

ナイジェリア連邦共和国  
連邦水資源省（FMWR）

ナイジェリア国  
全国水資源管理開発基本計画策定  
プロジェクト報告書

第9編

データ目録・写真集（英）

平成26年1月  
(2014)

独立行政法人  
国際協力機構（JICA）

八千代エンジニアリング株式会社  
株式会社建設技研インターナショナル  
株式会社三祐コンサルタンツ

環境
JR
14 - 011



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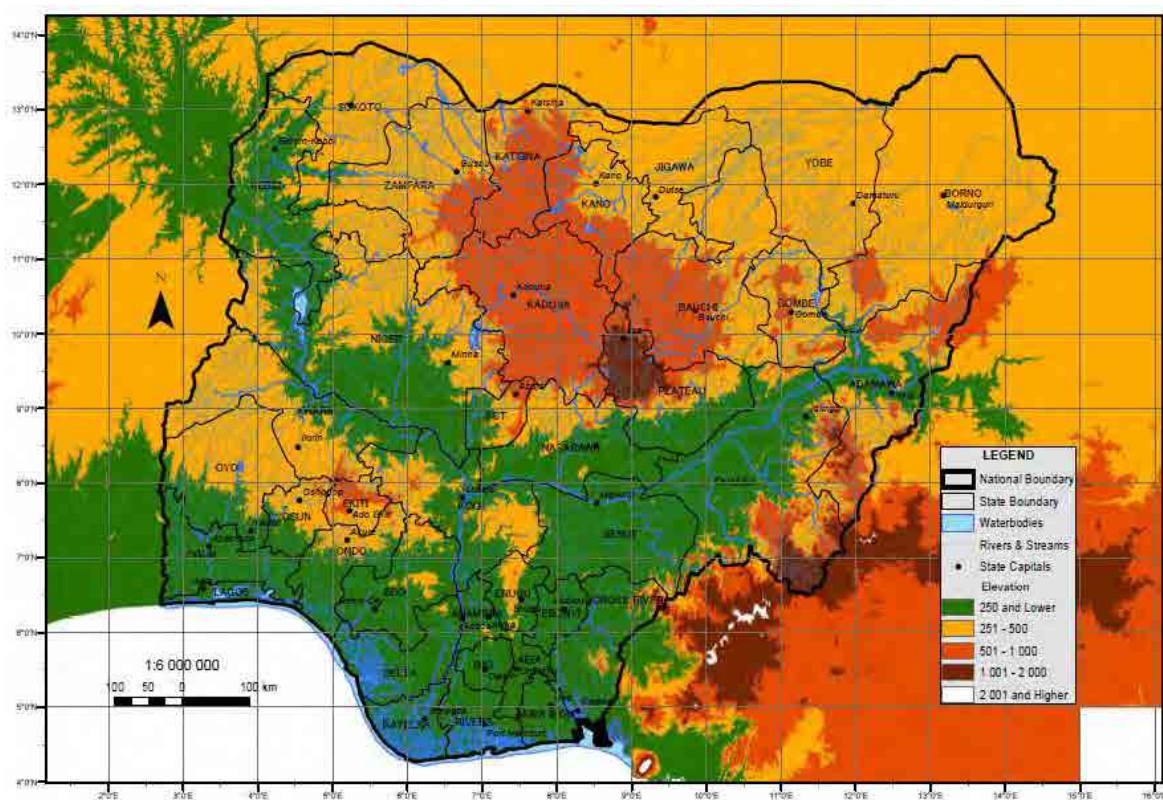
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### Location of the Federal Republic of Nigeria



### Map of Project Area



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## Abbreviations

Abbreviation & Acronym	Explanation
ACGSF	Agricultural Credit Guarantee Scheme Fund
ADP	Agricultural Development Project
AEPB	Abuja Environmental Protection Board
AfDB	African Development Bank
BADC	British Atmospheric Data Centre
BCM	Billion Cubicmeter
BOD	Biochemical Oxygen Demand
BOT	Build-Operate-Transfer
CCU	Climate Change Unit
CD	Capacity Development
CITES	Convention on International Trade in Endangered Species
CMCC	Catchment Management Coordinating Committee
CMO	Catchment Management Office
CMP	Catchment Management Plan
CPI	Consumer Price Index
CWQS	Core Welfare Indicators Questionnaire Survey
DDRO	Department of Dam and Reservoir Operations
DEM	Digital Elevation Model
DFID	Department for International Development in UK (UKAID)
DID	Department of Irrigation and Drainage
DO	Disolved Oxygen
DPRS	Department of Planning and Research and Statistics
DRBOI	Department of River Basin Operation and Inspectorate
DWQ&S	Department of Water Quality Control and Sanitation
DWS	Department of Water Supply
EA	Environmental Assessment
EC	European Commission
ECN	Energy Commission of Nigeria
EIA	Environment Impact Assessment
EL	Elevation
EMSS	Environmental Management Support System
ERICA	European Rivers and Catchment
ET	Evapotranspiration
EU	European Union
FAO	Food and Agriculture Organization
FCA	Fadama Association Committee
FCT	Federal Capital Territory
FEPA	Federal Environmental Protection Agency
FEWS	Flood Early Warning System
FGN	Federal Government of Nigeria
FIWD	Federal Inland Waterways Department
FMANR	Federal Ministry of Agriculture and Natural Resources
FMARD	Federal Ministry of Agriculture and Rural Development
FME(d)	Federal Ministry of Education
FME(n)	Federal Ministry of Environment
FMH	Federal Ministry of Health
FMP	Federal Ministry of Power
FMT	Federal Ministry of Transport
FMWA	Federal Ministry of Women's Affairs
FMWR	Federal Ministry of Water Resources
FMWRRD	Federal Ministry of Water Resources and Rural Development
GCM	Global Climate Models
GDMA	Gurara Dam Management Authority
GDP	Gross Domestic Product
GIS	Geographical Information System



Abbreviation & Acronym	Explanation
GWMA	Gurara Water Management Authority
HA	Hydrological Area
HYCOS	Hydrological Cycle Observation System
ICT	Information and Communication Technology
IEE	Initial Environmental Evaluation
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
IWRM	Integrated Water Resources Management
JAXA	Japan Aerospace Exploration Agency
JICA	Japan International Cooperation Agency
JMP	Joint Monitoring Programme
kW	Kilowatt
kWh	Kilowatt-Hour
LCBC	Lake Chad Basin Commission
LGA	Local Government Authority
M&E	Monitoring and Evaluation
M/P	Master Plan
MANR	Ministry of Agriculture and Natural Resources
MCM	Million Cubicmeter
MDG	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
MLIT	Ministry of Land, Infrastructure and Transport of Japan
MW	Megawatt
MWh	Megawatt-Hour
NACRDB	Nigeria Agricultural Cooperative and Rural Development Bank
NAFDAC	Nigeria Food Drug Administration and Control
NAFSS	National Agriculture and Food Security Strategy
NASRADA	Nigeria Space Research and Development Agency
NBA	Niger Basin Authority
NBN	National Bank of Nigeria
NBS	National Bureau of Statistics
NCC	Nigeria Cameroon Commission
NCWR	National Council on Water Resources
NDHS	National Demographic and Health Survey
NEED	National Economic Empowerment and Development Strategy
NEMA	National Emergency Management Agency
NERA	National Emergency Relief Agency
NESREA	National Environmental Standards and Regulations Enforcement Agency
NEWMAP	Nigerian Erosion and Watershed Management Project
NFDP	National Fadama Development Project
NFSSP	National Food Security Support Project
NGO	Non Governmental Organization
NGSA	Nigeria Geological Survey Agency
NIHSA	Nigeria Hydrological Services Agency
NIMET	Nigerian Meteorological Agency
NIS	Nigerian Industrial Standard
NIWA	National Inland Waterways Authority
NIWRMC	Nigeria Integrated Water Resources Management Commission
NNJC	Niger-Nigeria Joint Commission
NPC	National Population Commission
NPC	Nigeria Planning Commission
NRDS	National Rice Development Strategy
NRW	Non Revenue Water
NTN	National Training Network
NWRI	National Water Resources Institute
NWSSBS	National Water Supply and Sanitation Baseline Survey
OORBDA	Ogun-Osun River Basin Development Authority
PET	Potential Evapotranspiration

Abbreviation & Acronym	Explanation
PHCH	Power Holding Company of Nigeria
PPP	Public-Private Partnership
PSP	Private Sector Participation
RBDA	River Basin Development Authority
RBMC	River Basin Management Commission
RCM	Regional Climate Models
ROPSIN	Review of the Public Irrigation Sector of Nigeria
RUWASSA	Rural Water Supply and Sanitation Agency
SEA	Strategic Environmental Assessment
SHA	Sub Hydrological Area
SON	Standards Organisation of Nigeria
SRRBDA	Sokoto-Rima River Basin Development Authority
SRTM	Shuttle Radar Topography Mission
SSHA	Small Sub Hydrological Area
STWSS	Small Town Water Supply and Sanitation
STWSSA	Small Town Water Supply and Sanitation Project
STWSSP	Small Town Water Supply and Sanitation Agency
SWA	State Water Agencies
TOR	Terms of Reference
UAC	Users Association Committee
UFW	Unaccounted for Water
UNDP	United Nations Development Programme
UNEP	UN Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UNISDR	United Nations International Strategy for Disaster Reduction
VAB	Visual Basic Application
WASHCOM	Water, Sanitation and Hygiene Committee
WATSAN	Water and Sanitation
WB	World Bank
WCA	Water Consumers Association
WHO	World Health Organization
WRDP	Water Resources Development Plan
WRMP	Water Resources Management Plan
WRUP	Water Resources Utilization Plan
WSSSRP	Water Supply Sanitation Sector Reform Programme
WTP or WTW	Water Treatment Plant or Works
WUA	Water Users Association

## 1. DATA LIST

All the data listed in Table 1 is saved in the CD to be attached to this Report.

**Table 1 Data List**

Folder Name	File Name	Contents	Source
00_Database_mdb	BASE.mdb	Base information for grid	JICA Project Team
	Base_State.mdb	Base information for grid with information of State	JICA Project Team
	CLIM.mdb	Database for gridded meteorology (monthly precipitation ,air temperature and PET)	JICA Project Team
	CRU.mdb	Database for CRU data	JICA Project Team
	RUNOFF.mdb	Database for gridded runoff (simulated)	JICA Project Team
	RUNOFF_c1.mdb	Database for gridded runoff (simulated) for climate change scenario-c1	JICA Project Team
	RUNOFF_c2.mdb	Database for gridded runoff (simulated) for climate change scenario-c2	JICA Project Team
01_Precipitation	80_P_State.xlsx	Monthly precipitation by State	JICA Project Team
	81_P_SHA.xlsx	Monthly precipitation by SHA	JICA Project Team
02_Discharge	00_Inventory_Hydro.xls	Inventory of hydrological data	JICA Project Team
	01_DailyDis_NBA.xls	Daily discharge by NBA	JICA Project Team
	01b_DailyDis_NBA_int.xls	Interpolated daily discharge by NBA	JICA Project Team
	01c_MonthlyDis_From DailyDis_NBA.xls	Monthly discharge by file: 01_DailyDis_NBA.xls	JICA Project Team
	01d_MonthlyDis_From DalyDis_NBA_int.xls	Monthly discharge by file: 01b_DailyDis_NBA_int.xls	JICA Project Team
	02_DailyDis_NIHSAs.xls	Daily discharge by NIHSA	JICA Project Team
	02b_DailyDis_NIHSAs_int.xls	Interpolated daily discharge by NIHSA	JICA Project Team
	02c_MonthlyDis_From DailyDis_NIHSAs.xls	Monthly discharge by file: 02_DailyDis_NIHSAs.xls	JICA Project Team
	02d_MonthlyDis_From DailyDis_NIHSAs_int.xls	Monthly discharge by file: 02b_DailyDis_NIHSAs_int.xls	JICA Project Team
	04_DailyDis_BORBDA.xls	Daily discharge by BORBDA	JICA Project Team
	04b_DailyDis_BORBD A_int.xls	Interpolated daily discharge by BORBDA	JICA Project Team
	04d_MonthlyDis_From DailyDis_BORBDA_int.xls	Monthly discharge by file: 04b_DailyDis_BORBDA_int.xls	JICA Project Team
	05_Monthly_UBRBDA.xlsx	Monthly discharge by UBRBDA	JICA Project Team
	10_MonthlyDis_Integrated.xls	Integration of monthly discharge	JICA Project Team
	20_MonthlyDis_final.xls	Finally arranged monthly discharge for the Study	JICA Project Team
03_GeneratedRun off	13_Stat_QNF_SHA.xlsx	Total monthly runoff at downstream end of SHA (simulated)	JICA Project Team
	13c1_Stat_QNF_SHA_c1.xlsx	Total monthly runoff at downstream end of SHA (simulated) for climate change scenario-c1	JICA Project Team
	13c2_Stat_QNF_SHA_c2.xlsx	Total monthly runoff at downstream end of SHA (simulated) for climate	JICA Project Team

Folder Name	File Name	Contents	Source
		change scenario-c2	
	14_Stat_QNF_SHA_Internal.xlsx	Monthly runoff by SHA (simulated)	JICA Project Team
	14c1_Stat_QNF_SHA_Internal_c1.xlsx	Monthly runoff by SHA (simulated) for climate change scenario-c1	JICA Project Team
	15_SHA_1970-2009.xlsx	Long-term average runoff by SHA	JICA Project Team
	15c1_SHA_1970-2009_c1.xlsx	Long-term average runoff by SHA for climate change scenario-c1	JICA Project Team
	15c2_SHA_1970-2009_c2.xlsx	Long-term average runoff by SHA for climate change scenario-c2	JICA Project Team
	16_RO_State.xlsx	Long-term average runoff by State	JICA Project Team
	16c1_RO_State_c1.xlsx	Long-term average runoff by State for climate change scenario-c1	JICA Project Team
04_Dams	01_Inventory_NigeriaDam.xls	Inventory of existing and under-construction dams	JICA Project Team
	02_ProposedDam_1995MP+NewSiteJPT.xls	List of Proposed dams in 1995MP and newly proposed dams	JICA Project Team
04_Dams	03_SummaryDams_WaterBalance.xlsx	Summary of dam parameters	JICA Project Team
	11_HAV_1995MP.xlsx	H-A-V relations for the proposed dams in 1995MP	JICA Project Team
	12_HAV_NewDamSites_UWS.xlsx	H-A-V relations for the newly proposed small dams	JICA Project Team
	13_HAV_LargeSelected.xlsx	H-A-V relations for the newly proposed large dams	JICA Project Team
	<i>Drawing large dams</i>	<i>drawings for large dams for volume calculation</i>	JICA Project Team
05_GridData_LongTermAverage	ID_Base_LOS.csv	Long-term average LOS (loss of recharge) by Grid	JICA Project Team
	ID_Base_LSR.csv	Long-term average LSR (recharge) by Grid	JICA Project Team
	ID_Base_P80.csv	Long-term average P80 (80% monthly precipitation) by Grid	JICA Project Team
	ID_Base_ROF.csv	Long-term average ROF (runoff) by Grid	JICA Project Team
	ID_Base_ROR.csv	Long-term average ROR (runoff rate) by Grid	JICA Project Team
	P_CRUadj.csv	Long-term average Precipitation by Grid	JICA Project Team
	PET_Hamon.csv	Long-term average PET by Grid	JICA Project Team
	T_CRUadj.csv	Long-term average Air Temperature by Grid	JICA Project Team
06_Map_Data	RBDA (shp, sbx, sbn, prj, dbf)	Boundary of RBDA	JICA Project Team
	Contour_20m (shp, sbx, sbn, prj, dbf)	Contour Line 20m	JICA Project Team
	Contour_25m (shp, sbx, sbn, prj, dbf)	Contour Line 25m	JICA Project Team
	index_Deg0_5 (shp, sbx, sbn, prj, dbf)	Index for 0.5 Degree Squire Tile	JICA Project Team
	index_Deg1_0 (shp, sbx, sbn, prj, dbf)	Index for 1.0 Degree Squire Tile	JICA Project Team
	Airport (shp, sbx, sbn, prj, dbf)	Airport	JICA Project Team
	LandDegradation (shp, sbx, sbn, prj, dbf)	Land Degradation Area	Ministry of Environment
	National Park (shp, sbx, sbn, prj, dbf)	National Park	JICA Project Team
	Protected Area (shp, sbx,	Protected Area	JICA Project Team

Folder Name	File Name	Contents	Source
	sbn, prj, dbf)		
	HA (shp, sbx, sbn, prj, dbf)	Hydrological Area	JICA Project Team
	SHA (shp, sbx, sbn, prj, dbf)	Sub-Hydrological Area	JICA Project Team
	MainRvr_SHA (shp, sbx, sbn, prj, dbf)	Main River	JICA Project Team
	CoastalWaterBody (shp, sbx, sbn, prj, dbf)	Coastal Water Body	JICA Project Team
	SignificanReservoir (shp, sbx, sbn, prj, dbf)	Significant Reservoir	JICA Project Team
	HydroStation (shp, sbx, sbn, prj, dbf)	Hydrological Station	JICA Project Team
	HydroStation_Pst (shp, sbx, sbn, prj, dbf)	Actual Position of Hydrological Station	JICA Project Team
	Base_Grid (shp, sbx, sbn, prj, dbf)	BaseGrid (Polygon)	JICA Project Team
	Base_Point (shp, sbx, sbn, prj, dbf)	BaseGrid (Point)	JICA Project Team
	Geology (shp, sbx, sbn, prj, dbf)	Geology	JICA Project Team
	Geology_SHA (shp, sbx, sbn, prj, dbf)	Geology divided by Sub-Hydrological Area	JICA Project Team
	Dams (shp, sbx, sbn, prj, dbf)	Dam Inventory	JICA Project Team
06_Map_Data	IrrigationPrj_Site (shp, sbx, sbn, prj, dbf)	Irrigation Project Site	JICA Project Team
	WTP (shp, sbx, sbn, prj, dbf)	Water Treatment Site	JICA Project Team
	WIP (shp, sbx, sbn, prj, dbf)	Water Intake Point	JICA Project Team

Source: JICA Project Team



## **2. PHOTGRAPHS**

### **2.1 Project Implementation**

The Project was implemented from August of 2011 until January of 2014. It took around two and half years to conclude the Project. The implementation period may divide to two major periods. One is reviewing and updating master plan and the other is preparation of catchment management plan for 2 catchment areas.

During first period (reviewing and updating master plan), nationwide workshops were held in Abuja requesting stakeholders to participate in the Project and exchange information on water resources management, ongoing and planned projects, and related issues. At same time, the Study team has visited many cities in Nigeria to collect information and asking for participation.

In posterior half (preparing catchment management plan stage) the Study team was more focus on targeted two (2) areas. In this period, workshops were also held to publicize new master plan. To align catchment management plan in these areas with new master plan, many discussions were made through those workshops.

Following photographs shows, activities of the Experts team during Project implementation.



August 2011, 1<sup>st</sup> Steering Committee Meeting  
Explanation and Discussion on Inception Report



August 2011, 1<sup>st</sup> Steering Committee Meeting  
Explanation and Discussion on Inception Report



August 2011, Stakeholder Meeting  
Explanation and Discussion on Inception Report



August 2011, Stakeholder Meeting  
Explanation and Discussion on Inception Report



August 2011, Field Survey (Bakalori Dam Sokoto State)



August 2011, Field Survey (Sokoto Water Board)



September 2011, Field Survey (Lokoja WTP)



September 2011, Field Survey (Challawa Gorge Dam)





February 2012, 2<sup>nd</sup> Steering Committee Meeting  
Explanation and Discussion on Progress Report-1



February 2012, 2<sup>nd</sup> Steering Committee Meeting  
Explanation and Discussion on Progress Report-1



May 2012, NIHSA Workshop (Capacity Building)



June 2012, NIWRMC Workshop (Capacity Building)



July 2012, 3<sup>rd</sup> Steering Committee Meeting  
Explanation and Discussion on Progress Report-2



July 2012, 3<sup>rd</sup> Steering Committee Meeting  
Explanation and Discussion on Progress Report-2



July 2012, 2<sup>nd</sup> Stakeholder Meeting  
Explanation and Discussion on Progress Report-2



July 2012, 2<sup>nd</sup> Stakeholder Meeting  
Explanation and Discussion on Progress Report-2



November 2012, National Council



November 2012, National Council



March 2013, 4<sup>th</sup> Steering Committee Meeting  
Explanation and Discussion on Draft Interim Report



March 2013, 4<sup>th</sup> Steering Committee Meeting  
Group Photo of Attendee after Steering Committee



June 2013, 5<sup>th</sup> Steering Committee  
Explanation and Discussion on Interim Report



June 2013, 5<sup>th</sup> Steering Committee  
Explanation and Discussion on Interim Report



May 2013, 3<sup>rd</sup> Stakeholder Meeting  
Registration of Attendee for Stakeholder Meeting



May 2013, 3<sup>rd</sup> Stakeholder Meeting  
Explanation and Discussion on Interim Report





May 2013, Stakeholder Meeting for Draft Catchment Management Plan (General Meeting)



May 2013, Stakeholder Meeting for Draft Catchment Management Plan (General Meeting)



June 2013, Sectorial Workshop (Water Supply)



June 2013, Sectorial Workshop (Irrigation)



May 2013, Stakeholder Meeting for Draft Catchment Management Plan (Stakeholder of HA-1 at Abuja)



May 2013, Stakeholder Meeting for Draft Catchment Management Plan (Stakeholder of HA-1 at Abuja)



June 2013, Workshop on Draft Catchment Management Plan (for Ogun-Oshun Basin (Major 4 state)) at Lagos



June 2013, Workshop on Draft Catchment Management Plan (for Ogun-Oshun Basin (Major 4 state)) at Lagos



July 2013, Workshop on Draft Catchment Management Plan (for Ogun-Oshun Basin (Major 4 state)) at Osun



July 2013, Workshop on Draft Catchment Management Plan (for Ogun-Oshun Basin (Major 4 state)) at Osun



July 2013, Field Survey (Urban Water Supply Facility) Lagos



July 2013, Field Survey (Acute Intake Iju WTP Lagos)



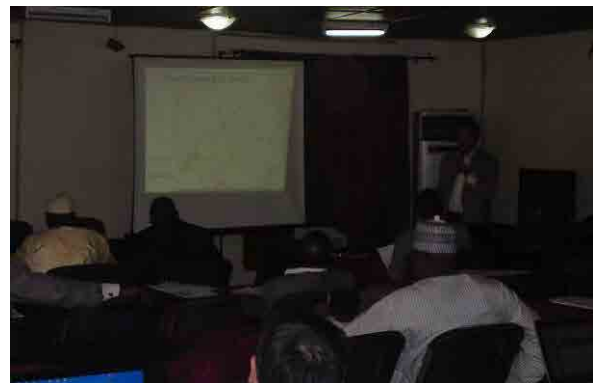
July 2013, Field Survey (Drilling Equipment and Workshop Ibadan RUWASSA)



July 2013, Field Survey (Well and Water Supply Facility Ibandan)



July 2013, Stakeholder Meeting for Draft of Catchment Management Plan (HA-1 Major 3 states)



July 2013, Stakeholder Meeting for Draft of Catchment Management Plan (HA-1 Major 3 states)





September 2013, Stakeholder Meeting for Draft of Catchment Management Plan (HA-1 Major 4 states)



September 2013, Stakeholder Meeting for Draft of Catchment Management Plan (HA-1 Major 4 states)



November 2013, Preliminary Meeting for Draft Final Report Explanation to the Minister



November 2013, Explanation of Draft Final Report to the Minister



November 2013, 6<sup>th</sup> Steering Committee Explanation and Discussion on Draft Final Report



November 2013, 6<sup>th</sup> Steering Committee Explanation and Discussion on Draft Final Report

## 2.2 Field Survey

Due to Nigeria's vast stretched national territory and limited time, the study team had to select targets of field survey. The importance of two major rivers (Niger River and Benue River) led study team to perform major 2 field survey. In order to prepare catchment management plan, closer look for targeted areas were also required. Unfortunately due to security concerns, field survey on HA-1 was canceled and Ogun-Osun Basin was also performed in limited conditions.

Following photographs are taken by the Experts during field survey.



August 2011, Field Survey (Oyan Dam Site)



August 2011, Field Survey (Oyan Dam Site)



August 2011, Field Survey (the way from Abuja to Gusau)



August 2011, Field Survey (the way from Abuja to Gusau)



August 2011, Field Survey (Gusau Bridge)



August 2011, Field Survey (Gusau Bridge)

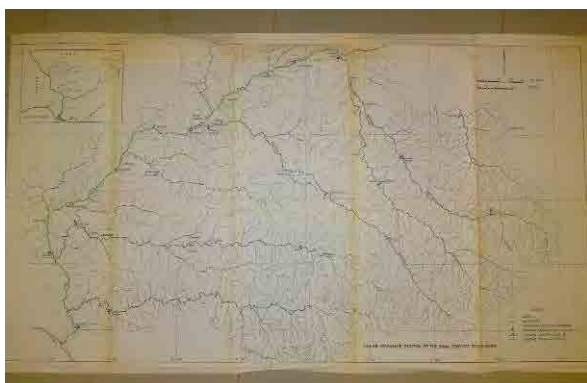




August 2011, Field Survey (Bakolori Dam Office)



August 2011, Field Survey (Bakolori Dam Office)



August 2011, Field Survey (Bakolori Dam Office)



August 2011, Field Survey (Bakolori Dam Office)



August 2011, Field Survey (Bakolori Dam)



August 2011, Field Survey (Bakolori Dam)



August 2011, Field Survey (Bakolori Dam)



August 2011, Field Survey (Bakolori Dam)



August 2011, Field Survey (Bakolori Dam)



August 2011, Field Survey (Bakolori Dam)



August 2011, Field Survey (the way from Bakolori to Sokoto)



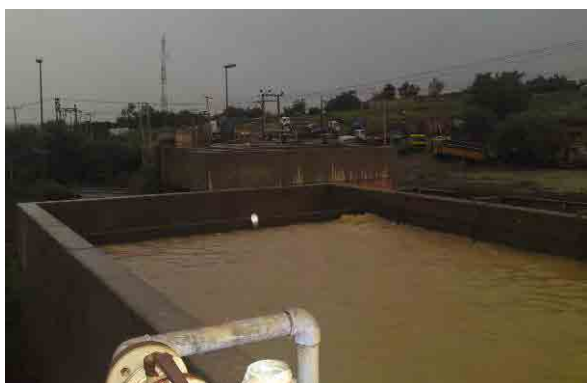
August 2011, Field Survey (the way from Bakolori to Sokoto)



August 2011, Field Survey (Wurno Irrigation Project)



August 2011, Field Survey (Wurno Irrigation Project)



August 2011, Field Survey (WTP in Sokoto)



August 2011, Field Survey (WTP in Sokoto)





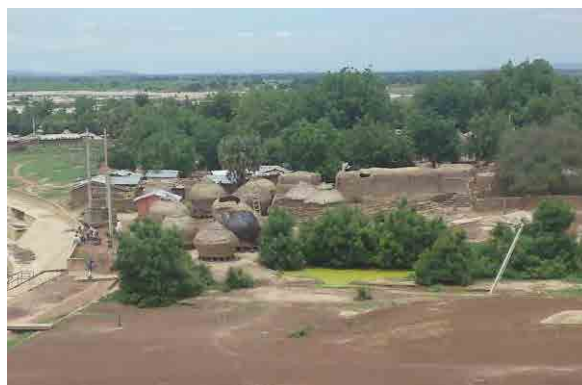
August 2011, Field Survey (Goronyo Dam)



August 2011, Field Survey (Goronyo Dam)



August 2011, Field Survey (Goronyo Dam)



August 2011, Field Survey (Goronyo Dam)



August 2011, Field Survey (the way from Sokoto to Minna)



August 2011, Field Survey (the way from Sokoto to Minna)



August 2011, Field Survey (the way from Sokoto to Minna)



August 2011, Field Survey (the way from Sokoto to Minna)



August 2011, Field Survey (Polder Irrigation Site)



August 2011, Field Survey (Polder Irrigation Site)



August 2011, Field Survey (Polder Irrigation Site)



August 2011, Field Survey (Polder Irrigation Site)



August 2011, Field Survey (Polder Irrigation Site)



August 2011, Field Survey (Polder Irrigation Site)



August 2011, Field Survey (Yelwa Intak and WTP)



August 2011, Field Survey (Yelwa Intak and WTP)





August 2011, Field Survey (Yelwa Intak and WTP)



August 2011, Field Survey (Yelwa Intak and WTP)



August 2011, Field Survey (Yelwa Intak and WTP)



August 2011, Field Survey (Yelwa Intak and WTP)



August 2011, Field Survey (Catchment Management Office Niger North)



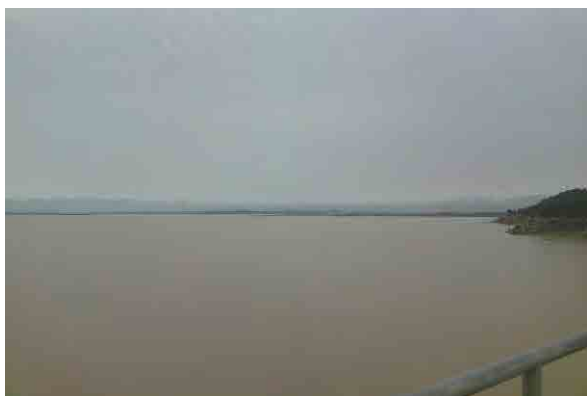
August 2011, Field Survey (Catchment Management Office Niger North)



August 2011, Field Survey (Catchment Management Office Niger North)



August 2011, Field Survey (Catchment Management Office Niger North)



August 2011, Field Survey (Shiroro Dam)



August 2011, Field Survey (Shiroro Dam)



August 2011, Field Survey (Shiroro Dam)



August 2011, Field Survey (Shiroro Dam)



August 2011, Field Survey (Shiroro Dam)



August 2011, Field Survey (Shiroro Dam)



August 2011, Field Survey (the way from Shiroro Dam to  
Abuja)



August 2011, Field Survey (the way from Shiroro Dam to  
Abuja)





September 2011, Field Survey (the way from Abuja to Lokoja)



September 2011, Field Survey (the way from Abuja to Lokoja)



September 2011, Field Survey (the way from Abuja to Lokoja)



September 2011, Field Survey (the way from Abuja to Lokoja)



September 2011, Field Survey (WTP in Lokoja)



September 2011, Field Survey (WTP in Lokoja)



September 2011, Field Survey (WTP in Lokoja)



September 2011, Field Survey (WTP in Lokoja)



September 2011, Field Survey (WTP in Lokoja)



September 2011, Field Survey (WTP in Lokoja)



September 2011, Field Survey (the Way from Abuja to Makarudi)



September 2011, Field Survey (the Way from Abuja to Makarudi)



September 2011, Field Survey (the Way from Abuja to Makarudi)



September 2011, Field Survey (the Way from Abuja to Makarudi)



September 2011, Field Survey (WTP in Makarudi)



September 2011, Field Survey (WTP in Makarudi)





September 2011, Field Survey (WTP in Makarudi)



September 2011, Field Survey (WTP in Makarudi)



September 2011, Field Survey (The way from Makarudi to Jalingo)



September 2011, Field Survey (The way from Makarudi to Jalingo)



September 2011, Field Survey (The way from Jalingo to Yola)



September 2011, Field Survey (The way from Jalingo to Yola)



September 2011, Field Survey (Upper Benue River Basin Authority)



September 2011, Field Survey (Upper Benue River Basin Authority)



September 2011, Field Survey (Upper Benue River Basin Authority)



September 2011, Field Survey (Upper Benue River Basin Authority)



September 2011, Field Survey (Water Observation Station)



September 2011, Field Survey (Water Observation Station)



September 2011, Field Survey (Yola Irrigation Area)



September 2011, Field Survey (Yola Irrigation Area)



September 2011, Field Survey (Yola Irrigation Area)



September 2011, Field Survey (Yola Irrigation Area)





September 2011, Field Survey (the way from Yola to Jalingo)



September 2011, Field Survey (the way from Yola to Jalingo)



September 2011, Field Survey (the way from Yola to Jalingo)



September 2011, Field Survey (the way from Yola to Jalingo)



September 2011, Field Survey (Kiri Dam)



September 2011, Field Survey (Kiri Dam)



September 2011, Field Survey (Kiri Dam)



September 2011, Field Survey (Kiri Dam)



September 2011, Field Survey (Kiri Dam)



September 2011, Field Survey (Kiri Dam)



September 2011, Field Survey (Kashimbila Dam Site)



September 2011, Field Survey (Kashimbila Dam Site)



September 2011, Field Survey (Kashimbila Dam Site)



September 2011, Field Survey (Kashimbila Dam Site)



September 2011, Field Survey (Kashimbila Dam Site)



September 2011, Field Survey (Kashimbila Dam Site)





September 2011, Field Survey (Challawa Dam)



September 2011, Field Survey (Challawa Dam)



September 2011, Field Survey (Challawa Dam)



September 2011, Field Survey (Challawa Dam)



September 2011, Field Survey (Tiga Dam)



September 2011, Field Survey (Tiga Dam)



September 2011, Field Survey (Tiga Dam)



September 2011, Field Survey (Tiga Dam)



July 2013, Field Survey (Akute Intake and WTP)



July 2013, Field Survey (Akute Intake and WTP)



July 2013, Field Survey (Akute Intake and WTP)



July 2013, Field Survey (Akute Intake and WTP)



July 2013, Field Survey (Akute Intake and WTP)



July 2013, Field Survey (Akute Intake and WTP)



July 2013, Field Survey (Akute Intake and WTP)



July 2013, Field Survey (Akute Intake and WTP)





July 2013, Field Survey (Ogun WTP)



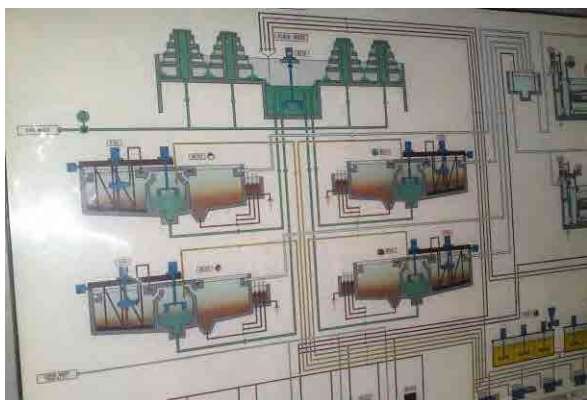
July 2013, Field Survey (Ogun WTP)



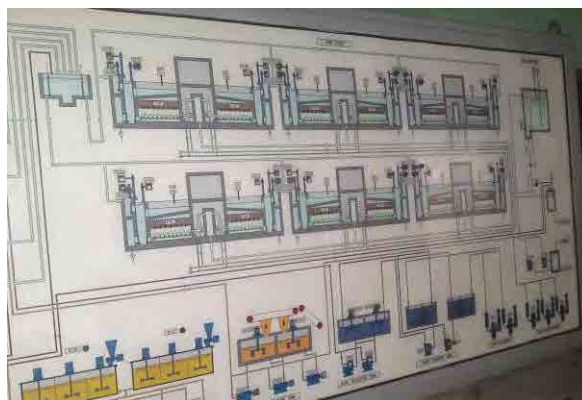
July 2013, Field Survey (Ogun WTP)



July 2013, Field Survey (Ogun WTP)



July 2013, Field Survey (Ogun WTP)



July 2013, Field Survey (Ogun WTP)



July 2013, Field Survey (Ogun WTP)



July 2013, Field Survey (Ogun WTP)



July 2013, Field Survey (Lagos WTP)



July 2013, Field Survey (Lagos WTP)



July 2013, Field Survey (Lagos WTP)



July 2013, Field Survey (Lagos WTP)



July 2013, Field Survey (Lagos Water Service with Well)



July 2013, Field Survey (Lagos Water Service with Well)



July 2013, Field Survey (Lagos Water Service with Well)



July 2013, Field Survey (Lagos Water Service with Well)



