for Trainers Training for medical equipment users
 - I-2-4 Planning for procurement for re-tooling for the regional workshops
 - I-2-5 Planning for problem oriented supervision
 - I-3 Implementation of plan
 - I-3-1 Conducting training
 - I-3-2 Developing the guidelines and IEC materials
 - I-3-3 Implementing problem oriented supervision
- II. The referral function of the central workshop is strengthened.
 - II-1 Analysing situation
 - II-2 Identifying the needs of technical improvement
 - II-3 Participating in the technical training
- III. Capacity of the regional workshops is strengthened to carry out medical equipment maintenance and provide technical advice to users.
 - III-1 Analysing situation
 - III-2 Identifying the needs of technical improvement
 - III-3 Participating in the technical training
 - III-4 Improving and sustaining the maintenance recording system and preparing performance reports from regional workshops
 - III-5 Analysing the frequent causes of medical equipment break down
 - III-6 Providing technical advice to the hospital and district technicians



ANNEX 4 : REVISED PROJECT DESIGN MATRIX (PDM)

Project Title: Improvement of Health Infrastructure Management in the Republic of Uganda

Term of Cooperation: Three (3) years from 2006

Target Group: HID and regional medical equipment maintenance workshops

1. HID engineers and technicians
2. Central/Regional workshops technicians and artisans

Project Design Matrix(PDM)			
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal: An efficient and cost effective health infrastructure management mechanism is established in Uganda.</p>	<ol style="list-style-type: none"> 1. No. of major breakdowns of health infrastructure 2. Waiting time for repair work to be done 3. % of functional health infrastructure 	<ol style="list-style-type: none"> 1. Quarterly / Annual Performance Report by RWS 2. Quarterly / Annual Performance Report by HID 	
<p>Project Purpose: The capacity of the Health Infrastructure Division (HID) and central/regional medical equipment maintenance workshops to manage health infrastructure and maintain medical equipment is strengthened.</p>	<ol style="list-style-type: none"> 1. No. of major breakdowns of medical equipments 2. Waiting time for repair work to be done 3. % of functional medical equipment 	<ol style="list-style-type: none"> 1. Quarterly / Annual Performance Report by RWS 2. Quarterly / Annual Performance Report by HID 	<ol style="list-style-type: none"> 1. Five(5)% of annual budget allocated for the maintenance work 2. Appropriate Funding Mechanism for the Regional Workshop is in place.




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Project Design Matrix(PDM)			
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<p>Outputs</p> <p>1. Problem oriented planning is developed and implemented by HID.</p>	<p>1-1. Up dating existing data</p> <p>1-2. IEC materials prepared</p> <p>1-3. Training manuals</p> <p>1-4. Trainings conducted</p> <p>1-5. Participants trained</p> <p>1-6. Regional workshop committee meetings held</p>	<p>1. Quarterly Performance Report by Regional Workshops</p> <p>2. Quarterly Work Plan and Performance Report by Central Workshops</p> <p>3. Prepared IEC Materials</p> <p>4. Training Manuals</p>	
<p>2. The referral function of the central workshop is strengthened.</p>	<p>2-1. Referred repair carried out</p>	<p>2-1, 2-2 Quarterly / Annual Performance Report by CWS</p>	
<p>3. Capacity of regional workshops is strengthened to carry out medical equipment maintenance and provide technical advice to users.</p>	<p>3. No. of repair carried out by Regional Workshops</p>	<p>3-1,3-2. Quarterly Work Plan and Performance Report by Regional Workshops</p>	
<p>I. Problem oriented planning is developed and implemented by HID.</p> <p>I-1 Strengthening Health infrastructure inventory management mechanism</p> <p>I-1-1 Reviewing existing data</p> <p>I-1-2 Collecting additional data</p> <p>I-1-3 Up dating health infrastructure inventory</p>	<p>Inputs (1) GoU</p> <p>i) Salary and allowances for counterpart staff</p> <p>ii) Office space for JICA experts/Project</p> <p>iii) Project Implementation Unit(PIU) cost (telephone, internet/e-mail, water, electricity etc.)</p> <p>iv) One operational vehicle for implementation of project activities in the field</p>		

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Project Design Matrix(PDM)	Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<p>I-2 Developing appropriate planning for improvement of the current situation</p> <p>I-2-1 Planning for training</p> <p>I-2-2 Planning for development of guidelines and IEC materials</p> <p>I-2-3 Planning for Trainers Training for medical equipment users</p> <p>I-2-4 Planning for procurement for re-tooling for the RWs</p> <p>I-2-5 Planning for problem oriented supervision</p> <p>I-3 Implementation of plan</p> <p>I-3-1 Conducting training</p> <p>I-3-2 Developing the guidelines and IEC materials</p> <p>I-3-3 Implementing problem oriented supervision</p> <p>II. The referral function of the central workshop is strengthened.</p> <p>II-1 Analysing situation</p> <p>II-2 Identifying the needs of technical improvement</p> <p>II-3 Participating in the technical training</p> <p>III. Capacity of the regional workshops is strengthened to carry out medical equipment maintenance and provide technical advice to users.</p> <p>III-1 Analysing situation</p>	<p>(2) JICA</p> <p>i) Experts for medical equipment management and maintenance</p> <p>ii) Vehicle for project operation (equipped to be usable as the mobile workshop vehicle)</p> <p>iii) Retooling and equipping of Wabigalo workshop and seven(7) other regional maintenance workshops with basic tools and equipment</p> <p>iv) Training for target group</p> <p>v) Operational costs for project activities except mandatory activities of IID</p>			

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Project Design Matrix(PDM)			
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
III-2 Identifying the needs of technical improvement III-3 Participating in the technical training III-4 Improving and sustaining the maintenance recording system and preparing performance reports from regional workshops III-5 Analysing the frequent causes of medical equipment break down III-6 Providing technical advice to the hospital and district technicians			

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Output	Activity	2006				2007				2008				2009				Responsible Person			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
I. Problem oriented planning is developed and implemented by HID.	I-1-2-4 Developing training modules and materials for inventory management	x	x																	HID	
	I-1-2-5 Conducting training for inventory management for HID staff and selected regional workshop staff			x																	HID
	I-1-2-6 Carrying out health infrastructure inventory data collection in hospitals and health centres	x	xxx	xxx	xxx																RWS
	I-1-3 Up dating health infrastructure inventory																				
	I-1-3-1 Carrying out support supervision for data collection and inventory update			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	HID
	I-2 Developing appropriate planning for improvement of the current situation																				
	I-2-1 Planning for training		x																		HID
	I-2-2 Planning for development of guidelines and IEC materials																				HID
	I-2-3 Planning for Trainers training for medical equipment users																				HID
	I-2-4 Planning for procurement for re-tooling the RWs																				
I-2-4-1 Carrying out inventory taking in regional workshops and prepare list of required tools			xxx	xxx																RWS	

Output	Activity	2006				2007				2008				2009				Responsible Person				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
Quarterly term																						
II. The referral function of the central workshop is strengthened.	II-1 Analysing situation			x										x	x	x	x					CWS/HID
	II-2 Identifying the needs of technical improvement			x																		CWS/HID
	II-3 Participating in the technical training			x	x		x	x	x					x	x	x	x					CWS
III. Capacity of the regional workshops is strengthened to carry out medical equipment maintenance and provide technical advice to users.	III-1 Analysing situation			x										x	x	x	x					RWS/HID
	III-2 Identifying the needs of technical improvement			x																		RWS/HID
	III-3 Participating in the technical training			x										x	x	x	x					RWS
Final evaluation	III-4 Improving and sustaining the maintenance recording system and preparing performance reports from regional workshops													x	x	x	x					RWS/HID
	III-5 Analysing frequent causes of medical equipment break down													xxx	xxx	xxx	xxx					RWS/HID
	III-6 Providing technical advice to the hospital users.													xxx	xxx	xxx	xxx					RWS/HID
	1. Preparation for final evaluation															xx						HID
	2. Final evaluation																x					JCC

*RC: Resource Centre, MoH
 *NACME: National Advisory Committee on Medical Equipment

2.1 オリジナルPDM

ANNEX 1.

PROJECT DESIGN MATRIX (PDM)

Project Title: Improvement of Health Infrastructure Management in the Republic of Uganda

Term of Cooperation: Three (3) years from 2006

Target Group: HID and regional medical equipment maintenance workshops

1. HID engineers and technicians
2. Central/Regional workshops technicians and artisans

Project Design Matrix(PDM)			
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal: An efficient and cost effective health infrastructure management mechanism is established in Uganda.</p>	<ol style="list-style-type: none"> 1. No. of major break downs of health infrastructure 2. Waiting time for repair work to be done 3. % of functional health infrastructure 4. Annual maintenance cost compared to the initial capital cost 	<ol style="list-style-type: none"> 1.&2.Quarterly regional workshop Reports 3.Annual inventory analysis reports for each region 4-1.Budget performance Reports for health facilities 4-2. Financial monitoring and management reports 	

Project Design Matrix(PDM)			
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<p>Project Purpose: The capacity of the Health Infrastructure Division (HID) and central/regional medical equipment maintenance workshops to manage health infrastructure and maintain medical equipment is strengthened.</p>	<ol style="list-style-type: none"> 1. No. of major breakdowns of medical equipments 2. Waiting time for repair work to be done 3. % of functional medical equipment 4. Annual maintenance cost compared to the initial capital cost 	<ol style="list-style-type: none"> 1.&2.Quarterly regional workshop Reports 3.Annual inventory analysis reports for each region 4-1.Budget performance Reports for health facilities 4-2. Financial monitoring and management reports 	<ol style="list-style-type: none"> 1. Five(5)% of annual budget allocated for the maintenance work 2.Financing mechanisms are properly operated
<p>Outputs</p> <ol style="list-style-type: none"> 1. Problem oriented planning is developed and implemented by HID. 	<ol style="list-style-type: none"> 1-1. Frequency of up dating existing data 1-2. No. of IEC materials prepared 1-3.No. of training manuals 1-4.No. of trainings conducted 1-5. No. of participants trained 1-6. No. of regional workshop committee meetings held 	<ol style="list-style-type: none"> 1.Annual health sector performance report 1-1. Annual inventory analysis reports for each region 1-2. Annual performance report 1-3&4&5. Training report 1-6.Minutes of Regional workshop committee meetings 	

Project Design Matrix(PDM)			
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<p>2. The referral function of the central workshop is strengthened.</p> <p>3. Capacity of regional workshops is strengthened to carry out medical equipment maintenance and provide technical advice to users.</p>	<p>2-1.No. of Situation analysis reports produced</p> <p>2-2. No. of referral cases</p> <p>3-1. No. of action plans drawn from break down reports</p> <p>3-2. No. of remedial actions taking by RWs</p>	<p>2-1. Situation analysis report</p> <p>2-2. HID performance report</p> <p>3-1. Annual work plan</p> <p>3-2.Regional workshops maintenance reports</p>	
<p>I. Problem oriented planning is developed and implemented by HID.</p> <p>I-1 Strengthening Health infrastructure inventory management mechanism</p> <p>I-1-1 Reviewing existing data</p> <p>I-1-2 Collecting additional data</p> <p>I-1-3 Up dating health infrastructure inventory</p> <p>I-2 Developing appropriate planning for improvement of the current situation</p> <p>I-2-1 Planning for training</p> <p>I-2-2 Planning for development of guidelines and IEC materials</p> <p>I-2-3 Planning for Trainers Training for medical equipment users</p> <p>I-2-4 Planning for procurement for re-tooling for the RWs</p>	<p>Inputs</p> <p>(1) GoU</p> <p>i) Salary and allowances for counterpart staff</p> <p>ii) Office space for JICA experts/Project</p> <p>iii) Project Implementation Unit(PIU) cost (telephone, internet/e-mail, water, electricity etc.)</p> <p>iv) One operational vehicle for implementation of project activities in the field</p> <p>(2) JICA</p> <p>i) Experts for medical equipment management and maintenance</p> <p>ii) Vehicle for project operation (equipped to be usable as the mobile workshop vehicle)</p> <p>iii) Retooling and equipping of Wabigalo workshop and seven(7)</p>		

Project Design Matrix(PDM)			
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<p>I-2-5 Planning for problem oriented supervision</p> <p>I-3 Implementation of plan</p> <p>I-3-1 Conducting training</p> <p>I-3-2 Developing the guidelines and IEC materials</p> <p>I-3-3 Implementing problem oriented supervision</p> <p>II. The referral function of the central workshop is strengthened.</p> <p>II-1 Analysing situation</p> <p>II-2 Identifying the needs of technical improvement</p> <p>II-3 Participating in the technical training</p> <p>III. Capacity of the regional workshops is strengthened to carry out medical equipment maintenance and provide technical advice to users.</p> <p>III-1 Analysing situation</p> <p>III-2 Identifying the needs of technical improvement</p> <p>III-3 Participating in the technical training</p> <p>III-4 Improving and sustaining the maintenance recording system</p> <p>III-5 Analysing the frequent causes of medical equipment break down</p> <p>III-6 Providing technical advice to the hospital and district technicians</p>	<p>other regional maintenance workshops with basic tools and equipment</p> <p>iv) Training for target group</p> <p>v) Operational costs for project activities except mandatory activities of HID</p>		

2.2 オリジナルPO

ANNEX 2.

PLAN OF OPERATION

Project name: *Improvement of Health Infrastructure Management in the Republic of Uganda.*

Project Purpose: *To develop the capacity of HID/MoH and regional medical equipment maintenance workshops to manage health infrastructure and maintenance medical equipment.*

Output	Activity	2006				2007				2008				2009				Responsible Person
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Quarterly term																		
0.Set up the Project Implementation Unit(PIU)	0-1. Project space formulation (furnish)		x															HID
	0-2. Procurement of equipment for PIU office		x															HID
I. Problem oriented planning is developed and implemented by HID.	I-1 Strengthening health infrastructure inventory management mechanism																	
	I-1-1 Reviewing existing data		xxx															HID
	<i>I-1-1-1 Assessing the problems with current data and inventory</i>		xxx															HID
	I-1-2 Collecting additional data																	
	<i>I-1-2-1 Reviewing existing data collection tools and prepare appropriate tools for data collection and management</i>		xxx															HID
	<i>I-1-2-2 Developing data management mechanism</i>		x x	x														HID
<i>I-1-2-3 Procuring equipments to set up at RWs for the new health infrastructure inventory management and monitoring mechanism (basic PC and soft wears and printer in case they already have them, it should be operationalised)</i>			x														HID	

Output	Activity	2006				2007				2008				2009				Responsible Person
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Quarterly term																		
I. Problem oriented planning is developed and implemented by HID.	<i>I-1-2-4 Developing training modules and materials for inventory management</i>		xx	x														HID
	<i>I-1-2-5 Conducting training for inventory management for HID staff and selected regional workshop staff</i>			x														HID
	<i>I-1-2-6 Carrying out health infrastructure inventory data collection in hospitals and health centres</i>				x													RWS
	<i>I-1-3 Up dating health infrastructure inventory</i>																	
	<i>I-1-3-1 Carrying out support supervision for data collection and inventory update</i>			x	x	x	x	x	x	x	x	x	x	x				HID
	I-2 Developing appropriate planning for improvement of the current situation																	
	<i>I-2-1 Planning for training</i>		x				x				x							HRD/HID
	<i>I-2-2 Planning for development of guidelines and IEC materials</i>						xxx											HPE/HID
	<i>I-2-3 Planning for Trainers training for medical equipment users</i>							xx										HRD/HID
	<i>I-2-4 Planning for procurement for re-tooling the RWs</i>																	
<i>I-2-4-1 Carrying out inventory taking in regional workshops and prepare list of required tools</i>		xx															RWS	

*HRD: Human Resource Division

*HPE: Health Promotion and Education

*NACME: National Advisory Committee on Medical Equipment

Output	Activity	2006				2007				2008				2009				Responsible Person	
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
Quarterly term																			
I. Problem oriented planning is developed and implemented by HID.	<i>I-2-4-2 Procuring and re-equipping regional workshops with required tools and equipment</i>			x														HID/JICA	
	I-2-5 Planning for problem oriented supervision				x	x	x	x	x	x	x	x	x	x				HID	
	I-3 Implementation of plan																		
	<i>I-3-1-1 Conducing training needs assessment for technicians and engineers at the HID and regional workshops</i>				xxx														HRD/ HID
	<i>I-3-1-2 Reviewing current training curriculum and develop an appropriate training curriculum for equipment maintenance technicians</i>					xx	xx				xx	xx			xx				HRD/HID
	<i>I-3-1-3 Preparing training manual for equipment maintenance and management</i>					xx					xx				xx				HID
	<i>I-3-1-4 Conducting in house training for HID and RWs' technicians to strength their skills and referral function capacities</i>						x					x							HRD/HID/ JICA
	<i>I-3-1-5 Conducing advanced training courses for engineers and selected technicians</i>					x					x				x				HID/JICA

Output	Activity	2006				2007				2008				2009				Responsible Person
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Quarterly term																		
I. Problem oriented planning is developed and implemented by HID.	<i>I-3-1-6 Conducting TOT for medical equipment users</i>								x									HID/JICA
	<i>I-3-1-7 Carrying out monitoring and evaluation of the training and performance of the technicians and workshops</i>				x	x	x	x	x	x	x	x	x	x				HRD/HID
	<i>I-3-1-8 Preparing quarterly and annual progress reports</i>				x	x	x	x	x	x	x	x	x	x				HID
	<i>I-3-2 Developing the guidelines and IEC material</i>																	
	<i>I-3-2-1 Developing proposals for improved health infrastructure standards, specifications and guidelines</i>								xx									HID/ NACME
	<i>I-3-2-2 Conducting a consensus meeting with key stakeholders on the new proposed health infrastructure standards and guidelines</i>								x									HID
	<i>I-3-2-3 Producing and disseminate the new standards and guidelines on health infrastructure management and maintenance</i>								x									HRD/HID
	<i>I-3-2-4 Producing and disseminating IEC materials</i>								x									HPE
	<i>I-3-3 Implementing problem oriented supervision</i>				x	x	x	x	x	x	x	x	x	x				HID

Output	Activity	2006				2007				2008				2009				Responsible Person
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Quarterly term																		
II. The referral function of the central workshop is strengthened.	II-1 Analysing situation		xxx															CWS/HID
	II-2 Identifying the needs of technical improvement			xxx														CWS/HID
	II-3 Participating in the technical training			x		x	x		x	x	x			x				CWS
III. Capacity of the regional workshops is strengthened to carry out medical equipment maintenance and provide technical advice to users.	III-1 Analysing situation		xxx															RWS/HID
	III-2 Identifying the needs of technical improvement			xxx														RWS/HID
	III-3 Participating in the technical training			x		x	x		x	x	x			x				RWS
	III-4 Improving and sustaining the maintenance recording system		xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx				RWS/HID
	III-5 Analysing frequent causes of medical equipment break down		xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx				RWS/HID
	III-6 Providing technical advice to the hospital and district technicians		xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx				RWS/HID
Final evaluation	1. Preparation for final evaluation											xx						HID
	2. Final evaluation												x					JCC

