

# REPUBLIC OF ZAMBIA



MINISTRY OF LANDS, NATURAL RESOURCES AND ENVIRONMENTAL  
PROTECTION

COUNTRY REPORT

FOR THE

**48<sup>th</sup> TECHNICAL COMMITTEE MEETING OF THE REGIONAL CENTRE  
OF RESOURCES FOR DEVELOPMENT (RCMRD), ADDIS ABABA,  
ETHIOPIA, 11<sup>th</sup> - 12<sup>th</sup> November, 2014.**

- THE CHAIRPERSON OF THE TECHNICAL COMMITTEE,
- THE DIRECTOR GENERAL OF THE REGIONAL CENTRE, DR. H FARAH,
- REPRESENTATIVE OF THE UNITED NATIONS ECONOMIC COMMISSION FOR AFRICA (ECA),
- HONOURABLE MEMBERS OF THE TECHNICAL COMMITTEE,
- LADIES AND GENTLEMEN.

FIRST AND FOREMOST, I WISH TO EXPRESS MY COUNTRY'S SINCERE GRATITUDE TO THE GOVERNMENT OF THE REPUBLIC OF ETHIOPIA FOR HOSTING THE TECHNICAL COMMITTEE (TC) AND GENERAL COUNCIL (GC) MEETINGS OF THE CENTRE AND FOR THE WARM WELCOME ACCORDED TO OUR DELEGATION. I ALSO TAKE THIS OPPORTUNITY TO INFORM THIS MEETING WITH ATMOST SADNESS THAT MY COUNTRY LOST OUR SITTING PRESIDENT, HIS EXCELLENCY MICHEAL CHILUFYA SATA ON 25<sup>TH</sup> OCTOBER, 2014. MAY HIS SOUL REST IN ETERNAL PEACE.

## 1.0 INTRODUCTION

- THE ZAMBIA SURVEY DEPARTMENT HAS CONTINUED WITH ITS MANDATE OF:
- ADMINISTERING AND PROVIDING SPATIAL DATA, AERIAL PHOTOGRAPHY AND THE PROVISION OF OTHER SURVEY SERVICES SUCH AS GEODETIC AND TRIGONOMETRICAL DATA;
- PRODUCING NATIONAL MAPS AT VARIOUS SCALES AND PERIODICALLY REVISING THE MAPS; ENSURING THAT LEGAL BOUNDARIES OF PROPERTIES IN BOTH STATE AND CUSTOMARY LAND ARE ACCURATELY DEFINED AND RECORDED; MAINTAINING ADMINISTRATIVE AND INTERNATIONAL BOUNDARIES;
- PROVIDING NATIONAL CONTROL FOR MAPPING, CADASTRAL, ENGINEERING AND OTHER SURVEYS; AND MAINTAINING SURVEY DATA AND OTHER SURVEY RECORDS.

THE DEPARTMENT HAS A TOTAL OF TEN REGIONAL SURVEY OFFICES LOCATED IN PROVINCIAL CENTRES OF OUR COUNTRY TO PROVIDE AN EFFICIENT AND EFFECTIVE GEOSPATIAL SERVICE.

## **2.0 CATEGORIES OF OUR SERVICES**

OUR SERVICES ARE BROKEN INTO THREE CATEGORIES: MAPPING, CADASTRAL AND SURVEY SERVICES.

### **2.1 MAPPING SERVICES,**

2.1.1 THE BRANCH HEADED BY ASSISTANT SURVEYOR-GENERAL HAS CONTINUED WITH THE NATIONAL MAPPING ACTIVITIES. THE BRANCH, DURING THE YEAR UNDER REVIEW, MANAGED TO COMPLETE THE TECHNICAL AND FINANCIAL EVALUATIONS FOR CONTRACTORS TO UNDERTAKE THE AERIAL PHOTOGRAPHY AND SATELLITE IMAGERY TO BE USED AS A BASE IN THE ZAMBIA INTERGRATED LAND MANAGEMENT INFORMATION SYSTEM (ZILMIS) AND FOR THE DEVELOPMENT OF THE NATIONAL SPATIAL DATA INFRASTRUCTURE UNDER THE NATIONAL LAND AUDIT AND NATIONAL TITLING PROGRAMMES.

2.1.2 IT IS REQUIRED THAT THE CONTRACTOR PROVIDES, THE FOLLOWING DATA SERVICES:

- A) AERIAL PHOTOGRAPHY OF MAIN CITIES AT 10 CM RESOLUTION OF ABOUT 1,800 SQUARE KM COMPRISING THE TOTAL AREA OF THE 15 MAIN CITIES IN ZAMBIA

- B) AERIAL PHOTOGRAPHY OF STATE LAND AT 20 CM RESOLUTION OF ABOUT 36,500 SQUARE KM, COMPRISING THE TOTAL AREA OF THE "STATE LAND AREAS".
- C) SATELLITE IMAGERIES OF TOWNSHIPS, BASED ON AVAILABILITY IN ARCHIVES FOR 88 TOWNSHIPS NATIONWIDE. THE IMAGERIES WILL BE AT 50 CM RESOLUTION WITH A COVERAGE OF 25 SQ/KM PER TOWNSHIP. (2,225 SQ KM).
- D) SATELLITE IMAGERY OF THE STATE WIDE AREA, IN ARCHIVE COVERING THE REST OF THE COUNTRY AREA ("COUNTRY WIDE AREA") AT 250CM (2.5M) RESOLUTION. (712,089 SQ KM).
- E) GENERATION OF DIGITAL ORTHO-PHOTO FROM THE ABOVE STATED RESOURCES, USING THE ORIENTATION PARAMETERS FROM GROUND CONTROL POINTS ("GCP").
- F) DIGITAL TERRAIN MODEL, ("DTM") AT 10M GRID FOR THE CITIES AREAS, 25M GRID FOR THE STATE LAND AREA. IN ADDITION, PROVISION OF REFERENCE3D (HRS) OR SRTM DTED-1 (10M- 20M ACCURACY ACCORDING TO AVAILABILITY) DTM FOR THE AREA COVERED BY THE SATELLITE IMAGERIES.
- G) SPATIAL DATA INFRASTRUCTURE, THAT INCLUDES A CENTRALIZED GEO-SPATIAL DATABASE AND WEB MAP SERVICES (WMS) AND A GIS PORTAL.
- H) CAPACITY BUILDING ON ORTHO-PHOTO GENERATION AND NSDI MANAGEMENT. THE CAPACITY BUILDING WILL INCLUDE TRAINING AT THE CONTRACTORS PREMISES.

- I) THE CONTACTOR WILL ALSO BE RESPONSIBLE FOR LOADING THE ORTHO-RECTIFIED AERIAL PHOTOGRAPHY AND SATELLITE IMAGERY INTO THE ZAMBIA INTEGRATED LAND MANAGEMENT INFORMATION SYSTEM (ZILMIS) DATABASE.
- J) PREFERENCE WILL BE THAT THE CONTRACTOR USES THE MAPPING SOFTWARE THAT IS ALREADY BEING USED BY THE MINISTRY E.G. ERDAS IMAGINE AND LEICA PHOTOGRAMMETRIC SUITE (LPS) FOR PHOTOGRAMMETRIC MAPPING AND THAT IT IS MANDATORY FOR THE CONTRACTOR TO PARTNER WITH A LOCAL LICENSED PRIVATE SURVEYOR TO UNDERTAKE THE GROUND CONTROL COMPONENT OF THE PROJECT.

### 2.1.3 PRINTING PRESS

OPERATIONALIZATION OF THE PRINTING PRESS HAS BEEN ACHIEVED AND THE COMPUTER TO PLATE MAKER MACHINE (CtP) HAS BEEN INSTALLED. 8 MEMBERS OF STAFF HAVE BEEN TRAINED ON OPERATING THE PRINTING PRESS AND THE CtP.

## 2.2 CADASTRAL SERVICES

2.2.1 DURING THE YEAR UNDER REVIEW, CADASTRAL SERVICES HAVE UNDERGONE A MAJOR SURGERY BY IMPLEMENTING THE ZAMBIA INTEGRATED LAND MANAGEMENT INFORMATION SYSTEM (ZILMIS). THE PROJECT MAIN OBJECTIVES WAS TO ANALYZE, DESIGN, DEVELOP AND IMPLEMENT A 3-TIER LAND ADMINISTRATION SYSTEM WITH

CENTRALIZED SYSTEM ADMINISTRATION FUNCTIONALITY AND REAL TIME REMOTE TRANSACTION PROCESSING.

2.2.2 ZILMIS, INCLUDES AN INTEGRATED GEOGRAPHICAL INFORMATION SYSTEM (GIS) COMPONENT TO ENABLE DIRECT ACCESS AND CONNECTIVITY BETWEEN THE REGISTRATION AND THE CADASTER INFORMATION, INCLUDING FUNCTIONALITIES SUCH AS:

- SPATIAL/ATTRIBUTE DATA  
CAPTURE/EDITING/PROCESSING/ANALYSIS
- GEO-REFERENCE CAPABILITIES
- DATA QUERY
- VIEWING/PRINTING FUNCTIONALITIES
- ACCEPTANCE OF VARIOUS RASTER AND VECTOR DATA SETS
- MAPS AND REPORT OUTPUTS
- VIEWING PLOT EXACT GEOGRAPHIC LOCATION
- BINDING OF ALPHANUMERIC AND GEOGRAPHIC INFORMATION
- VIEWING LAND INFORMATION IN ANY FORMAT
- INCLUDING GIS LAYERS AND ORTHO-PHOTO
- ADD AND EDIT FUNCTIONALITY
- SUPPORT A VARIETY OF LAND PROCESSES AND STATUTES

2.2.3 THE SYSTEM GENERATE COMPREHENSIVE, ACCUMULATIVE AND DISAGGREGATED LAND STATISTICS AS AN INSTANCE AND PERIODICALLY AS REQUIRED BY THE CLIENT. THE SYSTEM INCLUDES AN EXPENDED ACCOUNTING AND BILLING MODULE THAT WILL ENHANCE REVENUE COLLECTION, SUPPORTING MANUAL AND ELECTRONIC PAYMENTS. THE SYSTEM TRACKS THE PHYSICAL LOCATION AND MOVEMENT OF HARDCOPY REGISTRY FILES. THE PROVISION OF ZILMIS INCLUDES AN INSTALLATION OF AN ELECTRONIC DOCUMENT MANAGEMENT (EDM) SYSTEM THAT WILL BE INTEGRATED WITH THE MAIN ZILIMS APPLICATION.

2.2.4 THE SCOPE OF WORK INCLUDES PARTIAL CONVERSION OF DATA FROM THE OLD SYSTEM INTO THE NEW SYSTEM. THE NEW SYSTEM SUPPORTS THE FOLLOWING OPERATIONAL AND PROCEDURAL PROCESSES:

- A) SUPPORT THE PROCESS OF DESIGN, TEST AND USE OF FORMS AND LEDGERS THAT ARE PART OF LAND ADMINISTRATION PROCESSES.
- B) GUIDE THE IMPLEMENTATION OF REGULATIONS, PROCEDURES AND FORMS IN ALL LAND ADMINISTRATION OFFICES TO ACHIEVE EFFECTIVE OPERATION OF THE VARIOUS LAND DIVISIONS.
- C) PLAN AND DESIGN THE IMPLEMENTATION OF A SECURITY PROGRAMME. THE SECURITY PROGRAMME INCLUDES DATA

SECURITY, PROCEDURES FOR STAFF, PHYSICAL SECURITY, SYSTEM SECURITY AND SECURITY EVALUATION.

- D) SUPPORT THE DESIGN OF REPORTING TEMPLATES FOR INTERNAL AND EXTERNAL USE, INCLUDING STATISTICAL DATA AND ANALYSIS.

## **2.3 SURVEY SERVICES**

2.3.1 BRANCH PROVIDES THE GEODETIC SERVICES WHICH FORMS THE FUNDAMENTAL INFRASTRUCTURE FOR ALL OUR GEOSPATIAL ACTIVITIES IN THE COUNTRY.

2.3.2 GROUND CONTROL POINTS (GCP) AND GPS STATIONS TO BE ESTABLISHED UNDER THE AERIAL PHOTOGRAPHY AND NATIONAL SPATIAL DATA INFRASTRUCTURE PROJECT WILL BE USED IN THE EXTENSION OF THE EXISTING GEODETIC NETWORK THROUGHOUT THE COUNTRY. THE PROJECT WILL BE OUR OPPORTUNITY TO TRANSFORM OUR GEODETIC CONTROL FROM THE CLARK 1880 DATUM TO WGS84. THE LOCATION OF THE GCP WILL BE DETERMINED ON ADVICE BY THE CONTACTOR AND WILL BE EVENLY DISTRIBUTED THROUGHOUT THE PHOTO BLOCK AND THE COUNTRY.

2.3.3 DURING THE PERIOD UNDER REVIEW, THE FOLLOWING ACTIVITIES HAVE BEEN UNDERTAKEN:

- A) IN FEBRUARY 2014, THE GOVERNMENT OF THE UNITED REPUBLIC OF TANZANIA INVITED ZAMBIA TO A QUADRIPARTITE MEETING ON LAKE TANGANYIKA BOUNDARY RE-AFFIRMATION AMONGST THE FOUR COUNTRIES OF ZAMBIA, TANZANIA, CONGO-DR, AND BURUNDI. CONGO AND TANZANIA HAVE BEEN HOLDING BILATERAL MEETINGS TO DETERMINE THEIR INTERNATIONAL BOUNDARY ALONG THE LAKE TANGANYIKA. THEY HAVE, HOWEVER, REALIZED THAT THEY NEEDED THE PARTICIPATION OF THE OTHER TWO RIPARIAN COUNTRIES OF ZAMBIA AND BURUNDI. FOLLOWING THE LAST BILATERAL MEETING BETWEEN CONGO-DR AND TANZANIA HELD AT KIGOMA, CONGO. IT WAS AGREED BY THE TWO COUNTRIES TO SHARE THE PROPOSED METHODOLOGIES FOR DETERMINING THE MEDIAN LINE ON THE LAKE, AND HOW TO DETERMINE THE TRI-UNION POINTS THAT CONNECTS THREE COUNTRIES ON THE LAKE.
- B) A JOINT MID-TERM REVIEW MEETING OF THE ZAMBIA/MALAWI/TANZANIA/MOZAMBIQUE INTERNATIONAL BOUNDARY DEMARCATION AND RE-AFFIRMATION TOOK PLACE IN SALIMA, MALAWI, FROM 22ND - 26TH JUNE, 2014 WHERE PROGRESS ON THE BOUNDARY DEMARCATION AND RE-AFFIRMATION EXERCISES WERE SHARED AND INTERVENTIONS TO IMPROVE THE IMPLEMENTATION OF THE BOUNDARY

DEMARCATIION AND RE-AFFIRMATION EXERCISE WERE PROPOSED.

- C) IN OCTOBER 2014, A JOINT SURVEY TEAM MEETING BETWEEN ZAMBIA AND MOZAMBIQUE WAS HELD IN CHIPATA, ZAMBIA. THE OBJECTIVE OF THE MEETING WERE TO: REVIEW AND ANALYSE THE RESULTS OF THE STATIC OBSERVATIONS COLLECTED IN 2012/2013 AND PLAN FOR 2015 FIELDWORK AND REVIEW MEASURES TO PROTECT THE BUILT BOUNDARY PILLARS ON THE COMMON BOUNDARY.

### **3.0 CONCLUSION**

THE SERVICES PROVIDED BY RCMRD IN CAPACITY BUILDING AND THE MAINTENANCE OF OUR SURVEYING AND MAPPING EQUIPMENT ENHANCES THE SCOPE AND QUALITY OF OUR RELATIONSHIP AND FOR THIS REASON, ZAMBIA WILL CONTINUE TO SUPPORT AND COOPERATE WITH RCMRD. IT IS FOR THIS REASON THAT ZAMBIA PLEDGES ITS' COMMITMENT TO TIMELY SETTLE THE ANNUAL CONTRIBUTION AND LIQUIDATE THE AREAS AMIDST COMPETING NEEDS ON OUR FINANCIAL RESOURCES.

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