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REQUEST FOR TECHNICAL ASSISTANCE

STUDY

ON

GEOGRAPHIC INFORMATION SYSTEM

FOR

SUSTAINABLE DEVELOPMENT

IN

GAMBIA

1999

DEPARTMENT OF LANDS AND SURVEYS

**STATE DEPARTMENT FOR LOCAL
GOVERNMENT LANDS AND RELIGIOUS
AFFAIRS**

REPUBLIC OF THE GAMBIA

REQUEST FOR TECHNICAL ASSISTANCE

PROJECT TITLE:

Study on Geographic Information System for Sustainable Development in Gambia

REQUESTING AGENCY:

Department of Lands and Surveys

(Address: 12, Marina Parade, Banjul, Tel: 220-227337, FAX: 227337)

Department of State for Local Government and Lands

Republic of the Gambia

SOURCE OF ASSISTANCE:

Government of Japan

TYPE OF ASSISTANCE:

Development Study (GIS and Digital Topographic Mapping)

- **Photo Scale: 1:50,000 (Black and White)** 575 01
- **Map Scale: 1:50,000**
- **Digital Mapping area: whole country (11,295 km²)**

The following useful maps should be produced and the data input :

- **Topographic Maps**
- ***Land Use Maps**
- ***Infrastructure Data**
- ***Socio-Economic Data**

*** They should be compiled by the existing data.**

Notes:

The Republic of the Gambia has already requested assistance for the conduct of two mapping projects to the Government of Japan in 1997. This undertaking is in no doubt significant to the success of the development of the country and the reinforcement of the Department of Lands and Surveys. (The Department of State for Local Government and Lands is currently the government agency responsible for every scale maps and their data including GIS.) The objectives of the Study submitted two years ago are as follows;

(Project Title)

- 1. Mapping Project for the Revision and Integration of Geographic Information in the Gambia**
- 2. Geographic Information System for Greater Banjul Area in the Gambia**

(Main Objectives of the Study)

- 1. To extend and updating the existing National Geodetic Control Network**
 - To revise the existing large scale maps of 1:2,500 and 1:1,250 of the major growth centers of the Gambia**
 - To produce cadastral plans for the major centers**
 - To produce digital topographic maps by revising the existing maps covering the whole country at the scale of 1:50,000, 1:25,000, and 1:10,000**
 - To establish a Land Related Information System**
- 2. To produce digital land-use maps covering the Greater Banjul Area at the scale of 1:10,000**
 - To conduct technology transfer to the counterpart personnel**

After assessing the importance of the above, the conduct of the production of national base maps at the scale of 1:50,000 covering the whole country, together with the updating the existing National Geodetic Control Network, in accordance with global standards, was considered to be the most urgently needed by Department of Lands and Surveys.

The succeeding sections are the comprehensive compilation of proposal made in the past.

1. BACKGROUND AND JUSTIFICATION

The Department of Lands and Surveys (DL&S), which is under the State Department for Local Government and Lands, is mandated to ensure an efficient land administration system in order to safeguard the limited land resources for sustainable socio-economic development.

DL&S comprises of three Units viz. Topographic and Cadastral Surveys, Map Production, Lands and Valuation. It is the National Surveying and Mapping Institution, and the Administrator of allocations and leases of Land granted by the Government. The Department also includes a Valuation Unit which determines the value of properties for rating and Land compensation purposes.

The land surveying activities include provision of services to all Ministries, Departments and Agencies in connection with development projects within the country. It is mandated to produce, compile, update and maintain all copies of standard national and specialized maps, aerial photographs and survey records. It carries out and controls cadastral surveys to facilitate the registration of properties, ensures that all surveys undertaken by private surveyors are checked and authenticated, and establishes and maintains the national geodetic network upon which national mapping and cadastral surveys are based.

The current poor National Geodetic Control Network on which all National Mapping activities are based needs to be addressed as a matter of urgency. The Control Network that was established by the Ordnance Survey of Great Britain in the 1960s has not been improved by way of revision, extension or densification. Rather, the control points are being progressively destroyed by construction activities. Expatriate Surveyor Support will be useful in updating and extending our National Geodetic Control Network as necessary.

The Latest maps and aerial photographs will be certainly required to implement the Development Plan in the Republic of the Gambia smoothly and efficiently. Ongoing and future projects underscore the Government's efforts to promote infrastructure development which is vital to the immediate reinforcement of the DL&S.

However, the existing national topographic maps made in 1981 on the basis of the aerial photos taken in 1978 are obsolete. Only two types of sheets out of 25 in total are in stock. Although DL&S has all of the original manuscripts in the office, they can not reprint because of the shortage of the funds. Map users are using black and white copied maps that are obscure reluctantly. DL&S does not have capability to conduct the revision work to meet the demands from variety of customers. Of course they do not have any budget to make a contract with a company on the printing and revision works.

(Current Situation of DL&S)

The existing national topographic maps at the scale of 1:50,000 were started production in the late 1970s. As these activities were completed about 20 years ago, the maps are obsolete. To revise the maps according to topographic changes that have occurred after this period, DL&S has had a strong intention to conduct aerial photography and revision work of the existing maps on the national territory. The decision of the works was not made, however, due to lack of know-how in the following techniques:

- 1) Cartography
- 2) GPS
- 3) Digital mapping

In addition, DL&S also lacks the following:

- 1) Experienced cartographer
- 2) Standardization of the data acquisition process
- 3) Standardization of the data structuring processes
- 4) Funds

Annual budgets of DL&S over the last 3 years are as follows:

Fiscal Year	Budget (Dalasis)
1996	1,324,897
1997	897,620
1998	1,787,760

US\$1=10.2Dalasis, October, 1998

Regardless of efforts made to overcome the above, the survey works for national topographic maps came to a standstill, leaving governmental organizations and private sectors with no choice but to continue utilizing outdated maps in drawing up development projects and management plans. Consequently, a lot of time has been wasted trying to maintain the suitability of the projects.

(Conclusion)

The Government has a wide range of sustainable development programs to boost the economy and conserve the natural environment. In order to formulate master plans for urban and rural development, and natural environment conservation, that are compatible with the prevailing trends in the areas concerned, new and small-scale maps are necessary. Up-to-date maps and aerial photos are also very important in field surveys to understand present conditions, e.g. geographical features, infrastructure, houses and facilities.

Small-scale maps that are available in the Republic of the Gambia cover the whole at a scale of 1:50,000 and were produced in late 1970s. Nonetheless, these maps have been used in the past to many rural development projects, e.g. resettlement programs, infrastructure planning, agricultural improvement, public health and sanitation, and forestry.

Due to financial constraints and insufficient technical expertise, the existing national topographic maps are never revised precisely to include changes in the population, environment and economy, hence they are no longer expedient for future project planning and design programs. (DL&S does not have any operational photogrammetry equipment at this moment.)

It is clearly evident that the successful implementation of all development programs, particularly, projects on the rehabilitation and conservation of the country will largely depend on the availability of topographic maps. Moreover, the production of new small-scale topographic maps using the latest digital technology will definitely accelerate the progress of development plans. It is needless to say that national topographic maps are of importance for independent countries to secure a permanent peace.

It is with the above-mentioned background and justification that the DL&S wishes to conduct a mapping project. The terms of reference for the Study are outlined in the subsequent sections of this document.

2. OBJECTIVES OF THE STUDY

Based on the above justification of the Study, the major objectives of the Study are defined as follows:

- 1) To review the national topographic mapping system.
- 2) To make suitable recommendations regarding the standardization of the data acquisition and structuring processes, production system, and other necessary system.
- 3) To identify the necessity for the essential institutional strengthening.
- 4) To produce digital topographic maps at the scale of 1:50,000 covering the whole country.
- 5) To establish Geographic Information System based on the above maps and existing data.
- 6) To conduct technology transfer, e.g. digital photogrammetric work, to the counterpart personnel during the execution of the Study.

3. STUDY AREA

The Study area shall cover the entire country, 11,295km²

4. GOAL OF THE PROJECT

The goal of the Project is to create DL&S able to:

- 1) Administer work in accordance with the Survey Code.
- 2) Establish and maintain geodetic control points.

- 3) Offer consultation on the design and preparation of the various maps used by national and regional bodies, perform entrusted work for the preparation of maps, carry out surveys, research, and do other related activities.
- 4) Manage map data, including the reproduction and publication of maps.
- 5) Hold seminars and lectures to promote and improve the level of knowledge concerning maps and aerial photographs.
- 6) Distribute new aerial photographs.

5. SCOPE OF THE STUDY

- 1) Mapping works such as contour plotting, photogrammetry works and the field works required for these mapping works will be conducted jointly by the Gambian counterpart and the Japanese Study Team.
- 2) The works summarized hereunder shall be completed within a two-year period.

1) Present DL&S Functions and Policies

- Assessment of technical capability of DL&S and staff
- Recommendations for the DL&S reorganization plan

2) Existing Equipment

- Preparation of an inventory of existing equipment (year of purchase, frequency of use and maintenance, etc.)
- Assessment of the efficiency and effectiveness of equipment and facilities
- Recommendation of an equipment and facility procurement plan

3) Existing Data, Maps and Aerial Photographs

- Collection and analysis of data for the establishment of a national geodetic network
- Preparation of an inventory of existing topographic maps, aerial photographs and related materials, including their quantity
- Investigation of national control points
- Study of survey code and related regulations
- Recommendations of the maintenance plan of topographic maps and other data.
- Recommendation of standardization of the data acquisition processes
- Recommendation of standardization of the data structuring processes

4) Related Ministries and Organizations

- Investigation of the survey equipment owned
- Evaluation of activities in terms of maps, thematic maps and GIS usage
- Interview of other agencies regarding their awareness of the importance of maps, survey works, and the DL&S
- Recommendation of a plan to foster closer collaboration between DL&S and other agencies

5) Geodetic Network Survey, Topographic Mapping & GIS

- Aerial photography of approximately 11,295km² at the scale of 1:50,000.
- Processing of contact prints and photos for enlargement in Japan.
- Pricking of existing triangulation points for use as control points. Conduct of ground control survey using GPS in the absence of triangulation points, and the connection of new control points to existing network of national ground stations to fully cover the specified mapping area. Concrete monuments with metal marks will be established at new control points.
- Field identification in close cooperation with the Gambian counterparts.
- Clear identification of important information, e.g. names of villages, boundaries, mountains, rivers, and roads, in cooperation with the Gambian counterparts.
- Implementation of aerial triangulation, stereo plotting and compilation by the Japanese Study Team in cooperation with the Gambian counterparts. Use of digital photogrammetry for stereo plotting and compilation
- Study on the most suitable Geographic Information System (GIS) in The Gambia
- Selection of GIS hardware and software
- Input of the existing infrastructure and socio-economic data, if available
- Handing over final digital data to DL&S.
- Specification of detailed information e.g. legend, map sheet, colors, mutually agreed upon by the Study Team and DL&S
- Provision of printed topographic maps

- A seminar will be held in Gambian at the end of the study for the transfer of technology, e.g. digital mapping and map utilization.

6. TRANSFER OF TECHNOLOGY

Technology transfer and training will be provided to the counterpart by foreign experts in the following fields, in the form of on-the-job training. Seminars and overseas training will also be included, the latter to be conducted preferably in Japan.

- 1) Various field survey and investigation methods
- 2) Geographic Information System
- 3) Latest digital mapping techniques
- 4) Revision work of the digital mapping
- 5) Maintenance & Operation of the latest equipment

7. STUDY SCHEDULE

The Study is estimated to take a total of 20 months.

8. REQUIRED EXPERTS

The study will require the following experts.

- Team Leader
- Supervisor of aerial photography works
- Photogrammetrist
- Supervisors of field survey works including GPS, leveling, field classification.
- Geodesist
- GIS specialist
- Coordinator

9. STUDY OUTPUT

The following will be prepared in the course of the Study.

- Inception Report
- Interim Report
- Draft Final Report

- Final Report
- Negative Film (black / white; scale : 1: 50,000)
- Contact Prints
- Original Maps (scale: 1:50,000)
- Printed Maps 1,000sets
- 1:50,000 scale digital cartographic framework data file (e.g. CD-ROM) 5sets
- Field Survey and Aerial Triangulation Data

10. EQUIPMENT SUPPLY

The following equipment brought into Gambian by the Study Team shall be handed over to the Government of Gambia after the completion of the Study.

- a) Equipment for field survey
 - Four wheels drive vehicles
 - Transceivers
 - GPS equipment
 - Total stations and other small survey equipment

- b) Digital Mapping Equipment
 - Digital Plotter
 - Workstation
 - Plotter and related equipment including software
 - GIS software

11. CURRENT SITUATION OF DEPARTMENT OF LANDS AND SURVEYS

11.1 Existing Maps and Activities of the Department of Lands and Surveys

In accordance with the mandate, the Survey Division has established and maintained the following maps:

MAP PUBLICATION LIST

SCALE	TYPE OF MAP	DATE OF PUBLICATION
1:250,000	The Gambia(East and West sheets)	1980
1:250,000	Electoral Constituency Map of Gambia	1982
1:125,000	Soil Association Maps	1976
1:125,000	Agricultural Lands, Forested Lands, Range Lands and Land Use	1986
1:50,000	Photo Maps of The Gambia	1976
1:50,000	Agricultural Lands, Forested Lands, Range Lands and Land Use	1986
1:25,000	Kombo Peninsula	1977
1:25,000	Orthophoto Maps (84 sheets)	1983
1:25,000	Electoral constituency Map of Kombo	1983
1:10,000	Coastal Strip (9 sheets)	1976
1:10,000	Orthophoto Maps from Kaur to Georgetown	1985
1:10,000	Land Use Photomaps of The Gambia (526 sheets)	1985
1:10,000	Topographic maps of urban growth centers	1985
1:5,000	Electoral constituency Map of Banjul	1982
1:5,000	Banjul Street Plan and Public Building	1974
1:1,250	Cadastral Plans of Banjul, Farafenni, Bansang, Soma Albreda and Juffereh	1983
1:2,500	Maps covering principal towns	1983
1:1,250	Cadastral Plans of Kombo St. Mary Division, Pakalinding, Soma and Bansang	
1:50,000	National Coverage Map (25 sheets)	1978-1981

11.2 Personnel

The size of the establishment has remained constant since 1980 with approximately 57 employees. However, the establishment is currently beset with problems in staffing. There are a very few adequately trained staff, and securing funding for training has proved difficult over the years.

The introduction of information techniques requires relevant training for its adequate and effective application. The training programs carried out are not sufficiently structured and detailed to significantly impact on the general efficiency and output of the Department. The lack of training opportunities and facilities are therefore a major bottleneck to the advancement of the Department.

11.3 On-going Projects by Donor Countries

DL&S doesn't have any on-going projects supported by donor countries and international organizations at this moment.

11.4 Others

The geographic network which was originally established by the Directorate of Overseas Surveys under the Government of U.K. was intact in some areas. A significant number of them have been destroyed by human activities, particularly road construction works. These have not been replaced because there is no structured system of replacing or extending the control network. There is also no systematic approach to map revision, so that all the map stock is out of date.

Cadastral surveys are also highly prioritized. Apart from the actual survey, DL&S is also involved in the management and maintenance of the cadastral maps, which is also not being carried out efficiently because of the magnitude of the task and the limited resources available.

12. UNDERTAKING OF THE GOVERNMENT OF THE GAMBIA

12.1 In order to facilitate the smooth and efficient conduct of the Study, the Government of the Gambia shall take necessary measures:

- (1) To secure the safety of the Study team,
- (2) To permit the members of the Study team to enter, leave and sojourn in Gambian in connection with their assignment therein, and exempt them from alien registration requirement and consular fees,

- (3) To exempt the Study team from taxes, duties and any other charges on equipment, machinery and other materials brought into and out of Gambia for the conduct of the Study,
- (4) To exempt the Study team from income tax and charges of any kind imposed on or in connection with any emoluments or allowance paid to the members of the Study team for their services in connection with the implementation of the study,
- (5) To provide necessary facilities to the Study team for remittance as well as utilization of the funds introduced in Gambia from Japan in connection with the implementation of the Study,
- (6) To secure permission for entry into private properties or restricted areas for the conduct of the Study,
- (7) To secure permission for the Study team to take necessary data, documents, aerial photographs, topographic maps related to the Study out of Gambia to Japan,
- (8) To provide medical services as needed. Its expenses will be chargeable to members of the Study team,
- (9) To secure necessary permission for aerial photography by foreign registered aircraft for the implementation of the Study, and
- (10) To obtain the necessary permission from the government of the neighboring country, Senegal for the execution of aerial photography by the Study Team at the area of border line.

12-2 The Government of Gambia shall bear claims, if any arise against member (s) of the Japanese Study team resulting from, occurring in the course of or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the member of the Study team.

12-3 The Department of Lands & Surveys shall act as a counterpart agency to the Japanese Study team and also as a coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

The Government of Gambia assures that the matters referred to in this form will be ensured for the smooth conduct of the Development Study by the Japanese Study team.

Signed:

Title:

Date:

INVENTORY OF FIELD SURVEY EQUIPMENT

Description	Type	Quantity
Theodolite	Cookie tavistock	1
Theodolite	T1	2
Theodolite	T2	2
Theodolite	T16	1
Theodolite	Micro-optic	1
Theodolite	Wild T2	2
Ranging rods	Telescopic type	1
Prismatic	Wild B3	2
Compass	Wild B3	2
Lighting kit		1
Prism	Wild	4
Tribrach	Wild	4
Tribrach for prism	Wild	4
3 prism box		3
11 prism box		2
Telescopic tripods	Wild	13
Telescopic staff		6
Wooden Staff		1
Level	Nak-0	1
Level	Wild NAB-24	3
Level	Nak-2	2
Level	N2	1
Level	Autoset	1
EDM	DistomatD14L, D1-1000	4
Alidate		1
Tellerometer		1
Base plates	Wild	4

All of the equipment for photogrammetry were broken down.

2. S/W 及び M/M

SCOPE OF WORK
ON
THE STUDY
FOR
ESTABLISHMENT OF GEOGRAPHIC DATABASE
IN
THE REPUBLIC OF THE GAMBIA

AGREED UPON BETWEEN

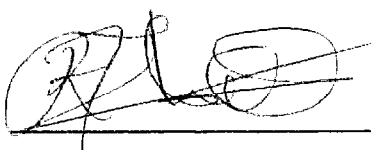
DEPARTMENT OF LANDS AND SURVEYS

AND

JAPAN INTERNATIONAL COOPERATION AGENCY

BANJUL

18 December, 2000



RUTHERFORD A. F. THOMAS

Director

Department of Lands and Surveys,
Department of State for Local Government
and Lands



SEIICHI TANIOKA

Leader

Preparatory Study Team
Japan International Cooperation Agency



I. INTRODUCTION

In response to a request by the Government of the Republic of The Gambia, the Government of Japan has decided to conduct the "Study for Establishment of Geographic Database in the Republic of The Gambia" (hereinafter referred to as "the Study"), in accordance with the relevant laws and regulations in force in Japan.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study in close cooperation with the authorities concerned of the Government of the Republic of The Gambia.

The present document sets forth the scope of work with regard to the Study.

II. OBJECTIVES OF THE STUDY

The objectives of the Study are to:

- 1) prepare digital topographic maps covering the whole country at the scale of 1:50,000, that will assist the Republic of The Gambia in developing various plans and programs; and
- 2) pursue technology transfer in the course of implementation of the Study.

III. STUDY AREA

The Study shall cover an area of about 11,295 km² being the whole country of the Republic of The Gambia.

IV. SCOPE OF THE STUDY

In order to achieve the objectives mentioned above, the Study shall cover following items.

- 1) Review of Existing Conditions

Existing conditions relevant to the Study including organizational set-up, mapping system, facilities management and control points shall be reviewed.

- 2) Ground Control Point Survey

Ground control points composing of the national geodetic control network shall be established.

- 3) Aerial Photography
1:50,000 black and white aerial photographs covering the Study area shall be taken.
- 4) Control Point Survey and Pricking
Control point survey and pricking shall be carried out.
- 5) Aerial Triangulation
Aerial triangulation shall be carried out to establish photo control points.
- 6) Field Identification
Topographic information shall be identified mainly using the aerial photographs. The field identification shall be conducted in case the information on the aerial photographs is difficult to be interpreted.
- 7) Digital Mapping
Digital mapping shall be carried out by using the aerial photographs and 1:50,000 scale digital topographic data shall be prepared.
- 8) Structurization
The digital topographic data shall be structured into vector framework data.
- 9) Editing and symbolization
The digital topographic data shall be edited and symbolized to print topographic line maps at the scale of 1:50,000.
- 10) CD-ROM production
The digital topographic data shall be compiled into CD-ROM.
- 11) Printing of Maps
The digital topographic data shall be printed at the scale of 1:50,000.
- 12) Technology Transfer
In order to facilitate technology transfer to the counterpart personnel, part of the above-mentioned items shall be undertaken by the counterpart personnel under the technical supervision of the Study team.
- 13) Dissemination of the Final Products
Recommendations for the wide and effective use of the geographic database produced under the Study shall be prepared.

V. STUDY SCHEDULE

The Study shall be implemented in accordance with the tentative Study schedule shown in Appendix. The schedule, including report submission dates stated in the next clause (VI), is tentative and subject to be modified when both parties agree upon and any necessity that arises during the course of the Study.



VI. REPORTS AND FINAL PRODUCTS

JICA shall prepare and submit the following reports in English and the final products of topographic mapping works to the Government of the Republic of The Gambia.

1. Inception Report
20 copies At the beginning of the Study
2. Progress Reports
20 copies At the end of the first year and the second year
3. Draft Final Report
20 copies At the end of the third year
4. Final Report
20 copies At the end of the Study
5. Final products of topographic mapping
 - (1) Negative films of aerial photographs 1 set
 - (2) Contact prints of aerial photographs 1 set
 - (3) Results of ground control point survey 1 set
 - (4) Results of aerial triangulation 1 set
 - (5) 1:50,000 scale topographic maps
 - films for printing 1 set
 - printed maps 1000 copies
 - (6) 1:50,000 scale digital topographic data
 - digital data files (eg. CD-ROM) 20 sets

VII. UNDERTAKING OF THE GOVERNMENT OF THE REPUBLIC OF THE GAMBIA

1. To facilitate the smooth conduct of the Study, the Government of the Republic of The Gambia shall take the following necessary measures:
 - (1) to secure the safety of the Japanese Study team;
 - (2) to permit the members of the Japanese Study team to enter, leave and sojourn in the Republic of The Gambia for the duration of their assignment therein and exempt them from foreign registration requirements and consular fees;
 - (3) to exempt the members of the Japanese Study team from taxes, duties, fees and any other charges on equipment, machinery and other materials brought into and out of the Republic of The Gambia for the conduct of the Study;
 - (4) to exempt the members of the Japanese Study team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Japanese Study team for their services in connection with the

- implementation of the Study;
- (5) to provide necessary facilities to the Japanese Study team for remittance as well as utilization of the funds introduced into the Republic of The Gambia from Japan in connection with the implementation of the Study;
 - (6) to secure permission for the Japanese Study team for entry into private properties and restricted areas for the implementation of the Study;
 - (7) to secure permission for the Japanese Study team to acquire necessary radio frequency for the implementation of the Study;
 - (8) to secure permission for the Japanese Study team to take all data and documents including topographic maps, original manuscripts and aerial photographs related to the Study out of the Republic of The Gambia to Japan;
 - (9) to secure necessary permission for aerial photography by a foreign registered aircraft for the implementation of the Study; and
 - (10) to provide medical services as needed. Its expenses will be chargeable on the members of the Japanese Study team.

2. The Government of the Republic of The Gambia shall bear claims, if any arises, against the members of the Japanese Study team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of the Japanese Study team.

3. Department of Lands and Surveys (hereinafter referred to as "DL & S") shall act as the counterpart agency to the Japanese Study team and also as the coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

4. DL & S shall, at its own expense, provide the Japanese Study team with the following in cooperation with other organizations concerned:

- (1) available data and information related to the Study,
- (2) counterpart personnel,
- (3) suitable office space with necessary equipment in Banjul,
- (4) vehicles with drivers, and
- (5) credentials or identification cards.

VIII. UNDERTAKING OF JICA

For the implementation of the Study, JICA shall take the following measures:

- (1) to dispatch, at its own expense, the Japanese Study team to the Republic of The Gambia; and
- (2) to pursue technology transfer to the Gambian counterpart personnel in the course of the Study.

IX. OTHERS

JICA and DL&S shall consult with each other in respect of any matter that may arise from or in connection with the Study.

TENTATIVE SCHEDULE OF THE STUDY

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Work in Gambia	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px;"></div> </div>																			
Work in Japan	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; width: 10px; height: 20px; margin: 5px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px;"></div> <div style="border: 1px solid black; width: 30px; height: 20px; margin: 5px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px;"></div> </div>																			
Reports and Final Product	△ IC/R							△ PG/R1					△ PG/R2				△ DF/R		△ F/R	△ F/P

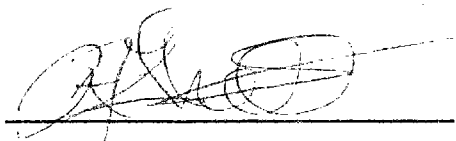
MINUTES OF MEETING
FOR
THE SCOPE OF WORK
ON
THE STUDY
FOR
ESTABLISHMENT OF GEOGRAPHIC DATABASE
IN
THE REPUBLIC OF THE GAMBIA

AGREED UPON BETWEEN
DEPARTMENT OF LANDS AND SURVEYS

AND

JAPAN INTERNATIONAL COOPERATION AGENCY

BANJUL
18 December, 2000



RUTHERFORD A. F. THOMAS
Director
Department of Lands and Surveys,
Department of State for Local Government
and Lands



SEIICHI TANIOKA
Leader
Preparatory Study Team
Japan International Cooperation Agency



The Japanese Preparatory Study Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Seiichi TANIOKA (Director of Cartographic Department, Geographical Survey Institute, Ministry of Construction) visited the Republic of The Gambia from 12 December to 18 December, 2000 in connection with the Study on "Study for Establishment of Geographic Database in the Republic of The Gambia" (hereinafter referred to as "the Study").

The Team had a series of discussions on the Scope of Work of the Study with officials of Department of Lands and Surveys, Department of State for Local Government and Lands (hereinafter referred to as "DL&S"). The attendance list is attached in ANNEX.

Through these discussions, both sides have completed the Scope of Work and confirmed the following points:

1. Both sides agreed that the title of the Study shall be "Study for Establishment of Geographic Database in the Republic of The Gambia".

2. Both sides agreed that following processes of the Study shall be carried out by counterpart personnel under the technical supervision of the Study Team. The Gambian side shall bear the necessary expenses.

- Ground Control Point Survey
- Control Point Survey and Pricking
- Field Identification

DL&S explained that they did not have necessary equipment for the above processes. The Team promised to convey that situation to JICA Headquarters.

3. DL&S explained the difficulty in providing the vehicles, and the Team promised to convey that situation to JICA Headquarters.

4. DL&S requested that Gambian counterpart personnel take advantage of training in Japan related to the Study to promote an effective technology transfer. The Team promised to convey this request to JICA Headquarters.

5. DL&S requested that all technology that will be applied for the implementation of the Study should be transferred to the counterpart personnel. The Team replied that the technology for the map revision will be transferred at least. DL&S agreed with the Team.

6. Both sides agreed that in case the aerial photography is not completed in the first year of the Study by unseasonable weather or other reasons the photographing shall be extended within the limits of one (1) year and both sides will consult with each other in respect of changing the method of the Study.



Attendant List

Gambian Side

Mr. RUTHERFORD A. F. THOMAS	Director, DL&S
Mr. OUSMAN SEMEGA JANNEH	Principal Cartographer, DL&S
Mr. OUSMAN S. JARJUSEY	Principal Surveyor, DL&S
Mr. ALIEU S. JOBE	Senior Cartographer, DL&S

Japanese Side

Mr. SEIICHI TANIOKA	Leader, JICA Preparatory Study Team
Mr. TAKASHI HAYASHI	Member, JICA Preparatory Study Team
Mr. TAKAHIRO KASAI	Member, JICA Preparatory Study Team
Mr. YOSHIMITSU YOSHIMURA	Member, JICA Preparatory Study Team
Mr. RYOICHI HASHIMOTO	Member, JICA Preparatory Study Team

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