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資料 1. 調査団員・氏名

スリランカ国気象情報・防災ネットワーク改善計画 団員名簿

第一次基本設計調査団（2006年10月24日～11月28日）

- | | | |
|-----------|-----------------------|---|
| 1. 植嶋 卓巳 | : 総括 | 独立行政法人国際協力機構
スリランカ事務所 所長 |
| 2. 駒崎 麻里子 | : 計画管理 | 独立行政法人国際協力機構
無償資金協力部 業務第一グループ
情報通信・ガバナンスチーム |
| 3. 栗田 博昭 | : 業務主任/
防災ネットワーク計画 | (株)パシフィックコンサルタンツインターナショナル |
| 4. 福井 徹郎 | : 気象情報ネットワーク計画 | (株)パシフィックコンサルタンツインターナショナル |
| 5. 大淵 雄興 | : 機材計画①/
運営維持管理計画 | (株)パシフィックコンサルタンツインターナショナル |
| 6. 山本 忠治 | : 機材計画② | (株)パシフィックコンサルタンツインターナショナル |
| 7. 加藤 宏承 | : 調達計画/積算 | (株)パシフィックコンサルタンツインターナショナル |

第二次基本設計調査団（2007年2月12日～3月10日）

- | | | |
|-----------|-----------------------|---|
| 1. 植嶋 卓巳 | : 総括 | 独立行政法人国際協力機構
スリランカ事務所 所長 |
| 2. 駒崎 麻里子 | : 計画管理 | 独立行政法人国際協力機構
無償資金協力部 業務第一グループ
情報通信・ガバナンスチーム |
| 3. 栗田 博昭 | : 業務主任/
防災ネットワーク計画 | (株)パシフィックコンサルタンツインターナショナル |
| 4. 福井 徹郎 | : 気象情報ネットワーク計画 | (株)パシフィックコンサルタンツインターナショナル |

基本設計概要説明調査団 (2007年5月23日～6月1日)

1. 坂田 英樹 : 総括
独立行政法人国際協力機構
スリランカ事務所 次長
2. 栗田 博昭 : 業務主任／
防災ネットワーク計画 (株)パシフィックコンサルタンツインターナショナル
3. 福井 徹郎 : 気象情報ネットワーク計画 (株)パシフィックコンサルタンツインターナショナル
4. 大淵 雄興 : 機材計画①／
運営維持管理計画 (株)パシフィックコンサルタンツインターナショナル

資料 2. 調査行程

2. 調査行程

第一次基本設計調査 (2006年10月24日～11月28日)

			官団員		コンサルタント				
			榎嶋 卓巳 総括	駒崎 麻里子 計画管理	栗田 博昭 業務主任/ 防災ネットワーク計画	山本 忠治 機材計画②	福井 徹郎 気象情報 ネットワーク計画	大淵 雄興 機材計画①/ 運営維持管理計画	加藤 宏承 調達計画/積算
1	10月24日	火		成田→コロombo	成田→コロombo			成田→コロombo	
2	10月25日	水	関係各機関表敬 (MDM&HR、DOM、NARA)				関係各機関表敬 (MDM&HR、DOM、NARA)		
3	10月26日	木	キックオフミーティング、表敬 (DOM)				キックオフミーティング、表敬 (DOM)		
4	10月27日	金	協議 (DMC)、コンポーネント1質問票検討				協議 (DMC)、コンポーネント1質問票検討		
5	10月28日	土	サイト調査 (ラトナブラ)				サイト調査 (ラトナブラ)		
6	10月29日	日	資料整理、団内打合せ				資料整理、団内打合せ		
7	10月30日	月	協議 (DOM)、表敬 (MOFP)、開調打合せ				協議 (DOM)、DOMの設備視察		
8	10月31日	火	協議 (DOM・DMC)、打合せ (NWM)			成田→コロombo	調査サイト確認 (DOM)、サイト調査準備		成田→コロombo
9	11月1日	水	ミニッツ署名			DOM本部設備に関する調査		サイト調査準備	
10	11月2日	木		コロombo→成田	コンポーネント1質問票補足説明 (DMC)	団内打合せ (調達機材関連)	サイト調査 (アヌラダブラ、ブッラマ)		
11	11月3日	金	開調との協議、再委託調査準備、サイト調査準備			サイト調査 (マハイルパッラマ、ポロンナルワ)			
12	11月4日	土	サイト調査 (カトウナヤケ、コロombo)			サイト調査 (アラガランヴィア)			
13	11月5日	日	資料整理、団内打合せ			サイト調査 (マータレー)			
14	11月6日	月	サイト調査 (ラトマラーナ、コロombo)			サイト調査 (カトウガスタ、クルネガラ)			
15	11月7日	火	サイト調査 (ゴール)			サイト調査 (ワゴッパ)			
16	11月8日	水	マータラ (ルフナ大学)、デニヤヤ			サイト調査結果取り纏め及び準備			
17	11月9日	木	サイト調査 (デニヤヤ、ハンバントタ、アングナコラバレッサ)			サイト調査 (ヌワエリヤ)			
18	11月10日	金	サイト調査 (ハンバントタ、ペルフッテ (セワナガラ))			サイト調査 (マウントビドウルタラガラ、ホートンブレインズ)			
19	11月11日	土	サイト調査 (バンダーラウェラ、バラゴダ (ラジャワカ))			サイト調査 (バドゥッパ、モナラーガラ)			
20	11月12日	日	サイト調査 (マワレツ (マリボダ))			サイト調査結果取り纏め			
21	11月13日	月	打合せ (DOM)、打合せ (開調・JICA)			設置機材関係に関する打合せ (DOM)			コロombo→成田
22	11月14日	火	周波数管理局打合せ、通信方式に係る情報収集 (DOM)			委託観測合意事項案作成			
23	11月15日	水	コンポーネント1質問票回答への対応 (DMC)、サイト調査に係る調整 (DOM)、団内協議 (計画策定協議の議題確認)、						
24	11月16日	木	コロombo→アンパーラ			コロombo→アヌラダブラ			
25	11月17日	金	サイト調査 (アンパーラ、ボトウヴィル)			サイト調査 (マナー、ワウニア)			
26	11月18日	土	サイト調査 (ボトウヴィル) →コロombo			アヌラダブラ→コロombo			
27	11月19日	日	コンポーネント1への対応に関する協議 (開調)			サイト調査取りまとめ、コンポーネント1に関する協議 (開調)			
28	11月20日	月	サイト調査結果の確認、計画策定、自動気象観測システム、通信方式等に関する協議 (DOM)						
29	11月21日	火	計画策定協議、質問票への回答確認 (DMC、DOM)			コロombo→成田	計画策定協議、質問票への回答確認 (DMC、DOM)		コロombo→成田
30	11月22日	水	計画策定協議、質問票への回答確認 (DMC、DOM)			計画策定協議、質問票への回答確認 (DMC、DOM)			
31	11月23日	木	サイト調査 (ラプガマ、シリカンドゥラ)			サイト調査 (ラプガマ、シリカンドゥラ)			
32	11月24日	金	サイト調査 (クダワ)			サイト調査 (クダワ)			
33	11月25日	土	サイト調査 (ヒニドゥマ)			サイト調査 (ヒニドゥマ)			
34	11月26日	日	団内協議			団内協議			
35	11月27日	月	計画最終確認協議 (DOM)、報告 (JICA スリランカ事務所)			計画最終確認協議 (DOM)、報告 (JICA スリランカ事務所)			
36	11月28日	火	コロombo→成田			コロombo→成田			

第二次基本設計調査（2007年2月12日～3月10日）

			官団員		コンサルタント	
			植嶋 卓巳	駒崎 麻里子	栗田 博昭	福井 徹郎
			総括	計画管理	業務主任/ 防災ネットワーク計画	気象情報ネットワーク計画
1	2月12日	月			表敬（JICAスリランカ事務所）、 警報伝達体制の調査 （警察通信センター）	
2	2月13日	火			インセプションレポート・質問票の 説明、協議（NBRO）、 防災機関を結ぶ通信ネットワーク に関する協議（DMC）	成田→コロンボ
3	2月14日	水			インセプションレポート・質問票の説明、協議（DOM）	
4	2月15日	木			防災機関を結ぶ通信ネットワークに 関する基本設計内容の 説明、協議（DMC）	静止気象衛星を用いた通信システム に関する協議及び GTS回線の改善プロジェクト 実施状況調査（DOM）
5	2月16日	金			地方防災調整ユニットに関する調査（マータラ、ゴール）	
6	2月17日	土			地方防災調整ユニットに関する調査（カルタラ、ラトナプラ）	
7	2月18日	日			地方防災調整ユニットに関する調査（ケゴール、ガンパハ）	
8	2月19日	月			インセプションレポート・質問票の説明、協議（国営ラジオ局） 地方防災調整ユニットに係わる調査（コロンボ）	
9	2月20日	火			省庁間ネットワーク構築計画 に関する調査（ICTA）、 中間報告（JICA スリランカ事務所）	代替サイトに関する協議及び トリンコマリー観測所の建物内 レイアウト図面の収集（DOM）
10	2月21日	水			緊急対策部の運用に関する調査 （DMC）、 通信ネットワークに関する調査 （ダイアログ テレコム）、 防災センター新庁舎に関する協議 （MDM&HR）	通信ネットワーク構成に関する検討
11	2月22日	木			インセプションレポート・ 質問票の説明、協議（DOI）、 インセプションレポート・ 質問票の説明、協議、警報伝達体制 に関する調査（国営テレビ局）	代替地調査（マリボダ）及び 調査結果の取り纏め
12	2月23日	金			無線周波数割当に関する確認 （周波数管理局）、 無線周波数使用に関する協議 （DOM）、 通信ネットワークに係わる調査 （ランカ コム）	通信ネットワークに関する協議 （DOM）、 通信ネットワークに関する調査 （ランカ コム）
13	2月24日	土			経過報告書作成	代替地調査（ヒンドゥマ）及び 調査結果の取り纏め
14	2月25日	日			経過報告書の作成、社内協議	
15	2月26日	月			案件内容説明 （外国資金局/MOFP） 防災に関する活動調査（UNDP）	機材設置場所調査（DOM）、 調査結果の取り纏め
16	2月27日	火			災害発生時における活動内容等調査 （緊急対応部/DMC） 通信ネットワークに関する調査 （スリランカ テレコム）	機材設置場所に関する調査 （国営テレビ局、 警察通信センター）、 調査結果の取り纏め
17	2月28日	水		成田→コロンボ	ミニッツに関する事前協議、 テクニカルノートに関する協議 （DMC）、 代替地調査報告（DOM）	機材設置場所調査 （DOI、国営ラジオ局） 代替地調査結果報告（DOM）
18	3月1日	木	ミニッツ案に関する協議（DMC） 開発調査で実施するパイロットプロジェクトに関する協議（開調） 通信ネットワークに関する協議 在スリランカ日本国大使館表敬		ミニッツ案に関する協議（DMC） 開発調査で実施するパイロットプロジェクトの内容に関する協議（開調） 通信ネットワークに関する協議、調査（スリランカ テレコム）	
19	3月2日	金	通信ネットワークに関する協議、確認 （DMC、DOM、DOI、NBRO、国営テレビ局、国営ラジオ局）		衛星通信に関する確認、協議（周波数管理局） テクニカルノート案に関する説明・協議 通信ネットワークに関する協議、確認 （DMC、DOM、DOI、NBRO、国営テレビ局、国営ラジオ局）	

			官団員		コンサルタント	
			植嶋 卓巳	駒崎 麻里子	栗田 博昭	福井 徹郎
			総括	計画管理	業務主任/ 防災ネットワーク計画	気象情報ネットワーク計画
20	3月3日	土	ミニッツに関する事前準備	ミニッツに関する事前準備 地方防災調整ユニット訪問 (ゴール)	通信ネットワークに関する検討	コロンボ→成田
21	3月4日	日	団内協議、ミニッツに関する事前準備		通信ネットワークに関する検討	
22	3月5日	月		機材設置場所調査(NBRO) 通信ネットワークに関する 調査、確認 (ダイアログテレコム、 ランカコム)	機材設置場所調査(NBRO) 通信ネットワークに関する 調査、確認 (ダイアログテレコム、 ランカコム)	
23	3月6日	火	ミニッツの説明、防災機関を結ぶネットワーク構成、機材計画の説明(DMC) ミニッツの確認 (MDM&HR)			
24	3月7日	水		ミニッツの説明及び 通信ネットワークに関する説明 (MOFP) ミニッツの確認(DMC)	ミニッツの説明及び 通信ネットワークに関する説明 (MOFP) ミニッツの確認(DMC) テクニカルノートの確認(DOM)	
25	3月8日	木		開発調査 防災セミナー出席	通信ネットワークに関する説明 (DOI、NBRO、警察、 地方防災調整官) 通信ネットワークに関する確認 (スリランカ テレコム)	
26	3月9日	金		業務結果報告 (JICAスリランカ事務所)	コンポーネント2に関する テクニカルノートへの署名(DOM) コンポーネント1に関する テクニカルノートへの説明、署名 (DMC) 業務結果報告 (JICAスリランカ事務所)	
27	3月10日	土		コロンボ→成田	コロンボ→成田	

基本設計概要説明調査 (2007年5月23日～6月1日)

			官団員		コンサルタント		
			坂田 英樹	栗田 博昭	福井 徹郎	大淵 維興	
			総括	業務主任/ 防災ネットワーク計画	気象情報ネットワーク計画	機材計画①/ 運営維持管理計画	
1	5月23日	水		成田→バンコク			
2	5月24日	木		バンコク→コロンボ			
				表敬(JICAスリランカ事務所) 打合せ(DMC) ミニッツに関する説明(MOFP)			
2	5月25日	金		気象情報ネットワークシステムおよび概要報告書等に関する説明(DOM) 無償資金協力案件に関する説明(世界銀行NAWAMプロジェクト関係者)			
3	5月26日	土		テクニカルノートの準備			
4	5月27日	日		資料整理、団内協議			
5	5月28日	月		機材仕様に関する説明(DOM) ミニッツに関する説明および協議(MODH)			
6	5月29日	火		機材に関する説明および確認(DOM)			
7	5月30日	水		ミニッツ署名 報告(在スリランカ日本国大使館) 報告(JICAスリランカ事務所)			
8	5月31日	木		コロンボ→バンコク(→)			
9	6月1日	金		(→)成田			

資料 3. 関係者（面会者）リスト

3. 関係者（面会者）リスト

第一次基本設計調査（2006年10月24日～11月28日）

第二次基本設計調査（2007年 2月12日～ 3月10日）

基本設計概要説明調査（2007年 5月23日～ 6月 1日）

1. 在スリランカ日本国大使館

大西 英之 : 参事官
渡邊 泰浩 : 二等書記官
定本 憲明 : 二等書記官

2. JICAスリランカ事務所

植嶋 卓巳 : 所長
坂田 英樹 : 次長
稲岡 美紀 : 所員

3. 防災人権省 (Ministry of Disaster Management and Human Rights)

Mr. Peter Dias Amarasinghe : Secretary

4. 財務計画省 (Ministry of Finance and Planning)

Mr. B. Abeygunawardena : Director General, Department of National Planning
Mr. M.P.D.U.K. Mapa Pathirana : Director of Department of External Resources

5. 気象局 (Department of Meteorology)

Mr. G.H.P. Dharmaratna : Director General
Mr. P. M. Jayatilaka Banda : Director
Mr. G.B. Samarasinghe : Deputy Director
Mr. Lalith Chandrapala : Deputy Director
Mr. E. S. Silva : Deputy Director
Mr. S. H. Kaliyawasam : Deputy Director
Mr. Nuwan Kumarasinghe : Electronics Engineer
Mr. D.J. Ajith Weerawardena : Meteorologist in Charge

6. 防災センター (Disaster Management Centre)

Major General Gamini Hettiarachchi : Director General
Mr. U.W.L Chandradasa : Director Technology & Mitigation
Mrs. Lalani Imbulana : Director Preparedness Planning
Mr. N.W.S.W.S. De Silva : Deputy Director of Admin & Personnel
Mr. A. D. Ramya Siriwanasa : Deputy Director (Emergency Operation)
Wing Cdr Dhammika. Wijeyasooriya : Assistant Director (Emergency Operations)
Mr. Kelum Jayasoma : Assistant Director (Information Technology)

7. 地方防災整備ユニット (District Disaster Management Coordinating Unit)
 Lt. Col. J. Fernando : DM Coordinator, Matara
 Capt H. M. D. S. R. SENARATNA : DM Coordinator, Galle
 Col. Keerthi Ekanayake : DM Coordinator, Kalutara
 Lt. Col. Manoj Mudannayake : DM Coordinator, Ratnapura
 Mrs. A. M. J. D. K. Mudalige : DM Coordinator, Kegalle
 Mr. Eranga Ratnayake : DM Coordinator, Gampaha
 Wing Cdr H. D. B. Chandrasekara : DM Coordinator, Colombo
8. 灌漑局 (Department of Irrigation)
 Mr. P. C. Senaratne : Director Specialized Services & Training
 Ms. P. P. G. Dias : Deputy Director Hydrology
9. 建築研究所 (National Building Research Organization)
 Mr. R. M. S. Bandara : Acting Head of the Landslide Studies and Services
 Division
 Ms. Kumari : GIS Specialist
 Mr. Lionel Bandara : Network Engineer
10. 警察 (Police)
 Mr. H. A. J. S. K. Wickramaratna : Senior Deputy Inspector General
 Mr. Kaluarachchi : Director of Communication Center
11. 国営テレビ局 (Sri Lanka Rupavahini Corporation)
 Mr. Rohan Perera : Director Engineering
 Acting Deputy Director General (Engineering)
 Mr. Athula Perera : Director Engineering (Projects & Planning)
 Mr. P. P. Rajapakshe : Deputy Director Engineering (Transmission & ICT)
12. 国営ラジオ局 (Sri Lanka Broadcasting Corporation)
 Mr. Sanath Panawennage : Deputy Director General (Engineering)
13. 国立水資源研究開発庁 (National Aquatic Resources Research & Development Agency)
 Mr. K. Haputantri : Chairman
 Mr. A.B. Ajith K. Gunaratne : Head Information Technology Division
14. スリランカ陸軍 (The Sri Lanka Army)
 Major General Tissa Jayawardana : Director General Staff
15. スリランカ海軍 (The Sri Lanka Navy)
 Vice Admiral Wasantha Karannagoda : Commander

16. 世界銀行 (World Bank) NAWAMプロジェクト関係者
- Mr. Nihal Fernando : Snr.Rural Development Specialist
 Mr. S. Manoharan : Rural Development Specialist
 Mr. Xiaokai Li : Senior Water Resources Specialist
 Mr. Sudharma Elakanda : Project Coordinator / National Water Management Improvement Project (NAWAM)
17. 国連開発計画 (United Nations Development Programme)
- Dr. Ananda Mallawatantri : Assistant Resident Representative
 Team Leader : Environment, Energy and Disaster Management
 Mr. M. A. S. J. K. Madurapperuma : Programme Coordinator
18. 通信規制委員会 (Telecommunications Regulatory Commission of Sri Lanka)
- Mr. Helasiri Ranatunga : Deputy Director, Spectrum Management
19. 情報通信庁 (Information Communication Technology Agent)
- Ms. Dil Piyaratna : Senior Project Manager, Information Infrastructure
 Mr. Radley Dissanayake : Programme Manager
20. スリランカ テレコム (Sri Lanka Telecom)
- Mr. Shoji TAKAHASHI : Chief Executive Officer
 Mr. Shuhei ANAN : Ex. Chief Executive Officer
 Mr. Ajith D. Silva : Head/Corporate Market Development
 Mr. Janaka R. Abeysinghe : Deputy General Manager (Solution Business)
 Mr. S. N. Neethan : Engineer (Solution Business)
21. ダイアログ テレコム (Dialog Telecom)
- Mr. Channa Amarasekara : Sales Manager
 Mr. Thevaraj Surendran : Engineer, Solutions Architecture
 Mr. Rukshan Seneviratne : Account Manager, Enterprises Solutions
22. ランカ コム (Lanka Com)
- Mr. Rohith Udalgama : Manager Director
 Mr. Kapila A. Silva : Administration & Commercial Director
 Mr. Roshan Jayatilleke : Head of Pre Sales

資料 4. 討議議事録 (M/D)

(2006. 11. 1、2007. 3. 15、2007. 5. 30)

Minutes of Discussions
on the Basic Design Study on the Project for
Improvement of Meteorological and Disaster Information Network

In response to the request from the Government of the Democratic Socialist Republic of Sri Lanka (hereinafter referred to as "Sri Lanka"), the Government of Japan decided to conduct a Basic Design Study on "Improvement of Meteorological and Disaster Information Network" (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

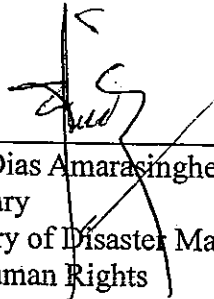
JICA sent the Basic Design Study Team (hereinafter referred to as "the Team") to Sri Lanka, headed by Mr. Takumi Ueshima, Resident Representative of the JICA Sri Lanka Office, and is scheduled to stay in the country from October 24, 2006 to November 21, 2006.

The Team held discussions with the officials concerned of the Government of Sri Lanka and conducted a field survey at the study area. As the result of the discussions and field survey, both sides have confirmed the main items described in the attached sheets. The Team will proceed to further study and prepare the Basic Design Study Report.

Colombo, Nov. 01, 2006

植島卓巳

Takumi Ueshima
Leader
Basic Design Study Team
Japan International Cooperation Agency



Peter Dias Amarasinghe
Secretary
Ministry of Disaster Management
and Human Rights



M.P.D. U.K. Mapa Pathirana
Director
Department of External Resources
Ministry of Finance and Planning

ATTACHMENT

1. Objective

The objective of the Project is to develop a reliable communication network among the relevant institutions and also improve the meteorological observation and prediction capabilities. This will contribute to improve the early warning system for natural disasters by means of improvement in public services under natural disaster conditions, and thus mitigate the loss of human life and property of the people of Sri Lanka.

The Project shall be closely linked and collaborated with the activities and outcome of the ongoing study conducted by Sri Lanka and JICA, namely "the Comprehensive Study on Disaster Management".

2. Components of the Project

- 1) Communication network system among the relevant institutions for proper coordination for early warning and disaster management of Sri Lanka. (Component-1)
- 2) Meteorological observation system to collect accurate and on-time weather data to utilize for early warning and disaster management of Sri Lanka. (Component-2)

3. Project Name

In the original request from the Sri Lankan side, the Project was named "Development of a comprehensive disaster early warning system including communication for the Department of Meteorology".

Through the discussion, Sri Lankan side and Japanese side have both agreed to change the project name to "Improvement of Meteorological and Disaster Information Network", which represents the Project more accurately.

4. Project Sites

The project sites for Component-1 are yet to be confirmed. It shall be agreed as a result of further discussions held between both sides.

The project sites for Component-2 are shown in Annex-1. Sri Lankan side understands that after the result of the further field survey and analysis of collected data, the project sites will be prioritized and may be limited to the high priority areas, from the perspective of urgency and necessity for disaster management.

5. Responsible Organization and Implementing Agency

- 1) The responsible organization for the Project is the Ministry of Disaster Management and Human Rights (hereinafter referred to as "the Ministry"). The organization chart of the ministry is shown in Annex-2-a.

- 2) The implementing agency for Component-1 is the Disaster Management Center (hereinafter referred to as "DMC"). The organization chart of DMC is also shown in Annex-2-a.
- 3) The implementing agency for Component-2 is the Department of Meteorology (hereinafter referred to as "DOM"). The organization chart of DOM is also shown in Annex-2-b.

6. Items Requested by the Sri Lanka Government

- 1) The items for Component-1 are yet to be finalized. Sri Lankan side shall confirm the request promptly, for JICA to carry on the basic design study of the said component.
- 2) After discussions with the Team, the items described in Annex-3 were finally requested by the Sri Lankan side for Component-2. JICA will assess the necessity and appropriateness of the request and will recommend to the Government of Japan for approval.
- 3) For the Tsunami Information Reception and Multi cast report equipment (Main-Hub) which was listed in the original request, both sides agreed that this component is outside of the scope of the Project.

7. Japan's Grant Aid Scheme

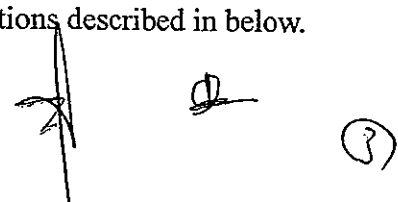
- 1) Sri Lankan side understands the Japan's Grant Aid scheme explained by the Team as described in Annex-4.
- 2) Sri Lankan side will take necessary measures, as described in Annex-5, for smooth implementation of the Project, as a condition for the implementation of Japan's Grant Aid.

8. Schedule of the study

- 1) The Team will proceed to further study in Sri Lanka up to November 21, 2006.
- 2) JICA will prepare the draft report in English and dispatch a mission to Sri Lanka in order to explain its contents around March, 2007.
- 3) In case that the contents of the report are accepted in principle by the Government of Sri Lanka, JICA will complete the final report and send it to Sri Lanka by the end of April, 2007.
- 4) This schedule may be modified and extended due to the discussions in progress concerning Component-1.

9. Other Relevant Issues concerning Component-1

Since the contents of Component-1 are not yet detailed enough for JICA to carry out the basic design study, Sri Lankan side shall promptly take necessary actions described in below.

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- 1) Articulating / Describing the expected use and requirements for the network.
- 2) Acquisition of formal agreement among the concerned organizations/institutions for the planned network, by means of contents, cost burden, role and responsible activities of each organization/institution.
- 3) Confirmation of the items and contents to be requested for Japan's Grant Aid among the planned network. This also should be agreed by the concerned organizations/institutions.

Japanese side submitted a questionnaire attached as Annex-6, which describes the necessary detailed information concerning the above matter. Sri Lankan side agreed to prepare the answer promptly. The subsequent schedule of the basic design study for this component will be considered according to its progress.

10. Other Relevant Issues concerning Component-2

1) Land Preparation

Land preparation for meteorological observation stations is indispensable to implement the Project.

- For the meteorological observation stations to be newly established by the Project, the exact place shall be selected during the further field study of the Team. The Team will give advice and requirement of the place, and the selection shall be the responsibility of DOM, and the specific location of the site shall be specified in the memorandum which will be exchanged with DOM and the consultant before the Team returns to Japan.
- Official land ownership acquisition or agreement of the usage of land from the landowner for each meteorological observation station shall be completed by the end of February, 2007. Demolishing the existing facilities and clearing of the land if needed shall be completed prior to the commencement of the Project. These works shall also be the responsibility of DOM.
- Sri Lankan side understands that even in case the selected land is not owned by DOM, the maintenance and operation of the equipment to be installed by Japan's Grant Aid shall be the responsibility of DOM.

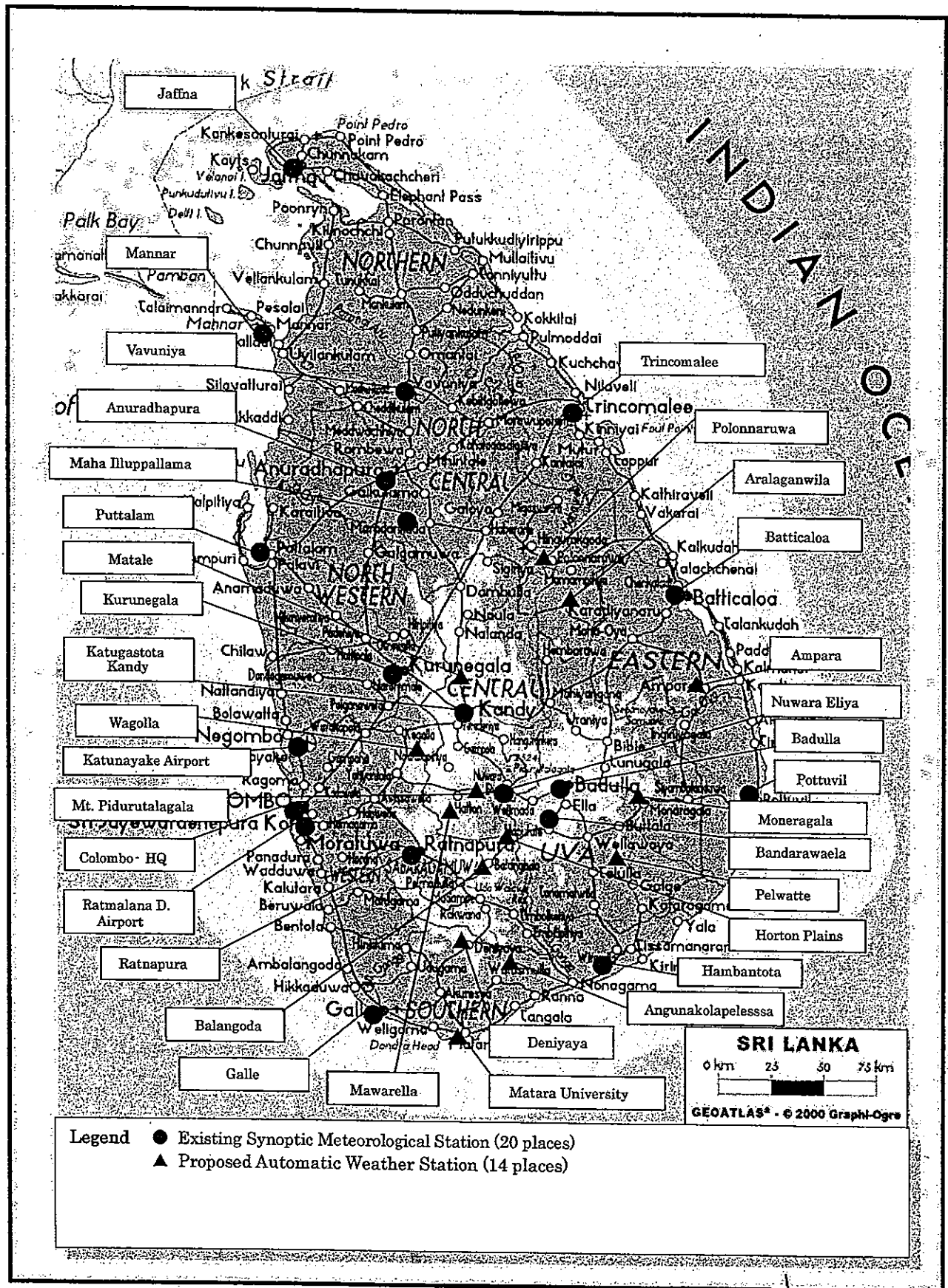
2) Sustainability of the Project

- The Team will carry out the study and consider the most appropriate system to ensure sustainability. Therefore, the communication method for transmitting the data from each observation station to DOM head office will be decided and proposed to the Sri Lankan side by the Team after a careful comparative review of the surrounding circumstances.
- Since the objective of the Project is to mitigate the disaster risks of the people of Sri Lanka, DOM agrees to coordinate with the concerned organizations to utilize the

observed and collected weather data.

- Sri Lankan side agrees to allocate sufficient funds and competent staff for proper and effective operation and maintenance of the equipment to be provided under Japan's Grant Aid. These requirements will be indicated by the Japanese side in the study report.
- Sri Lankan side during discussions requested adequate technical assistance for proper operation and maintenance of the equipment and network which is to be implemented by the Project. Japanese side will assess the necessity of soft component (technical assistance to be included in the Project) and set the scope of assistance.

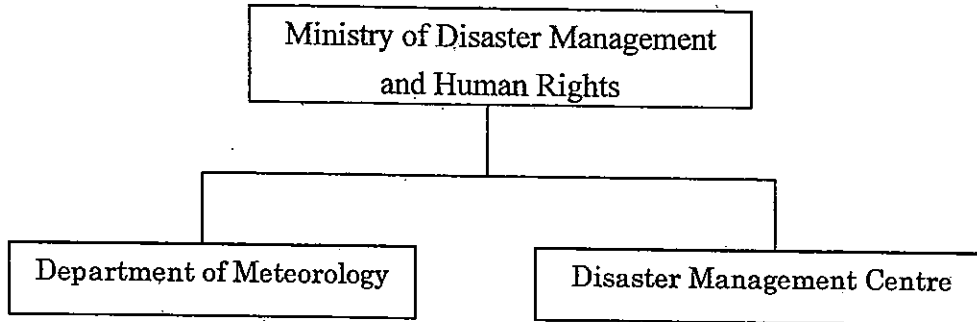




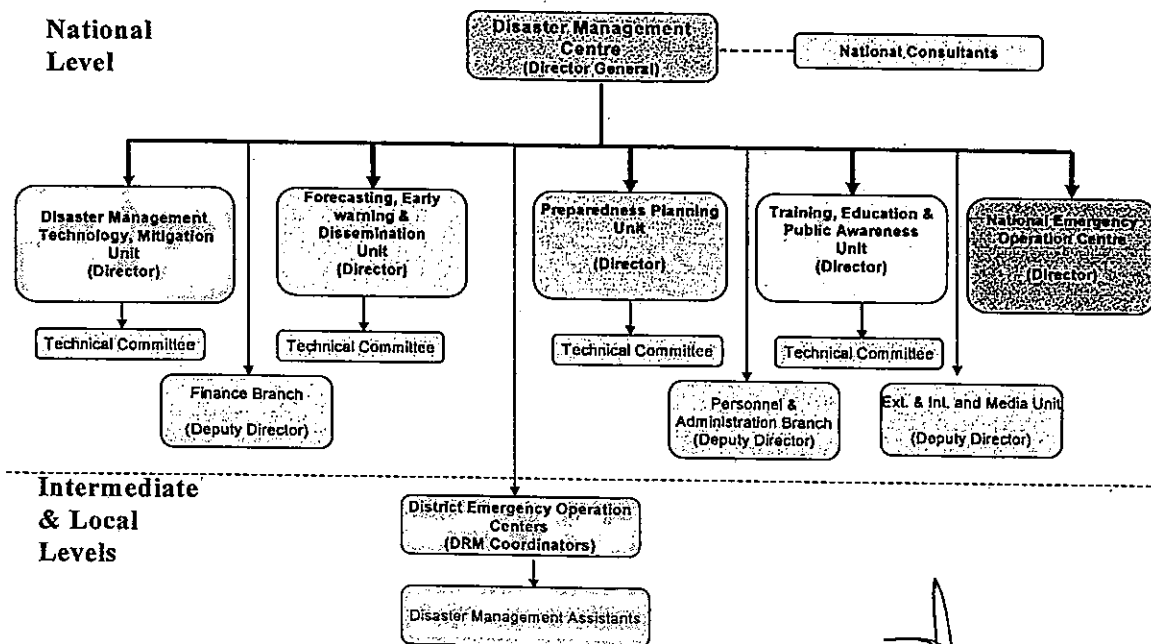
Location Map of Project Site

③

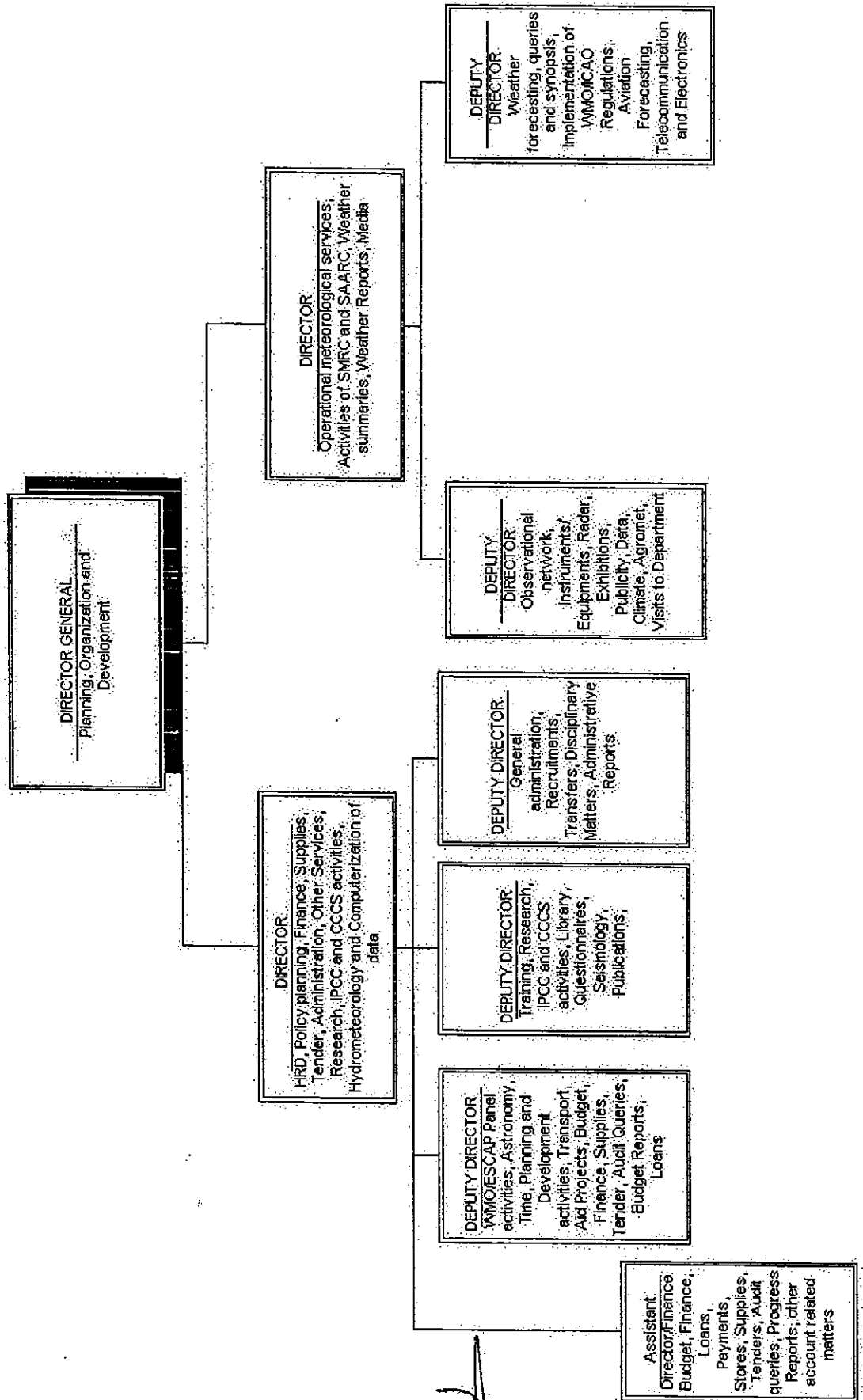
**Organization Chart of the
Ministry of Disaster Management and Human Rights**



Organization Chart of the Disaster Management Centre



Organization Chart of the Department of Meteorology



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Requested items for Component-2
(Component-2: Meteorological observation system)

No.	Item	Quantity	Other remarks
1. Automatic Weather Stations (14 stations)			
1-1	Sensor (rainfall gauge, wind speed, wind direction, air temperature, humidity, air pressure, solar radiation)	14	Items and quantity will be considered due to the situation of each station.
1-2	Sensor pole / Sensor collector	14	
1-3	Logger	14	
1-4	Remote terminal unit (RTU)	14	
1-5	Transmission Equipment	14	
1-6	Operation terminal	14	
1-7	Printer	14	
1-8	Power supply facility	14	
1-9	Shelter	14	
2. Synoptic Meteorological Stations (20 stations)			
2-1	Sensor (rainfall gauge, wind speed, wind direction, air temperature, humidity, air pressure, solar radiation)	20	
2-2	Sensor pole / Sensor collector	20	
2-3	Logger	20	
2-4	Remote terminal unit (RTU)	20	
2-5	Transmission Equipment	19	Except Colombo Station
2-6	Operation terminal	20	
2-7	Printer	20	
2-8	Power supply facility	20	
3. DOM Head Office			
3-1	Transmission Equipment	2	① Stations → DOM ② DOM → DMC
3-2	Communication Control Unit (CCU)	1	
3-3	Central operation terminal	1	
3-4	File server	1	
3-5	Web server	1	
3-6	Router	1	
3-7	Switching Hub	1	
3-8	Laser color printer	1	
3-9	Power supply facility	1	
4. Disaster Management Center (DMC)			
4-1	Transmission Equipment	1	DOM → DMC
4-2	Central operation terminal	1	
4-3	Power supply facility	1	

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JAPAN'S GRANT AID

The Grant Aid scheme provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

1. Grant Aid Procedures

Japan's Grant Aid scheme is executed through the following procedures:

Application	(Request made by the recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by the Cabinet)
Determination of Implementation	(The Note exchanged between the Governments of Japan and recipient country)

Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study) using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Scheme, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes (E/N) signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

(1) Contents of the study

The aim of the Basic Design Study (hereafter referred to as "the Study") conducted by JICA on a requested project (hereafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.
- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- Confirmation of items agreed on by both parties concerning the basic concept of the Project.
- Preparation of a basic design of the Project.
- Estimation of costs of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of the Japan's Grant Aid scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA. The consultant firm(s) used for the Study is (are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency.

3. Japan's Grant Aid Scheme

(1) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

(2) "The period of the Grant Aid" means the one fiscal year, which the Cabinet approves, the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed. However, in case of delays in delivery, installation or construction due to unforeseen factors such as national disaster, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

(3) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country. However, the prime contractors, namely, consulting, constructing and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

(4) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

(5) Undertakings required of the Government of the Recipient Country

In the implementation of the Grant Aid Project, the recipient country is required to undertake such necessary measures as the following:

- a) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction,
- b) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
- c) To secure buildings prior to the procurement in case the installation of the equipment,

- d) To ensure all the expenses and prompt ^{of} ~~excursion~~ for unloading, customs clearance at the port of disembarkation of the products purchased under the Grant Aid,
- e) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts,
- f) To accord Japanese nationals, whose services may be required in connection with the supply of the products and services under the Verified contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

(6) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and the equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

(7) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country.

(8) Banking Arrangements (B/A)

- a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.
- b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

(9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions to the Bank.

(End)

Major undertakings to be taken by each Government

No.	Items	To be Covered by Grant Aid	To be Covered by Sri Lankan Side
1	To secure buildings and land		●
2	To clear, level and reclaim the site when needed		●
3	To construct gates, fences and utilities in and around the site when needed		●
4	To bear the following commissions to the Japanese foreign exchange bank for the banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
5	To ensure unloading and customs clearance at port of disembarkation in Sri Lanka		
	1) Marine (Air) transportation of the products from Japan to Sri Lanka	●	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	
6	To accord Japanese nationals, whose services may be required in connection with the supply of the products and the services under the verified contract, such facilities as may be necessary for their entry into Sri Lanka and stay therein for the performance of their work		●
7	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Sri Lanka with respect to the supply of the products and services under the verified contracts		●
8	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
9	To bear all the expenses, other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and installation of the equipment		●
10	To coordinate and solve any issues related to the Project which may be raised from third parties or inhabitants in the Project during implementation of the Project		●

(B/A: Banking Arrangement, A/P: Authorization to Pay)





**QUESTIONNAIRE ON DISASTER MANAGEMENT NETWORK
FOR DMC AND RELATED NATIONAL INSTITUTIONS**

1. General

The following information is required for the Study of the Project.

- 1) Role or duty of the individual institutions related to the national disaster management, particularly, relation between National Disaster Management Center (NDMC) and Disaster Management Center (DMC) should be clarified. Individual responsible duty and role, related laws or regulations which define the duty also should be clarified.
- 2) Organization Structure of individual National Institutions, and responsible section, department, or division for this Project, contact personnel, telephone number, e-mail address for individual National Institutions.
- 3) Physical address, the building, and the room of individual National Institutions where the equipment is to be installed.

2. Expected Benefit and Effects of the Project

It should be specified the prospective direct benefit or effectiveness to be obtained after completion of the planned Disaster Management Network. It should be mentioned as much as specifically.

3. Necessary Warnings and Information on Disaster Management

Among the related national institutions, the following information should be clarified in the existing conditions and planning concept respectively as attached form.

- What kind of information/warning is required to transmit/receive from/to which national institutions?
- Update intervals of the above information/warnings during emergency situation of natural disaster

Such information is required to fill up in the attached form.

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4. Agreement among the concerned Organizations

Acquisition of agreement among the concerned organizations/institutions for the planned network should be required. It should be specified the contents, cost burden, role and responsible activities of each organization/institutions in the agreement.

5. Outline of the Project and Request

The items and contents to be requested for Japan's Grant Aid among the planned network should be clarified and confirmed. This also should be agreed by the related organizations/institutions. The following explanations should be provided.

- Outline of the System

The brief explanation of the system or equipment to be requested should be specified

- Breakdown of the Expected Equipment

The breakdown of the equipment, and each quantity should be provided.

- Operation and Maintenance

It should be specified that how the requesting equipment can be operated or maintained in order to keep the sustainable operation. The financial source of operation and maintenance should be clarified.

- Cost Estimation

Approximate total project cost should be specified.



6. Budget/Financial Aspect of National Institutions

Detailed budget (staff and manpower, investment, operation and maintenance, administration overhead, etc.) for the past 5 years for DMC and related all National Institutions.

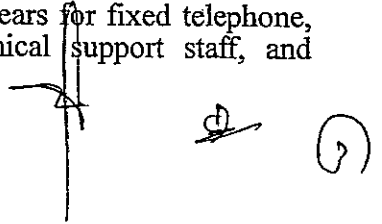
- O&M: utility charge, telecommunications charge, Internet related charge, consumable items, and other O&M
- Investment: Other donors cooperation, own budget, and information on planned cooperation of other donors

7. Organizations of National Institutions

It should be specified that the number of personnel of individual national institutions with breakdown of administration staff, engineers, technical support staff, etc.

8. Information on the Existing Information and Communication Network

- 1) Information on the existing telecommunications lines, Internet connection, and network conditions in headquarters of individual related National Institutions.
 - Number of personnel (Administration personnel, technical personnel, supporting personnel, others)
 - Number of fixed telephone lines: _____ lines
 - Number of cellular mobile phones for the own personnel.
_____ Phones.
 - Internet access bandwidth _____ (Mbps/Kbps)
 - Internet Access Method (Dial up/ADSL/Optical Fiber), Is it dedicated lines or shared lines?
 - Do you maintain the own server? (Yes/No) If yes, is it mail server, web server, file server, or others? (Please specify the objectives: _____)
 - Type and capacity of LAN. (Wired/Wireless, 10Mbps/100Mbps/others)
 - How many PC is provided for your own personnel?
 - How many mail accounts are operating?
 - How many technical support personnel are working on Internet connection and/or operation of LAN?
 - Annual budget and actual expenditure in the past five (5) years for fixed telephone, cellular mobile phones, Internet connection, own technical support staff, and



outsourced maintenance cost. Please specify whole institutions, head quarters, other regional/local offices respectively.

- 2) Telecommunications line/circuit fault conditions of each National Institutions for headquarters or other offices where the network access point is located.

Occurrence of line/circuit fault: _____ times/ year

(Normal Operation case: _____ times /Emergency case: _____ times)

Causes of circuit fault: _____

Time taken for recovery:

Average: _____ hours

Longest _____ hours

Affected Problems: _____



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Information to be Transmitted/Received through the Disaster Management Network
under Emergency Situation within the Central Level (Existing Condition)

	DMC	DOM	NARA	GSMB	Police CC	Navy	Media
DMC		→Ri(image)/3h → WAWWW(text)/1h					
DOM	Ri(image)/3h→ WAWWW(text)/1h →		Ri(image)/3h→ WAWWW(text)/1h →	Ri(image)/3h→ WAWWW(text)/1h →	Ri(image)/3h→ WAWWW(text)/1h →	Ri(image)/3h→ WAWWW(text)/1h →	Ri(image)/3h→ WAWWW(text)/1h →
NARA							
GSMB							
Police CC							
Navy							
Media							

Legend
 ****(###)/+++ : Contents of Information/Direction(Type of Information)/Update Intervals
 →****() : Receiving Information/Direction
 ****()→ : Transmitting Information/Direction

Type of Information
 (voice) : Voice
 (text) : Text
 (image) : Image
 (movie) : movie

Abbreviations
 RI : Rain Information including rain fall; rain intensity, accumulated rain fall
 RI&wl : Rain fall data observed by Department of Irrigation, and water level
 WA : Weather Advisory
 WW : Weather Warning
 EI : Evacuation Instruction

Note
 Please extend the above table when it is necessary.

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Information to be Transmitted/Received through the Disaster Management Network
under Emergency Situation within the Central Level (Planning Concept)

	DMC	DOM	NARA	GSMB	Police CC	Navy	Media
DMC		→RI(image)/3h → WAWWW(text)/1h					
DOM	RI(image)/3h→ WAWWW(text)/1h →		RI(image)/3h→ WAWWW(text)/1h →	RI(image)/3h→ WAWWW(text)/1h →	RI(image)/3h→ WAWWW(text)/1h →	RI(image)/3h→ WAWWW(text)/1h →	RI(image)/3h→ WAWWW(text)/1h →
NARA							
GSMB							
Police CC							
Navy							
Media							

Legend
 ***((##)/+++ : Contents of Information/Direction(Type of Information)/Update Intervals
 →***() : Receiving Information/Direction
 ***()→ : Transmitting Information/Direction

Type of Information
 (voice) : Voice
 (text) : Text
 (image) : Image
 (movie) : movie

Abbreviations
 RI : Rain Information including rain fall, rain intensity, accumulated rain fall
 RI&wl : Rain fall data observed by Department of Irrigation, and water level
 WA : Weather Advisory
 WW : Weather Warning
 EI : Evacuation Instruction

Note : Please extend the above table when it is necessary.

**Minutes of Discussions
on the Second Basic Design Study on the Project for
Improvement of Meteorological and Disaster Information Network**

In October to November 2006, Japan International Cooperation Agency (hereinafter referred to as "JICA") sent a Basic Design Study Team to the Democratic Socialist Republic of Sri Lanka (hereinafter referred to as "Sri Lanka") on the Project for "Improvement of Meteorological and Disaster Information Network" (hereinafter referred to as "the Project").

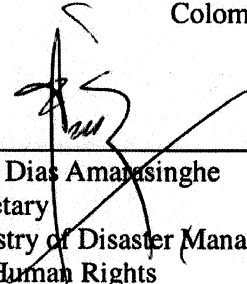
Further study was conducted in Japan, and JICA decided to conduct a second Basic Design Study headed by Mr. Takumi Ueshima, Resident Representative of the JICA Sri Lanka Office, from February 12 to March 9, 2007.

The Team held discussions with the concerned officials of the Government of Sri Lanka and conducted a field survey in the study area. As the result of the discussions and field survey, both sides have confirmed the main items described in the attached sheets. Also, this Minutes shall be distributed to the organizations listed below, and be confirmed with a countersign. The Team will proceed to further works and prepare the Basic Design Study Report.

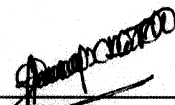
Colombo, Mar. 15, 2007

植島 卓巳

Takumi Ueshima
Leader
Basic Design Study Team
Japan International Cooperation Agency



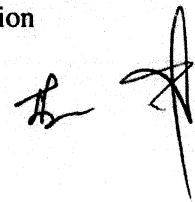
Peter Dias Amarasinghe
Secretary
Ministry of Disaster Management
and Human Rights



M.P.D.U.K. Mapa Pathirana
Director
Department of External Resources
Ministry of Finance and Planning

Distribution:

1. Eng. D.M.S. Samarasekara, Director General, Department of Irrigation,
Mr. M.K. Ilangakoon, Senior Deputy Inspector General of Police, Ranges IV Ministry of Irrigation and Water Management *WANE*
2. *for* Mr. H.A.J.S.K. Wickramaratna, Senior Deputy Inspector General, Sri Lanka Police *Ranges I*
3. Mr. Sunil Sarath Perera, Chairman, Sri Lanka Broadcasting Corporation *[Signature]*
4. Dr. Ariyaratne Athugala, Chairman, Sri Lanka Rupavahini Corporation



ATTACHMENT

1. Overall Issue

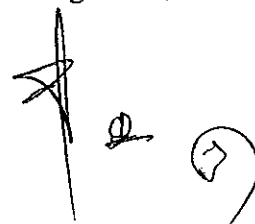
Both sides agree that the items confirmed in the previous Minutes of Discussion signed on November 1, 2006 shall remain valid, except for the matters specified in this document.

2. Project Sites

The project sites for Component-1 are shown in Annex-1-a. The project sites for Component-2 are shown in Annex-1-b. Both sides agree that this is the final decision, and neither modification nor addition of the site will be accepted hereafter. Also, Sri Lankan side understands that the project sites will be prioritized and may be limited to the high priority areas, from the perspective of urgency and necessity for disaster management.

3. Items Requested by the Sri Lanka Government

- 1) After discussions with the Team, the components described in Annex-2-a for Component-1 and Annex-2-b for Component-2 were finally requested by the Sri Lankan side. Both sides agree that this is the final decision, and neither modification nor addition of the request will be accepted here after. JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval.
- 2) For the additional request of dedicated lines to District Offices, it was confirmed that the connecting point should be the District Disaster Management Coordination Unit (DDMCU). However, after the field survey at the offices, the Team concluded that using VSAT for data transmission will not be an appropriate option at present for maintenance reasons, and DMC agrees to utilize a data communication operator's service for dedicated connection between the Emergency Operation Centre in DMC and the DDMCUs.
- 3) For the additional request of telephone and facsimile machines, the Team confirmed that those equipments are presently available at the proposed DDMCUs. Also, the standalone PC used at DDMCU does not need to be connected to the local access network, which concludes that a file server will not be necessary. As a result, both sides agree that telephone and facsimile machines, as well as file server for DDMCU will not be included in the final request.
- 4) For the additional request of Systems for Forecasting, both sides agree that the items are out of the scope of Component-2 of the Project, which concentrates on collecting accurate and on-time weather data to utilize for early warning and disaster management, and therefore will not be included in the final request.

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4. Japan's Grant Aid Scheme

Sri Lankan side understands the Japan's Grant Aid scheme and the necessary undertakings to be taken by the Government of Sri Lanka as explained by the Team and described in Annex-4 and Annex-5 of the Minutes of Discussions signed by both sides on November 1, 2006.

5. Schedule of the study

- 1) JICA will prepare the draft report in English and dispatch a mission to Sri Lanka in order to explain its contents around May, 2007.
- 2) In case that the contents of the report are acceptable in principle to the Government of Sri Lanka, JICA will complete the final report and send it to Sri Lanka by the end of June, 2007.

6. Other Relevant Issues concerning Component-1

1) Overall Responsibility of the Organizations Concerned

Disaster Management Centre (DMC), Department of Meteorology (DOM), Department of Irrigation (DOI), National Building Research Organization (NBRO), Sri Lanka Police (SLP), Sri Lanka Broadcasting Corporation (SLBC), and Sri Lanka Rupavahini Corporation (SLRC) (hereinafter referred to as "the concerned organizations"), shall be aware of and take full responsibility for the role which each of the organization shall take, to achieve the objective of the Project. The functions of the information network and the position of each organization are as described in Annex-3.

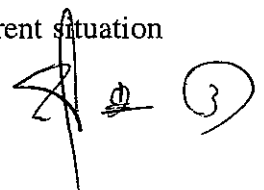
Moreover, DMC shall be responsible for the coordination among the concerned organizations

2) Data Communication System

As the result of the survey and study, the Team proposed to utilize a data communication operator's service to build a network among the concerned organizations. The Sri Lankan side agrees with the idea, and DMC will be responsible to appoint a suitable data communication operator to establish a closed network among the concerned organizations. Also, DMC shall provide and maintain the connectivity between DMC Emergency Operation Centre and the seven proposed DDMCUs.

Allocation of sufficient budget by the Sri Lankan side to engage into a contract including the maintenance service with a data communication operator, and to develop suitable contents for distribution among the concerned organizations are also mandatory for the realization of Component-1. These arrangements shall be made prior to the commencement of Component-1. The Grant Aid usually requires the start up arrangements to be completed before the approval of the Project.

For the equipment requested for Japan's Grant Aid, considering the current situation



of Component-1 and the fact that JICA development study on “the Comprehensive Study on Disaster Management” is ongoing to design and assist the implementation of the necessary contents to be distributed and shared among the concerned organizations, and also that the local procurement of the necessary equipment will not be a problem, the Team feels the necessity to consider other schemes of cooperation as well. The Team will consult in Japan with other JICA departments for other suitable cooperation options for Component-1.

3) Equipment Installation

Securing adequate space for the equipment to be provided under Japan’s Grant Aid is indispensable to implement the Project. The concerned organization shall all be prepared for the installation before the arrival of the equipment.

Especially for the installation space at DMC, the Sri Lankan side guarantees to start the construction of the DMC’s new building by May 2007, and complete the construction by March 2008. Also, if there will be any change in the layout plan of the building, DMC shall inform the Japanese side promptly.

4) Sustainability of the Project

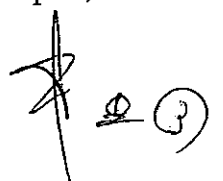
- Sri Lankan side agrees to allocate sufficient budget and qualified staff for proper and effective operation and maintenance of the equipment to be provided under Japan’s Grant Aid. Necessary budget amount will be considered by the Japanese side and be stated in the report of the study.
- Each of the concerned organization shall secure sufficient budget and hold responsibility to maintain and operate the equipment installed in their organization. Shall any trouble occur to the equipment or network, all organization agrees to take necessary measures to restore the function.
- If any of the concerned organization is to be relocated to another place, Sri Lankan side shall be responsible for the relocation of the equipment and reconnection to the network. Also, future improvement / replacement of the equipment shall be implemented by the Sri Lankan side with its own finance from the viewpoint of self-reliance.

7. Other Relevant Issues concerning Component-2

1) Security Measures

The Team explained to the Sri Lankan side that the Japanese side is presently considering to pass over the equipment provided by Japan’s Grant Aid at Colombo and subsequently to be installed by the Sri Lankan side, in case the installation work may not be taken during the Project period due to security reasons. In that case, DOM shall be responsible for the installation work.

The Japanese side will conclude this consideration in the draft of the final report, and the contents shall be agreed during the draft report explanation mission.

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2) Land Preparation

Both sides agreed in the first Basic Design Study mission that the Sri Lankan side shall complete the official land ownership acquisition or agreement of the usage of land from the landowner for each meteorological observation station by the end of February, 2007. However, the procedures are still under process for most of the project sites.

Sri Lankan side agrees that if the documents are not available by the draft report explanation mission, the particular site will be eliminated from the Project.

3) Meteorological Observation Network

From the review and study conducted in Japan, the Japanese side proposed using a satellite system for the communication method for sending the data between each observation station and DOM head office. Sri Lankan side agrees with this plan, and also agrees to complete the following works in accordance to the schedule of the Project;

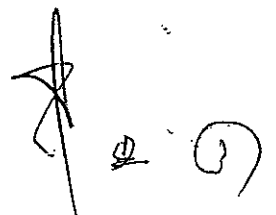
- To obtain the frequency allocation for the VSAT, from the Telecommunications Regulatory Commission.
- To provide necessary space segment for satellite communication under a contract with a satellite operator before the installation of the equipment.
- To secure necessary budget to maintain the satellite communication in advance to the maintenance and operation of the equipment provided by Japan's Grant Aid.

4) Others

Sri Lankan side guarantees to provide any assistance to the Japanese side to obtain necessary permissions at the Project sites, to carry on the study as well as the implementation of the Project.

8. Summarization of the Undertakings concerning the Project

Summary of the undertakings to be covered by the Sri Lankan side is described and attached as Annex-4.



Project Site for Component-1

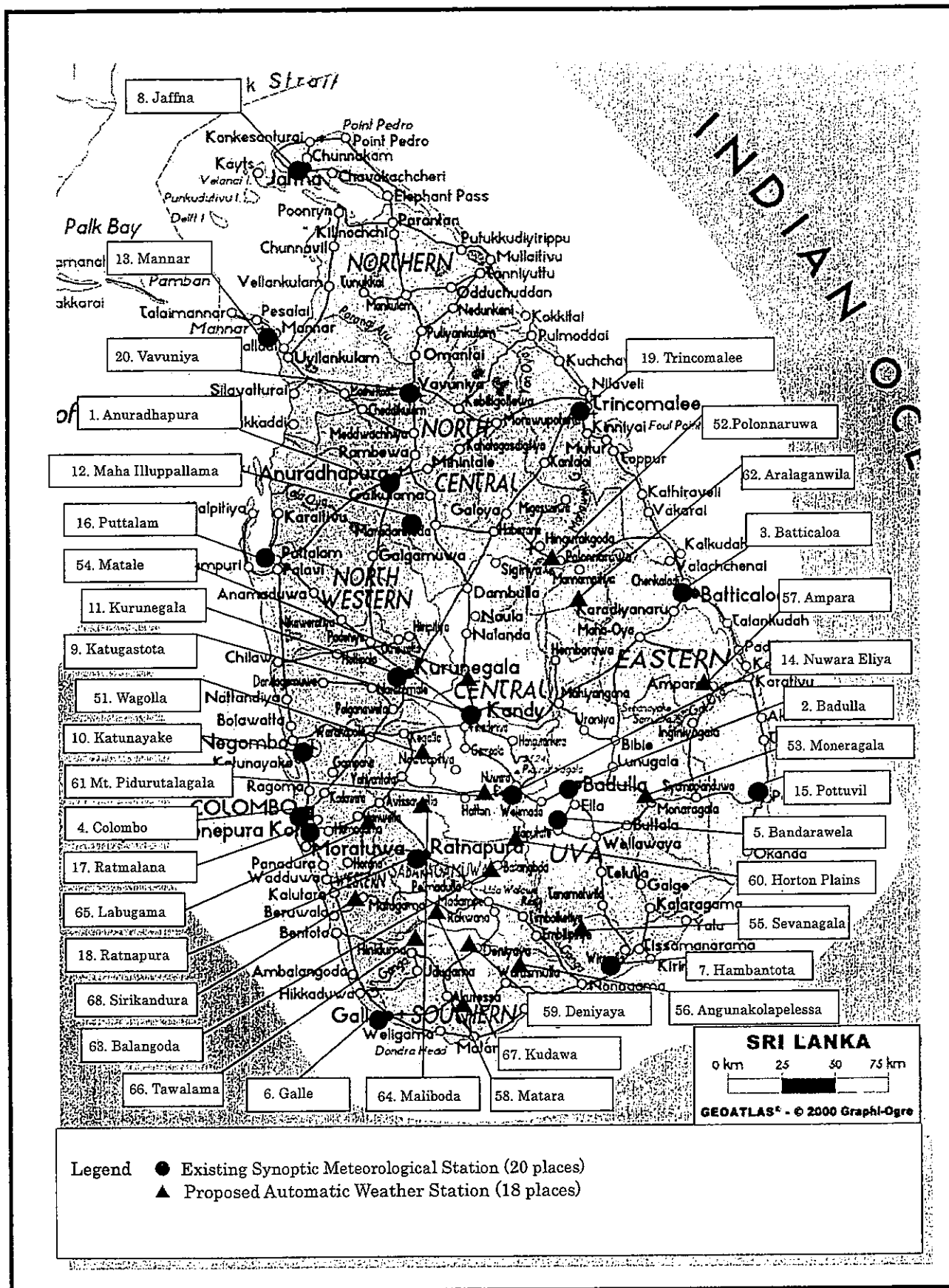
Address of the Concerned Organizations for Disaster Management Network

Organization	Address of the Organization
DMC	Sir. James Peiris Mawatha Colombo 2
DoM	383 Bauddhaloka Mawatha, Colombo 7
DOI	238 Bauddhaloka Mawatha Colombo 7
NBRO	99/1, Jawatte Road, Colombo 5
SLP	Inspector General's Command & Information Division, Mirihana
SLRC	Independence Square, Colombo 7
SLBC	Independence Square, Colombo 7

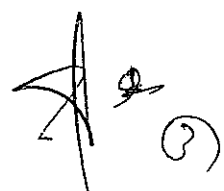
Address of District Disaster Management Coordinating Unit (DDMCU) for 7 districts

District	Address of the DDMCU
Matara	District Secretariat, Fort, Matara
Galle	448/A Colombo Road Gintota, Galle
Kalutara	District Secretariat Kalutara
Ratnapura	Old Divisional Secretariat Office Building, Ratnapura
Colombo	District Secretariat Colombo
Kegalle	District Secretariat Kegalle
Gampaha	District Secretariat Gampaha

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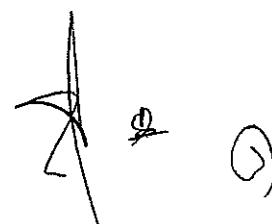
Location Map of Project Site of Component-2



Requested items for Component-1

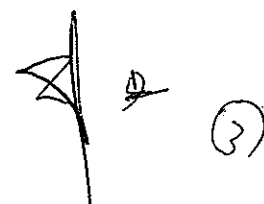
(Component-1: Communication Network System among the relevant institutions)

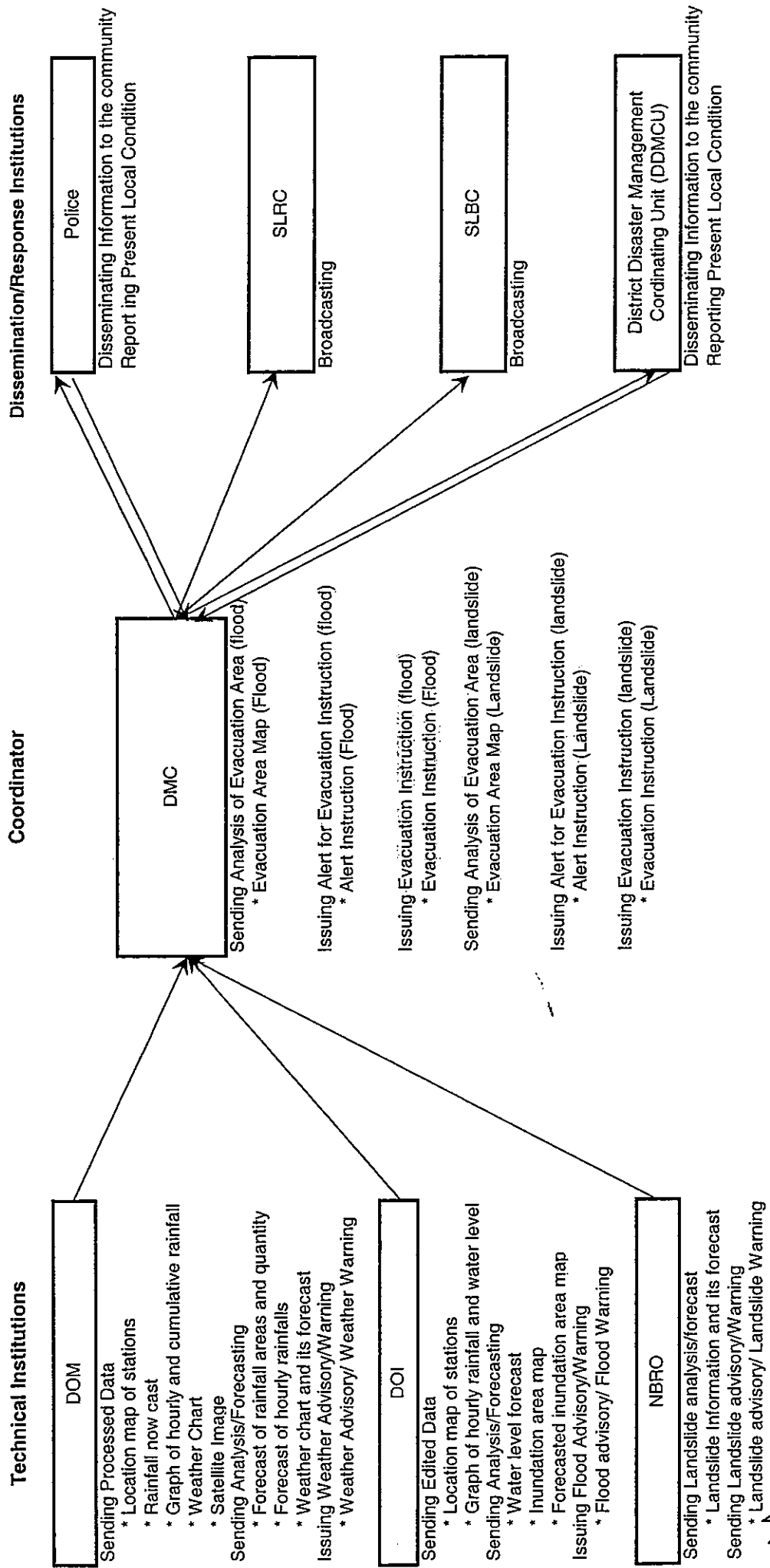
No.	Item	Quantity	Other remarks
1. Disaster Management Centre (DMC)			
1-1	Web Server	1	
1-2	Monitoring Equipment	1	
1-3	VoIP Phone	1	
2. Department of Meteorology (DOM)			
2-1	Monitoring Equipment	1	
2-2	VoIP Phone	1	
3. Department of Irrigations (DOI)			
3-1	Monitoring Equipment	1	
3-2	VoIP Phone	1	
4. National Building Research Organization (NBRO))			
4-1	Monitoring Equipment	1	
4-2	VoIP Phone	1	
5. Sri Lanka Police (SLP)			
5-1	Monitoring Equipment	1	
5-2	VoIP Phone	1	
6. Sri Lanka Broadcasting Corporation (SLBC)			
6-1	Monitoring Equipment	1	
6-2	VoIP Phone	1	
7. Sri Lanka Rupavahini Corporation (SLRC)			
7-1	Monitoring Equipment	1	
7-2	VoIP Phone	1	
8. District Disaster Management Coordination Units (DDMCUs)			
8-1	Monitoring Equipment	7	
8-2	VoIP Phone	7	



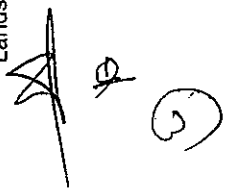
Requested items for Component-2
(Component-2: Meteorological observation system)

No.	Item	Quantity	Other remarks
1. Automatic Weather Stations (18 stations)			
1-1	Sensor (rainfall gauge, wind speed, wind direction, air temperature, solar radiation)	18	
1-2	Sensor pole / Sensor collector	18	
1-3	Logger	18	
1-4	Remote terminal unit (RTU)	18	
1-5	Transmission Equipment	18	
1-6	Power supply facility	18	
1-7	Spare parts	-	
2. Synoptic Meteorological Stations (20 stations)			
2-1	Sensor (rainfall gauge, wind speed, wind direction, air temperature, humidity, air pressure, solar radiation)	20	
2-2	Sensor pole / Sensor collector	20	
2-3	Logger	20	
2-4	Remote terminal unit (RTU)	20	
2-5	Transmission Equipment	19	Except Colombo Station
2-6	Operation terminal	20	
2-7	Printer	20	
2-8	Power supply facility	20	
2-9	Spare parts	-	
3. DOM Head Office			
3-1	Transmission Equipment	1	
3-2	Communication Control Unit (CCU)	1	
3-3	Central operation system	1	Including analysis and display system
3-4	Router	1	
3-5	Switching Hub	1	
3-6	Printer	1	
3-7	Power supply facility	1	
3-8	Spare parts	-	





Role and Relationship of the Concerned Organizations on Disaster Management Information



Contents of Disaster Management Information and Development Schedule

Organization	Activities	Shearing Information/Contents	Completion Target
DoM	Data Processing	* Location map of stations (42kB) * Rainfall now casting (55kB) * Graph of hourly and cumulative rainfall (15kB x 15) * Weather Chart (53kB) * Satellite Image (250kB) Number of browsing graph is supposed 15	To be developed by JICA Grant Aid Project or Obtained by the Existing System
	Analysis/Forecasting	* Forecasting of rainfall area and quantity (50kB) * Forecasting of hourly rainfall (50kB) * Weather chart and its forecasting (53kB)	To be developed by JICA Grant Aid Project
	Issuing of Weather Advisory/Warning	* Weather Advisory/ Weather Warning	To be developed by JICA Grant Aid Project
DOI	Data Editin	* Location map of stations (125kB x 3) * Graph of hourly rainfall and water level (25kB x 15) 15 observation stations graph in 3 river basin is supposed to browse.	To be developed under Pilot Project of JICA Comprehensive Study
	Analysis/Forecasting	* Water level forecasting (40kB x 15) * Inundation area map (70kB x 3) * Forecasted inundation area map (70kB x 3)	
	Issuing of Flood Advisory/Warning	* Flood advisory/ Flood Warning	
NBRO	Landslide analysis/forecasting	* Landslide Information and its forecasting (70kB x 3)	<i>To be confirmed</i>
	Landslide advisory/Warning	* Landslide advisory/ Landslide Warning (85kB x 3)	
DMC	Analysis of Evacuation Area for flood	* Map showing Evacuation Area (Flood) (85kB x 3)	To be developed under Pilot Project of JICA Comprehensive Study
	Issuing of alert for evacuation instruction (flood)	* Alert Instruction (Flood) (85kB x 3)	
	Issuing of Evacuation Instruction (flood)	* Evcuation Instruction (Flood) (85kB x 3)	
	Analysis of Evacuation Area for landslide	* Map showing Evacuation Area (Landslide) (85kb x 3)	<i>To be confirmed</i>
	Issuing of alert for evacuation instruction (landslide)	* Alert Instruction (Landslide) (85kB x 3)	
	Issuing of Evacuation Instruction (landslide)	* Evacuation Instruction (Landslide) (85kB x 3)	

Project Implementation Schedule and Necessary Undertakings

	2007												2008			2009										
	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
DMC Building Construction Approval of the Cabinet Designing & Construction	◆																									
Contract with a Data Communication Operator for Disaster Management Communication Network																										
Preparation of the Budget																										
Tender																										
Contract																										
DoM Obtaining official permission for land usage of each meteorological observation stations																										
Obtaining of License on Frequency Allocation from TRC																										
Budget Preparation for Satellite Communication (VSAT)																										
Submission of Application																										
Obtaining of License																										
Clearance of Ministry of Defense on VSAT Installation																										
Contract with Satellite Operator (VSAT)																										
Confirmation of Contract Condition (Frequency & Cost)																										
Budget Preparation for Satellite Communication (VSAT)																										
Signing of Contract with Satellite Operator																										
Implementation Schedule of the Project (tentative)																										
Explanation and Confirmation of Draft Final Report of Basic Design Study																										
Submission of Final Report of BD Study																										
Approval by the Cabinet of Japan																										
E/N																										
D/D Preparation of Tender Documents																										
Distribution of Tender Document																										
Tender Opening																										
Manufacturing & Installation																										

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Minutes of Discussions
on the Basic Design Study on the Project for
Improvement of Meteorological and Disaster Information Network
(Explanation of Draft Final Report)

From October to November 2006, and February to March 2007, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on the Project for Improvement of Meteorological and Disaster Information Network (hereinafter referred to as "the Project") to the Democratic Socialist Republic of Sri Lanka (hereinafter referred to as "Sri Lanka"), and through discussions, field surveys, and technical examination of the results in Japan, JICA prepared a Draft Final Report of the Study.


In order to explain and to consult with concerned officials of the Government of Sri Lanka on the contents of the Draft Final Report, JICA sent to Sri Lanka the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Hideki Sakata, Deputy Resident Representative of JICA Sri Lanka Office, from May 24 to 31, 2007.

As a result of discussions, both sides confirmed the main items described on the attached sheet.

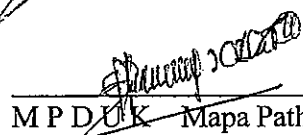
Colombo, May 30, 2007



Hideki Sakata
Leader
Basic Design Study Team
Japan International Cooperation Agency



Peter Dias Amarasinghe
Secretary
Ministry of Disaster Management
and Human Rights



M P D U K Mapa Pathirana
Director - Japan Division
Department of External Resources
Ministry of Finance and Planning

ATTACHMENT

1. Contents of the Draft Final Report

The Sri Lankan side has agreed and accepted in principle the contents of the draft final report explained by the Team.

Especially, both sides have agreed that the requested equipment for the Communication Network System among the relevant institutions (Component-1) is to be separated from this Project and to be implemented as part of the pilot project of the JICA development study "Comprehensive Study on Disaster Management"

2. Implementing Agency

In response to the above agreement, both sides have agreed that the implementing agency will be the Department of Meteorology (DOM) for the Project.

3. Japan's Grant Aid Scheme

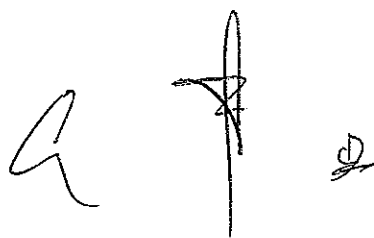
The Sri Lankan side has reconfirmed the Japan's Grant Aid scheme and the necessary undertakings to be taken by the Government of Sri Lanka as explained by the Team and described in Annex-4 and Annex-5 of the Minutes of Discussions signed by both sides on November 01, 2006.

4. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and forward it to the Government of Sri Lanka by July, 2007.

5. Other Relevant Issues

- 1) It was agreed that the equipment provided for project sites in Ampara, Batticaloa, Jaffna, Mannar, Pottuvil, Trincomalee and Vavuniya be handed over to the Sri Lankan side in Colombo. Sri Lankan side agreed to allocate adequate budgetary provisions and make arrangements to complete installation and commissioning of these equipments within one year of the completion of the Project (currently due to complete in March 2009).
- 2) The Sri Lankan side has understood the schedule of the Project after signing of the Exchange of Notes (E/N) and agrees to complete the required procedures indicated below before the disembarkation of the products in June 2008.
 - Acquisition of the license on frequency allocation from the Telecommunication Regulatory Commission (TRC).



- Acquisition of the satellite communication by contracting with a satellite operator.
 - Installation of fence around the project site of Maliboda and Tawalama.
 - Allocation of 5 technical staff of DOM for the installation, maintenance and operation of the system.
 - Prompt tax exemption and customs clearance of the procured equipment.
- 3) The Sri Lankan side agreed to assign an appropriate number of counterpart personnel to work with Japanese counterparts during installation and testing of the procured equipment to obtain the skills necessary to install, commission and maintain the system. The Sri Lankan side (including the institutions joining the Disaster Management Network) shall also assign an appropriate number of counterpart personnel during the soft component (technical assistance) period to obtain the skill of proper operation (and maintenance) of the system introduced by the Project.
- 4) Both sides have agreed that the Project Cost Estimation, as attached as Annex, should neither be duplicated nor release to outside parties before the signing of all Contract(s) relating to the Project.
- 5) Both sides have agreed that the specifications of the equipment should neither be duplicated nor released to outside parties until the bidding documents are finalized.

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ANNEX

Project Cost Estimation

1 Initial Cost Estimation

The initial project cost needed in the case of grant aid from Japan will be 803 million yen. The breakdown of the project cost according to the contribution sharing between Japan and Sri Lanka will be estimated as follows according to the estimation timing of March 2007. This amount does not indicate the exact amount of grant under the Exchange of Note.

(1) Japan's Contribution

Classification		Amount (million yen)
Equipment	Automatic weather observation systems, satellite communication system, central operating system	749
Detailed Design, Supervision, Soft Component		54
Total		803

(2) Sri Lanka's Contribution

Classification	Amount (thousand Rs)
Installation of Fence	630

2 Operation and maintenance cost

The equipment pertaining to the meteorological information network system to be procured by this grant aid project mainly includes the automatic weather observation systems, communication equipment for transmitting weather observation data and the server for the central operation system, PCs and other electronic equipment. This will be a completely new system as they collect observation information manually and through ordinary telephone lines now. The project will result in increase of following items of operation and maintenance cost.

(1) Circuit cost for the satellite communication system

The circuit charge of the satellite communication system required for operation of the weather information network system is estimated Rs 1,940,000 per year.

(2) Radio frequency charge for the satellite communication

The satellite communication system will be composed of a hub station to be installed at the headquarters of Department of Meteorology (hereinafter referred to as "DOM") and terminal stations to be installed at Synoptic Meteorological Stations and Collaborator's Stations. Concerning use of radio frequency, it is necessary to pay the Telecommunications Regulatory Commission of Sri Lanka Rs 50,000 per year for a hub station and Rs 30,000 per year for one terminal-station. As there are 37 terminal-stations, the radio frequency charge including the hub station will be Rs 1,160,000 per year.

(3) Personnel cost

No additional personnel cost will accrue at Synoptic Meteorological Stations as the current observers will adapt to the new system. Six electronics engineers are needed for operating and maintaining round the clock the automatic weather observation systems, the satellite communication system and the central operating system to be newly introduced. DOM is going to increase 1 engineer and 4 technicians. The personnel cost will increase Rs 1,080,000 per year.

(4) Electricity charge

Additional power supply is required for the hub station and two servers and one PC of the central operating system installed at headquarters of DOM. The devices will consume 2kW in total, being translated into Rs 300,000 per year according to the tariff of the public power company of Sri Lanka.

(5) Cost of consumables

For calibration of the automatic weather observation system to be installed by the grant aid project, reagents for humidity calibration for one year are included. From the 2nd year on, Rs 11,262 per year will be needed to purchase the reagents.

The printers to be installed at each Synoptic Meteorological Stations will be ink jet printers and it will be necessary to replace the ink cartridges at least once a year. They will have 20 printers at the stations and two printers for the central operating system, 22 in total, requiring a cost of Rs 150,000 per year.

The description above is summarized in the table below.

Operation and Maintenance Cost of Procured Equipment (Unit: 1,000 Rs)

Cost	1 st year	2 nd year on (percentage against actual expense in 2006)	Expense item and Actual amount of expense in 2006
Circuit cost for the satellite communication system	1,940	1,940 (39%)	Communication 5,000
Radio frequency charge for satellite communication system	1,160	1,160 (23%)	
Personnel cost	1,080	1,080 (1.7%)	Personnel 62,000
Electricity charge	300	300 (5%)	Power 6,000
Cost of consumables	150	162 (6%)	Consumable 2,650
Total	4,630	4,642 (3.6%)	Total 127,000

3 Necessary Installation after Completion of the Project

In this project, the equipment for 7 north and east sites will be handed over to Colombo headquarters of DOM. The equipment is requested to install, adjust, and test by Sri Lankan Side within one year after the Project completion. The necessary cost for this work is estimated Rs 1.94 million.