

AFRICAN DEVELOPMENT BANK (AfDB)

SOCIAL INVESTMENT FUND

UNIVERSITY OF GHANA MEDICAL SCHOOL

UNIVERSITY OF GHANA BIOTECHNOLOGY CENTRE

UNIVERSITY OF GHANA NURSING AND MIDWIFERY SCHOOL

GHANA NEWS AGENCY (GNA)

MICROFINANCE AND SMALL LOANS CENTRE (MASLOC)



GOVERNMENT OF GHANA

MINISTRY OF FINANCE

**POST COVID-19 SKILLS DEVELOPMENT AND
PRODUCTIVITY ENHANCEMENT PROJECT
(PSDPEP): CONSULTANCY SERVICES FOR
PREPARATION OF ENVIRONMENTAL AND
SOCIAL MANAGEMENT FRAMEWORK
(ESMF) -**

DRAFT FINAL ESMF REPORT

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List of Acronyms

| | |
|--------|---|
| AfDB | African Development Bank |
| ESIA | Environmental and Social Impact Assessment |
| ESMF | Environmental and Social Management Framework |
| EMP | Environmental Management Plan |
| EMU | Environmental Monitoring Unit |
| EPA | Environmental Protection Agency |
| ESA | Environmental and Social Assessment |
| ESIA | Environmental and Social Impact Assessment |
| FC | Forestry Commission |
| FPMU | Funds and Procurement Management Unit |
| GoG | Government of Ghana |
| MASLOC | Microfinance and Small Loans Centre |
| MES | Ministry of Environment and Science |
| MoE | Ministry of Education |
| SEA | Strategic Environmental Assessment |
| SIF | Social Investment Fund |
| WRC | Water Resources Commission |

Executive Summary

Project Background

The government of Ghana through the Ministry of Finance have sought funding from the African Development Bank for the proposed Post Covid-19 Skills Development and Productivity Enhancement Project (PSDPEP). The Social Investment Fund is the Coordinating Unit of the Project.

Study Objectives of ESMF

Specifically, the objectives of the ESMF is to:

- Assess the potential adverse E&S impacts commonly associated with the sub-projects and the way to avoid, minimize, or mitigate them.
- Establish clear procedures and methodologies for the E&S planning, review, approval and implementation of sub-projects.
- Develop an E&S assessment screening process; and specify the roles and responsibilities and the necessary reporting procedures for managing and monitoring sub-project E&S concerns.

Project Description

The PSDPEP is classified as Category II according to the African Development Bank's environmental guidelines, the Bank's Climate Safeguards System and an Environmental and Social Management Plan (ESMP) that has been prepared. Therefore, all project implementation activities will follow AfDB OS guidelines.

Project Components

The activities implemented under the project include new construction and rehabilitation at **three** institutions. These include construction and rehabilitation of infrastructure/facilities for teaching and learning such as ICT laboratories, Science and Technologies production units, pharmaceutical production research and diagnostic laboratories, offices, lecture rooms, libraries and others will be rehabilitated and climate proofed. In addition, Climate-proofed rehabilitation of 4 GNA structures in Accra, Northern Belt (Tamale), the Middle Belt (Kumasi), and the Coastal Belt (Takoradi).

Study Areas Boundary

The project study areas cover seven (7) regions (Greater Accra, Eastern, Western, Ashanti, Bono, Upper West and Northern). However, the selected provision of new construction and rehabilitation of infrastructure are either located in a metropolis, municipal or district assembly.

Description of Environmental and Social Baseline

The existing baseline conditions include known plans, programs, apparent commitments and/or intentions to the extent they are known, to consider them in the assessment of cumulative impacts. The existing key baseline data were gathered to depict the physical, biological/ecological, and socio-economic/socio-

Kwaku Anim Boateng (Independent Consultant)

cultural environments in the project sphere of influence. The basic baseline information of the selected project sites have been disclosed from the regional perspective to facilitate ease of presentation and readability as follows: **Physical Aspect** (climate and meteorology; seismicity; geomorphology and geology; hydrogeology, hydrology and drainage systems; soils; topography; air quality, dust and odour; ambient noise levels); **Biological/Ecological Aspect** (flora species; fauna species; protected and critical habitats; animal migration routes); **Socio-Economic/Socio-Cultural Aspect** (demography and settlement pattern; culture, ethnicity and religion; economy and employment; agricultural production; literacy and education; vulnerable group; gender equity and mainstreaming)

Policy and Legal Framework

The relevant environmental regulatory obligations and guidelines to guide the ESIA development and the Contractor(s) for the Proposed Project are the following: Environmental Protection Act 490 (1994); National Building Regulation, 1996 (LI 163); The Local Government Act, 1993 (Act 462); The Constitution of the Republic of Ghana, 1992; Land Use and Spatial Planning Authority (formally Town and Country Planning Ordinance, 1944 (Cap 84)); The Criminal Code, 1960 (Act 29); Pesticides Control and Management Act, 1966 (Act 528); Energy Commission Act, 1997 (Act 541); Factories, Offices and Shop Act, 1970 (Act 328); National Museums Decree, 1969, NLCD 387 ; Water Resources Commission Act, 1996 (Act 552); Fire Protection Act (1994) and Fire Protection Regulations, 2004 (LI 724); State Lands Act, 1962 (Act 125); State Lands Regulations, 1962 (LI 230); National Development Planning Act, 1994 (Act 479); Food and Drugs Act, 1992 (P.N.D.C.L. 305 B).

Determination of Potential Impacts of the Project Activities

SMEs severely negatively affected by the Covid-19 pandemic: (i) business failure (ii) loss of wages, employment, or non-payment of wages. (iii) large fall in sale of priced goods (iv) large rise in price of food (v) chronic/severe illness or accident of household member (vi) death of household member (vi) Break-up of household.

Guidelines for Mitigation and Enhancement Measures

Environmental and social screening marks the beginning of ESIA or ESMP process for any proposed project. The screening should be initiated as early as possible along with the sub-project planning process after the subproject is conceived. The extent of environmental assessment that might be required to be carried out in respect of a proposed subproject will depend on the outcome of the screening process. The purpose of the preliminary screening is to: rapidly determine whether proposed projects are likely to have potential negative environmental and social impacts; decide if form EA1 needs to be submitted to EPA; identify appropriate mitigation measures for activities with adverse impacts; incorporate mitigation measures into the project design as appropriate; review and approve projects proposals and monitor environmental and social impacts and concerns during implementation.

Institutional Capacity for ESMF implementation

Kwaku Anim Boateng (Independent Consultant)

The Social Investment Fund (SIF) and the Allied Agencies would be the main institutions responsible for the post-Covid-19 Restoration Program (PCRP). The SIF is the implementing agency under the MoF mandated to implement this project. The Regional Coordinating Council and the Environmental Protection Agency are major stakeholders with institutional roles in the areas of coordination, assessment, and monitoring. These institutions will be directly involved with the review of the ESMF. The SIF and the allied agencies will coordinate work among the relevant institutions and liaise with management on approval of agreed activities for speedy implementation. A technical team comprising these two institutions will guide the implementation of the project. The successful implementation of the ESMF will depend on the commitment, capacity of personnel and the appropriate and functional arrangements within these institutions.

Budgetary Provisions: The budget and financial support for the cost outlays for ESMF and capacity building of project implementation units is about **USD 300,000.00**.

Development of Monitoring Plan

Monitoring is a key component of the ESMF during project implementation. Monitoring should be undertaken at the sub-projects implementation phase to verify the effectiveness of impact management, including the extent to which mitigation measures are successfully implemented. Monitoring should involve three areas: Compliance monitoring; Impact monitoring; and Cumulative impact monitoring. The aim of monitoring would be to: Improve E&S management practices; Check the efficiency and quality of the EA processes; Establish the scientific reliability and credibility of the EA for the project; and provide the opportunity to report the results on safeguards and impacts and proposed mitigation measures implementation. Five key parameters which will be monitored include the following: (i) **adequate dissemination of ESMF to stakeholders**; (ii) **capacity building and training programmes undertaken**; (iii) **screening of sub-projects**; (iv) **completion of EPA forms EA1 and EA2**; and (v) **adequate mitigation measures provided to manage adverse impacts**.

Stakeholder Participation Strategy and Consultations

Stakeholder participation strategy has been disclosed as public/community and institutional consultations carried out. Strategic objectives for environmental education have been discussed as principles governing the stakeholder's participation process. Methods of dissemination of environmental education have been captured and discussed. And formatted matrix portrayal of public and community consultations has been shown.

Table of Content

| Section | Description | Page |
|---------|---|-------|
| | List of Acronyms | ...1 |
| | Executive Summary | ...2 |
| | Table of Content | ...5 |
| | List of Tables | ...9 |
| | List of Figures | ...10 |
| 1 | Introduction | ...10 |
| 1.1 | Project Background | ...10 |
| 1.2 | Purpose and Objective of the ESMF Study | ...11 |
| 1.3 | Description of the Proposed Project | ...11 |
| 1.3.1 | Project Components | ...15 |
| 1.4 | Study Areas Boundary | ...26 |
| 1.5 | Approach to the ESMF Study | ...29 |
| 2 | Description of Environmental and Social Baseline | ...29 |
| 2.1 | Physical Aspects | ...29 |
| 2.1.1 | Climate and Meteorology | ...41 |

| | | | | | | | | | | | |
|-------|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2.1.2 | Seismicity, Seismic Activities and Geo-Hazards | ... | ... | ... | ... | ... | ... | ... | ... | ... | 43 |
| 2.1.3 | Geomorphology and Geology | ... | ... | ... | ... | ... | ... | ... | ... | ... | 49 |
| 2.1.4 | Hydrogeology, Hydrology and Drainage | ... | ... | ... | ... | ... | ... | ... | ... | ... | 55 |
| 2.1.5 | Soils | ... | ... | ... | ... | ... | ... | ... | ... | ... | 61 |
| 2.1.6 | Topography | ... | ... | ... | ... | ... | ... | ... | ... | ... | 67 |
| 2.1.7 | Air Quality, Dust and Odour | ... | ... | ... | ... | ... | ... | ... | ... | ... | 67 |
| 2.1.8 | Ambient Noise Levels | ... | ... | ... | ... | ... | ... | ... | ... | ... | 67 |
| 2.2 | Biological/Ecological Aspect | ... | ... | ... | ... | ... | ... | ... | ... | ... | 67 |
| 2.2.1 | Flora Species | ... | ... | ... | ... | ... | ... | ... | ... | ... | 74 |
| 2.2.2 | Fauna Species | ... | ... | ... | ... | ... | ... | ... | ... | ... | 75 |
| 2.2.3 | Protected and Critical Habitats | ... | ... | ... | ... | ... | ... | ... | ... | ... | 83 |
| 2.2.4 | Animal Migration Routes | ... | ... | ... | ... | ... | ... | ... | ... | ... | 83 |
| 2.3 | Socio-Economic/Socio-Cultural Aspect | ... | ... | ... | ... | ... | ... | ... | ... | ... | 83 |
| 2.3.1 | Demography and Settlement Pattern | ... | ... | ... | ... | ... | ... | ... | ... | ... | 85 |
| 2.3.2 | Culture, Ethnicity and Religion | ... | ... | ... | ... | ... | ... | ... | ... | ... | 88 |
| 2.3.3 | Economy and Employment | ... | ... | ... | ... | ... | ... | ... | ... | ... | 92 |
| 2.3.4 | Agriculture Production | ... | ... | ... | ... | ... | ... | ... | ... | ... | 97 |
| 2.3.5 | Literacy and Education | ... | ... | ... | ... | ... | ... | ... | ... | ... | 100 |
| 2.3.6 | Vulnerable Group | ... | ... | ... | ... | ... | ... | ... | ... | ... | 101 |
| 2.3.7 | Gender Mainstreaming | ... | ... | ... | ... | ... | ... | ... | ... | ... | 102 |

| | | | | | | | | | |
|-------|---|-----|-----|-----|-----|-----|-----|-----|-----|
| 3 | Overview of Relevant Policy, Legislations | ... | ... | ... | ... | ... | ... | ... | 102 |
| 3.1 | Institutional Framework... | ... | ... | ... | ... | ... | ... | ... | 104 |
| 3.2 | Waste Management | ... | ... | ... | ... | ... | ... | ... | 104 |
| 3.3 | International Environmental and Social Conventions | ... | ... | ... | ... | ... | ... | ... | 105 |
| 3.4 | Legislation Relevant to Biodiversity | ... | ... | ... | ... | ... | ... | ... | 105 |
| 3.5 | Conventions Related to Biodiversity Conservation | ... | ... | ... | ... | ... | ... | ... | 105 |
| 3.6 | National Legislations and Relevant Statues | ... | ... | ... | ... | ... | ... | ... | 106 |
| 3.7 | National Policy Documents | ... | ... | ... | ... | ... | ... | ... | 107 |
| 3.8 | National Guidelines and Procedures Documents | ... | ... | ... | ... | ... | ... | ... | 107 |
| 3.9 | Ghana Standards | ... | ... | ... | ... | ... | ... | ... | 111 |
| 3.10 | Environmental Screening Determination and Conditions | ... | ... | ... | ... | ... | ... | ... | 120 |
| 4 | Determination of Potential Impacts | ... | ... | ... | ... | ... | ... | ... | 120 |
| 4.1 | Design, Pre-Refurbishment, Renovation or Pre-Construction | ... | ... | ... | ... | ... | ... | ... | 121 |
| 4.1.1 | Positive impacts | ... | ... | ... | ... | ... | ... | ... | 122 |
| 4.2 | Renovation or Construction Phase impacts | ... | ... | ... | ... | ... | ... | ... | 127 |
| 4.3 | Occupancy and Maintenance Phase Impacts | ... | ... | ... | ... | ... | ... | ... | 129 |
| 5 | Guidelines for Mitigation and Enhancement | ... | ... | ... | ... | ... | ... | ... | 160 |
| 6 | Development of Checklist and Guidelines | ... | ... | ... | ... | ... | ... | ... | 160 |
| 6.1 | Environmental and Social Screening Process | ... | ... | ... | ... | ... | ... | ... | 160 |
| 6.2 | Environmental and Social Assessment Procedures | ... | ... | ... | ... | ... | ... | ... | 163 |

| | | | | | | | | | | | |
|-------|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 7 | Institutional Capacity for ESMF Implementation ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 163 |
| 7.1 | Institutional Arrangements... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 163 |
| 7.2 | Project Steering Committee | ... | ... | ... | ... | ... | ... | ... | ... | ... | 164 |
| 7.3 | Project Implementation Team | ... | ... | ... | ... | ... | ... | ... | ... | ... | 164 |
| 7.4 | Regional Coordinating Council Oversight Committee | ... | ... | ... | ... | ... | ... | ... | ... | ... | 165 |
| 7.5 | Ghana EPA | ... | ... | ... | ... | ... | ... | ... | ... | ... | 165 |
| 7.6 | Institutional Strengthening | ... | ... | ... | ... | ... | ... | ... | ... | ... | 166 |
| 8 | Development of Monitoring Plan | ... | ... | ... | ... | ... | ... | ... | ... | ... | 166 |
| 8.1 | Environmental and Social Mitigation, Monitoring and Reporting | ... | ... | ... | ... | ... | ... | ... | ... | ... | 166 |
| 8.1.1 | Compliance Monitoring | ... | ... | ... | ... | ... | ... | ... | ... | ... | 166 |
| 8.1.2 | Impacts Monitoring/Reporting | ... | ... | ... | ... | ... | ... | ... | ... | ... | 174 |
| 9 | Stakeholders Participation Strategy | ... | ... | ... | ... | ... | ... | ... | ... | ... | 174 |
| 9.1 | Purpose of Stakeholders Participation Strategy | ... | ... | ... | ... | ... | ... | ... | ... | ... | 174 |
| 9.2 | Purpose of Stakeholders Engagement Plan (SEP) | ... | ... | ... | ... | ... | ... | ... | ... | ... | 174 |
| 9.3 | Strategic Objectives for Environmental and Social Education | ... | ... | ... | ... | ... | ... | ... | ... | ... | 175 |
| 9.4 | Methods of Dissemination for Environmental and Social Education | ... | ... | ... | ... | ... | ... | ... | ... | ... | 175 |
| 9.5 | Public Rights | ... | ... | ... | ... | ... | ... | ... | ... | ... | 175 |
| 9.6 | Grievance Redress Mechanism | ... | ... | ... | ... | ... | ... | ... | ... | ... | 175 |
| 9.7 | ESMF Disclosure | ... | ... | ... | ... | ... | ... | ... | ... | ... | 176 |
| 9.8 | Summary of Public and Community Consultations | ... | ... | ... | ... | ... | ... | ... | ... | ... | 177 |

| | | | | | | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Appendices | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 182 |
| Appendix F: MASLOC, Accra: Engagement of Eban Capital Officials | | | | | | | | | | ... | ... | 183 |
| Scoping Exercise Summary Sheet | | | ... | ... | ... | ... | ... | ... | ... | ... | ... | 184 |
| Environmental Features Checklist | | | ... | ... | ... | ... | ... | ... | ... | ... | ... | 188 |
| List of Allied Agencies | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 192 |
| Socio-Economic Baseline Survey... | | | ... | ... | ... | ... | ... | ... | ... | ... | ... | 194 |

List of Tables

| | | | | | | | | | | | | |
|----|--|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|
| 1 | Profile of Project Components | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 11 |
| 2 | Detailed AfDB Output Statements on Project Components | | | | | ... | ... | ... | ... | ... | ... | 13 |
| 3 | Profile of New Construction and Rehabilitation of Infrastructure | ... | | | | | ... | ... | ... | ... | ... | 16 |
| 4 | Legal, Regulatory and Policy Review | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 107 |
| 5 | Profile of Key Applicable Environmental Regulations | | | | ... | ... | ... | ... | ... | ... | ... | 109 |
| 6 | Profile of Key Institutions Relevant for Project | ... | | ... | ... | ... | ... | ... | ... | ... | ... | 110 |
| 7 | Summary of OS Objectives and Triggers Implication | | | | ... | ... | ... | ... | ... | ... | ... | 116 |
| 8 | Category Definition for AfDB Project | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 119 |
| 9 | Renovation or Construction Phase Impacts | | | ... | ... | ... | ... | ... | ... | ... | ... | 122 |
| 10 | Construction Phase OHS Risks | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 126 |
| 11 | Infectious Prevention and Control | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 129 |
| 12 | Potential Environmental and Social Mitigation Guidelines | | | | | | ... | ... | ... | ... | ... | 150 |
| 13 | Indicative Environmental and Social Mitigation Measures | | | | | ... | ... | ... | ... | ... | ... | 167 |

| | | | | | | | | |
|----|------------------------------------|-----|-----|-----|-----|-----|-----|--------|
| 14 | Profile of Individual Consultation | ... | ... | ... | ... | ... | ... | ...177 |
|----|------------------------------------|-----|-----|-----|-----|-----|-----|--------|

List of Figures

| | | | | | | |
|---|---|-----|-----|-----|-----|-------|
| 1 | Project Locations Map for Project Sites in Greater Accra Region | ... | ... | ... | ... | ...42 |
|---|---|-----|-----|-----|-----|-------|

1.0 Introduction

The government of Ghana through the Ministry of Finance have sought funding from the African Development Bank for the proposed Post Covid-19 Skills Development and Productivity Enhancement Project. The Social Investment Fund is the Coordinating Unit of the Project.

1.1 Project Background

Contribution to Ghana's post-COVID-19 recovery in the health sector through climate-resilient infrastructure improvements and skills development in higher education institutions and the restoration of livelihoods and income and employment opportunities through entrepreneurship and jobs among youth and women is one of the initiatives under the Post Covid-19 Recovery Program on Skills Training, Research and Productivity (PRSTRP). Therefore, the Government of Ghana, through the Ministry of Finance acting through the Social Investment Fund (SIF) and allied agencies (University of Ghana Medical School, University of Ghana Biotechnology Centre, University of Ghana Nursing and Midwifery School, Ghana News Agency (GNA), Microfinance and Small Loans Centre (MASLOC)) has received financial support from the African Development Bank (AfDB) towards the cost of providing new construction and rehabilitation at **three** institutions. These include construction and rehabilitation of infrastructure/facilities for teaching and learning such as ICT laboratories, Science and Technologies production units, pharmaceutical production research and diagnostic laboratories, offices, lecture rooms, libraries and others will be rehabilitated and climate-proofed. In addition, Climate-proofed rehabilitation of 4 GNA structures in Accra, Northern Belt (Tamale), the Middle Belt (Kumasi), and the Coastal Belt (Takoradi).

1.2 Purpose and Objectives of the ESMF

The general framework for the assessment and management of environmental and social (E&S) risks and impacts of developments/projects in Ghana is provided in the Environmental Assessment (EA) Regulations - Legislative Instrument (LI 1652). For AfDB projects, E&S safeguards procedures and policies must be followed for projects funded by them. As part of the funding arrangements for this project, the Government of Ghana through SIF (as Project Implementation Agency (PIA)) has prepared this Environmental and Social Management Framework (ESMF), by use of Independent Consultant, in compliance with the AfDB's Environmental and Social Framework (ESF) and Integrated Safeguard Systems (ISS) which were reviewed, evaluated and adopted, must be cleared by the Bank and publicly disclosed.

Kwaku Anim Boateng (Independent Consultant)

SIF is committed to meeting the AfDB's Environmental and Social Framework (ESF) which requires that for projects with subprojects (such as Component 1.1 - Strengthening the health system-climate resilient infrastructure rehabilitation and procurement of equipment), that the risks and impacts cannot be determined until the details of sub-project have been identified, an Environmental and Social Management Framework (ESMF) must be prepared. It is envisaged that the project will have a number of sub-project activities especially in the areas that could potentially include some minor construction, renovation and refurbishment works. Since the GNA infrastructure facilities will be funded under this program, with some of the sub-project activities undetermined at this point, an ESMF is required. This ESMF provides a general impact identification framework to assist project implementers to screen sub-projects and institute measures to address potential adverse E&S impacts. It sets out the principles and processes within which the sub-projects would be implemented and agreeable to all parties. Specifically, the objectives of the ESMF is to:

- Assess the potential adverse E&S impacts commonly associated with the sub-projects and the way to avoid, minimize or mitigate them;
- Establish clear procedures and methodologies for the E&S planning, review, approval and implementation of sub-projects;
- Develop an E&S assessment screening process; and specify the roles and responsibilities and the necessary reporting procedures for managing and monitoring sub-project E&S concerns.

Using the E&S screening tool the project will identify the potential risks of sub-project component 1.1 and determine which environmental assessment instrument such as ESIA, ESMPs, Resettlement Action Plan that may be required.

1.3 Description of the Proposed Project

The PRSTRP is classified as Category II according to the African Development Bank's environmental guidelines, the Bank's Climate Safeguards System and an Environmental and Social Management Plan (ESMP) that has been prepared. Therefore, all project implementation activities will follow AfDB OS guidelines.

1.3.1 Project Components

The activities implemented under the project include new construction and rehabilitation at **three** institutions. These include construction and rehabilitation of infrastructure/facilities for teaching and learning such as ICT laboratories, Science and Technologies production units, pharmaceutical production research and diagnostic laboratories, offices, lecture rooms, libraries and others will be rehabilitated and climate-proofed. In addition, Climate-proofed rehabilitation of 4 GNA structures in Accra, Northern Belt (Tamale), the Middle Belt (Kumasi), and the

Coastal Belt (Takoradi). The project components under contract are shown in Table 1.0. However, **Project Component 2 (Rebuilding youths` and women`s livelihoods through entrepreneurship and employment creation)** will be the sub-component of interest for which this ESMF report has been prepared.

Table 1.0 **Profile of Summarized Project Components**

| Serial Number | Components | Description of Components | Comments |
|---------------|--|---|--|
| 1 | 1 - Strengthening the health system- climate resilient infrastructure rehabilitation and procurement of equipment. | This component will support the recovery of Ghana's health system from the impacts of the COVID-19 pandemic by improving of the capacity of the University of Ghana to train additional health workers to respond to COVID-19 and future environmentally induced pandemics enhance capacity for testing, diagnosis, and treatment in the system. At the University of Ghana, infrastructure including teaching and learning facilities such as ICT laboratories, Science and Technologies production units, pharmaceutical production research and diagnostic laboratories, offices, lecture rooms, libraries and others will be rehabilitated. | Total component cost, implementing entity responsibilities have been provided in the AfDB project output statement document. |
| 2 | 1.1 - Strengthening the health system- climate resilient infrastructure rehabilitation and procurement of equipment. | Climate-proofed rehabilitation of 4 GNA structures in Accra, Northern Belt (Tamale), the Middle Belt (Kumasi), and the Coastal Belt (Takoradi). | Total component cost, implementing entity responsibilities have been provided in the AfDB project output statement document. |

| | | | |
|---|--|---|--|
| 3 | 2 - Rebuilding youths` and women`s livelihoods through entrepreneurship and employment creation. | This component will support the rebuilding of livelihood and sources of income among youths and women for them to recover from the socioeconomic and climate related shocks or impacts of the COVID-19 pandemic on individuals, households, and enterprises, especially SMEs. It is aimed at improving access to technical and climate-resilient skills training and sustainable green climate finance for youths, women, and SMEs. | Total component cost, implementing entity responsibilities have been provided in the AfDB project output statement document. |
| 4 | 3 - Project Management | This component aims to provide technical and administrative support for the implementation of project activities under the two components above. | Total component cost, implementing entity responsibilities have been provided in the AfDB project output statement document. |

Source: SIF Project Document

Table 2.0. Detailed AfDB Output Statements on Project Components

| OUTPUT STATEMENT 3: Increased access to modern and adequate teaching and research equipment at the School of Biomedical Sciences, the Biotechnology Centre, and the School of Nursing and Midwifery of the University of Ghana | | | | | | |
|---|---------------|---------------------|-----------------------|-----------------------------|---|------------------------|
| RESULTS CHAIN AND INDICATOR DESCRIPTION | RMF INDICATOR | UNIT OF MEASUREMENT | BASELINE (as at 2020) | TARGET AT COMPLETION (2026) | MEANS OF VERIFICATION | FREQUENCY OF REPORTING |
| <u>INDICATOR 3a:</u> Availability of teaching and research equipment at the University of Ghana in biotechnology, microbiology, and nursing and | ☒ | Number | | 146 | University of Ghana and SIF Project Quarterly and Reports | Quarterly and Annually |

Kwaku Anim Boateng (Independent Consultant)

| | | | | | | |
|--|-------------------------------------|--------|---|---|---|------------------------|
| midwifery: | | | | | | |
| INDICATOR 3b: Biotechnological and biomedical research linked to the sustainable local production of medical supplies such as vaccines, drugs, and other medical supplies | <input checked="" type="checkbox"/> | Yes/No | No links | Links established and functional | University of Ghana and SIF Annual Reports | Annually |
| OUTPUT STATEMENT 4: Improved capacities of the Ghana News Agency (GNA), UoG, and other media houses to inform and educate the public on COVID-19 and other climate related pandemics, to disseminate research findings of UoG, and link youths, women, MSMEs, and cooperatives to income and employment opportunities | | | | | | |
| INDICATOR 4a: Staff of GNA, other media houses, and GoG trained in effective communication on COVID-19 and other pandemics prevention and therapeutic measures and dissemination of UoG research findings and MSMEs credit access | <input type="checkbox"/> | Number | 0 (2021) | 200 | Project Report/ Annual Report/ | Annually |
| INDICATOR 4b: Locations where GNA infrastructure is rehabilitated | | Number | 0 (2021) | 4 | SIF Project Quarterly and Annual Progress Reports | Quarterly and Annually |
| INDICATOR 4c: GNA and other media houses using digitalized communication platforms on the COVID-19 pandemic and MSMEs access to credit | <input checked="" type="checkbox"/> | Yes/No | No | Yes | SIF Project Quarterly and Annual Progress Reports | Quarterly and Annually |
| OUTPUT STATEMENT 5: Increased access to technical, entrepreneurial and climate-resilient skills training for youths and women | | | | | | |
| INDICATOR 5a: Youths and women trained in technical, entrepreneurial and climate resilient skills and sustainable green climate finance for youth, women SMEs, and cooperatives | <input type="checkbox"/> | Number | Number of trainees: Males= Females= | Number of trainees: Males= Females= | Ghana Enterprise Agency (GEA), SIF and MASLOC Project Quarterly and Annual Progress Reports | Quarterly and Annually |
| OUTPUT STATEMENT 6: Increased access to sustainable green climate finance for youth and women SMEs and cooperatives | | | | | | |
| INDICATOR 6a: Access to green climate finance increased for youths, women, MSMEs and cooperatives | <input checked="" type="checkbox"/> | Number | Number of males= Number of females= | Number of males= Number of females= | GEA, Ghana SIF and MASLOC Project Quarterly and Annual Progress Reports | Quarterly and Annually |

| | | | | | | |
|---|-------------------------------------|----------|---|--|---|------------------------|
| INDICATOR 6b: MASLOC credit operations and transactions fully digitalized to deepen financial inclusion | <input checked="" type="checkbox"/> | Yes / No | Manual | Digitalized | SIF and MASLOC Project Quarterly and Annual Progress Reports | Quarterly and Annually |
| INDICATOR 6c:Green and climate resilient jobs created for youths and women | <input checked="" type="checkbox"/> | Number | Direct jobs=5,000 Males= Females= Indirect jobs= Males= Females= | Direct jobs=6,000 Males= Females= Indirect jobs= Males= Females= | GEA, SIF and MASLOC Project Quarterly and Annual Progress Reports | Quarterly and Annually |
| I ACTIVITIES | | | I INPUTS | | | |
| PROJECT COMPONENTS A. Component 1: Infrastructure Rehabilitation and Procurement of Equipment B. Component 2: Rebuilding youths’ and women’s livelihoods through entrepreneurship and employment creation C. Component 3: Project Management | | | Component | | Source | |
| | | | | | ADF Grant (million) | Government (In Kind) |
| | | | | A- Infrastructure Rehabilitation and Procurement of Equipment | UA 7.13 | UA 0.71 |
| | | | | B-Component 2: Rebuilding youths’ and women’s livelihoods through entrepreneurship and employment creation | UA11.00 | UA 1.10 |

| | | | |
|--|-----------------------|--------------|-------------|
| | C. Project Management | UA2.01 | UA 0.20 |
| | D | | - |
| | | | - |
| | | | |
| | Total (UA) | 20.14 | 2.01 |

Source : AfDB Data Records

1.3.2 Livelihood Restoration Plan (LRP)

There will not be any physical involuntary resettlement, resulting in land acquisition, population displacement and compensation payment in the literal sense. However, there will be support for climate-resilient socio-economic recovery and the protection of jobs and businesses and contribute to the rebuilding of the health system in Ghana. The proposed project will also strengthen resources and capacities of small and medium enterprises especially women and youth, built relevant medium and high-level skills in TVET and STEM and enhance linkages between research, policy, and private sector growth in the pharmaceuticals industry. This livelihood restoration section outlines measures to contribute to Ghana's post-COVID-19 recovery in the health sector through climate-resilient infrastructure improvements and skills development in higher education institutions and the restoration of livelihoods and income and employment opportunities through entrepreneurship and jobs among youth and women under the Project. The measures and options presented form the basis of the livelihood restoration planning of Project Component 2 of the ESMF. It aims to support the rebuilding of livelihood and sources of income among youths and women for them to recover from the socioeconomic and climate related shocks or impacts of the COVID-19 pandemic on individuals, households, and enterprises, especially SMEs. It is aimed at improving access to technical and climate-resilient skills training and sustainable green climate finance for youths, women, and SMEs to pre-Covid-19 levels livelihoods, and to ensure the promotion of improved sustainable livelihoods.

Purpose for Livelihood Restoration Program: It is important to consider the context and nature of **economic displacement** in the design of a livelihood restoration program and the opportunities open to affected youth and women. The focus of the livelihood restoration plan is to support youth and women to quickly re-establish life-support activities to reduce their vulnerability from impacts of Covid-19 pandemic. Given the importance of entrepreneurship and employment creation for youth and women and the links between livelihood, sources of income and vulnerability, it is recommended that the main livelihood support program focuses on skills training.

Livelihood Restoration Strategy: The primary livelihood restoration strategy to be adopted for the Project Component 2 is to conduct intensive skills training for the youth and women and SMEs, with support in compensation for losses of livelihood assets incurred during the global pandemic effects from Covid-19. The standard compensation methodology to be adopted by the Project should include transition support allowance. Moreover, additional livelihood

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restoration interventions should be implemented depending on the circumstances of the youth, women, and SMEs to ensure that international standard requirements are achieved for the Project. Vulnerable groups should specifically be considered in the approach to the provision of livelihood restoration scheme. Here, vulnerability analysis should be undertaken to establish the levels of vulnerability among the youth, women, and SMEs.

It should be noted that as recommendation by the Individual Consultant, attention should be paid to the needs of disadvantaged groups among those targeted for livelihood intervention. Vulnerable individuals or groups among the youth, women and the SMEs are particularly the marginalized or disadvantaged and who might thus be more likely than others to experience adverse impacts from the Covid-19. Vulnerability can be determined by identifying the likelihood that an individual or a group faces harder conditions as the result of the Covid-19 impacts. This vulnerable status may stem from a group's gender, economic status, ethnicity, religion, cultural behaviour, sexual orientation, language, or physical and psychological health conditions. Vulnerable groups may include, among others, female-headed households, those below the poverty line, the landless, those without legal title to assets, ethnic, religious, and linguistic minorities, indigenous peoples, those who are disabled, etc.

1.4 Approach to the ESMF Study

The ESMF has been prepared in accordance with AfDB's Environmental and Social Framework and applicable Ghana environmental assessment guidelines. The following approach and techniques were used in the ESMF study:

Task 1 Description of proposed project

The Consultant shall present information on (i) location of all project-related development sites and general facilities at project development sites, pre-construction activities, construction activities, schedule, staffing and support, facilities and services, operation and maintenance activities.

The Consultant is also to provide maps to illustrate the general setting of the project-related development sites, as well as surrounding areas, which can be potentially affected. The Consultant shall provide a detailed description of the proposed project components.

Task 2 Description of the Environment

This task entails gathering, evaluating, and presenting baseline data on the environmental characteristics of the project(s) area of influence. The purpose is to inform on any anticipated changes before the start of the projects. This description involves: (i) the physical environment (i.e. topography, geology climate and meteorology, surface water hydrology); (ii) biological environment (i.e. flora types and diversity, rare and endangered species within or adjacent to projects intervention sites, including wetlands, sensitive habitats); (iii) socio-economic and cultural environment, including present and projected, where appropriate (i.e. population, land use, planned development activities, community structure, employment and labour market, sources and distribution of income, cultural properties – such as historical and archaeological significant sites, indigenous people, and traditional tribal lands and customs).

Kwaku Anim Boateng (Independent Consultant)

Task 3 Legislative and Regulatory Framework

The Consultant shall identify and briefly discuss the pertinent regulations and standards governing environmental quality, health and safety, protection of sensitive areas, protection of endangered species, CITES, etc., at international, national, regional and local levels. These shall include but not limited to Environmental Assessment Regulations 1999 (L.I. 1652), Environmental Protection Agency Act, 1994 (Act 490), Town and Country Planning Ordinance (Cap. 84) No. 13 of 1945, etc.

Task 4 Determination of Potential Impacts of the Projects

The ESMF and RPF shall identify and describe all potential significant changes brought about by the projects. These would encompass environmental and social impacts, both positive and negative, because of project interventions, such as involuntary resettlement, social conflicts and disturbance, threats to land and natural resources, biodiversity, natural habitats. It is important in this section to differentiate between short, medium and long-term.

Also, it is important to assess the environmental awareness and commitment of implementing agencies. Assess the changes brought about by the projects on baseline environmental and social conditions discussed in Task 2.

Describe the extent and quality of available data and any pertinent information deficiencies, which might preclude projection of impacts. Identify and outline terms of reference (ToR) for studies designed to bridge information gaps encountered during the study.

Task 5 Analysis of Alternatives of the Proposed Projects

The ESMF should provide an evaluation of reasonable alternatives to fulfill the ultimate development objective of the projects. Assess the extent to which alternatives are more appropriate from an environmental, socioeconomic, and cultural standpoint than the proposed projects. Include the counterfactual scenario – not implementing the projects – to underline the environmental and social conditions without it.

Task 6 Development of Checklists and Guidelines

A screening mechanism should be developed as a tool to review the scope and magnitude of environmental and social impacts. It should also help determine whether further environmental assessments need to be carried out. The checklist should be accompanied by guidelines for mitigation and integrated into the overall framework for selection of sites for sub projects and other physical works to be undertaken by the project.

Task 7 Development of a Management Plan to Mitigate Negative Impacts

A generic Environmental Management Plan would entail recommending feasible and cost-effective measures to prevent, mitigate, compensate or reduce negative impacts. The consultant is to provide cost outlays for the proposed measures, as well as their institutional and capacity-building requirements to implement them. This should ideally be presented in a matrix/table format. It is noteworthy that the consultant:

Kwaku Anim Boateng (Independent Consultant)

- Clearly define responsibilities for implementing the environmental management plan in relation to the resources affected by the projects. These should be spelt out and appropriately resources.
- Identify arrangements for coordination between the various actors for mitigation.

Task 8 Institutional Needs Assessment

Assess institutional capacity and discuss measures to strengthen their management, training, staffing, budgeting, and financial support. It is important to present in this section cost outlays for environmental capacity building of the implementing agency/agencies.

Task 9 Development of Monitoring Plan

The consultant is to design a monitoring plan for the implementation of mitigation measures. The monitoring plan should clearly indicate the linkages between impacts identified in the ESMF, indicators to be measured, methods to be used, sampling locations, and frequency of measurements and definition of thresholds indicating the need for corrective actions. It is important that all aspects of the monitoring arrangements be appropriately costed and the responsibilities clearly defined. The reporting arrangements for environmental and social management monitoring need to be integrated into the overall monitoring and evaluation program.

Task 10 Inter-agency Coordination and Public/Private Sector/NGO Involvement

The consultant should undertake the ESMF with a view to assess the feasibility of broad-based participation, involving other government agencies, local NGOs, the private sectors and affected individuals or groups of people. Assess potential benefits resulting from such a broad-based partnership in implementing and monitoring projects outcomes.

2.0 Description of Environmental and Social Baseline of the Project Areas

The existing baseline conditions include known plans, programs, apparent commitments and/or intentions to the extent they are known, to consider them in the assessment of cumulative impacts. The existing key baseline data were gathered to depict the physical, biological/ecological, and socio-economic/socio-cultural environments in the project sphere of influence. The basic baseline information of the selected project sites have been disclosed from the regional perspective to facilitate ease of presentation and readability as follows:

2.1 Physical Aspects

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2.1.1 Climate and Meteorology

Greater Accra Region: The region falls within the dry, coastal, equatorial climatic zone with temperatures ranging between 20° and 30° Celsius, and annual rainfall ranging between 635 millimetres along the coast to 1,140 millimetres in the northern parts. There are two rainfall peaks, notably in June and October. The first rainfall season between April and July is associated with the major cropping season in the region.

Western Region: The region is the wettest part of Ghana. The rainfall map of the region shows clearly that rainfall decreases northwards and eastwards from the extreme south-west which is the wettest part of the region and the country. Rainfall distribution in the region is characterized by two seasons; with the major one reaching its maximum in May/June and the minor one in October. There is practically no month without rain. The region falls under two main climatic types: the south-western equatorial and the wet semi-equatorial. The south-western equatorial climatic type roughly coincides with the evergreen forest and the wet semi-equatorial climatic type with the semi-deciduous forest. The south-western equatorial climate is the wettest in the country with rainfall patterns as described above. The highest temperatures which occur in March/April are around 30 degrees centigrade while the lowest temperatures of 26 degrees occur in August. Relative humidity is between 70-80% all year round. The wet semi-equatorial climate has average yearly rainfall between 1250 and 2000 millimetres with sharp dry seasons.

Ashanti Region: The region has an average annual rainfall of 1,270 mm and two rainy seasons; the major season is from April to mid-August and the minor season is from September to November. The period December to March and mid-August to mid-September is relatively dry. The average daily temperature is about 27 degrees Celsius.

Bono Region: In Bono, the dry seasons are long, hot, and muggy; the wet seasons are very cold and wet; and it is partly cloudy year-round. Over the course of the year, the temperature typically varies from -0.56°C to 32.2°C and is rarely below -8.3°C or above 36.1°C. The warm-weather activities are from mid May to mid June and from mid August to early October. The hot season lasts for 3.9 months, from May 23 to September 20, with an average daily high temperature above 27.2°C. The hottest month of the year in Bono is July, with an average high of 32.2°C and low of 22.2°C. The wet season lasts for 3.0 months, from November 28 to February 26, with an average daily high temperature below 12.8°C. The coldest month of the year in Bono is January, with an average low of -0.56°C and high of 7.8°C. The chance of wet days in Bono varies throughout the year.

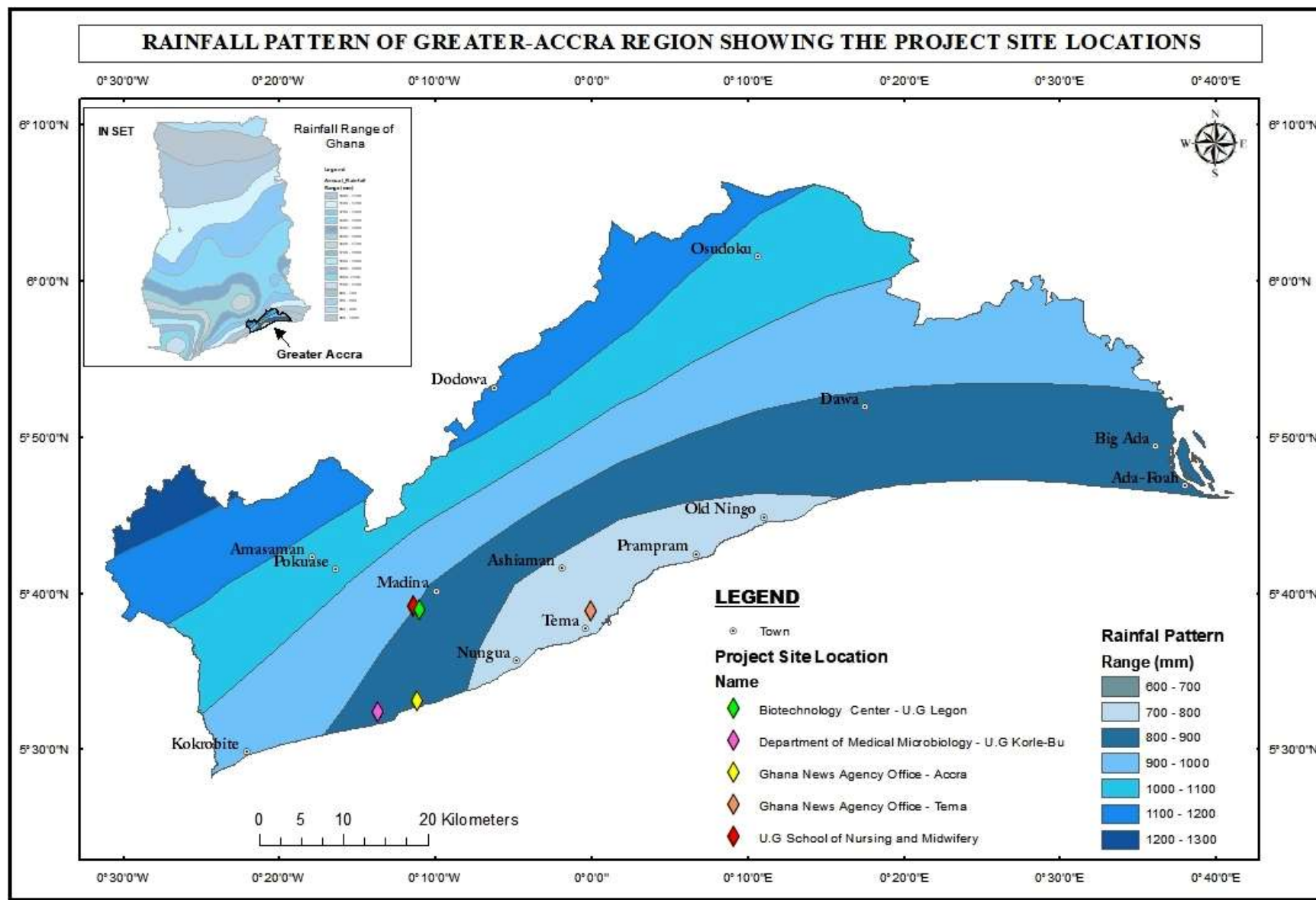
The wetter season lasts 4.8 months, from March 15 to August 10, with a greater than 30% chance of a given day being a wet day. The month with the most wet days in Bono is May, with an average of 11.6 days with at least 0.04 inches of precipitation.

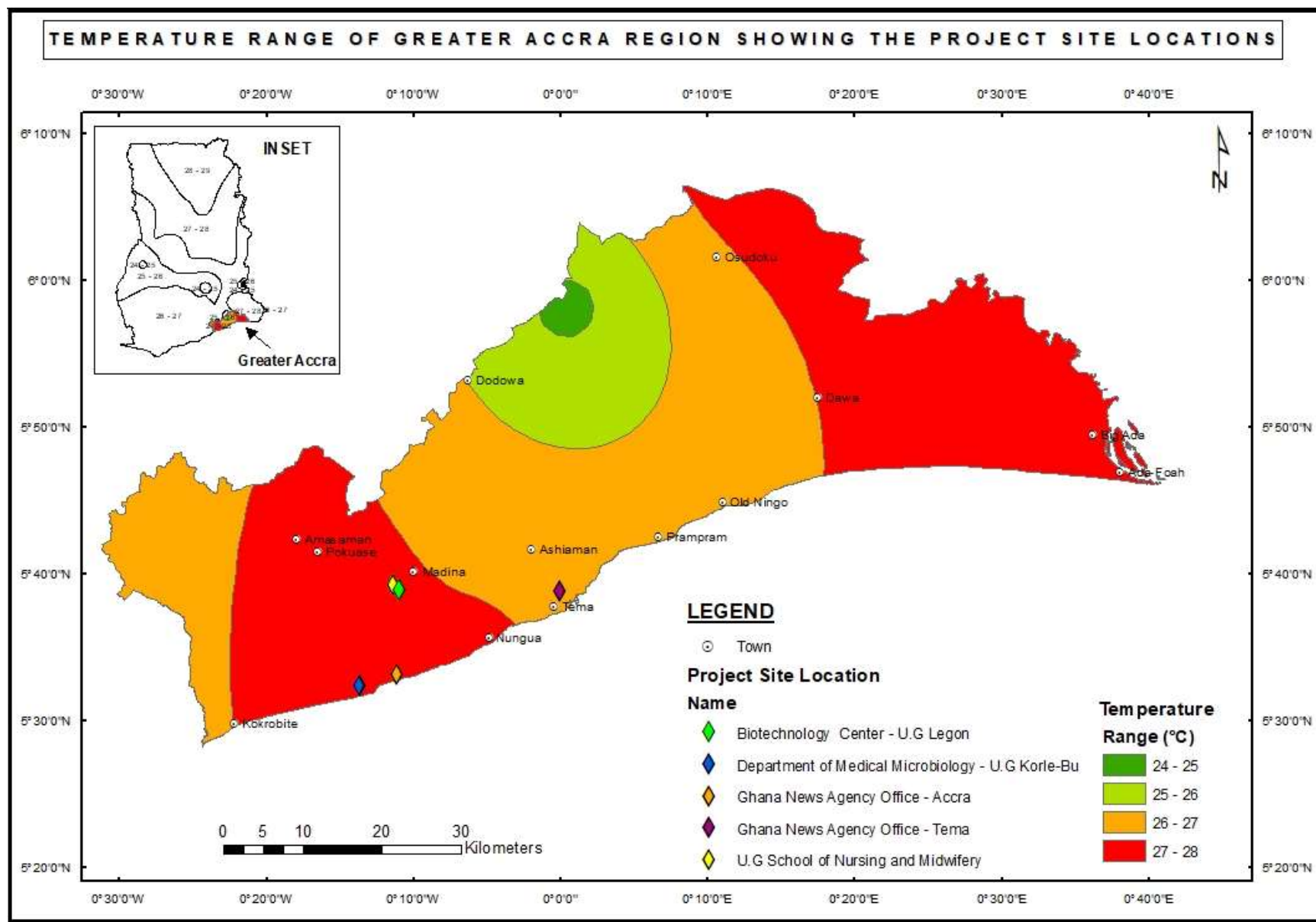
The drier season lasts 7.2 months, from August 10 to March 15. The month with the fewest wet days in Bono is January, with an average of 7.0 days with at least 0.04 inches of precipitation. The month with the most days of rain alone in Bono is May, with an average of 11.6 days. Based on this categorization, the most common form of precipitation throughout the year is rain alone, with a peak probability of 39% on May 15.

Eastern Region: The region lies within the wet semi-equatorial zone which is characterized by double maxima rainfall in June and October. The first rainy season is from May to June with the heaviest rainfall occurring in June while the second season is from September to October, with little variations between the distribution. Temperatures in the region are high and range between 26°C in August and 30°C in March. The relative humidity which is high throughout the year varies between 70 percent and 80 percent.

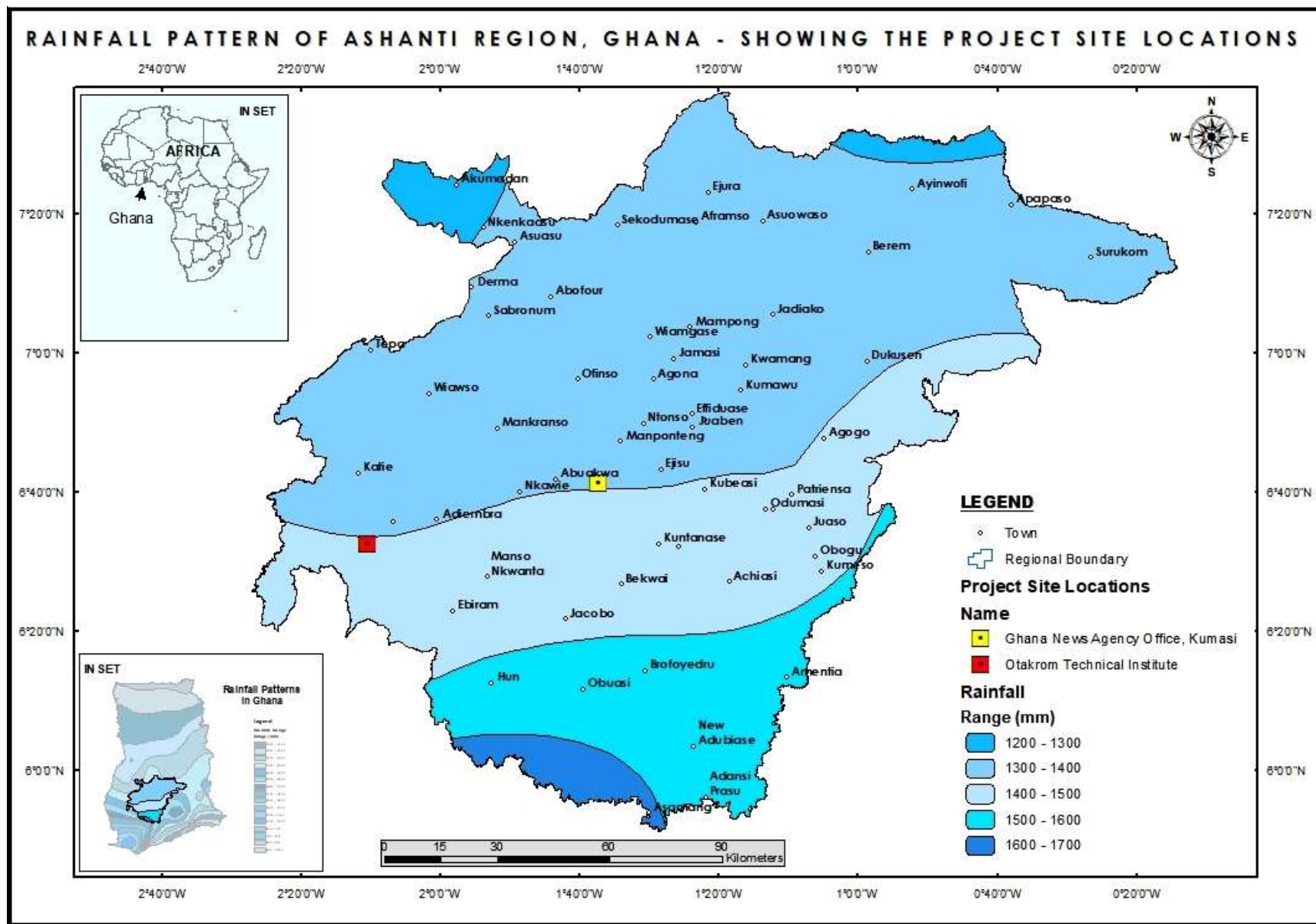
Upper West Region: The climate of the Upper West Region follows a general pattern identified with the three northern regions. It has a single rainy season from April to September, with average annual rainfall of about 115 cm. This is followed by harmattan, a prolonged dry season characterized by cold and hazy weather from early November to March, and an intense hot weather that ends only with the onset of early rainfall in April. The mean monthly temperature ranges between 21c and 32c . Temperatures rise to their maximum (40c) in March, just before the onset of the rainy season, and fall to their minimum (20c) in December during harmattan which is brought about by the north-east trade winds.

Northern Region: The climate of the region is relatively dry, with a single rainy season that begins in May and ends in October. The amount of rainfall recorded annually varies between 750 millimetres and 1,050 millimetres. The dry season starts in November and ends in March/April with maximum temperatures occurring towards the end of the dry season (March-April) and minimum temperatures in December and January. The harmattan winds, which occur from December to early February, have a considerable effect on temperatures in the region, making them vary between 14oC at night and 40oC during the day. Humidity is very low, aggravating the effect of the daytime heat.

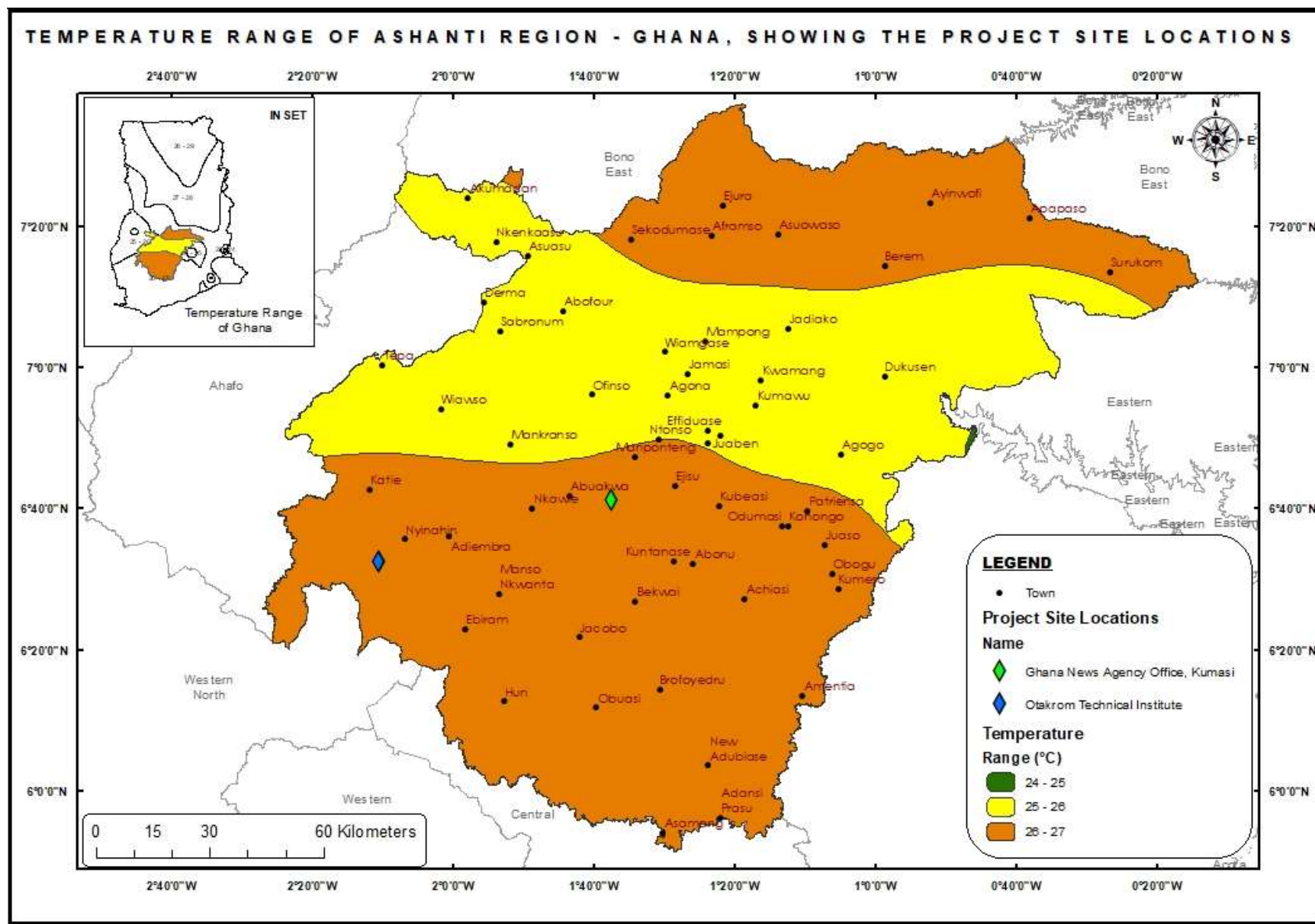




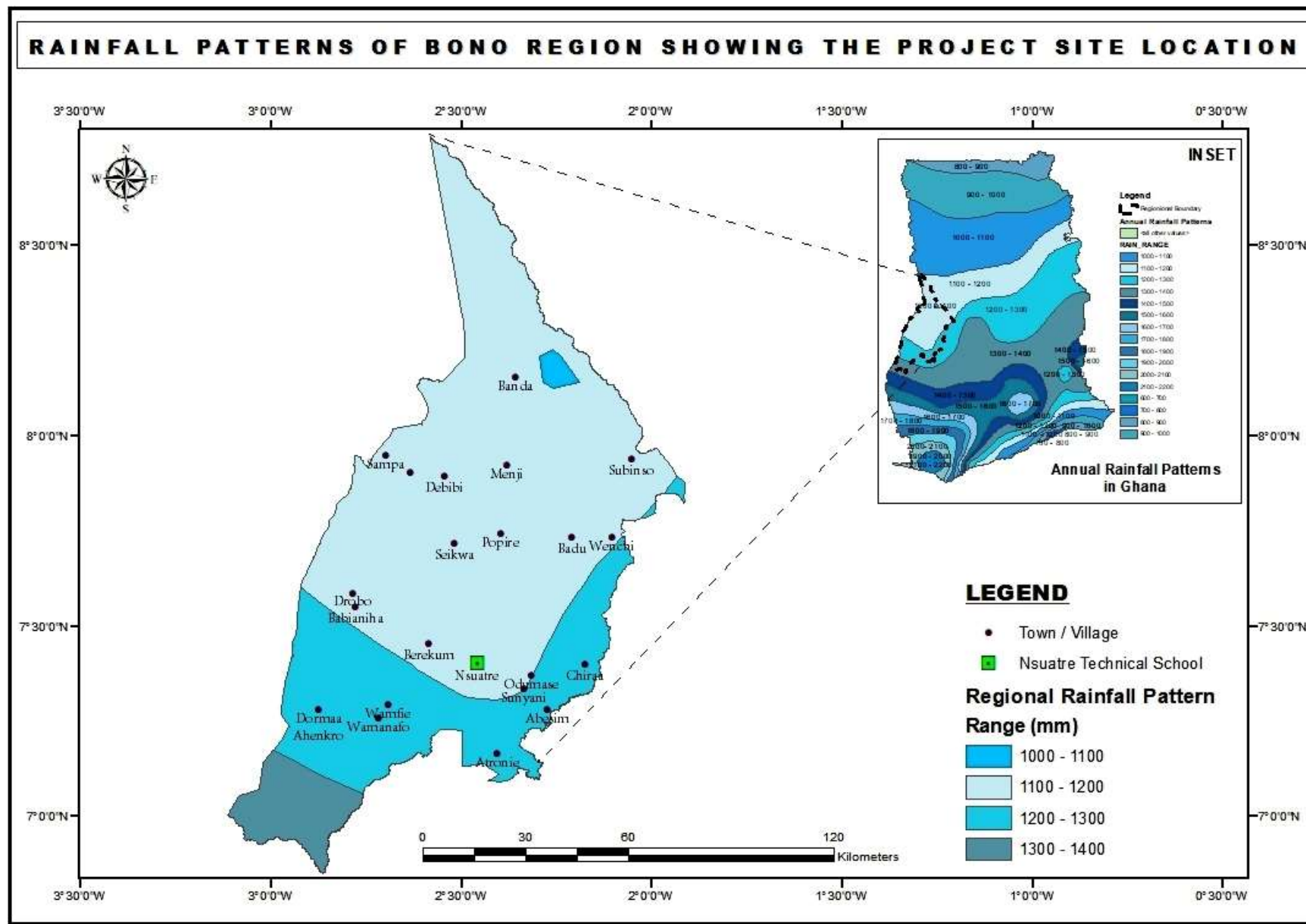
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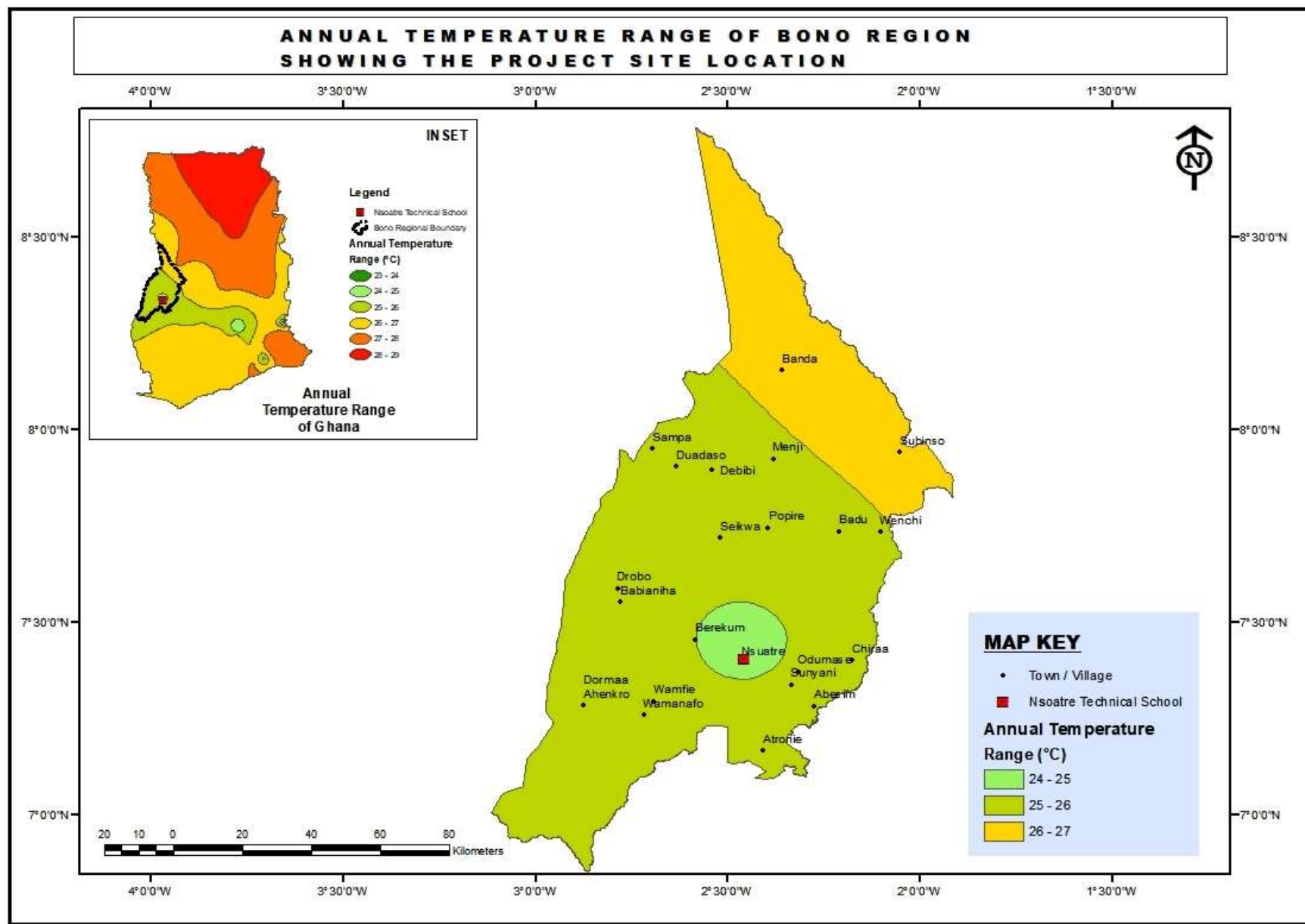
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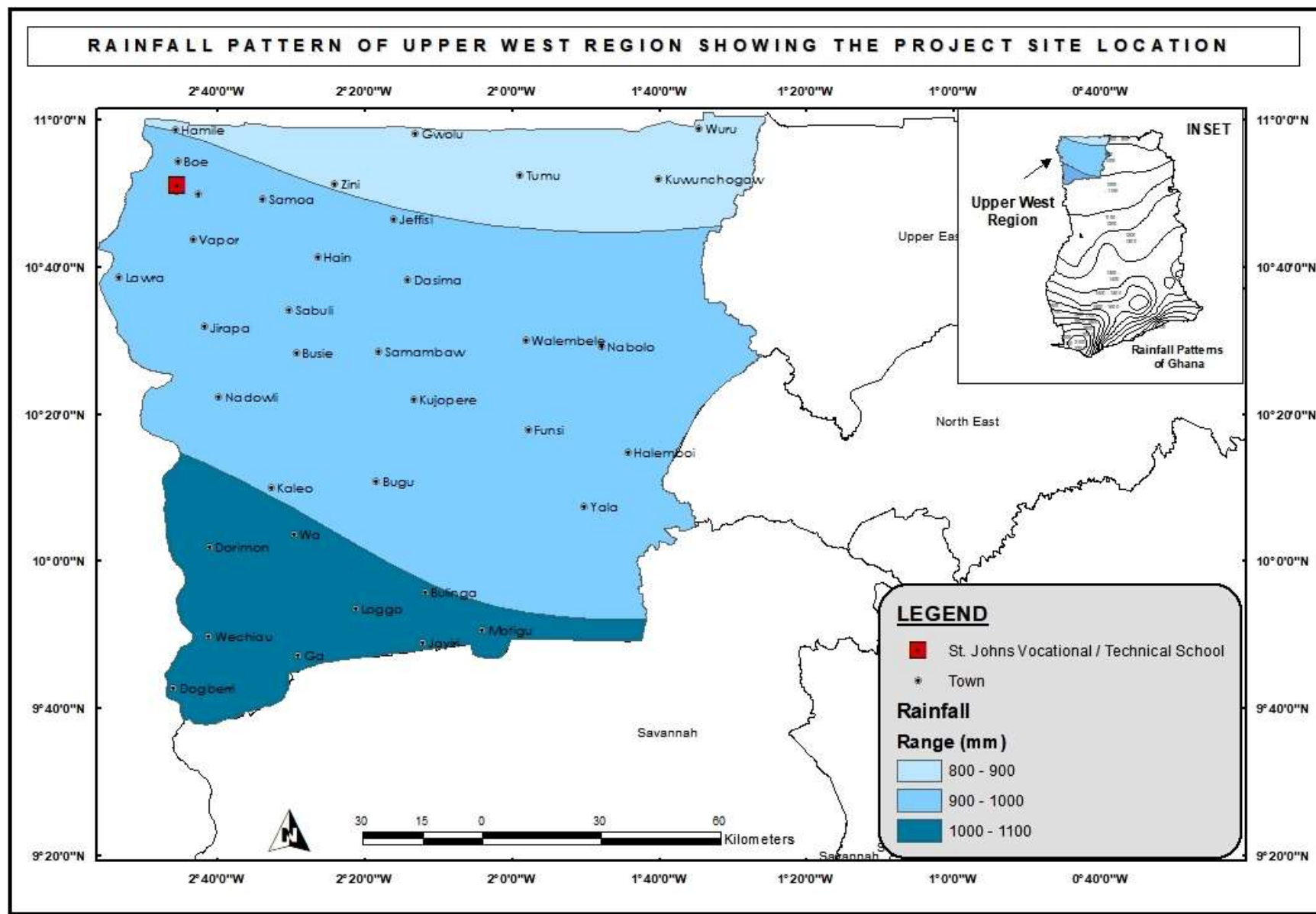
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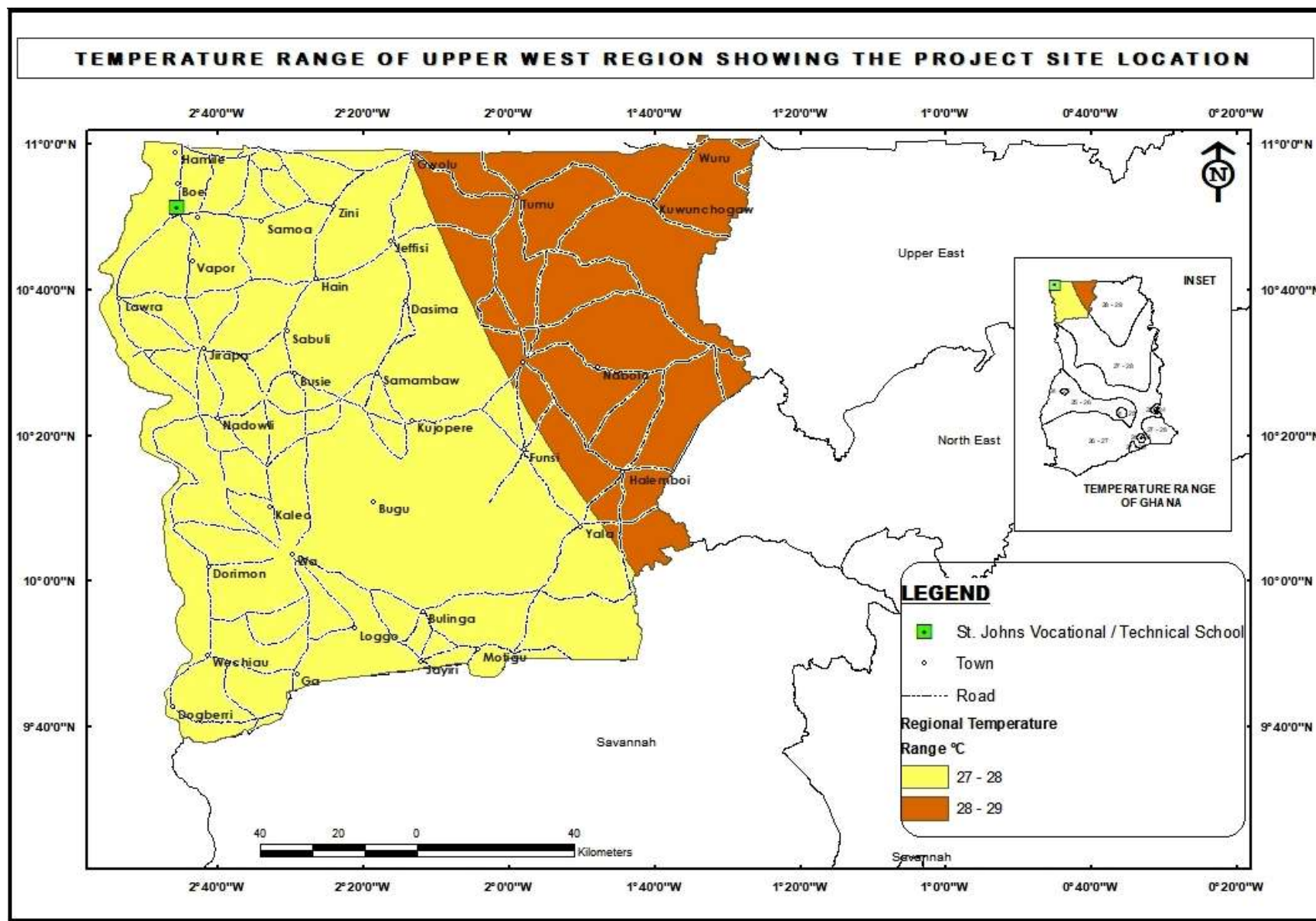


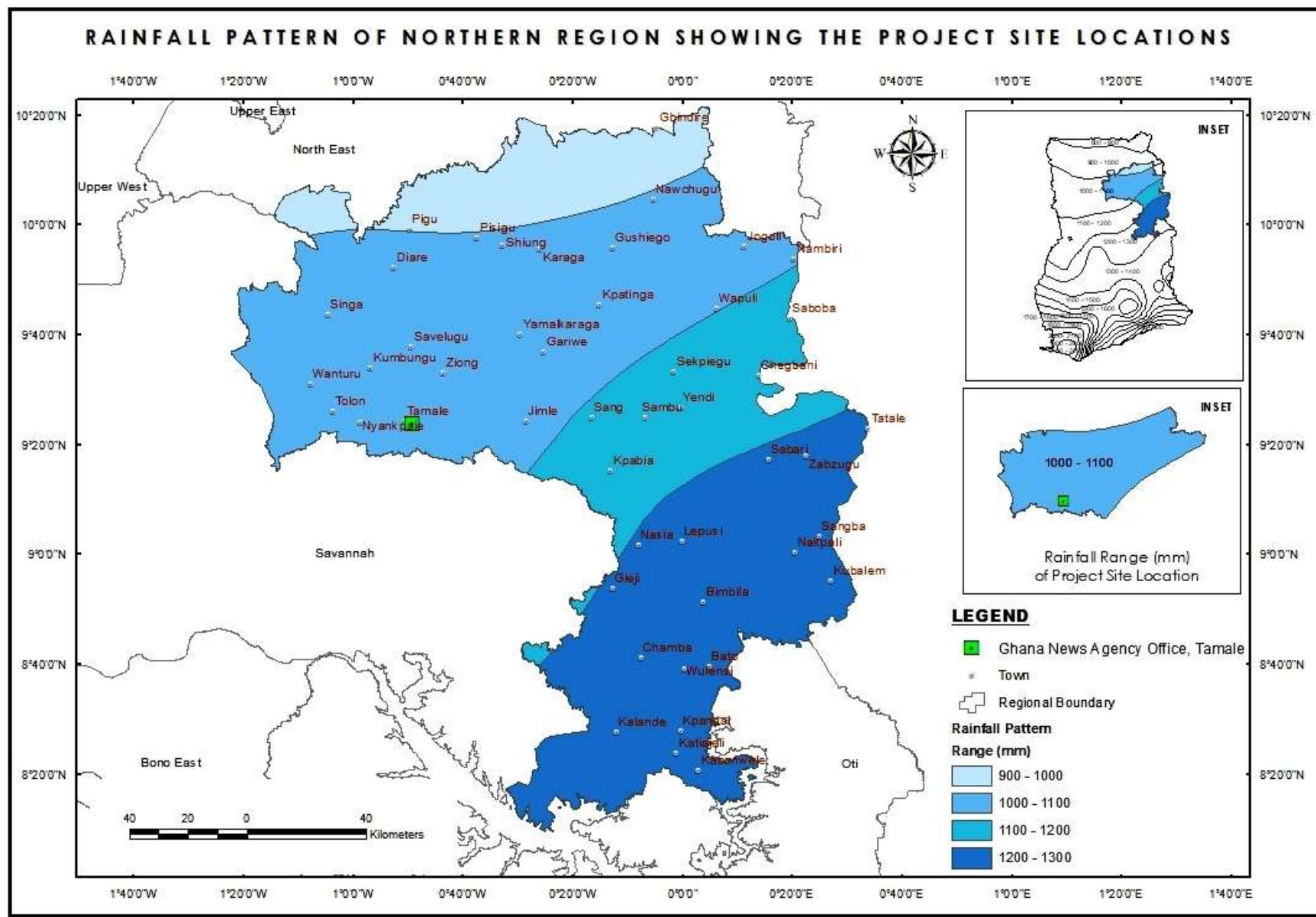
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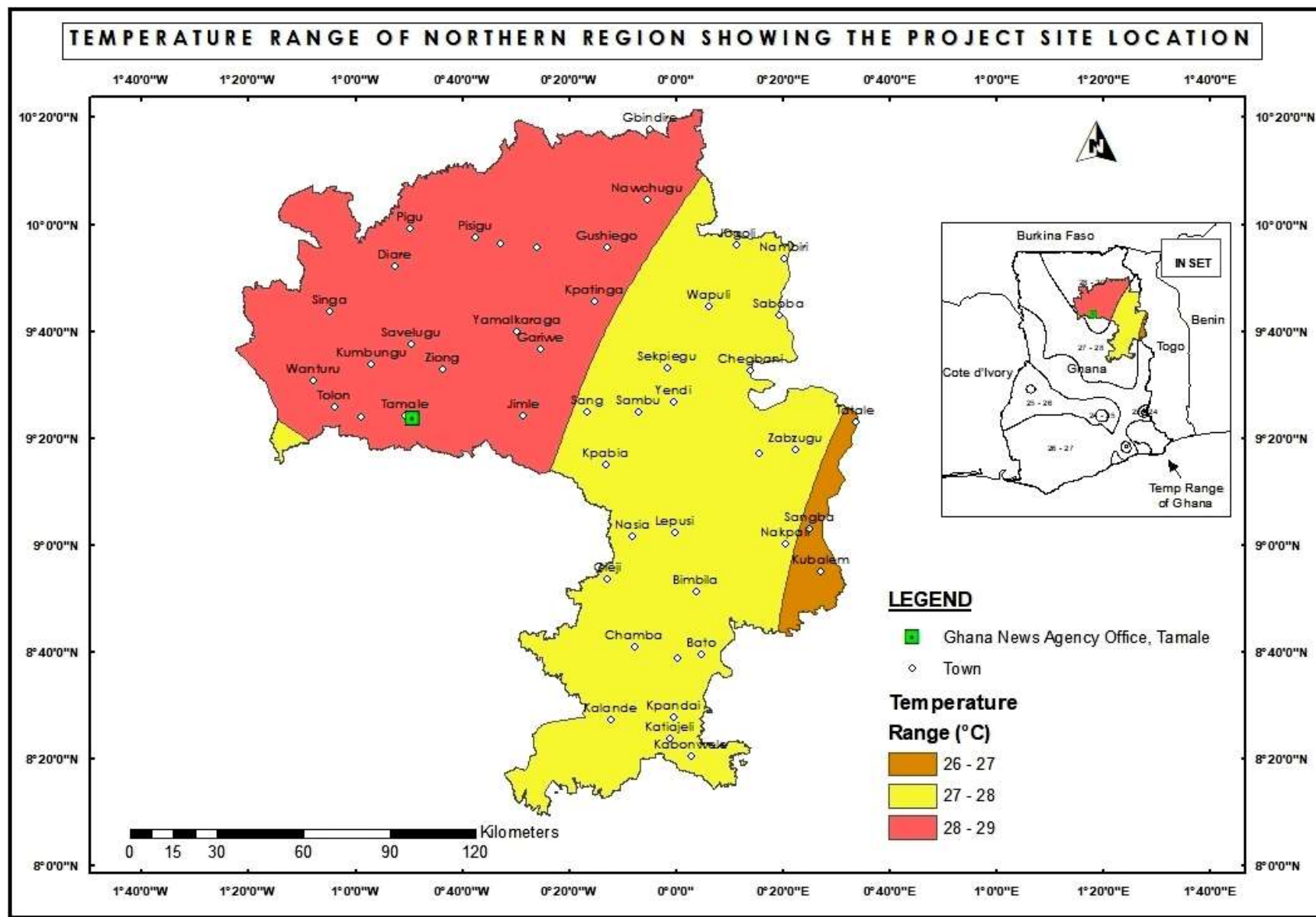


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2.1.2 Seismicity, Seismic Activities and Geo-hazards

Greater Accra Region: The project corridor of influence may be located within an active fault zone and has experienced some earthquakes in the past years. Therefore, with reference to seismic activities and geo-hazards, the project road catchment area is located within a region with non-zero factor of intensity. That is, the project corridors and the surrounding catchment enclave do lie near the very heart of seismic zone activities, according to Geo-hazards Records. The project area is considered as a region with high potential for earthquakes occurrences. Given the level of occurrence of historic seismic activities in the project corridors, the risk is still considered as high. However, a technical note can recommend that a risk/cost analysis is undertaken if it is deemed to be a concern for the proposed project sites. When a seismic activity causes an earthquake large enough to hit the project enclave, a significant warning period should be provided. It is hereby recommended within the Emergency Response Plan specific measures are outlined to manage the unlikely event of an earthquake affecting the project area. Within this, a framework should be to ensure that the following measures are instituted: (i) a warning system is developed on the proposed project corridors and all project personnel, visitors, pedestrians and project community residents are aware of its presence and purpose (ii) in the event of an alarm, evacuation measures should be instituted as far as possible (iii) all project personnel, visitors, pedestrians and closer community residents are evacuated from the project area and all buildings of the camp sites (See Fig 1.0).

Western, Ashanti, Bono, Eastern, Upper West and Northern Regions: Moving away from the Greater Region and the coastal belt towards the interior of the country, seismic activities and geo-hazards level of intensity diminishes in potential for earthquakes occurrences. According to Geo-hazards Records, the project areas outside of the Greater Region do not lie on any active fault lines leading to experiences in earthquake occurrences. Therefore, the project areas in the Western, Ashanti, Bono, Upper West, and Northern Regions almost zero factor of intensity for seismicity, seismic activities and geo-hazards in the face of earthquake occurrences (See Fig 1.0).

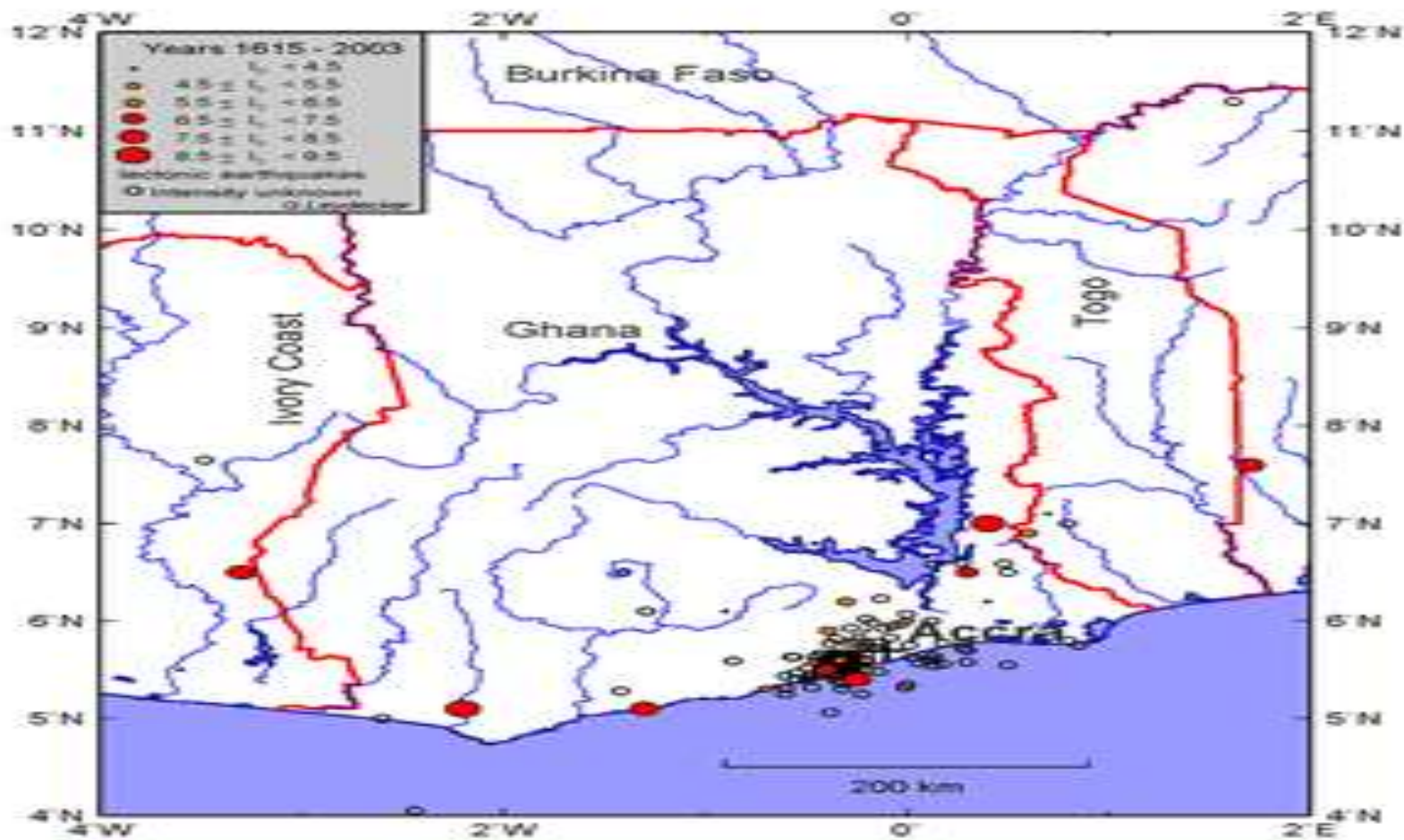


Figure 1.0 Earthquake Catalogue of Ghana (1615 – 2003)

2.1.3 Geomorphology and Geology

Greater Accra Region: Accra coastal zone has 3-type of rock in three identified geomorphic regions. They include unconsolidated and poorly consolidated rock along the western region, the Accraian series occupying the central region and the Dahomeyan series in the eastern region.

Western Region: Much of the region is covered by Pre-Cambrian rocks which he calls the “Birimian” and “Tarkwaian” series. According to him, the two rock types are important because most of the gold, manganese and diamonds mined in the country are obtained from the Birimian rocks, while the Tarkwaian provides large quantities of gold. Also, rich deposits of bauxite occur in areas covered by the two types of rock.

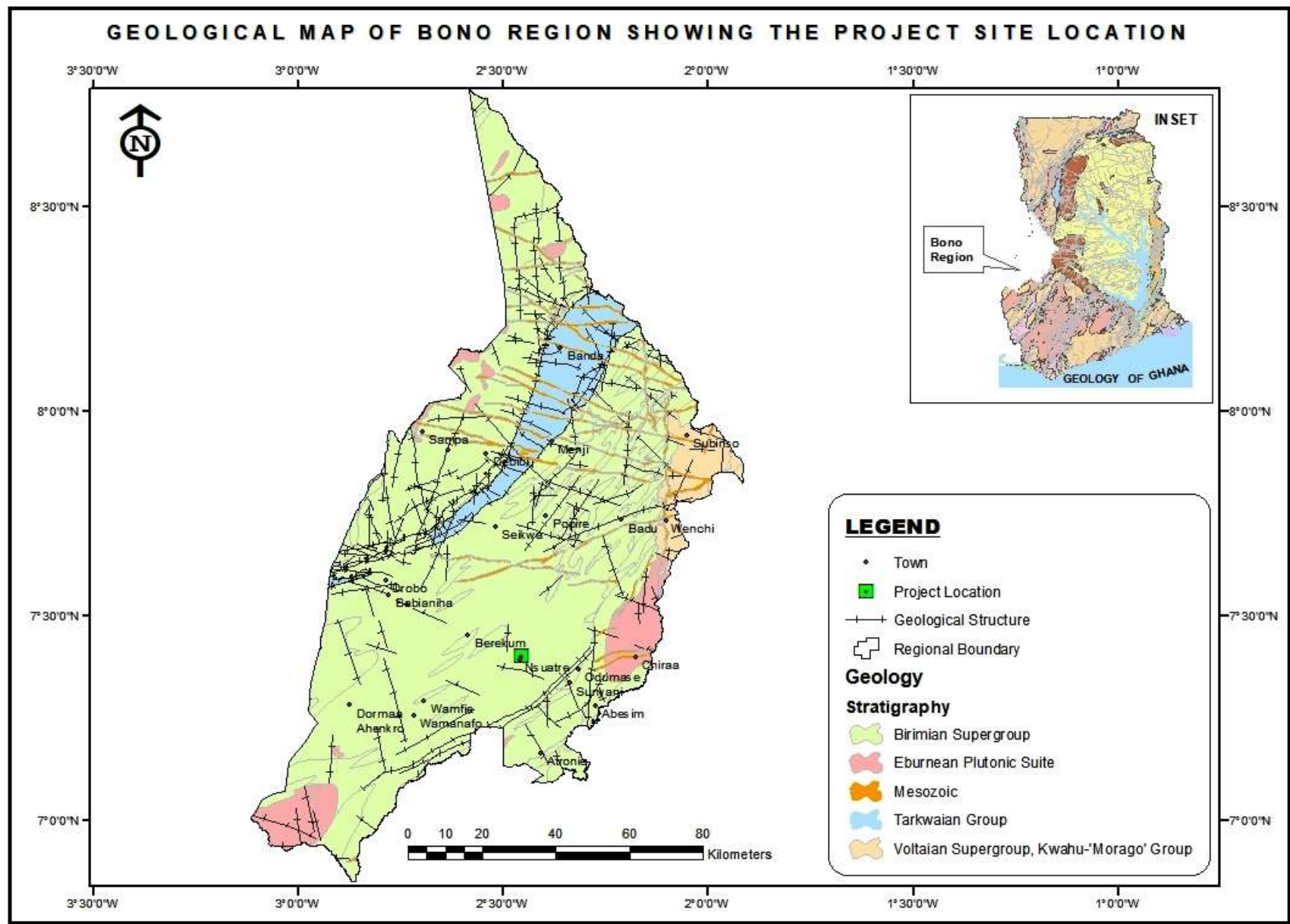
Ashanti Region: The geology is summarized as follows: About 98% of the region is dominated by Birimian and the Voltaian systems. The Birimian system covers about 54% and consists of Precambrian igneous and metamorphic rocks.

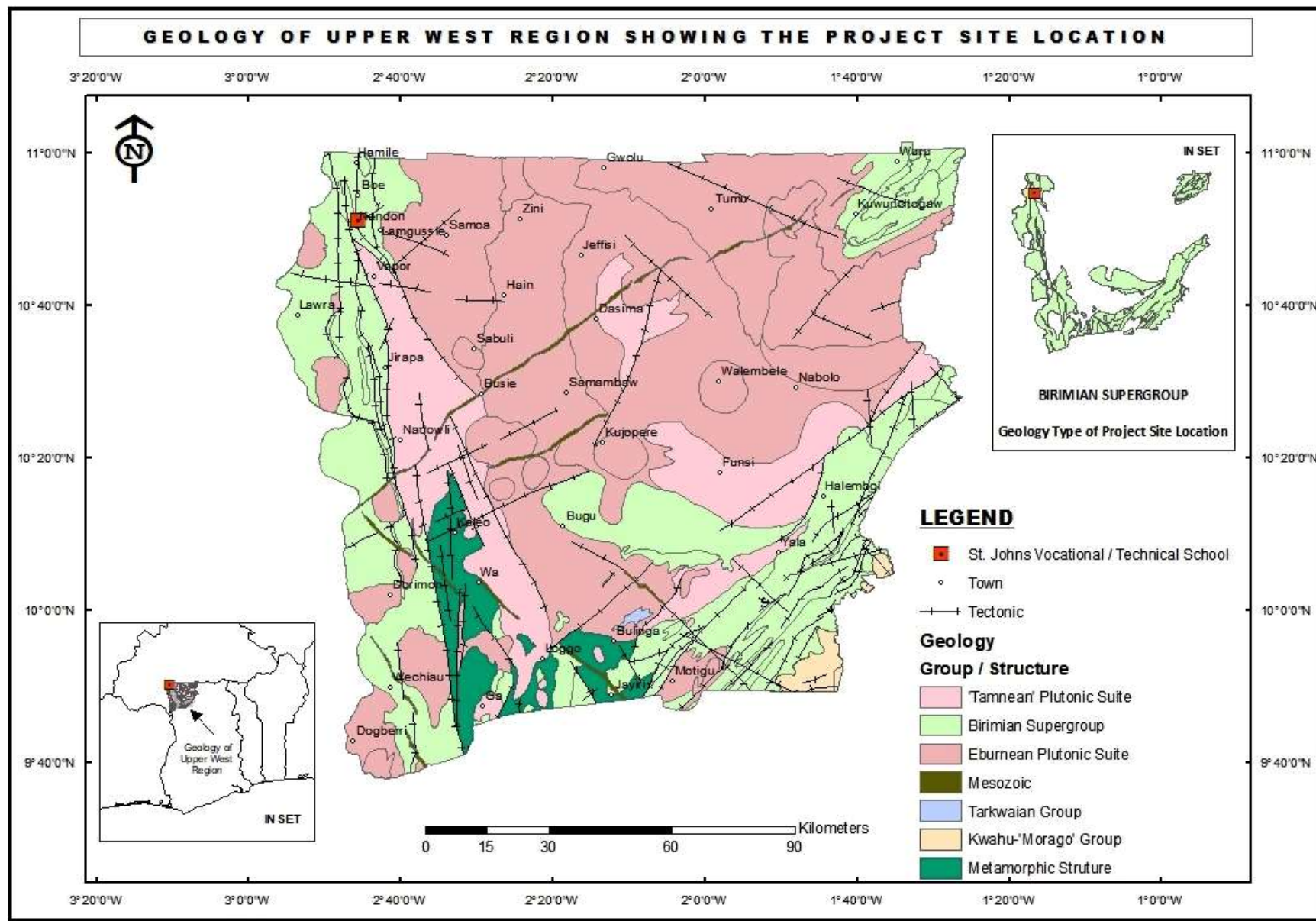
Bono Region: The geological structure to the eastern part is covered by Voltaian formation of palaeoxic origin that is quartzite, shale, arkose and mudstones, Western section exhibit lower Birimian (Middle Pre-Cambrian) origin with some intrusive of upper Birimian and lower Pre-Cambrian.

Eastern Region: The geology comprises the late Proterozoic – Paleozoic Voltaian Group (which forms a thick sedimentary cover in the eastern part of the West African Craton), the Togo Formation (which is part of the Pre-Cambrian Mobile Belt), the intrusive basin-type Ekumean granitoid (Cape Coast granite complex) and the Proterozoic Birimian Supergroup belonging to the West African Craton.

Upper West Region: The geology is part of the high plains that cover most of the North-Western part of Ghana. These are characterised by a series of wide plateaus made up of Birimian and post-Birimian granites and their weathered materials. The surfaces have been levelled by denudation.

Northern Region: The geology is “Voltaian Sandstone Basin”. It extends over an area of 112,765 sq kms, representing close to 70% of Ghana’s surface area. The rock system comprises Palaeozoic sedimentary series formed around 300-500 million years ago. Rock component includes gentle dipping or flat-bedded sandstones, mudstones, shales, limestones, silt stones, etc.





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2.1.4 Hydrogeology, Hydrology and Drainage Systems

Greater Accra Region: The main rivers that flows through the region are the Volta and Densu, in addition, there are small seasonal streams flowing mostly from the Akwapim Ridge into the sea through numerous lagoons. Because the region is bordered on the south by the Gulf of Guinea, there are ecologically very important but highly polluted lagoons and wetlands in AMA, Tema and Dangme East. The Volta estuary is located at Ada.

Western Region: Four main rivers flow through the region: Pra, Ankobra, Tano and Bia. Apart from the Ankobra, the other rivers have their source in forests in neighbouring regions and flow southwards into the sea. The Tano and Bia enter the sea outside Ghana through the La Cote d'Ivoire. River Pra has potential for hydro-power generation. These rivers do not lend themselves to use by large boats because of interruptions in many places by rapids and waterfalls. The Sutri falls on the lower Tano near Abuoso and the rapid on the Pra just south of Twifo Praso are sited to buttress the point.

Ashanti Region: The region is drained by Lake Bosumtwi (the largest natural lake in the country) and many rivers such as Offin, Pra, Afram and Owabi which serve as sources of drinking water for residents of many localities in the region.

Bono Region: Two main drainage systems could be distinguished in the Region. The Black Volta dominates the northern parts of the Region while to the south, the Tain, Bia, Pru and Tano Rivers form the main drainage basins.

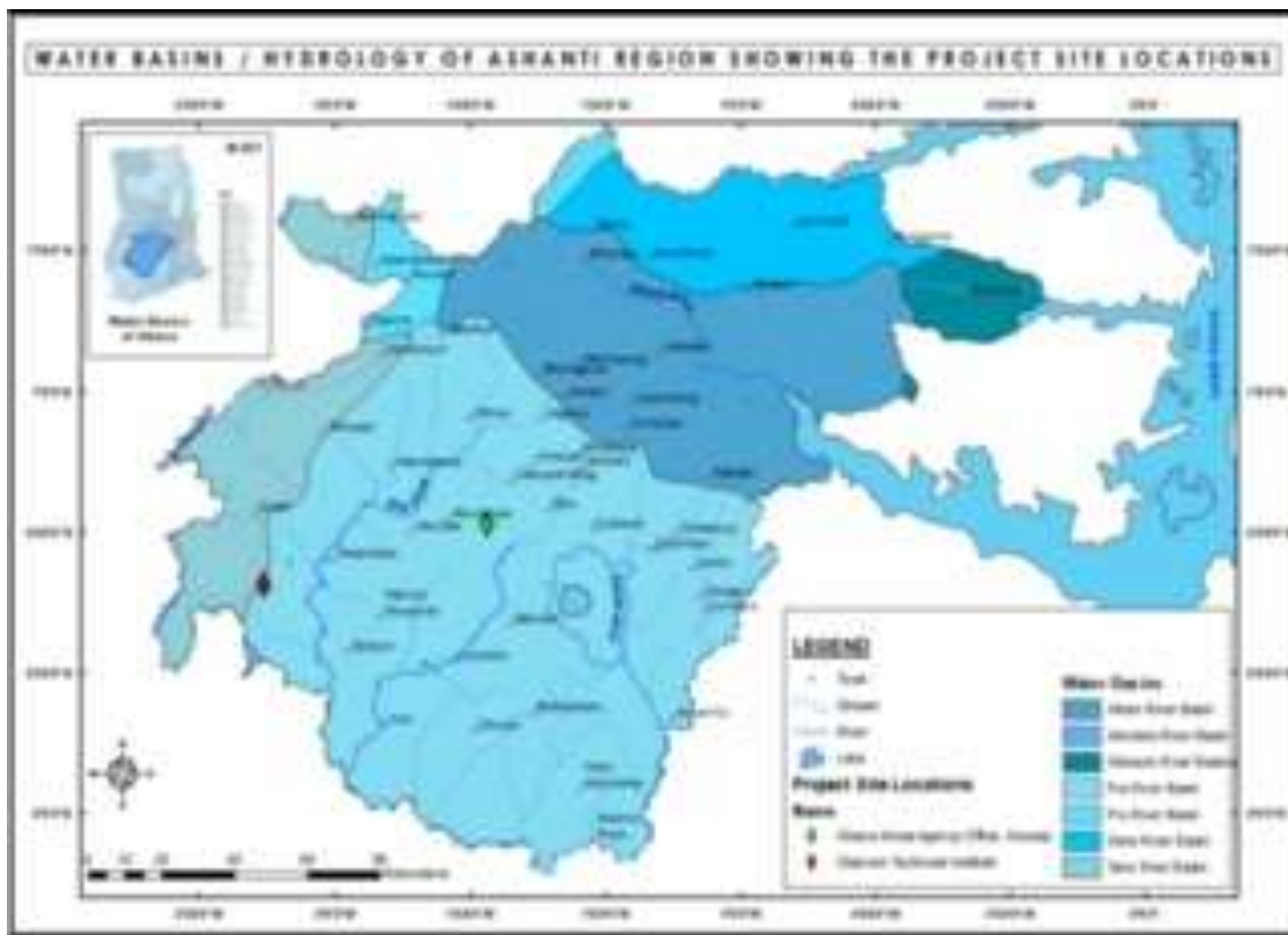
Eastern Region: The region is well drained with the Volta Lake covering large stretches of the land. By it, transportation is made possible between the southern and northern parts of the country. The suspension bridge on the lake, the Adomi Bridge, is also a major connection between south eastern parts of the country and the Greater Accra region.

Upper West Region: The area is drained by the White Volta and its tributaries like the Sissili and the Kulpawn rivers. Flooding by the White Volta is an annual problem caused mainly by the numerous small rivers, which flow into it. The present combination of heavy run-off, high evaporation and transpiration and low infiltration rates to recharge aquifers in some areas of the municipality, contribute to water deficiencies, especially to the west of the White Volta.

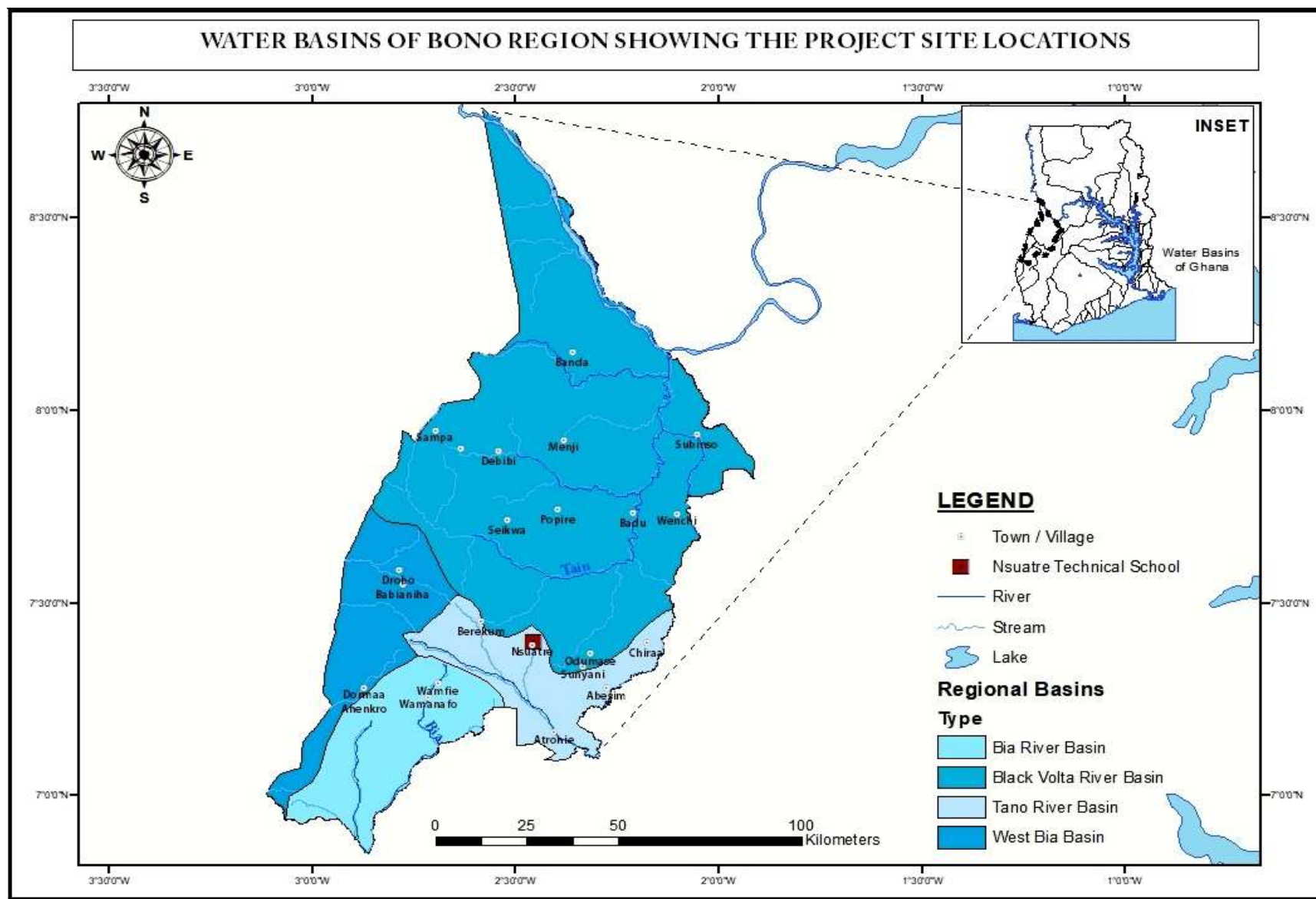
Northern Region: The region is drained by the Black and White Volta Rivers and their tributaries such as the Nasia and Daka rivers.

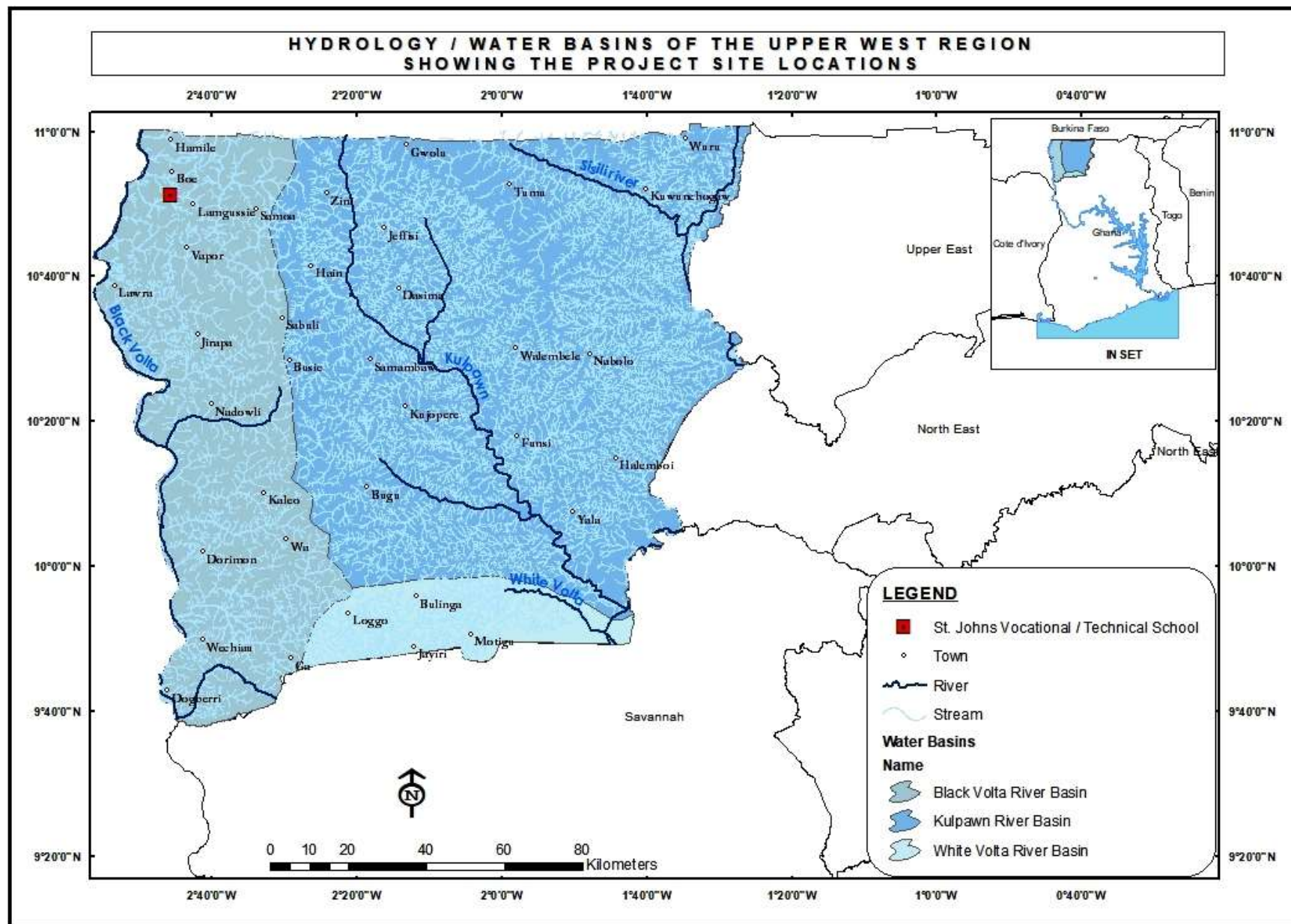


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2.1.5 Soils

Greater Accra Region: Soils are sandy and clayey loams. Alluvia soils are found at the valley bottoms and the estuary. The soils have low organic contents with shallow topsoil's which limit the capacity for crop production.

Western Region: Generally, the soil types are characterised by their geological formation. The soil types are the following: (i) soils formed over granite rocks which are generally undulating to rolling landscape; these are not suitable for agriculture, because the soils are shallow with rocky outcrops (ii) soils developed over Lower Birimian rocks which are soils of the high rainforest areas; these are deeply weathered, severely leached and strongly acidic (iii) soils identified as forest ochrosols-oxysols and totally oxysols are the two main agricultural soil groups.

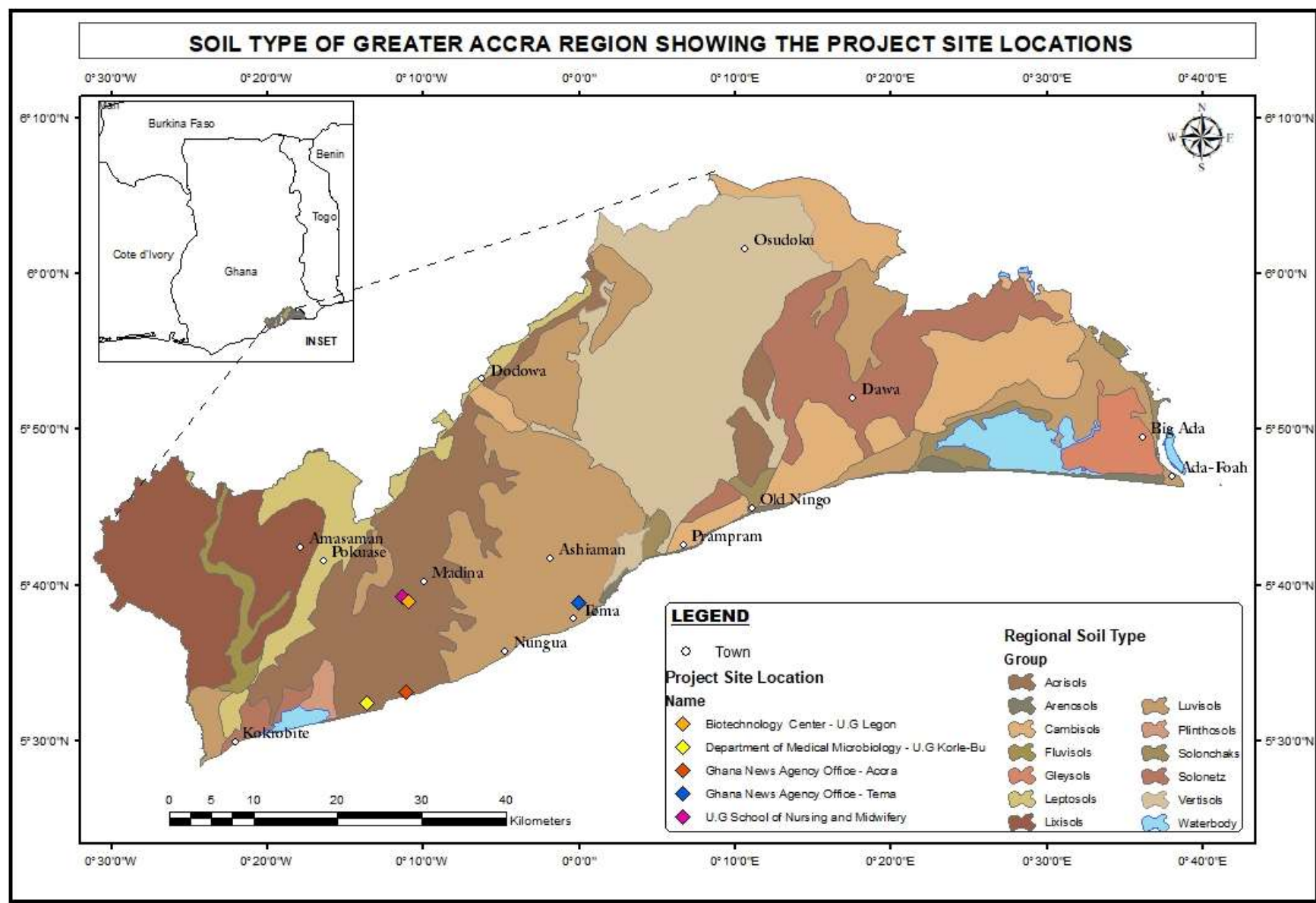
Ashanti Region: The soils are mainly of two types. Forest ochrosols are found in the southern districts whilst the savanna ochrosols are confined to the northern districts.

Bono Region: Three main soil groups are found within the region. These are (i) Forest Ochrosols, covering the south-western part (ii) Savanna Ochrosols, this stretches as wide belt from the west and gradually narrows toward the east (iii) Ground water Laterite Ochrosols Inter. This intergrades in the northern parts of the Region. Besides these, there are some small patches of Oxysols and Rubrisols. Ochrosols intergrades to the south of Sunyani.

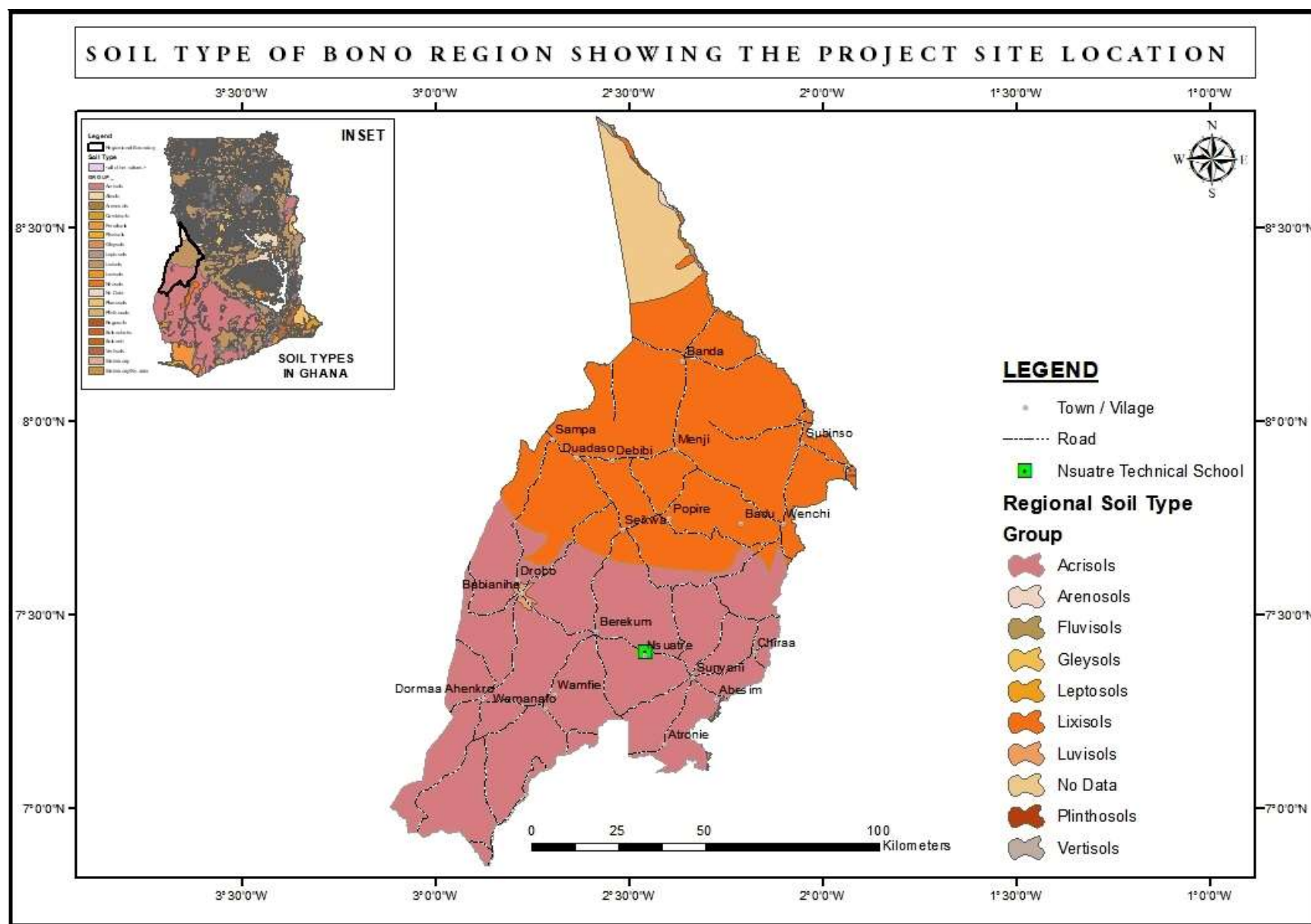
Eastern Region: The main soil type in all the areas of the region except Kwahu North (Afram Plains) is forest ochrosol and lithosol. Savanna ochrosol occurs mainly in Kwahu North and parts of Yilo-Krobo, Manya and Asuogyaman areas, with patches of forest rubisol in the New Juaben and east Akim areas.

Upper West Region: Many types of soil are found in the region. They include the Savannah ochrosols, tropical brown yeast, terrace soils found along the banks of rivers and streams, and groundwater laterites. These soil types favour the cultivation of a variety of grains, pulses and tubers and cotton. One crop commonly cultivated on the terrace soil type is tobacco.

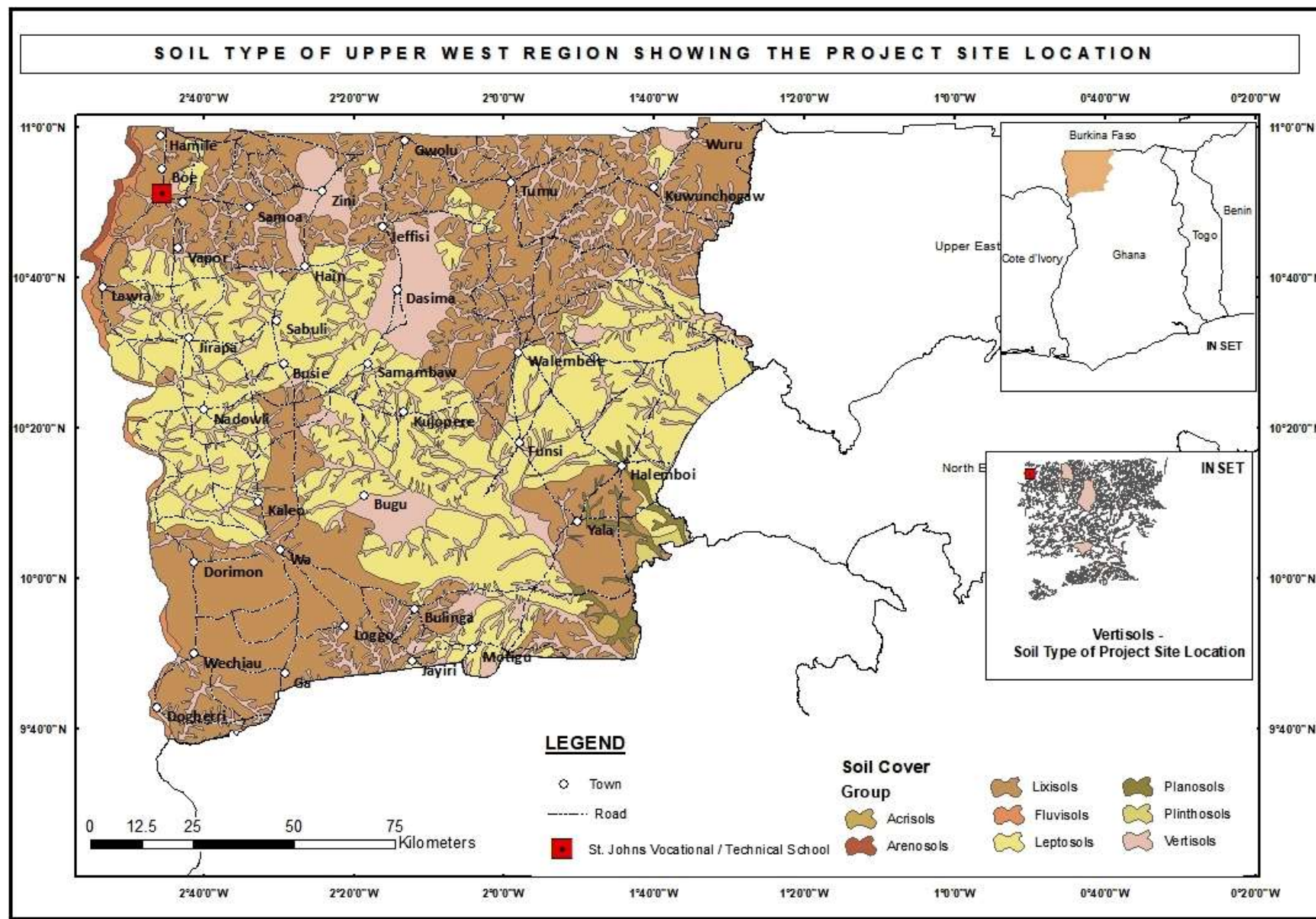
Northern Region: The predominant soil types in the Municipality are sandy, loam, sandy-loams, and clayey soils. Naturally this provides the municipality an opportunity for the cultivation of a diversity of crop types be they upland crops such as maize, groundnuts, cowpea and soybeans or valley bottom crops such as rice.



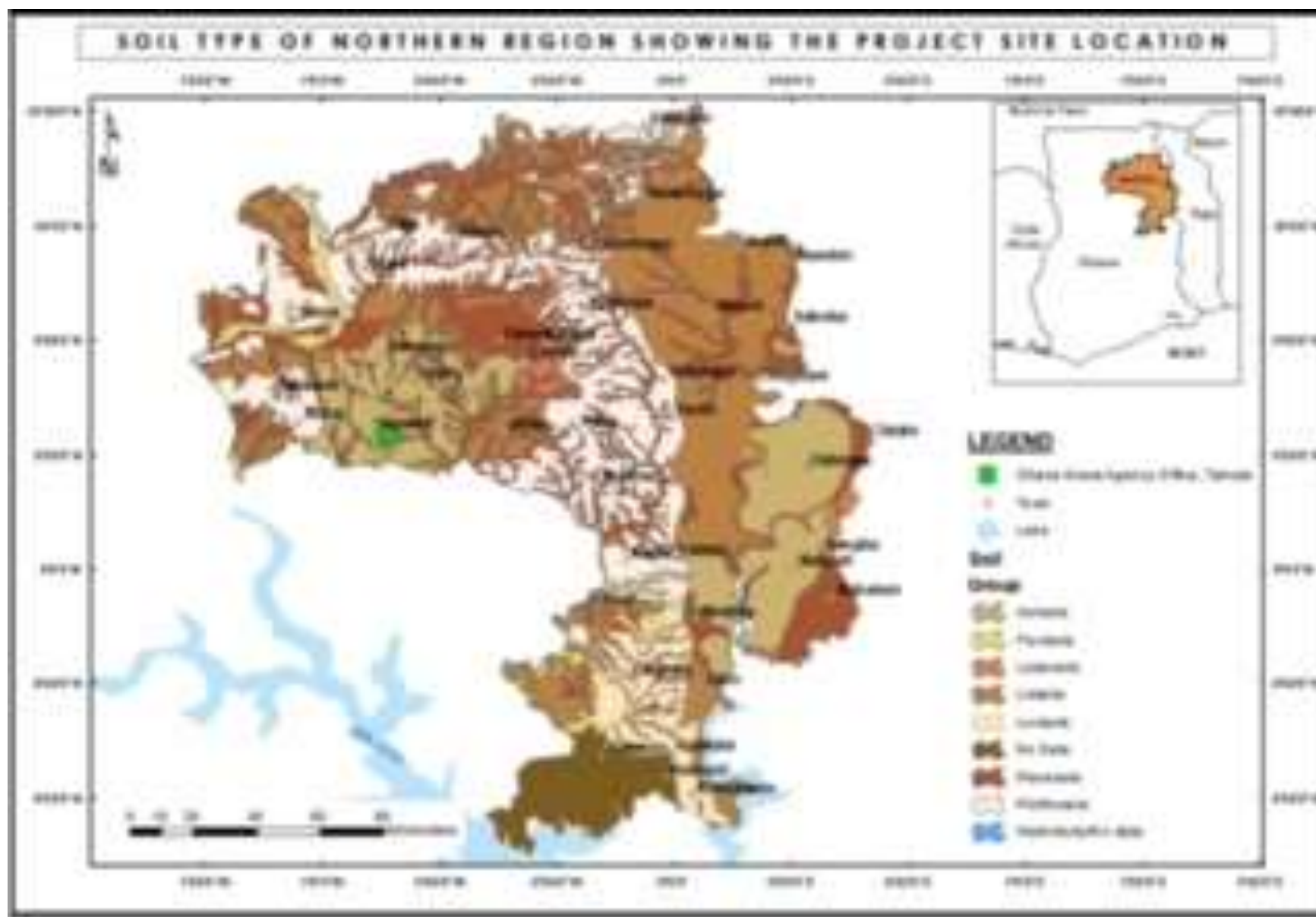
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2.1.6 Topography

Greater Region: The almost flat and featureless Accra plains descend gradually to the gulf from a height of 150m. The Topography east of the city is marked by ridges and valleys, while to the west, the low plains contain broader valleys, and round, low hills with a few rocky headlands.

Western Region: The relief of the Western region falls in the physiographic type classified as the forest dissected plateau. Much of the region is a plain between about 240 and 300 metres above sea level with isolated hills. In the North-West (covering about five districts) the topography is rugged and hilly.

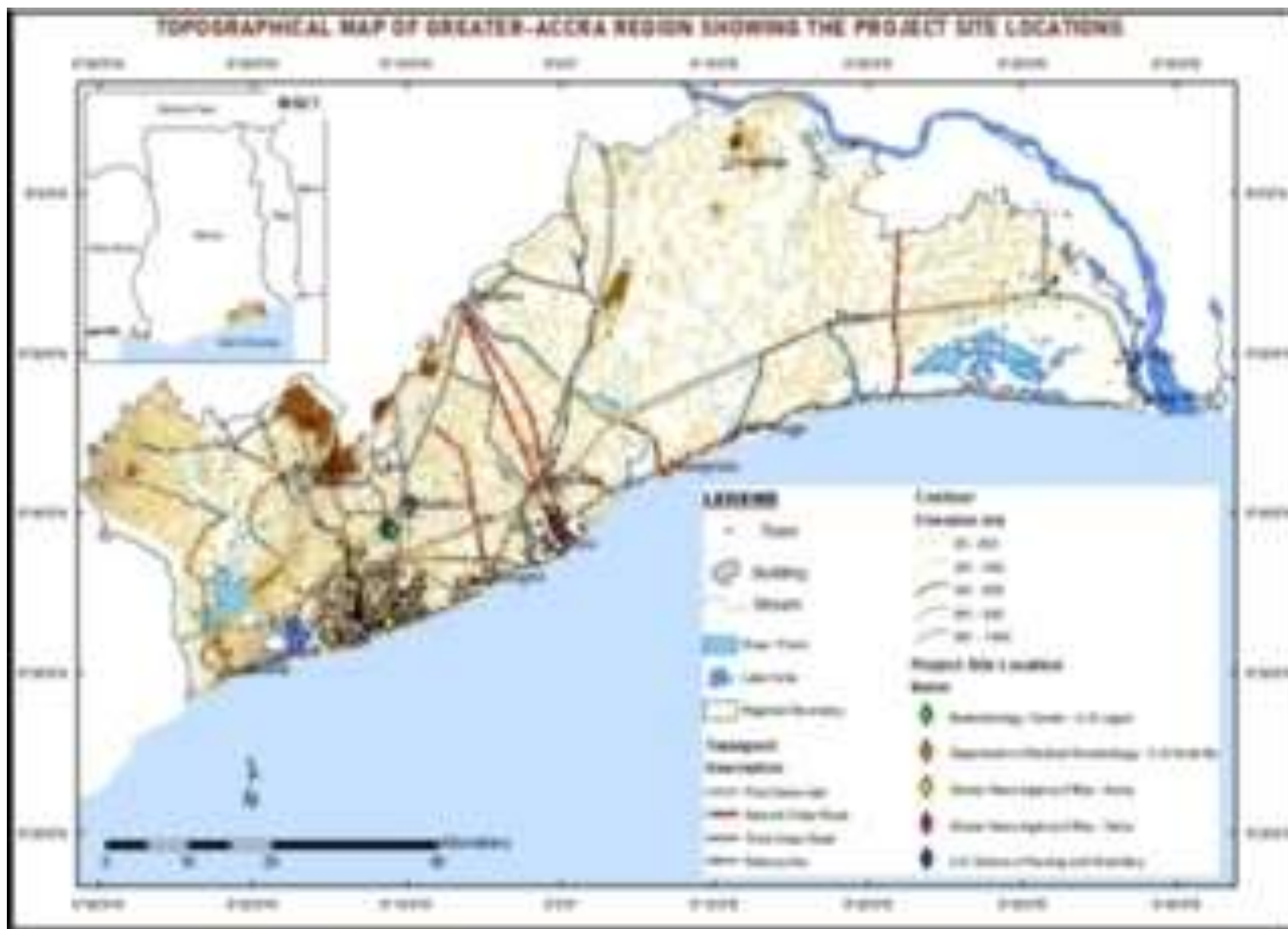
Ashanti Region: Much of the region is situated below 150 and 300 m above sea-level.

Bono Region: The southern and eastern parts have rather low elevations not exceeding 152.4m above sea level. The land then gradually rises toward the north around Wenchi, where it attains a height of 533.7m in the Buoyem Hills. Other higher elevations occur at Bosumkese 712.6m and Bonsam 643.1m. Sunyani, the regional capital has an average elevation of about 384.8m. Along the Cote d'Ivoire border the land rises at certain places, for instance Asuakwaw 483.7m, Sampa 547.5m and Banda 592.2m.

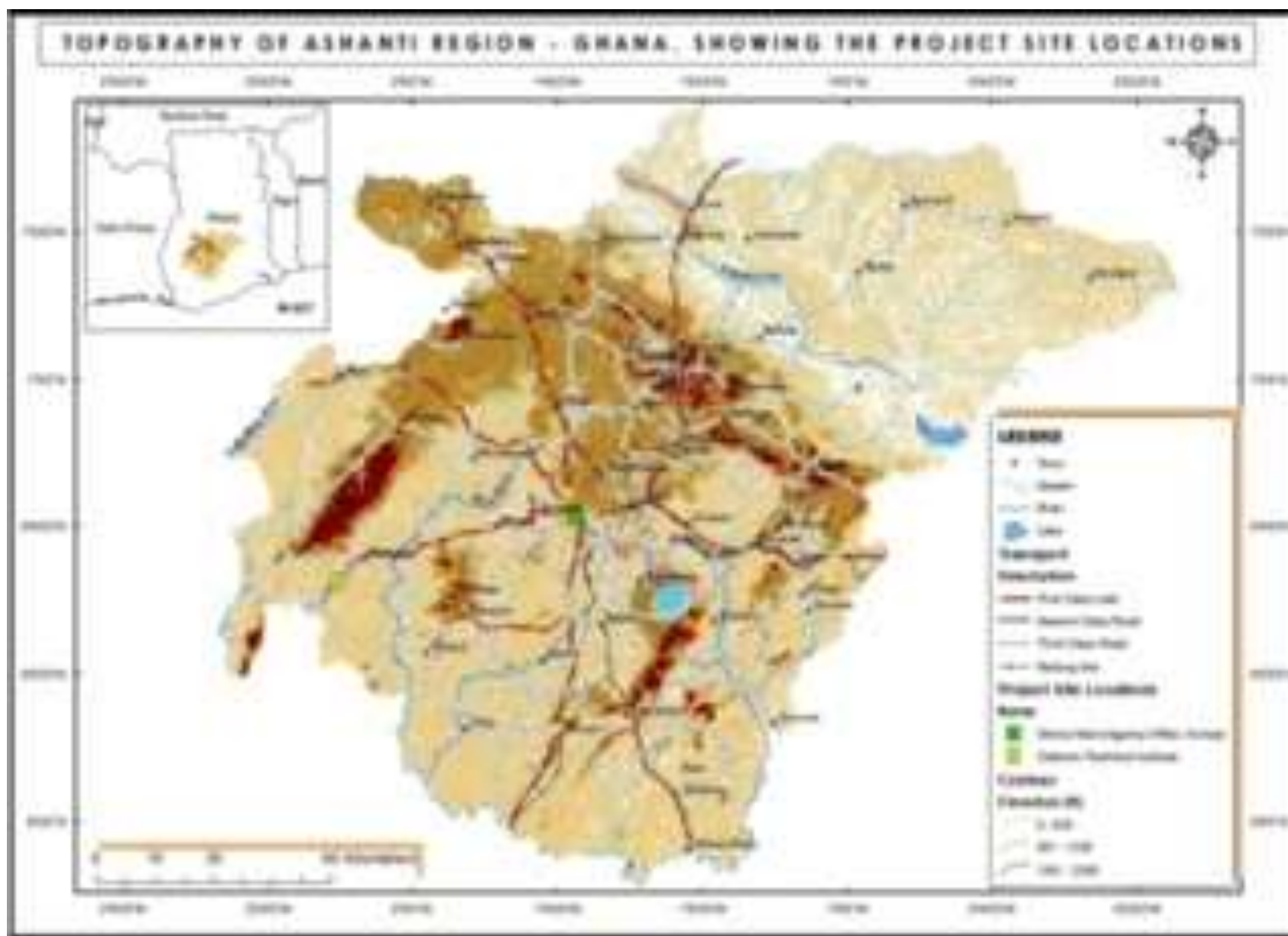
Eastern Region: There are four main topographical features: (i) the Kwahu scarp with an elevation of 759m above sea-level (ii) the Atiwa-Atwaredu Ranges near Kibi, reaching an elevation of 732m above sea-level (iii) the Akwapim highland attaining an elevation of 467m above sea level which is the southern extension of the Togo-Atakora mountain ranges (iv) the isolated hills/mountains dotting the relatively low-lying plains to the south, notably the Krobo and the Yogaga mountain.

Upper West Region: The region has an almost entirely flat topography, especially west of the capital Wa and around Lawra, better referred to as the Wa-Lawra plains. The height of the land is generally between 275m and 300m above sea level, except eastwards of Wa where the land rises over 300m above sea level. Further eastwards, the land falls to about 150m above sea level.

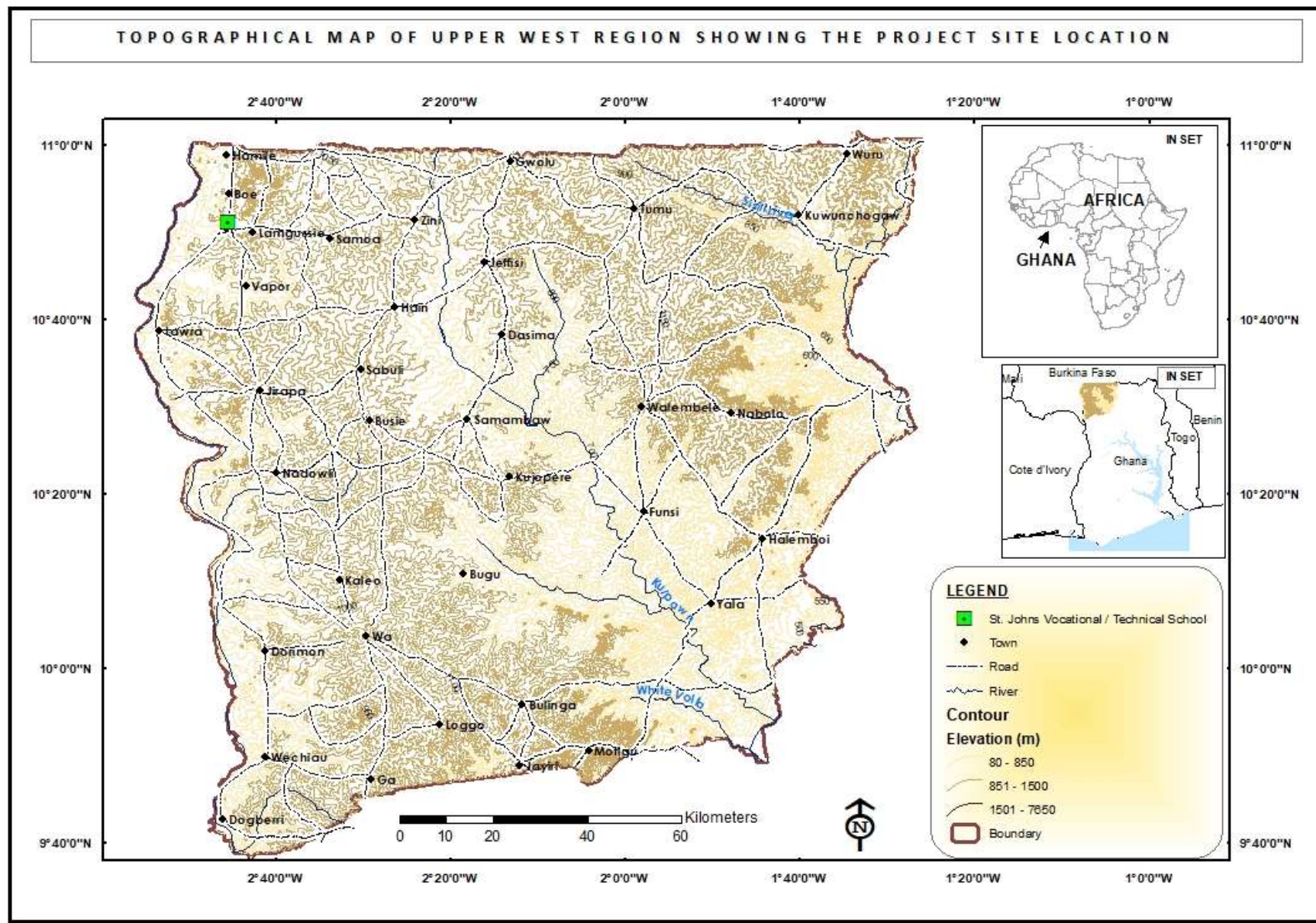
Northern Region: The land is mostly low lying except in the northeastern corner with the Gambaga escarpment and along the western corridor. The landscape is one of flat extensive plain with a height range of 60–150 meters above sea level. The lands located to the far west of West Gonja District, close to the Cote d'Ivoire border, fall within the north–south physiographic zone geographically dubbed 'Savannah High Plains'. The towns and villages located in this zone include Bole, Sawla, Tuna, Mankuma and Kuntasi.

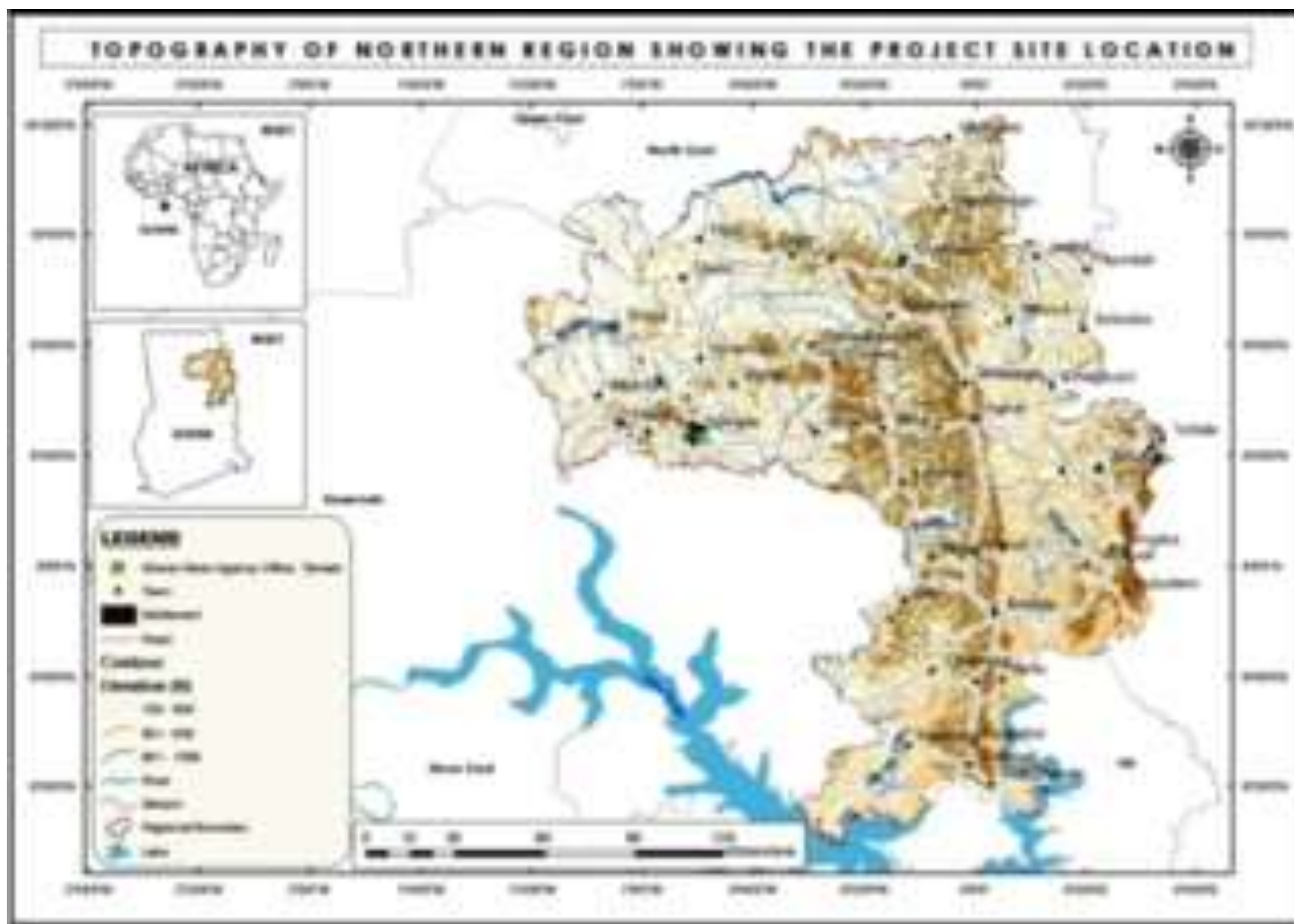


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2.1.7 Air Quality, Dust and Odor

Greater Accra, Western, Ashanti, Bono, Eastern, Upper West and Northern Regions: The vehicular traffic generated air pollution poses an intermittent threat to create severe pollution in the project corridor because of the absence of trees cape or trees canopy alignment within the the project landscape. Generally, the air ambient quality at the project sites will be punctuated by vehicular exhaust fumes, total suspended particulate and inhalable particulate matter (PM₁₀).

Moreover, the intensity of such emissions will increase with the increasing number of vehicular traffic movement during peak rush hours (6am and 8am in the mornings; 4pm and 6pm in the evenings) on market days. However, periods of reduced vehicular movements will portray lessened vehicular traffic activities hence minimal number of vehicular traffic movement translates into less exhaust fumes delivery. At such times, the air quality is slightly degraded. But these processes of deterioration are all reversible, resulting in the re-adjustment of air quality to acceptable national standards (field sampling of air quality analysis would have to be carried out and the results will be disclosed for EPA Ghana permitting purposes).

2.1.8 Ambient Noise Levels

Greater Accra, Western, Ashanti, Bono, Eastern, Upper West and Northern Regions: The increased number of vehicular traffic at project zone during peak rush hours (6am to 8am in the morning; 4pm to 6pm in the evening) on market days lead to a higher frequency in automobile engine noise pollution and auditory nuisance. Greater intensity of such noise and auditing distortions will increase during rush hour continuous idling of automobile or vehicular engines on market days within marketing centres. But less reduced occurrences in vehicular movement during non-peak rush hours, will originate slightly induced disturbances from noise pollution during non-market days within marketing centres (field sampling of ambient noise levels would have to be carried out and the results will be disclosed for EPA Ghana permitting purposes).

2.2 Biological/Ecological Aspect

2.2.1 Flora Species

Greater Accra Region: The vegetation is mainly coastal savannah shrubs interspersed with thickets. Some trees are mostly found in the Dangme west and Ga Districts.

Western Region: The vegetation types found in the region is evergreen or rain forest, semi-deciduous forest, Guinea savannah and coastal savannah. The rain forest can be found in the south-western equatorial climatic region at the extreme south-western corner of the Region. The

high temperatures and heavy rainfall facilitate all year round speedy growth of plants. The trees of the forest are evergreen as only a few of the top two out of three layers shed their leaves. The semi- deciduous forest which covers a larger part of the region is similar to the rain forest in its structure except a much higher proportion of trees shed their leaves. Like the rain forest, the trees do not all shed their leaves at the same time, and so is never bare of leaves. Human activities such as farming have led to the destruction of most of the virgin forest, hence only secondary forest currently remains. For most part of the Jomoro district, the guinea savannah covers a narrow strip along the south-western coast. The yearly rainfall is barely below 1000mm or 1250mm. The dry season is intense and humidity is low. The coastal savannah covers the coastal areas of Shama district and parts of the coastal areas of Sekondi-Takoradi Metropolis. The vegetation is made up of thick scrub. The area has the lowest amount of rainfall in the country but has high humidity throughout the year.

Ashanti Region: More than half of the region, the south-western part, lies in the semi-equatorial forest zone (moist deciduous forest) and a smaller north-eastern part lies in the savanna zone. The guinea savanna consists of short deciduous and fire-resistant trees. Riverine forests also occur along the Afram River and streams of the savanna zone.

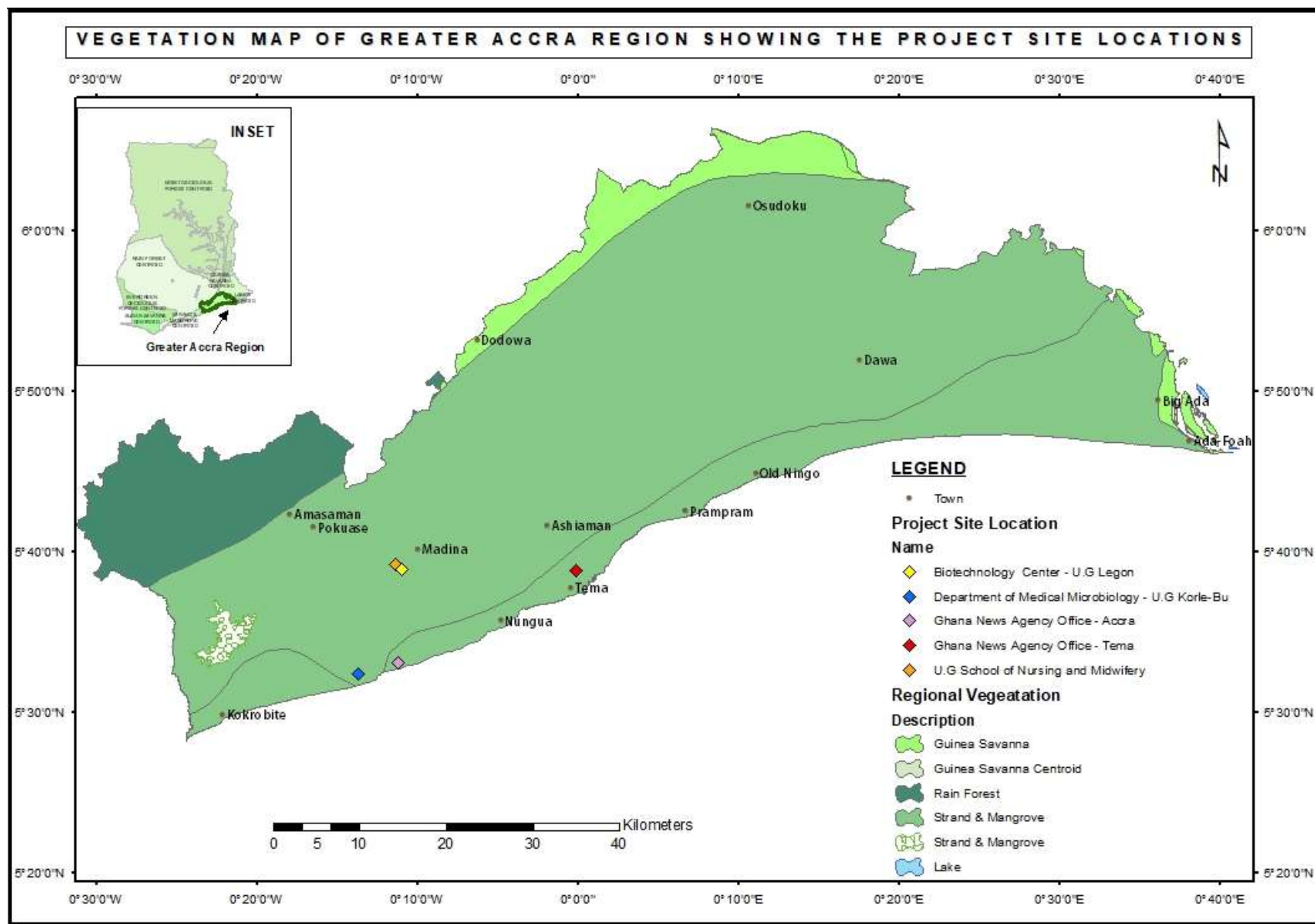
Bono Region: The predominant vegetation zones are the moist semi-deciduous forest, transitional and the Guinea Savanna woodland roughly representing the southern, middle, and northern parts of the region respectively. The forest belt is mainly found to the south and south-western parts of the Region while the savanna wood land predominates in the eastern half of the northern third of the region.

Eastern Region: Three main vegetation zones: (i) semi-deciduous rain forest covering the southern and central portions of the Region (ii) transitional savanna zone covering the northern parts behind the Kwahu Scarp and (iii) coastal savanna covering the Eastern fringes behind the Akwapim Range. The forest and savannah type of soils are suitable for the cultivation of a variety of crops.

Upper West Region: The Upper West Region can be subdivided into two agro-ecological zones: the guinea savanna zone in the southern part and the Sudan savanna zone in the northern and northeastern part. The determining factor for this subdivision is the rainfall pattern. The borderline between the two zones runs approximately half way between Jirapa and Nadowli. The **Sudan savanna** is characterized by scattered trees and a sparse ground cover of grasses. The trees found include Baobab (*Adansoniadigitata*), dawadawa (*Parkiaclappertoniana*), shea (*Butyrospermumparadoxum* subsp. parkii), *Acacia albida* and species of *Albixia*. In the guinea savanna, the vegetation is characterized by a higher density of pro-climax tree species. The predominant trees are *Isoberinadoka*, *Isoberinadalzieli*, *Daniella* spp., mahogany (*Khayaseneqalensis*) and other *Khaya* spp., ebony (*Diospyros mespilliformis*) as well as dawadawa (*Parkiaclappertoniana*) and shea trees (*Butyrospermumparadoxum* subsp. parkii). The last two are very common, as they are protected for their economic value. In the more densely populated areas they are almost the only wild trees to be found. During the wet season, the south has a cover of bunch grasses, notably *Andropogon* and *Cymbopogon* spp. and forbes. As a result of annual bush fires, the vegetation has been degrading in both areas. In the northern part of the region, where slopes

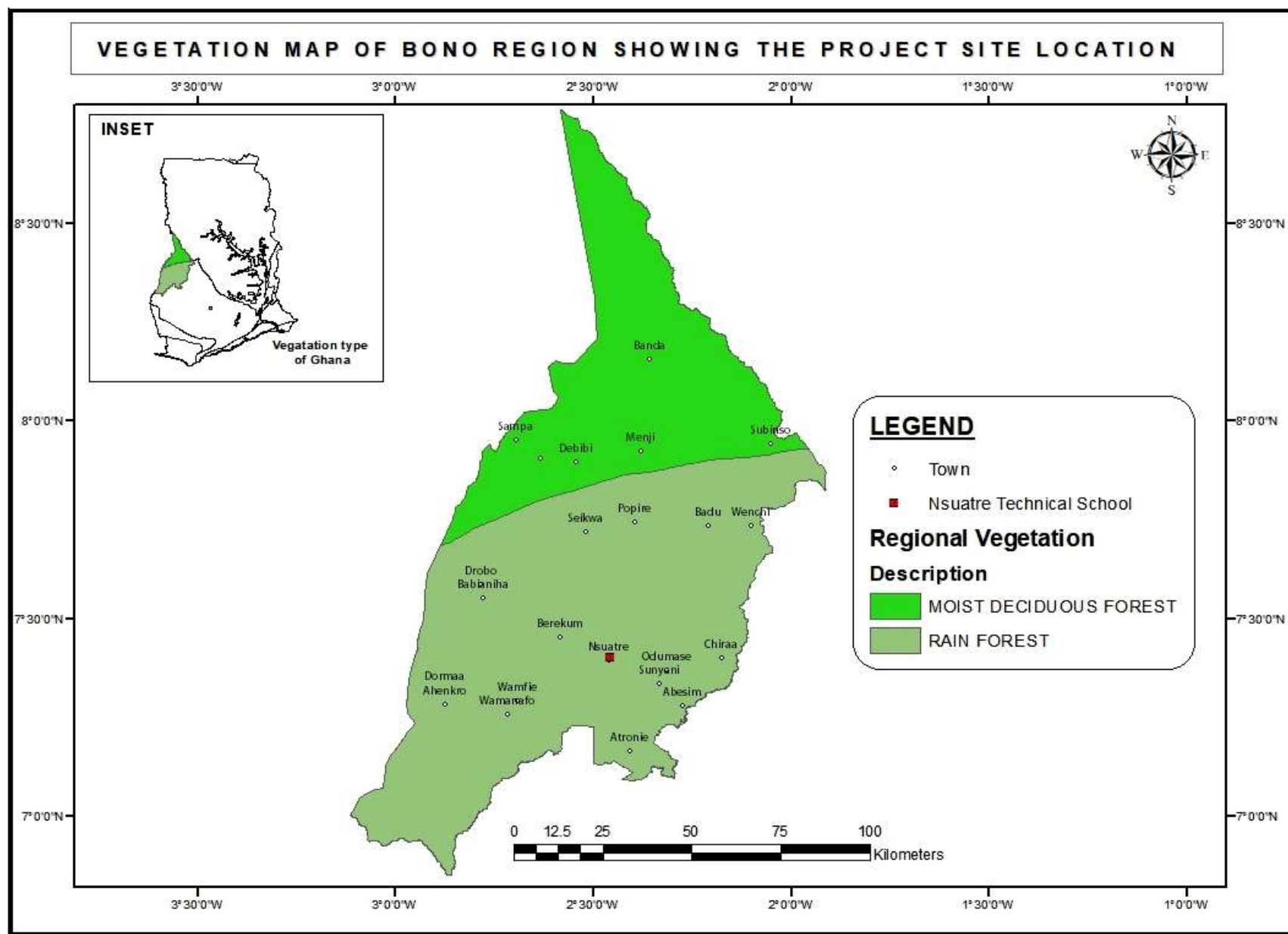
are steeper and population pressure is higher, severe soil erosion is becoming a problem. However, primary vegetation can still be found in the south of the region, especially east of the Kulpawn River.

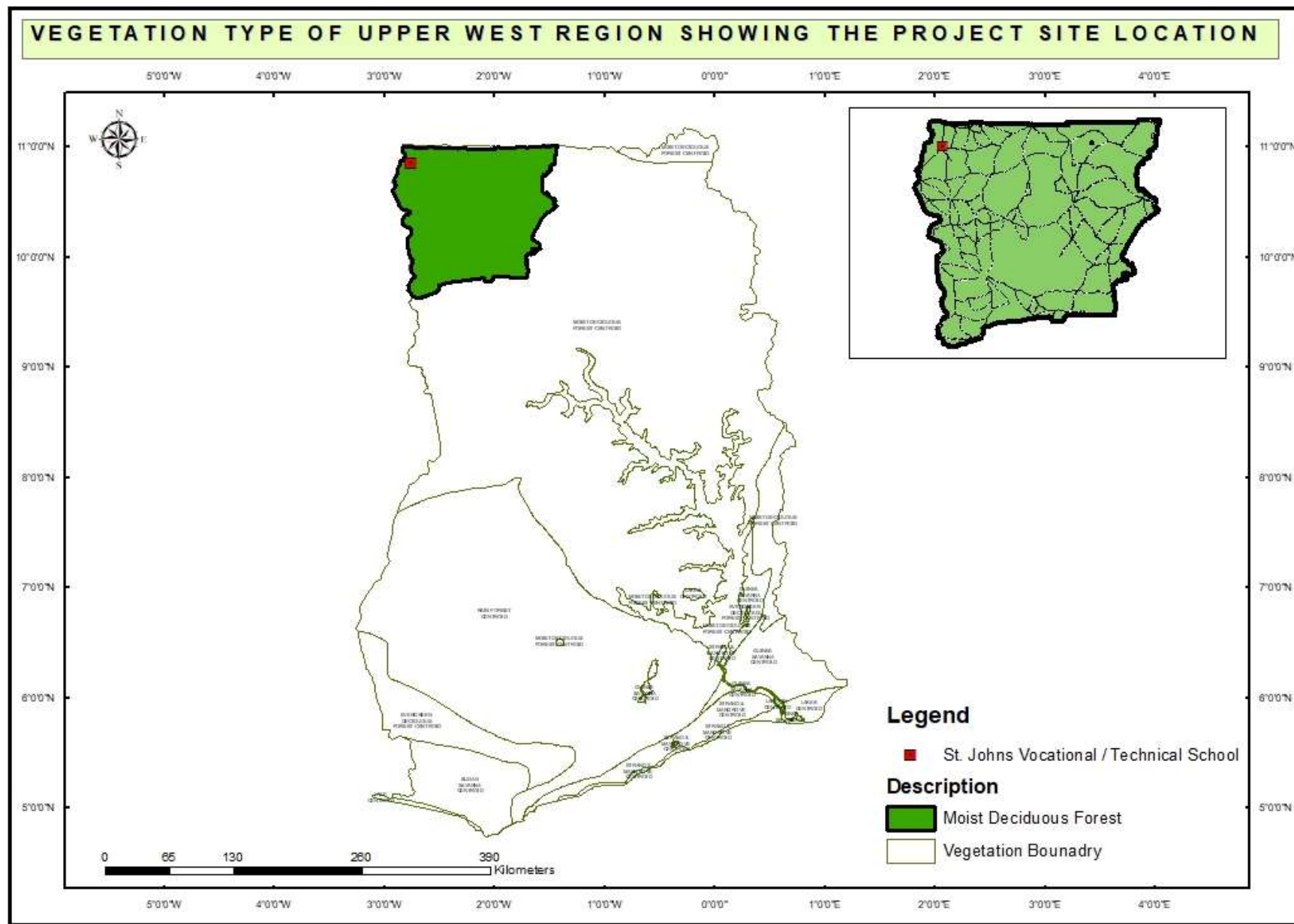
Northern Region: The main vegetation is grassland, interspersed with guinea savannah woodland, characterised by drought-resistant trees such as acacia, (*Acacia longifolia*), mango (*Mangifera*), baobab (*Adansonia digitata* Linn), shea nut (*Vitellaria paradoxa*), dawadawa, and neem (*Azadirachta indica*).

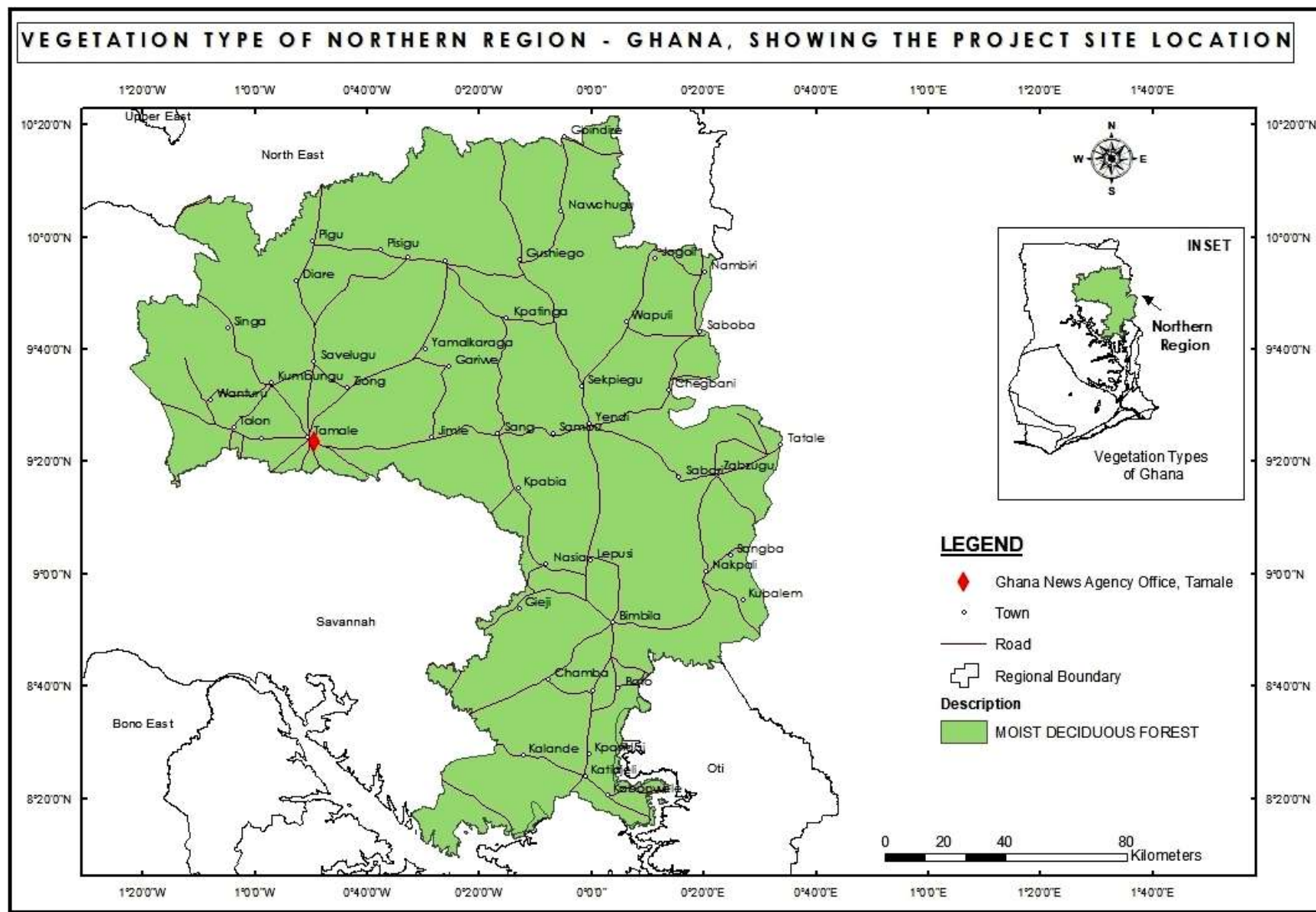


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2.2.2 Fauna Species

Greater Accra Region: There are no known resident species of endangered or threatened fauna within the project zone of influence due to the built-up environment. However, beyond the project zones, the natural habitat provides the necessary congenial atmosphere for various types of fauna species such as monkeys, antelopes, deers, squirrels, grasscutters, birds.

Western Region: The coastal marine resources of the Region include various species of pelagic and demersal fishes as in the coastal waters of other parts of the country with sardinellas (*Sardinella aurita* and *Sardinella madarensis*) as the most important. The wetlands in the Region are dominated by freshwater species notably *Chrysichthys nigrodigitatus*, and are nursery grounds for juveniles of some marine fishes. Invasive species found in the Region are the Water hyacinth *Eichhornia crassipes* in the Tano/Aby/Ehy lagoon and the seasonal blooms of the filamentous green alga *Enteromorpha flexuosa* in the coastal waters from Jomoro to Nzema East which constitute a nuisance to fishing and other economic activities. The sandy shores of the Region are important nesting areas for endangered marine turtles; dolphins are landed at Dixcove and Axim and manatees could be found in the Tano/Aby/Ehy lagoon system while the Amanzule wetlands and Cape Three Points Forest Reserve are Important Bird Areas.

Ashanti Region: Forest wildlife, including monkeys, buck and clouds of butterflies, can be seen all over the region. Bats, birds of prey, parrots and owls are other examples of fauna species spotted in the region.

Bono Region: Mona monkeys of rare breed, including species of antelopes and varieties of birds have been recorded in this region. There is a colony of hippopotamus under conservation status in the region.

Eastern Region: Large mammals have been recorded in the region. About, 22 species were recorded with 12, 14 and 15 species observed from Atiwiredu, Asiakwa South and Asiakwa North respectively. Of the species recorded, Pel's flying squirrel (*Anomalurus pelii*) is listed as Near Threatened, Yellow-backed duiker (*Cephalophus silvicultor*), Black duiker (*Cephalophus niger*), Bay duiker (*Cephalophus dorsalis*), Maxwell's duiker (*Cephalophus maxwellii*) and Royal antelope (*Neotragus pygmaeus*) are listed as Lower Risk/Near Threatened, and West palm squirrel (*Epixerus ebii*) is listed as Data Deficient on the IUCN Red List. In addition to these species of international conservation concern, the African civet (*Civettictis civetta*), African palm civet (*Nandinia binotata*), Long-tailed pangolin (*Uromanis tetradactyla*) and Yellow-backed duiker (*Cephalophus silvicultor*) are nationally protected in Ghana. Many illegal activities, especially related to hunting, have been observed. Moreover, deforestation along trail lines being constructed for mineral exploration and occasional illegal farms could be a significant factor affecting the conservation of large mammals in Atewa area.

Upper West Region: There is sanctuary for many endangered species of wildlife like hippos, and water bucks, elephants and birds of spectacular plumage. Moreover, there is seasonal migration and visits of elephants and other species from Mole. There are records for the spotting of hippos, bats, chameleons, hedgehogs and many different types of lizards and snakes, including places to see birds with over 200 species identified and new sights seen regularly.

Northern Region: Elephant, buffalo, kob, warthog, waterbuck, bushbuck, roan antelope, hartebeest, duikers, oribi, patas monkey and green (vervet) monkey are the species commonly seen in the region. There are over 90 species of mammals recorded in the region.

2.2.3 Protected and Critical Habitats

Greater Accra Region: The Shai Hills Resource Reserve was declared Forest Reserve in 1962 with total area of 47 square kilometres (4,700 ha; 18 sq mi) which was later expanded to 51 square kilometres (5,100 ha; 20 sq mi) in 1973 till present. It was made a Game Production Reserve in 1971. The protected area was home to the Shai people before they were ejected by the British in 1892, remains of Shai peoples works can still be found at the reserve. It is covered with grassland and low dry forest vegetation. There are nearly 400 plant species spread on the 5 separate hills at the Shai Hills Resource Reserve. There are nearly dozens of primary animal species including antelopes, bats, birds (such as violet Turaco, Paradise Flycatcher, Green Turaco Red-billed Hornbill, Yellow-fronted Tinkerbird, and Red-necked Buzzard), baboons, cats, duiker, guinea fowls, kobs, green monkeys, monitor lizards, African python, royal python, and zebras.

Western Region: Nini Suhien National Park and Ankasa Resources Reserve are twin Wildlife Protected Areas that are in the wet evergreen forest area of the Western Region of Ghana. These areas are so rich in biodiversity that about 300 species of plants have been recorded in a single hectare. The areas are largely unexplored but 43 mammal species including the bongo, forest elephant, 10 primate species including the endangered Dina monkey and the West African chimpanzee have been recorded. Bird fauna is also rich. The reserves offer very good example of the west evergreen forest to the prospective tourist. The reserve is not yet developed for large-scale tourism. For light tourism overnight facility is available at Elubo, which is, only 10 minutes drive away from the reserve. Tourists can only go on foot safaris. Accra to Elubo is by a 325km first class international road.

Ashanti Region: Kogyae Strict Nature Reserve is a strict nature reserve, located near Kumasi, Ghana. The Kogyae Strict Nature Reserve was established in 1971 and has an area of 386 km². Animals present on the reserve include African buffalos, African civets, civet cats, and monkeys, as well as 85 species of birds. Bobiri Forest Reserve and Butterfly Sanctuary is an ecotourism centre in Ghana and the only butterfly sanctuary in West Africa. It has about 400 species of butterflies. It is located on the main Accra - Kumasi Highway at the village of Kubease, about 30 kilometres

from Kumasi. The region is endowed with a spectacular geography that includes lakes, waterfalls, scarps, forest reserves, national parks, birds and wildlife sanctuaries, such as Owabi Arboretum and Bomgobiri.

Bono Region: **Nchiraa Waterfalls** wedged between the mountains of the Nchiraa Settlement, the Nchiraa waterfalls is located 30 kilometres North of Wenchi. The tourist is offered a hiking adventure on a rocky and challenging footpath that leads to the waterfalls. The existence of other natural and cultural tourism within 10 kilometers radius makes the tour package exhilarating. These includes the Wurobo Ancestral Caves which is located about 8 kilometers from Nchiraa Settlement. The caves are believed to be the original dwelling place of the people of Nchiraa. **Duasidan Monkey Sanctuary** is located 10 kilometers Southwest of Dormaa Ahenkro. This sanctuary hosts a rare breed of Mona monkeys. The tourist is welcomed by the presence of these monkeys as you enter their forest-like abode. Bamboo trees form a canopy in the middle of the forest, which serves as a resting grounds for visitors. Monkeys can be seen swinging up and down tree branches and peeling bananas left out for them. It is quite a remarkable sight as the visitors get the chance to see how monkeys carry their babies on the move. **Bui National Park / Bui Dam** covers 1,821 kilometers square and covers part of the Black Volta River, the Bui National Park is endowed with several species of antelopes and a variety of birds. It is also known for its hippopotamus population. The tourist can take a cruise on the Black Volta River through the National Park. The Bui Dam is located at the base of the Banda Mountains, the dam was built to improve Ghana's energy requirements.

Eastern Region: Aburi is located on the Akwapim-Togo Range of Ghana. It's just three quarters of an hour drive from Accra, the capital of Ghana. The cool mountainous weather of Aburi makes it a destination for people who love the cool side of life. Located in this cool tranquil environment is the Aburi Botanical Gardens. The garden covers a total land area of about one hundred and sixty (160) acres. However it is only three (3) acres that have been developed and the remaining serving as a botanical reserve. Atewa Range Forest Reserve, in the eastern region of Ghana, is internationally recognized as one of the highest priority ecosystems in West Africa for its high species diversity, high levels of endemism and great hydrological importance. The forest was gazetted as a National Forest Reserve in 1926, then subsequently a Special Biological Protection Area in 1994, a Hill Sanctuary in 1995 and as one of Ghana's 30 Globally Significant Biodiversity Areas (GSBAs) in 1999. It is also recognized as an Important Bird Area.

Upper West Region: Gbelle Game Reserve, located 17km south of Tumu, is an important sanctuary for endangered species of wildlife, as well as hippos, elephants and bucks. Birdwatchers consider this an important habitat for indigenous and migratory birds.

Northern Region: Mole National Park covers approximately 4,840 km² and is the largest and most prestigious protected area in Ghana under the aegis of the Wildlife Department. Mole National Park was the first Wildlife Protected Area to be established in Ghana. The Park lies within two physiographic regions - 65% lies within the Voltaian sandstones basin and 35% within the savannah high plains. The topography is generally

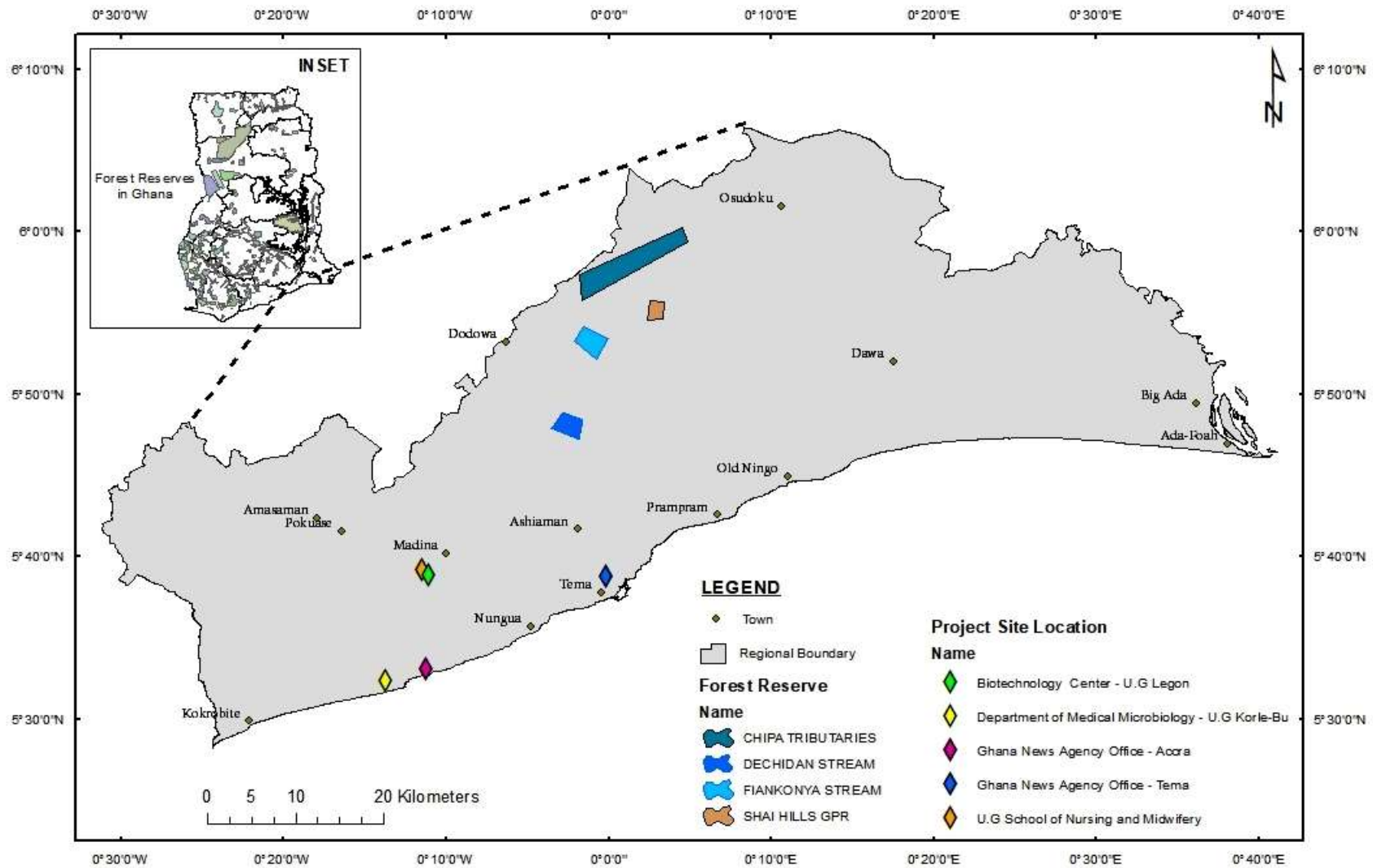
undulating with flat topped hills which is dominated by the Konkori scarp that runs north-south through the park and reaches up to 250m. The Park forms part of the Volta River catchment and numerous rivers cross or originate in it to drain into the White Volta River. Mole National Park represents a fairly undisturbed guinea Savannah ecosystem dominated by open savannah woodland. The park has very rich flora and fauna.

Over 93 species of mammals, about 400 species of birds, 9 amphibian, 33 reptilian and several insectivorous species and 5 endemic butterfly species have been recorded. Species of special interest include Elephant, Buffalo, Kob, Western Hartebeest, Roan Antelope, Defassa Waterbuck, Oribi, Bohor Reedbuck and Red-flanked Duiker. The riverine forests are home to rare and endangered species such as Yellow-backed Duiker and Black and White Colobus monkey. The Lion, Leopard and Hyena are important large carnivores found in the reserve. The buffalo population is of great scientific interest since both black and red colour varieties exist in the Park. With regards to vegetation, local endemism is generally low in West African Savannah, and only two endemic species *Kyllinga echinata*, a sedge and *Ancilema setiferum* var *pallidiciliatum* confined to northern Ghana, are found in Mole.

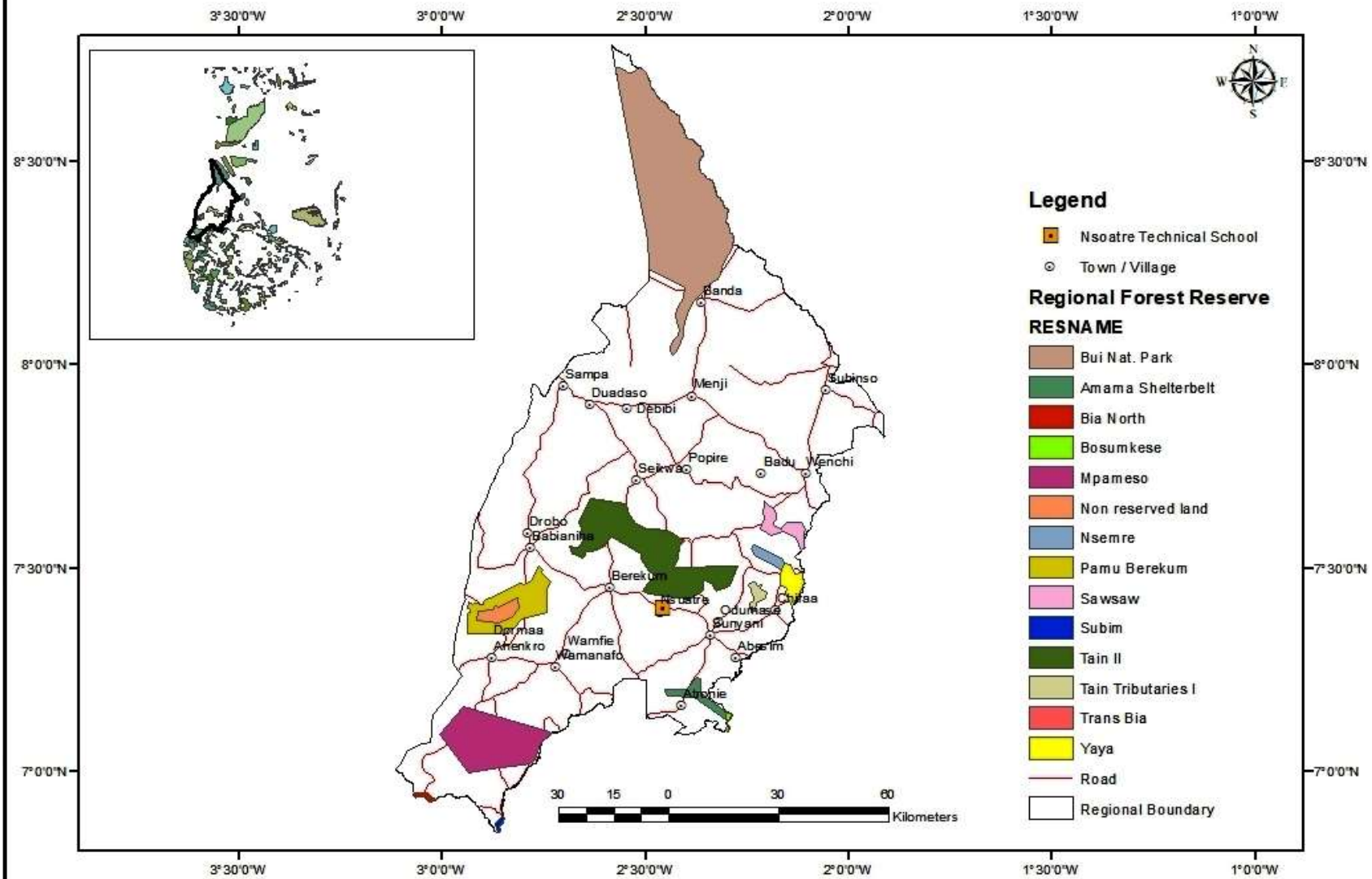
In addition, three species endemic to Ghana are recorded, namely *Gongronema obscurum*, *Raphionacme vignei* and *Phinopterys angustifolia*. Eleven (11) species of mole are confined to the savannah woodland while *Mimusops kummel*, a tree that is confined to riverine forests. To date, five species have been identified which have not been recorded elsewhere in Ghana *Croton pseudopulchellus*, *Indigofera conferta*, *Indigofera trichopoda*, *Jatropha neriifolia* and *Pleiotaxis newtonii*. *Anthocleista vogelii*, a tree of wet sites in the south-western forest zone of Ghana has been recorded for the first time in Mole. *Apodostigma palleus* is a climber that is also restricted to the forests in the south-west Ghana. *Amblygonia caracasana*, a savannah tree widespread in central, east and south tropical Africa, has been recorded for the first time in Ghana at Mole.

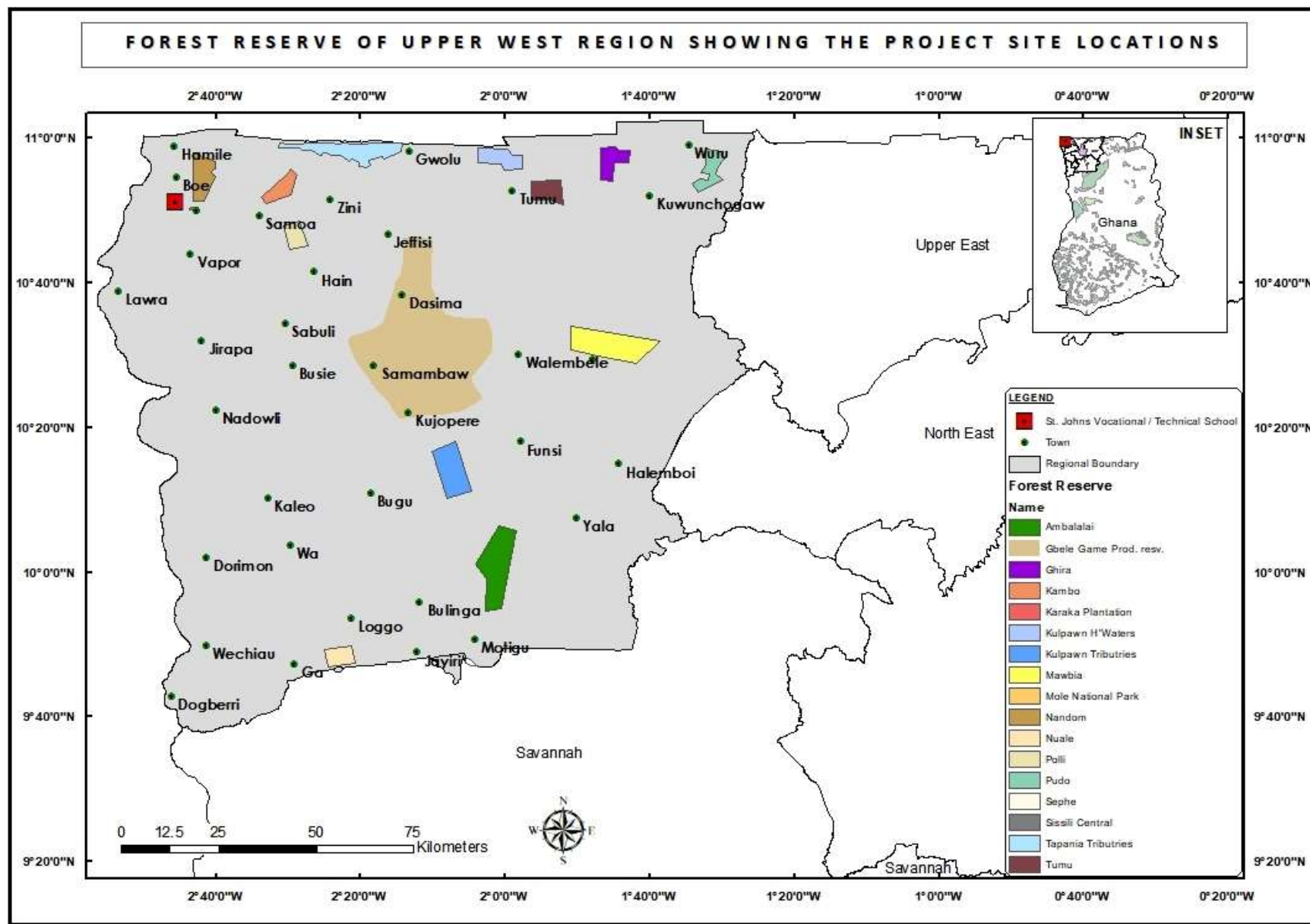
Mole has an important history linked to the national slave trade route project. The ancient caravan route from Salaga to Wa and beyond to Mali, passed through the heart of the park. This route was used for both trading and to transport slaves to coastal markets. The park Headquarters is located right at a place where two famous slave raiders (Samore and Babatu) raided and erased a village to the ground. The Headquarters is named after one of them - Samole. There is a cave in the Konkori escarpment that was used as a refuge from slave raiders by the local indigenes. Other important attractions in the Park include Kwomwoghlu and Asibey pools, wetland areas (unique bird-watching sites), waterfalls on the Konkori escarpments and remains of many old villages destroyed by slave raiders.

FOREST RESERVE MAP OF GREATER-ACCRA REGION SHOWING THE PROJECT SITE LOCATIONS

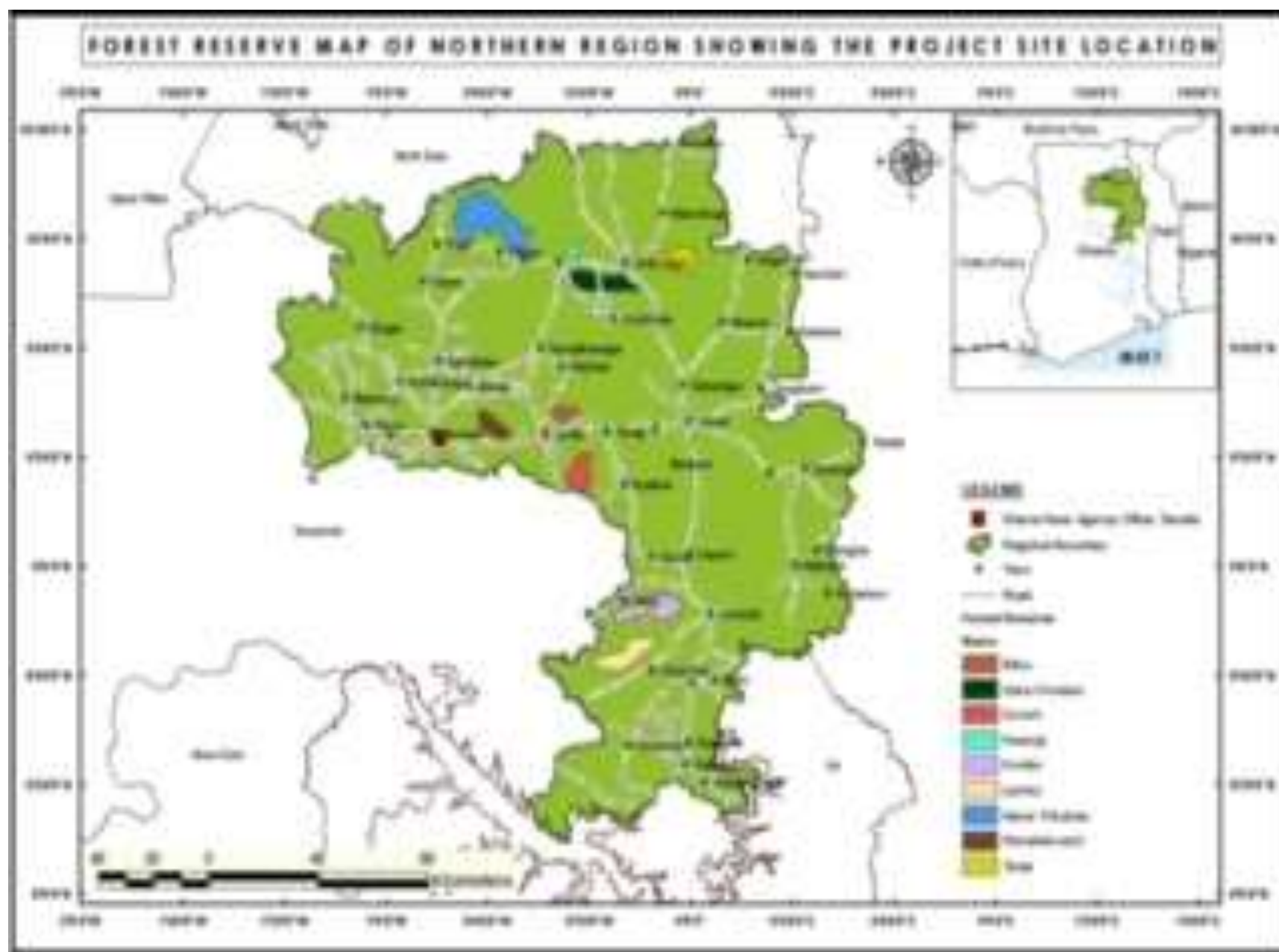


FOREST RESERVE MAP OF BONO REGION SHOWING THE PROJECT SITE LOCATION





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2.2.4 Animal Migration Routes

Greater Accra, Western, Ashanti, Bono, Eastern, Upper West and Northern Regions: There are no clearly defined wild animal migration routes, but there is a strong presence of animal breeding within most of the project corridors, especially in the urban centres. There is a consistent presence of domestic sheep, goats and fowls breeding along the periphery of the project boundaries in the peri-urban zones.

2.3 Socio-Economic/Socio-Cultural Aspect

2.3.1 Demography and Settlement Pattern

Greater Accra Region: Greater Accra recorded a population of 4,010,054 in 2010. This is an increase from 491,817 in 1960, 851,614 in 1970, 1,431,099 in 1984, and 2,905,726 in 2000. Thus, the population of Greater Accra recorded an eight-fold increase within a period of 50 years from 1960-2010. There was a 38.0 percent increase in the population in the period from 2000 and 2010 compared with a 73.2 percent increase between 1960 and 1970, a 68.1 percent increase between 1970 and 1984, and a 103.0 percent increase between 1984 and 2000. Furthermore, Greater Accra recorded a 3.1 percent annual population growth rate between 2000 and 2010. This compares with 5.2 percent between 1960 and 1970, 3.3 percent between 1970 and 1984, and 4.4 percent between 1984 and 2000.

Western Region: The results of the 2010 Population and Housing Census (2010 PHC) showed that the number of persons enumerated in the Western Region was 2,376,021. The population of the Western Region almost doubled between the inter censal period, of 1960 (626,155) to 1984 (1,157,807). In a space of forty years (1970-2010), the population of the Region increased by over 300 percent. In spite of this, the percentage change dropped considerably from 66.2 percent in 2000 to 23.5 percent in 2010, while the inter censal growth rate also dropped by 1.2 to 2.0 percent during the same period. In 2000, the regional inter censal growth rate was above the national average (2.7%) but in 2010 it was below national growth rate of 2.5 percent. The population density of the Region has increased from one census to the next and by nearly fourfold over the 50 year period. The reason for this might be attributed to influx of persons to the growing cocoa areas, 'galamsay' operations and the oil and gas industry. The current Regional density of 99.3 persons per sq. km. is below the national population density of 103.4 persons per sq. km. but much more below the Region with the highest population density is Greater Accra (1,235.8 persons per sq.km).

Ashanti Region: The population of the region in 2010 is 4,780,280, representing 19.4 percent of the total country population. This makes it the most populous and one of the most rapidly growing regions in the country. The region's share of the national population has increased steadily from 16.5 percent in 1960 to 17.3 percent in 1970 and declined marginally to 17.0 percent in 1984. Its share continued to increase to 19.1 percent in 2000 and 19.4 percent in 2010. The region's urban population first exceeded the rural population in 2000 and increased further in

2010. The urban population rose steadily from 25.0 percent in 1960, 29.7 percent in 1970, 32.5 percent in 1984, and 51.3 percent in 2000 to 60.6 percent in 2010. The rural population on the other hand, decreased steadily from 75.0 percent in 1960 to 39.4 percent in 2010. The rapid rate of urbanization in the region is due mainly to migration from rural areas in the region as well as from other regions, particularly the northern parts of the country. The population growth rate for the region has been higher than the national average for each census year, even though it fluctuates. It was 2.9 percent in 1970, 2.5 percent in 1984, 3.4 percent in 2000 and 2.7 percent in 2010. The 2010 population growth rate for the region is only lower than those of the Central region (3.1%) and Northern region (2.9%). Population density is measured by the population of a given area divided by the land area in square kilometres. The population density of the region is currently 196 persons per sq. km. It is the third highest after the Ashanti Region (1,235.8 persons) and the Central Region (224.1 persons) The population density in the region increased steadily from 45 persons in 1960, 61 persons in 1970 and 86 persons in 1984, to 148 persons in 2000. The rapid increase in population density is due largely to fast population growth exerting pressure on the fixed land area.

Bono Region: Due to scanty information on the newly constituted Bono Region, comprehensive demographic information on Brong Ahafo Region was adopted to substantiate and depict such demographic analysis. The Brong Ahafo Region has a total population of 2,310, 983. It is the second largest Region in Ghana by land size and accounts for about 9.4 percent of the population. With a land size of 39,554 km², the population density for the region has increased from 45.9 persons/km² in 2000 to 58.4 persons/km² in 2010. The region experienced its highest growth rate of 3.3 percent in the intercensal period 1970 to 1984. The growth rates for the 1984/2000 and 2000/2010 periods fell below the respective national averages by 0.2 percentage points.

Eastern Region: The results of the 1960 census indicated that population size of the region was 1,094,196. It increased by 15.3 percent by 1970. Higher but decreasing percentage increases were recorded between 1970 and 1984 (38.1%), 1984 and 2000 (25.4%) and 2000 and 2010 (25.0%). The population figure also yielded increasing densities of 54, 63, 87, 109, and 136 persons per square kilometre between the five censal periods while intercensal growth rates decreased between 1970 and 2000 but increased between the 2000 and 2010 intercensal period. The decrease in growth rates between 1970 and 2000 could be attributed to factors such as out-migration (internal and international) from the region as in other parts of the country as economic conditions were not favourable.

Upper West Region: The population of the region as enumerated in the 2010 Population and Housing Census (PHC) is 702,110, with 48.6 percent (341,182) males and 51.4 percent (360,928) females. The population aged less than 15 years constituted 41.7 percent of the total, while those aged between 15 and 64 constituted 52.3 percent. The rest (6.0%) were persons 65 years and older. The proportion of the urban population was 16.3 percent in 2010. The regional population density was 38.0 persons per square kilometre, an increase from 31.2 persons per sq. km. in 2000.

Northern Region: The Northern region has a total population of 2,479,461 in 2010 with more females (1,249,574) than males (1,229,887). The population of the region increased by 36.2 percent between 2000 and 2010, making it the fastest growing region in the country after the Central (38.1 %) and Greater Accra (38.0 %) regions. In 1960, the population of the Northern region was 531,573, increased to 727,618 in 1970 and to 1,164,583 in 1984 representing over 50 percent increase in 24 years. The region recorded an intercensal growth rate of 2.9 percent between 2000 and 2010. This is a slight increase over the 2.8 percent of the period 1984 to 2000. Prior to 2000, the annual intercensal growth rate of the region has been above 3 percent (3.2 percent between 1960 and 1970 and 3.4 percent between 1970 and 1984). The region's share of the national population is 10.1 percent, making it the fourth largest in terms of population after the Ashanti (19.4%), Greater Accra (16.3%) and Eastern (10.7%) regions. The Northern region is Ghana's largest in terms of land area (70,384 square kilometres), constituting about 30 percent of the country's land mass. As a result, population density (number of persons per square kilometre) of the region is the lowest in the country, at 35 in 2010, having increased from 26 in 2000. Population density of the region in 26 previous censuses was 8 in 1960, 10 in 1970 and 17 in 1984.

2.3.2 Culture, Ethnicity and Religion

Greater Accra Region: Culture plays an important role in shaping a people's way of life in terms of attitudes, beliefs and behaviour. Even though there are a number of ethnic groups in the region, the Ga-Dangme is the indigenous ethnic group of the region. It is a patriarchal, patrilineal and patrilocal society by birth. The language is a branch of the Kwa family and is made up of two languages, Ga and Adangme which are closely related and have sometimes been considered as a single language. There are many similarities in the basic vocabulary, but there are also differences in many of the words and the grammar, particularly in the verb phrase. **Ethnicity** refers to the ethnic group a person belongs to. Data on ethnicity in the 2010 census were collected only from Ghanaians by birth and Ghanaians with dual nationality. The classification is of major ethnic groups as officially established by the Bureau of Ghana Languages and has been in use since the 1960 census. Akan was the largest ethnic group in Greater Accra in 2010 with almost four out of ten persons (39.7%) stating they were Akan. This is followed by Ga-Dangme (27.4%), Ewe (20.1%), Mole-Dagbani (5.2%), Guan (1.9%), Gurma (1.6%), Grusi (1.3%) and Mande (0.7%). **Religion** disclosure indicated that the majority (83.3%) of the population in Greater Accra in 2010 reported an affiliation with Christianity (Pentecostal/Charismatic, 44.6%; Protestant, 22.3%; other Christian, 8.9%, and Catholic, 7.5%). The high proportion of Pentecostal/Charismatic (44.6%), in the region is probably due to the proliferation of these churches in Accra. Christians are followed by Muslims (11.8%) and traditionalists (0.5%). However, 3.4% of the population indicated they had no affiliation to any religion.

Western Region: The indigenous people of the region exhibit a high degree of **cultural homogeneity** in areas of lineage organization, inheritance, and succession. Matrilineal descent system, where the female line is used for recruitment into the lineage or succession and inheritance is the

type practised by the indigenous people. Chieftaincy succession is for instance, based on the matrilineal system of succession. However, the instoolment of Safohene and Okyeame follows the double unilineal system of succession, where an individual can be instooled as Safohene or Okyeame through the mother's or father's line. There are also non indigene settlers in the region whose grandparents had migrated several years back from different parts of Ghana into Western region primarily for economic reasons. These groups of people have been subsequently absorbed into the indigenous population. These are the Fantes in the then vibrant mining communities such as Tarkwa and Bogoso as well as those who engaged in trading activities in the Sekondi –Takoradi area; the Ashantis, Brongs and people from the three northern regions who migrated mostly to the cocoa growing areas of the region and Ewes and Gas in the fishing communities along the coastal belt.

The indigenes of the Western Region are predominantly Akans. There are five major sub-groups of the Akans in the Region: Ahantas, Nzemas, Sefwis, Aowins and Wassas with 21 Paramountcies. Among the Paramountcies are Nsein, Lower Axim, Upper Axim, Apatem, Gwira, Atuabo, Benyin, Aowin, Suman, Wiawso, Wassa Fiase, Upper Dixcove, Lower Dixcove and Sefwi Bekwai. Apart from these five major sub- groups, there are other indigenous minorities such as the Pepesa whose peculiar dialect is understood by the Nzemas, Ahantas, Aowins and Sefwis. Fanti is widely spoken as a second language alongside those of the indigenes in the southern part of the region. Fante is also used as medium of instruction in lower primary classes and as examinable subject at the basic level. The ethnic majority in the Region are the Akans (78.2%) with the remainder is distributed among the Mole Dagbani (8.6%), the Ewe (6.2%), the Ga- Adangbe (3.1%) and others (3.9%). The largest ethnic minority is the Mole Dagbani who are mainly found in the northern part of the Region (Bia, Sefwi Akontombra, Aowin- Suaman, Juabeso Sefwi Wiawso and Wassa Amenfi West) where they are mainly engaged in cocoa production.

Majority of persons living in the region are Christian's 82.0 percent, while Moslems 9.3 percent and Atheist 6.7 percent. Traditional and other religions constitute about one percent each. This regional pattern has remained unchanged over the decade. Among the Christians, the proportions who are Catholics and Other Christians have declined, while Protestants and Pentecostals/Charismatics have increased. The proportion of Moslems also increased while that of Atheist declined.

There are different **types of festivals** celebrated in the region. However four of such festivals dominate. These are: Kundum, Afahye (Akwantukase), Alluole, and Nkronu. With the exception of the Wassa, Sefwi, Shama and Mpohor traditional areas, all of the other traditional councils celebrate Kundum festival amidst glamorous drumming and dancing between August and November. The significance of the celebration of these traditional festivals are many. Festivals celebrated in Western like all other festivals celebrated elsewhere in Ghana serves, among others, the following purposes: To mark the beginning of a traditional year To offer thanks to the Supreme God for his care and protection and to offer thanks to the ancestors and the spirits for their protection during the past year. To renew the peoples loyalty to their chiefs by paying

homage and lastly To settle family disputes, quarrels and misunderstanding. The period of celebration of these festivals in the region differs from one community to another. Usually the last day of the festivals are marked by colourful durbars.

Ashanti Region: Chieftaincy - the social administration of the Asante nation is through a traditional system of chieftaincy and elders. Each community in the region, like other parts of the country, has a chief of some level from Odikro (chief) to Omanhene (paramount chief). The Asantehene is the only King of Asante. Each chief has “divisional chiefs” with portfolios, similar to the national President and Ministers. The ascension to chieftaincy (except Nkosohene) is through the matrilineal system. **Festivals** are common features of all the ethnic groups in the country. In the Ashanti Region, festivals are few. The Akwasidae is a major festival held regularly at six-week intervals and nine times in a year. It is celebrated to remember past Asante leaders and heroes / heroines. If it falls on a Sunday, it is celebrated as Adaekese. **Language and ethnicity** like the other regions of the country, there are many ethnic groups in the Ashanti Region. The 2010 Population and Housing Census (PHC) shows the largest group as the Akan including Asante (74.3%), followed by the Mole-Dagbani (11.3%), Ewe (3.8%) and Gurma (2.8%). About 30.5 percent of the Akan in the country are in the Ashanti Region. The Mole-Dagbani population in the Ashanti Region is the second highest in the country after the Northern Region, their ancestral home. The populations of Mande (35.1%) and Grusi (16%) in the Ashanti Region are the highest in the country. The people of Asante speak mainly a major branch of Akan called Asante Twi. About 77.8 percent of the people in the region in 2010 are Christians of different denominations. The proportion of Muslims is 15.3 percent, the second largest, while those with no religious affiliation are 5.4 percent and 0.7 percent are traditionalists.

Bono Region: The Region is predominantly inhabited by the Akan ethnic group in all the Districts except Sene, where Guans constitute the largest **ethnic group**. The Mole-Dagbon group constitutes the second largest ethnic group except in Sene and Atebubu. Three out of every five Akans in the region are Brong (Bono). The Region upholds **chieftaincy** as an honoured and development institution. In all, there are 45 Paramount seats and traditional councils. Some owe allegiance to the Asantehene while others govern themselves. Traditionally, drumming and dancing are a medium of entertaining and unifying the population. Several traditional drumming and dancing groups are found in virtually all Districts. Following the Adinkra tradition of the Kingdom of Gyaman, visual arts are a common practice of the people of the Region. Like other Akan societies, has a **variety of festivals** the most prominent one being the Apoo Festival of Wenchi, Techiman and Nkoranza, the Yam Festival (Fo-Yawowo) of Atebubu, and Kwafie Festival of Dormaa, Nsoatre and Berekum.

A little over two-thirds are Christians. Other **religions** in the Region are Islam and adherents of African Traditional religions. One in three Christians in the Region is Pentecostal or Charismatic. Catholics are about one-fifth of the Region’s population. Pru and Sene are the only Districts where adherents of African Traditional religions are relatively high. The Islamic faith is predominant in Techiman and Atebubu-Amantin.

Eastern Region: Consistent with past trends, the Akan (51.1%) constitute the largest **ethnic group** in the region, followed by Ewe (18.9%), Ga-Adangbe (17%) and the Guan (5.3%). The presence of diverse ethnic groups is explained by the presence of migrants who seek employment in the agricultural and other sectors of the economy of the region. Both patrilineal and matrilineal systems of kinship are found in the region because of the diverse ethnic backgrounds of the residents. The practices of inheritance are observed by the patrilineal and matrilineal systems of kinship and descent. The institution of chieftaincy is an important component of the social organization of the region as in the rest of the country. The dominant **religious group** in the Eastern Region is Christianity with more than four-fifth (84.5%) professing adherence to the Christian faith. Moslems form only 6.7 percent of the population. The adherents to traditional religion form (1.4%) and those who have no religion constitute 6.5 percent.

Upper West Region: The people of the Upper West Region are organized under chiefs at the lineage and settlement levels. **Chieftaincy** is a respected institution and is a major medium for community mobilization. In Sissala, the title Koro (e.g., Tumu Koro) is used for the chiefs while Na (e.g., Wa Na) is used in the other districts. There are 21 traditional paramountcies – Jirapa-Lambussie has two, Lawra three, Nadowli seven, Sissala five and Wa has four). The major ethnic groups in the region fall under the broad generic categories of the Mole Dagbon and Grusi. The major languages of the region are Dagaare, Sissali, Wale and Lobi. Inheritance is patrilineal except among the Lobi who, like the Akan in southern Ghana, have a matrilineal inheritance system. Marriage is generally polygamous, with the extended family system sharing resources. Male dominance and a relatively low status for women are common in the region.

The predominant **religions** are Christianity, Islam and traditional African religion. Traditional life and beliefs, as elsewhere in the country, are more prominent in the rural areas. Christianity (comprising Catholics, Protestants, Pentecostal/Charismatic, and other denominations) leads with 44.5 percent, followed by Islam (35.6%) and African traditional religions (13.9%). The notable **festivals** are the Damba festival in Wa, Dembenti among the Dagaabas, Kobine in Lawra and Kakube in Nandom. Festivals such as Kobine, Kakube, Zumbeti, Willa, Damba, Paragbiele, Bagre, Kala, Bongngo and Singma portray the way of life of the people of the region. For instance, the Damba, which is celebrated by the Walas, is meant to usher in the New Year. It is at this festival that the Chief is assessed as to his physical fitness to continue to rule his people. Both the Kokube festival of the people of Nandom and the Kobine of the people of Lawra are celebrated to offer thanks to God through the ancestors for blessing them with a bumper harvest.

Northern Region: There are four **paramount chiefs** in the region. They are: the Ya-Na, who is the overlord of Dagbon in Yendi; the Nayiri of Mamprugu in Nalerigu; the Bimbilla Naa of Nanung in Bimbilla and the Yagbonwura of the Gonja Traditional area in Damongo. All the paramount chiefs are members of the Northern regional Chiefs and also the National House of Chiefs. The mode of ascension to the skins (thrones) of these four paramountcies is through the “gate” system (a gate being one branch of a royal family). These Paramount Chiefs, usually in consultation

with the King makers and their Councils of Elders, enskin sub-chiefs who pay allegiance to them within their respective traditional areas. The eligibility or otherwise to the throne is determined by revered King makers. Upon the death of a Chief, a regent is selected from the eligible gate to act until the final funeral rites of the late Chief are performed and a new one is enskinned.

The popular **festivals** that are celebrated in the Northern region include the Bugum (fire) and Damba festivals. The Bugum festival is an annual festival celebrated by most of the ethnic groups of northern Ghana. It is celebrated in the lunar month of Bugum in Dagbani and Muharram in Arabic. Bugum is the first month of the lunar calendar of the Dagomba. The origin of the festival is shrouded in mystery as Islam and Dagbon cultures each claim to own it. There is, however, some inter-relationship between the two cultures as they have influenced each other with the passage of time. The Damba on the other hand is both a dance and a festival and is the single most important festival celebrated across the northern of Ghana by the Dagomba, Mamprusi, Gonja, Nanumba and even the Wala in the Upper West Region. Oral tradition has it that the word Damba is a Mandingo word meaning “Big Dance” but it is also strongly believed to be a Dagomba word dambahi meaning “shake oneself freely”.

The main **ethnic group** of the Northern region, the largest subgroups are the Dagomba and the Mamprusi, while the Kokomba, Basaari and Bimoba are the largest of the Gurma group. The Chokosi belong to the Akan while the Gonja and Chumburu belong to the Guan ethnic group. Mole-Dagbon is the predominant ethnic group, constituting 52.7 percent of the population. Muslims form 60.0 percent of the population the Northern region. This is followed by Christians constituting 21.0 percent. Among the Christians, the Catholics have the highest proportion (7.6%). Traditionalists constitute 16.0 percent of the population.

2.3.3 Economy and Employment

Greater Accra Region: About 55.9 percent of the population in Greater Accra is economically active 6 and 44.1 percent is economically not active. A higher proportion of males is economically active (73.1%) than of females (68.9%). Seven of every ten economically active persons are aged between 20-44 years, with much lower proportions found in very early and late ages. Most of the economically not active are aged 5-19 years, reflecting participation in education. However, 1.3 percent of people aged less than 15 years (children) are economically active. This translates to 25,719 in absolute numbers. This has implications for schooling and the future development of the children concerned. Of the economically active population in Greater Accra, 92.2 percent are employed and 7.8 percent are unemployed. The proportion of employed males (92.6%) is slightly higher than employed females (91.8%). Among employed persons, the highest proportions are aged between 25 and 44 years. However, among unemployed persons, the highest proportions are aged between 15 and 34 years. the highest proportion of employed persons in Greater Accra is services and sales workers (35.6%). They are followed by craft and related trade workers (21.0%), workers in

elementary occupations (10.7%), professionals (8.1%), plant and machine operators and assemblers (7.0%), and managers (5.2%). Other occupational categories include skilled agricultural, forestry and fishery (4.6%), technicians and associate professionals (3.9%) and clerical and support workers (3.3%). The two leading occupational categories require neither expertise nor high educational training.

The occupations with high skill requirements such as professionals, managers, technicians and associate professionals account for relatively low proportions of employed persons. This is not peculiar to the Greater Accra Region only but to the entire country and does not augur well for the future development. Among the employed there are higher proportions of males than of females in all the occupational categories apart from clerical support, service and sales and elementary occupations. More than half (51.1%) of employed females in Greater Accra are service and sales workers. Higher proportions of those in urban localities are employed across nearly all occupational categories than those in rural localities. The clear exception is skilled agricultural, forestry and fishery which accounts for 26.4 percent of employed people in rural areas compared with 2.5 percent in urban areas.

Western Region: There are 2,042,645 persons in the age-group five years and older. Of these 51.6 percent are **economically active**. A breakdown by sex indicates a fairly even distribution between the sexes. For the age group under 25 years for the economically inactive, the percentage of males (26.1%) is slightly higher than that of females (25.5%). On the other hand the percentage of females is higher than that of males for age groups 25 years and older. The proportions employed in age groups 25 – 34 and 35 – 59 in urban areas are higher than the proportions for the same age groups in rural areas. For all the other age groups, the proportions are higher in rural areas. Out of the 2,042,645 persons aged five years and above in the Region, 48.8 percent are employed. The employment rates by age shows an increasing rate with age and a massive drop after age group 35 - 59. Of the total Regional population of 2,042,645 aged five years and older, 3.5 percent are unemployed. The majority of the unemployed persons (58.9%) are in urban areas.

The proportion of the unemployed as a percentage of total population in the relevant age group is 47.9 percent in urban and 25.6 percent in rural areas. Nearly 40 percent of unemployed persons are within age 15 – 24 years. There are 1,449,507 persons aged 15 years and older in the Region and 4.1 percent of them are unemployed. Over 80 percent of these are first time job seekers. About 48 percent of persons five years and older are economically not active with more females (51.1%) than males (48.9%). Within age groups, the rate for the economically not active declines with increasing age with the exception of those who are 60 years and older. In terms of the age composition of the economically not active, the proportions in the two youngest age groups (5-9 and 10-14 years) were lower in urban (49.3%) than in rural (61.5%) areas, while the reverse was true for all other age groups.

Agriculture, (including forestry and fishing) is the major industry in the Region (47.5%), accounting for the largest proportion of employed persons in all Districts except Sekondi-Takoradi metropolis. Wholesale and retail; repair of motor vehicles and motorcycles is the second largest industry in the Region. It is the most important industry in the Sekondi-Takoradi metropolis employing about 1 in 3 persons. Mining and quarrying is the second largest employer in Tarkwa Nsuaem (22.6%) and Prestea/Huni valley (18.2%). Males dominate in mining and quarrying, construction, transportation and storage, professional and technical activities and administrative and support service activities while females also dominate in wholesale and retail and accommodation and food service activities.

Ashanti Region: Of the population aged 5-14 years (children) in the region, about 4.7 percent are employed in 2010. An overwhelming majority (95.2%) are economically not active and 0.1 percent are unemployed. The proportion of females (4.8%) in the age group 5- 14 years who are employed is slightly higher than that of their male counterparts (4.7%). Working children are more common in rural areas (8.2%) than in urban areas (2.1%). The proportion of males (8.4%) working in rural areas is higher than that of females (8.0%) but the reverse is the situation in urban areas where females (2.4%) are more than males (1.7%). About 69.4 percent of the workforce in the region is economically active. This is a decline compared with 76.9 percent in 2000. Thus, more people in the region are economically not active in 2010 (30.6%) compared with 2000 (23.1%). The data show that males (71.4%) form a larger proportion of economically active population and also constitute the largest proportion of the economically not active population across all age groups. The 35-39, 40-44 and 45-49 years age groups have the highest proportion being economically active, ranging from 91.0 percent to 91.5 percent, while the lowest proportion is the 15-19 years age group (22.0%). There is female dominance among all age groups regarding economically active population except in the age groups 40-44, 55-59 and 60-64 years where the male proportions are slightly higher. Similarly, the economically not active population (not employed, not seeking nor available for work) shows that female proportions are higher than those of males for all age groups, ranging from 50.3 percent for the 15-19 years age group to as high as 70.7 percent among the 35-39 years age group. The high economically not active proportion among female 35-39 requires attention because these form some of the most active years of a person's life and such inactivity would be expected rather among the 70 years and older group.

More than 30 percent of employed persons aged 15 years and older are skilled agricultural, forestry and fishery workers. About one fourth (26.5%) and less than one fifth (16.9%) of the workforce are service and sales, and craft and related trades workers respectively. The proportion of the workforce in managerial (2.7%), professional (6.3%) and technicians and associate professional occupations (1.8%) is relatively low. Most managers (4.5%) are in the age group 55-59 years and the fewest are in the 20-24 age group (1.3%). Regarding professionals, the dominant age groups are 55-59 years (8.9%) and 25-29 years (8.8%) and the lowest proportion is among the 70-74 years age group (2.0%).

Agriculture, including forestry and fishing, constitutes the largest industrial sector, employing 30.9 percent of the workforce aged 15 years and older. Other major industrial sectors are wholesale and retail; repair of motor vehicles and motorcycles (25.2%), manufacturing (10.5%), other

service activities (6.3%) and accommodation and food service activities (6.0%). The age groups from 25 and 44 years form the bulk of the workforce in all sectors. Their cumulative proportion is 44.2 percent in agriculture, forestry and fishing. The proportion of the workforce for real estate activities in the region is exceptionally low (4.80 and constituting 7.3%) relative to the others. The industry of employed persons (15 years and older) by locality of residence in 2010 for the region, about 59.7 percent of the workforce is employed in urban compared with 40.3 percent in rural areas. With the exception of agriculture including forestry and fishing (82.6%) and mining and quarrying (59.4%) which have a high proportion of their workforce in the rural areas, the remaining sectors have higher proportions of their workforce aged 15 years and older mostly in the urban areas. Thus, as much as 92.5 percent of real estate activities, 90.2 percent of financial and insurance activities, 85.8 percent of electricity gas stream and air conditioning supply; and 85.7 percent of professional scientific and technical activities are concentrated in the urban areas in the region. These are pulling factors in the urban areas regarding rural-urban migration especially for those seeking jobs in industries and occupations that are largely absent in the rural areas.

Bono Region: Using information from the Brong Ahafo Region demographic statistics, overall, 71.5 percent of the population 15 years and older indicated they were employed, while 2.9 percent were unemployed. The proportion of the economically not active population (not employed, not seeking nor available for work) were a quarter (25.6 percent) of the total population 15 years and older. There is an observed reduction in the proportions of employed (73.4 percent) and unemployed (5.8 percent) from the 2000 PHC, while an increase is observed in the proportion classified as economically not active (20.7 percent). Figures in brackets refer to the 2010 PHC. Not much difference is observed among the employed males (35.6 percent) and females (35.9 percent) and the unemployed males (1.4 percent) and females (1.9 percent). In the proportion economically not active however, there were two percent more females (13.7 percent) than males (11.6 percent) in the region. The public sector accounts for only 5.5 percent of all employed persons 15 years and older while the private formal employs only 3.5 percent. As expected, more persons in the rural areas (95.2%) were in the private informal sector compared to their urban counterparts (84.1%). Most rural dwellers (78.9%) reported that they were in the agricultural, forestry and fisheries industry compared to 37.2 percent of their urban counterparts. The next most important occupation is service and sales workers with 14.1 percent of employed persons, followed by crafts and related trade workers, 10 percent.

There has been a significant reduction from 75 percent to 62 percent in the number of self employed without employees in the region from 2000 to 2010. More females (51.3%) than males (48.7%) are self employed without employees. Contributing family workers (62.7%) and apprentice (64.2%) are also female dominated in all districts of the region. In the region as a whole, males (73.3%) are more likely than females (26.7%) to be casual workers. Six employed persons in ten are engaged in the agricultural, forestry and fishing industry; three in ten in urban areas and seven in every ten employed persons in rural areas. The wholesale and retail (68.6%), manufacturing (64.9%) and accommodation

and food service activities (88.9%) industries are female dominated. The more physically intensive industries such as construction, mining and quarrying, transportation and storage are male dominated.

Eastern Region: On the average, a little less than 3 out of every 4 persons (73.0%) aged 15 years and older are economically active in the Eastern Region. A little more than two thirds (69%) of the population in the Eastern Region was employed while 4.1 percent were unemployed. The rest (27.3%) were not economically active. Employment rate is relatively high in the region, with an average of 94.3 percent for the Region. Differences exist among the age categories. The rate increases with age and ranges from 85.0 percent for the youth (15-24 years) to 98.0 percent for those aged 35- 59 years. The employment rate of the aged (60+ years) is higher than that of the youth. The average level of unemployment in the Eastern Region recorded at the census was 4.1 percent. Overall, economic activity rate is high in the Eastern Region. Employment rates are also relatively high, reaching 70 percent and higher in most of the districts. The levels of economic activity rate are lower for urban areas than their rural areas. The urban areas also recorded the highest rates of unemployment than the rural areas. The youth also recorded the lowest rates of economic activity as well as the highest rates of unemployment in all the districts. Sex differentials were observed with respect to the economic characteristic. Females generally recorded lower economic activity rates and higher unemployment rates than male.

Upper West Region: Out of the population of 409,412 aged 15 years and older in the region, 67.3 percent were employed and 2.9 percent unemployed, while 29.8 percent were not economically active. A large proportion (73.0%) of the economically not active population resided in rural areas. The proportion of the female population (16.9%) that was economically not active in the region was higher than that of males (13.6%). the economically active population constituted 69.5 percent of the population aged 15 years and older. About 85 percent of the economically active population in the region resided in rural areas. Most of the population 15 years and older in the region were skilled agricultural, forestry and fishery workers (72.8%). Moreover, about 10 percent were craft and related trade workers.

The proportion of the male population working as agricultural, forestry and fishery workers (77.8%) was higher than that of females (68.3%). On the other hand, the proportion of females (14.7%) engaged in craft and related work was more than double that of males (5.6%). Slightly over 50.0 percent of the employed population were self-employed without employees, with only 2 percent being self-employed with employees. Among the male employed population, 59.0 percent are self-employed without employees while the proportion is 48.7 percent for females. Only about 2 percent of employed males and females were self-employed with employees. A little more than one-third (33.9%) of the employed population were contributing family workers.

More than 70 percent of the employed population was engaged in the agriculture, forestry and fishery sector of the economy. About 9 percent was employed in the manufacturing sector while 6.1 percent was employed in the wholesale and retail and motor repairs sector. In the region

as a whole, 77.0 percent of the male and 68.0 percent of the female population were employed in the agriculture, forestry and fishing sector, while the proportion of females (14.0%) employed in manufacturing was far higher than the proportion of males (3.2%). The proportion of females (7.3%) in the wholesale and retail sector was also higher than males (4.7%).

Northern Region: The proportion of the economically active population that is employed in rural areas is higher than in urban areas. The highly agrarian economy in rural areas might be the reason for the high proportion of persons who are employed there compared with the economically active who are employed in urban areas. The major occupation of employed persons in the region is skilled agricultural, forestry and fishery workers who constitute almost 74.0 percent, followed by craft and related workers, at 8.1 percent. Clerical support workers and service and sales workers form a minimal proportion (0.4%) each.

In the Northern region, the major industry in which employed persons work is agriculture, forestry and fishery (73.5%). Wholesale and retail; repair of motor vehicles and motorcycles forms 9.2 percent followed by manufacturing (6.2%) and accommodation and food service activities (2.4%). Agriculture, forestry and fishery remains the major industry. All five industries in addition to transportation and storage, information and communication constitute the highest proportions in the region. At regional level, 58.6 percent of the economically active population is self-employed without employees while contributing family workers constitute 28.5 percent of the employed population. The proportion of the self-employed with employees is less than 3.3 percent at regional level.

The employment sectors are in five categories: public, private formal, private informal, semi-public/parastatal and NGOs (local and international). An overwhelming proportion (94.5%) of employed persons in the region is in the private informal sector while less than 4.0 percent work in the public sector.

2.3.4 Agriculture Production

Greater Accra Region: Agricultural activity is not very common in Greater Accra due to its predominantly urban characteristics. Only 6.6 percent of households are agricultural households. In urban localities, only 4.4 percent of households are agricultural households compared with 31.4 percent in rural localities. Agricultural households found in the urban areas and the more urban enclaves are likely to contain individuals who work in the fishing industry and those engaged in urban agriculture, growing mainly vegetables along the major drains in Accra for the hospitality industry. The average size of agricultural households is 5.0 persons. This is higher than the general average household size in Greater Accra (3.8 persons). This is expected because agricultural household sizes are generally higher than general household sizes due to the labour requirements of agricultural activities. It could also be due to high fertility and the lack of access to clinics for contraceptive and related issues. agricultural households are more likely to be headed by a male (69.2%) than by a female (30.8 %). This situation is the same in urban and rural localities.

The highest proportion of heads of agricultural households in Greater Accra is aged 35-44 years, followed by 22.1 percent aged 45-54 years. A lower proportion of agricultural household heads in urban areas than in rural areas are in the younger or oldest age groups. About 80.2 percent of the households in agriculture in Greater Accra engage in crop farming, 35.8 percent livestock rearing, 4.5 percent tree growing and 0.5 percent fish farming. There are 121,070 farms in Greater Accra growing about 64 different crops. Based on the number of farms growing particular crops the most common crops grown are cassava, pepper, maize, tomatoes and carrots. Farming in Greater Accra is mainly by mono- cropping (49.6%), although substantial proportions of farmers also practice mixed cropping (26.2%) and inter-cropping (24.2%). Generally, chickens, goats, cattle and sheep are the four most common livestock reared in Greater Accra both by number of holdings and by total livestock.

Western Region: Although about half of all the 553,634 households in the Region are involved in agriculture. Over 60 percent of all households in agriculture are headed by males. This pattern is replicated in both urban and rural areas. Out of the total of 548,104 people in agriculture in the region, over 70 percent are from rural areas. The disaggregation of the population in agriculture by sex indicates that majority of the region have slightly more males than females in agriculture in both urban and rural areas. Four types of farming are considered, namely; crop, tree, livestock and fish farming. Crop farming is sub-divided by type of cropping into mixed cropping, inter cropping and mono cropping. However, crop farming is the most common involving over 90 percent of households in agriculture. Livestock rearing is also common with at least 1 in 5 households involved. Tree growing is not a common agricultural activity; less than 1% of their households are engaged in tree growing. Fish farming is a rare activity with less than 1 percent of households involved. There are no major differences in types of farming by type of locality and sex of head of household.

There are 614,106 farms in the Region growing 65 crops. The leading crops in terms of number of farms are cocoa (37.9%), cassava (23.1%), plantain (15.5%), oil palm (6.9%), cocoyam (2.9%), yam (1.9%), maize (1.9%) and coconut (1.9%). All the crops except mushrooms and sun flower are cultivated using three types of cropping (inter cropping, mono cropping, and mixed cropping). For Mushrooms and sun flower cultivation, farmers do not use inter cropping at all; for both, mono cropping is used. Other crops that also use mono cropping are carrot, cocoa, coconut, lemon grass, oil palm, rubber, shallot, sorghum and spinach. Mixed cropping is used for cocoyam, peas and yam, while inter cropping is used mainly for black pepper, tiger nut and tobacco.

There were 2,690,756 livestock in the Region. Chicken (64.0%), fish from fish farming (10.0%), goat (9.2%) and sheep (8.2%) are the four most important livestock (Table 11.7) and constitute 91.4 percent of all livestock. Apart from pigs (1.9%), ducks (1.3%) and cattle (1.2%), all other types of livestock contribute less than one percent to the total stock. Also, apart from doves and turkey which had nearly the same numbers in both urban and rural areas, the rural area accounted for over 65 percent of all other livestock in the Region.

Ashanti Region: There are 412,055 **agricultural households** in the Ashanti Region, representing 16.5 percent of total agricultural households in the country. As a proportion of all households in the region, agricultural households form 36.6 percent. The average agricultural household size

is 4.9 compared with an average household size of 4.2 for the region, suggesting that agricultural households are relatively larger. About 34.8 percent of agricultural households have 1-3 persons, 38.9 percent have 4-6 persons, 19.0 percent have 7- 9 and the remaining 7.3 percent have 10 persons and more. In the urban areas, 35.4 percent have 1-3 persons in a household, 38.4 percent have 4-6 persons and the remaining 26.2 percent have 7 and more persons. The average household size is 5.0. In the rural areas, 34.7 percent have 1-3 persons, 39.2 percent have 4-6 persons and the remaining 26.2 percent have 7 and more persons. The average household size is 4.9. Thus, the urban agricultural households are slightly larger than the rural agricultural households. Agricultural households in urban areas form a minority of 16.4 percent of total households, whereas in the rural areas they form a substantial majority of 71.8 percent of total households.

The distribution of **agricultural household members** who are engaged in farming activities by sex and locality indicated that, the total number of household members in agriculture is 767,942. In the region as well as in the urban and rural areas, the proportions of males and females who are in farming activities are approximately 51 percent and 49 percent, respectively. In the urban areas, the number of household members in farming activities is 214,027 or 27.9 percent of the regional total. In the urban areas, males (51.5%) are more than females (48.5%). Again, the proportion of males (51.1%) is higher than that of females (48.9%) in the rural areas.

The **heads of the agricultural households** in the region are predominantly male (67.2%). The female heads are 32.8 percent. In the urban areas, the male heads are 63.6 percent and the female heads are 36.4 percent, while in the rural areas, the male heads are relatively more than in the urban areas (68.6%) and the female heads are relatively fewer (31.4%). About 11 percent of heads are below 30 years of age, 45.5 percent are between 30 years and 50 years of age, 26.5 percent are between 50 years and 65 years of age, and the remaining 17.0 percent are 65 years and older. In urban areas, the proportion of heads aged below 30 years is 10 percent compared with 11.3 percent in rural areas. Those aged between 30 years and 50 years are 44.1 percent in urban areas, slightly less than their counterparts in rural areas who are 46.1 percent. The heads whose ages are from 50 years to 65 years are 28.3 percent in urban areas, slightly more than the 25.8 percent of those in that age group in rural areas. The proportion of heads aged 65 years and older in urban areas is 17.4 percent, also slightly more than their counterparts among heads in the rural areas who are 16.8 percent.

About 96.8 percent of the households are in **crop farming**, 25.4 percent in livestock rearing, 0.8 percent in tree growing and 0.1 percent in fish farming. In crop farming, the proportion in the Ashanti Region exceeds the national average (95.1%) and in the other farming activities the national averages (40.5% in livestock rearing, 1.1% in tree growing and 0.2% in fish farming) exceed the averages in Ashanti Region. The proportion of male-headed and of female-headed households in the region engaged in crop farming is 67.2 percent male and 32.8 percent female. For those engaged in **tree growing**, the proportions are 67.1 percent male and 32.9 percent female. The proportions of male-headed and female-headed households engaged in livestock rearing are 73.4 percent male-headed households and 26.6 percent female-headed households. In fish farming, the proportion of male-headed households is much higher than that of female-headed households, 84.2 percent against 15.8 percent.

There are 1,087,342 farms in the region, representing 16.4 percent of the 6,625,828 farms in Ghana. Among the crops, the proportion of cocoa farms is highest (22.1%), followed by cassava farms (21.6%), plantain farms (20.1%), and maize farms (11.3%). The maize farms are not many largely because their minor season coincided with the 2010 census. In the minor season, many farmers do not cultivate maize due to a high risk of crop failure as a result of inadequate and fluctuating rainfall patterns. The **major tree crops** in terms of number of farms after cocoa are oil palm and citrus, and far behind are cola, apples, mango, avocado and coffee. Among the starchy crops consumed mainly in the country, the most important is cassava, followed closely by plantain, distantly by cocoyam and yam, and far behind by banana. Maize is the most important cereal crop cultivated in the region, followed distantly by rice, millet and sorghum (only 47 farms).

Among the **vegetables** produced mainly for domestic consumption, pepper and tomato have twice as many farms as does okro and even more than garden eggs and onions. Beans are the most important pulse, followed by groundnuts; peas and soya beans are also cultivated. The number of farms for pineapple and pawpaw cultivation is relatively small, 1,188 farms and 759 farms, respectively. For most of the crops including roots, tubers, plantains, maize, millet and sorghum, mixed cropping is predominant. Intercropping is the approach used to cultivate many of the cola and shallots farms, among other crops, such as black pepper, lemon grass, and tiger nut. The crops for which mono-cropping dominate on the farms include many tree crops such as, cocoa, oil palm, citrus, mango, avocado and the forest trees. Among the other crops, mono-cropping is used in cultivating rice (44.2%) and carrots (62.2%).

The total **livestock farms** representing keepers in the region are 156,733, about 8.5 percent of the total in the country. About 71,009 or 45.3 percent of the keepers keep chicken, 40,904 or 26.1 percent keep goats and 28,172 or 18.0 percent keep sheep. The numbers and proportions of keepers who keep pigs are 3,504 or 2.2 percent, cattle are 3,376 or 2.1 percent, guinea fowls are 2,619 or 1.7 percent and ducks are 2,547 or 1.6 percent. For other livestock, the numbers of the keepers are very small and the proportions are below 1.0 percent. The total number of livestock in the region in 2010 is 3,491,423, representing 11 percent of total livestock in the country. Livestock farming is concentrated in the rural areas where 70.8 percent of the animals are kept compared to 29.2 percent in the urban areas. The important livestock in the region in terms of numbers are chickens numbering 2,235,672, or 64.0 percent of total livestock, followed by goats (478,812, or 13.7%, sheep (376,877, or 10.8%), cattle (101,862, or 2.9%) and pigs (90,271, or 2.6%). With regard to other birds, guinea fowl number 53,925 (or 1.5%), ducks (34,433, or 1.0%), doves (20,889, or 0.6%), turkeys (19,943, or 0.5 percent) and ostriches (5,456, or 0.2%). Among the other animals, rabbits number 17,996 (or 0.5%) and grasscutters are 15,546, or 0.4 percent. The number of **livestock type per farm or keeper** shows a wide range. For the ruminants, the average animals per keeper are as follows, cattle 30, pigs 26, sheep 13 and goats 12. In the birds category, the average numbers per keeper are dove 55, chicken 32, ostrich 28, guineafowl 21, turkey 18 and duck 14. For all types of livestock, the average per keeper is higher in the urban areas than in the rural areas, except for beehives and ostrich where the average numbers per keeper are higher in the rural areas. In other words, the livestock holdings are relatively larger in the urban areas than in the rural areas. Rearing of ostrich requires a large land area

or farm that is not easily available in the urban areas. In the case of bees, the urban environment is not suitable partly because of stinging and the need for flowers for nectar.

Bono Region: More than two-thirds (68.5%) of **households** in the Region are engaged in agriculture. The average agricultural household size is 5.2. This is slightly less than the Regional average household size (5.3) is higher than that of urban agricultural households (36.2%). Rural agricultural households have relatively larger household sizes than those of urban localities. The average rural agricultural household size is 5.3 while that of the urban is 5.1. There are 654,079 household members in farming in the Region of which 52.7 percent are males. There are more males in farming than females. About 11.5 percent of the heads are below 30 years of age, 46 percent are between 30 years and 50 years of age, 26 percent between 50 years and 65 years of age, and the remaining 16.5 percent are 65 years and older. In the urban areas, the proportion of the heads aged below 30 years is 12.2 percent. The corresponding percentages for those in the age group 30-49 years are 47.7 percent, 24.5 percent for those between 50 and 65 years and 15.7 percent for those 65 years and older. The 122 proportion of the heads aged below 30 years in the rural communities is 12.7 percent; that for those aged between 30 to 49 years is 46.2 percent and 25.4 percent for those between 50 to 64 years. The remaining 15.3 percent are for those aged 65 years or older.

The 336,097 agricultural households in the region are engaged in various farming activities. Households can be engaged in one or more activity. Crop farming is predominant among agricultural households (96.6%). The second most prominent activity is livestock rearing (34.4%). Slightly more than one thousand households are engaged in tree growing. Fish farming employs about 0.1 percent of agricultural households. As expected, the percentage of rural households is higher than that of urban households engaged in farming activities. The percentages of agricultural households are also higher than those of female-headed households for all farming activities.

Eastern Region: Overall, 374,257 households are engaged in agricultural activities in the region. The average household size is approximately five members (4.6). Households with 1 to 6 members constitute the majority (77.6%) of agricultural households in the Region while those with seven and more members form less than a quarter (22.4%) of all the agricultural household sizes in the Region. A total of 116,605 agricultural households have been recorded in urban areas in the Eastern Region, constituting about a third (31.2%) of the 374,257 agricultural households in the region. The pattern in urban areas also shows predominance households with 1 to 6 members. Overall, the proportion of one-member household is three times (14.5%) that of the Regional average (4.6%). The rural agricultural households in the Eastern Region constitute 68.8 percent of all agricultural households in the region.

Of the 374,257 agricultural households recorded in the Eastern Region, 69.3 percent one male and 30.7 percent are female-headed. At the Regional level, the percentage of female-headed agricultural households was higher for the urban (34%) than for the rural (29.2%) areas. The age characteristics of the urban agricultural household heads show that on the average, the majority of them are in 30- 59 years age bracket. Less than 10 percent are aged 20-29 years and 26 percent are aged 60+ years. There are 257,652 agricultural households in rural localities of the

Eastern Region. This represents 68.8 percent of all the agricultural households in the region. On the average, young adults constitute a tenth (10.4%) of the rural agricultural household heads while the aged form a quarter (24.7%). The rest (64.9%) are in the 30- 59 years age category. Overall, 354,296 households in the Region are engaged in these activities. The majority of the households, 354,296 representing 68.8 percent, are involved in crop farming. A little less than a third are rearing livestock (30.2%). Very negligible percentages engage in tree growing (0.6%) and fish farming (0.2%) in the Region.

Upper West Region: A total of 84,931 households were engaged in agricultural activities in the region. More than 90 percent (91.4%) of agricultural households in the region are in rural areas. About 77 percent of households engaged in agriculture in urban areas are male-headed households and 80.8 percent of these households are in rural areas. Throughout the Upper West Region, an average 13.4 percent of households engaged in agriculture had a head who was 70 years and older. More than 95 percent of households engaged in agricultural activity were involved in crop farming while 63.7 percent were also engaged in livestock rearing. Only a small proportion (1.9%) was engaged in tree growing. About 81 percent of male-headed households were engaged in crop farming compared to about 19 percent of female-headed households. About 78.3 percent of male-headed households in urban areas are engaged in various agricultural activities compared to 21.7 percent of females.

In the rural areas, except for tree growing, more than 80 percent of male-headed households are engaged in agricultural activities compared to nearly 20 percent of female-headed households. Crops cultivated by households in the Upper West Region are mainly cereals, roots and tubers and legumes. Households are either engaged in mono-cropping (single crop cultivated on farmland), mixed cropping (more than one crop on the same farmland) or crop rotation. About 84 percent of households engaged in agro-forestry (tree growing) in the region were located in rural areas. In the case of legumes, the proportion of households in the rural areas who cultivated beans and groundnuts was 97.1 percent and 93.1 percent respectively. Only 15.0 percent of households engaged in cultivating carrots lived in urban areas. Maize and millet, the two major cereal crops grown in the region, were cultivated by a high proportion of households in rural areas (93.3% and 96.2% respectively). The other crops involving the highest number of farmers were yam and rice, each cultivated by more than 95 percent of households living in rural areas. More than 93 percent of livestock holdings in the region were in rural areas. Most cattle (95.5%), goats (95.0%), chickens (93.0%) and pigs (92.2%) were in rural areas while 32.7 percent of rabbits were in urban areas. The picture was the same for the number of livestock in the region where more than 90% of most livestock were reared in rural areas.

Northern Region: A total of 2,503,006 households in Ghana are engaged in agriculture, of which 240,238 households are in the Northern region. This constitutes 9.6 percent of the national total. The Northern region's average agricultural household size is 8.5 compared with a national average of 5.3 persons. The Northern region has approximately 7.5 percent of the national total of urban households in agriculture. The average household size in agriculture in the urban Northern region is 8.9. Heads of households in agriculture in the Northern region are 90.7 percent male and 9.3 percent female. With respect to rural-urban distribution of sex of head of households in agriculture, 86.6 percent of urban

households in agriculture are headed by males and 13.4 percent by females, while in rural areas, the percentages are even higher for male-headed (91.8%) and female-headed (8.2%) households.

Most households are in crop farming (90.5%) and livestock rearing (30.1%) while tree growing (0.9%) and fish farming (0.1%) are the least practiced agriculture activity. out of the 49,537 urban households in agriculture in the Northern region, 90.2 percent are engaged in crop farming, 1.6 percent in tree growing, 0.2 percent in fish farming and 30.1 percent in livestock rearing. It is worth noting that, some households are involved in more than one agricultural activity. For example a household could be involved in tree growing as well as livestock rearing.

There are six major holdings of livestock in the Northern region, namely. goats, chickens, sheep, cattle, guinea fowl and pigs. The rural areas of the Northern region have far more livestock holdings (86.0%) than the urban areas (14.0%). The distribution of the number of livestock also follows the same pattern, with 13.2 percent and 86.8 percent for urban and rural areas respectively.

2.3.5 Literacy and Education

Greater Accra Region: About 59.0 percent were found to have had a basic level of education, followed by 21.0 percent secondary, 7.0 percent vocational/technical/commercial, 6.0 percent tertiary, (6.0%) post-secondary diploma and 2.0 percent post-middle certificate. Among those who have ever attended school, the highest proportions have basic (52.6%), secondary (15.7%) and tertiary (5.1%) education. A higher proportion of females has never attended school compared with males (13.4% and 6.5% respectively), whereas a higher proportion of males have higher levels of education than females. The proportion of the population that has never attended school is higher in rural localities (19.5%) compared with urban localities (9.1%). One in every ten persons (10.7%) aged 11 years and older in the Greater Accra region is not literate in any language. The proportion of non-literate females (14.7%) is more than twice that of males (6.4%). Furthermore, the proportion of non-literate people in rural localities (20.4%) is almost double that of urban localities (9.8%). More than eight in every ten people aged over 11 years in Greater Accra is literate in English and Ghanaian language (47.4%) or in English only (34.9%). This is followed by those who are literate in Ghanaian language only (4.4%), English, French and Ghanaian language (1.8%), and English and French (0.8%). There are higher proportions of literate males than literate females in all the language combinations except Ghanaian language only. Literacy in Ghanaian language only is marginally higher in rural localities than in urban localities.

Western Region: For both sexes, the literacy rate of the Region (76.4%) is higher than the national average (74.1%). The Regional rates for combined urban and rural (76.1%), urban (85.0%) and rural (69.5%) are all higher than the national rates of urban and rural combined (74.1%), urban (84.1%) and rural (62.8%), respectively. For urban-rural categories, the incidence of illiteracy is higher among the rural folks of the Region.

One in six primary school, (16.2%) of all persons aged six years and older, have attained or completed this Primary School. In the Region one third of all persons in the reference age have completed JHS/JSS (32.0%) in the Region. Less than one percent of persons age six years or older in the Region have post-graduate education (0.4%). Of all persons aged six and older in Region, 20.8 percent have never attended school, which is lower than the national rate (23.5%). Majority of persons in the Region have attended a Junior High or Middle school (32.7%). All the indicators except Secondary or Senior High School and a degree or higher qualification (1.1%) are better than the national rates. The proportion of males 6 years or older who have never attended school (18.3%) is lower than that of females (26.4%); is proportions are lower than the national rate.

Ashanti Region: About 666,091 of the population 3 years and older in the region have never been to school. For those who have never been to school, 65.4 percent are females and 34.6 percent are males. This implies that more females are illiterate, unable to read and write, than males in the region. For the 1,817,525 persons currently in school, 51.7 percent are males and 48.3 percent are females. As many as 1,902,993 persons 3 years and older or 43.4 percent, have some level of formal education in the past; with females (50.3%) slightly more than the males (49.7%). The region has an average of 15.2 per cent (10.9% of males and 19.2% of females) of the population aged 6 years and older that has never been to school compared with the national average of 23.4 per cent. There has been a drastic reduction of the population that has never been to school in the region, from 33.2 percent in 2000 to 15.2 percent in 2010. This is a positive development in formal education in the region. The population that has never attended school in rural Ashanti is nearly double (21.5%) that of the urban areas (11.2%). About 14.7 percent of this population has only primary education and 31.3 percent has JSS/JHS education. The proportion of the population in nursery is the same (3.0%) for both sexes but slightly higher for males than females in kindergarten. The proportion of females currently in primary and JSS/JHS is more than that of males in both urban and rural areas. Also, the proportion of females currently in vocational, technical and commercial schools is more than that of males in both urban and rural areas. The proportion of males is more than that of females at SSS/SHS, post-secondary diploma, bachelor's degree and postgraduate education levels. 82.6 percent of the population 11 years and older in the region are literate. This is higher than the national proportion of 74.1 percent.

About 58 percent are literate in both English and a Ghanaian language and 10.7 percent are literate in a Ghanaian language only. Less than 1.0 percent is able to read and write in three different languages, namely, English, French and a Ghanaian language. Those who are literate in English language only constitute 13.2 per cent. A large proportion of the population (71.9%) can read and write in English language and combinations of a Ghanaian language and French and 69.2 per cent can read and write in a Ghanaian language and English or French.

Bono Region: About 70 percent of the population are literate. More than half are literate in both English and a Ghanaian language and a little over one-fourth are literate in only one of the two languages, English and a Ghanaian Language. Less than one percent of the population are literate in French. Persons who can speak two other languages in addition to English (e.g. English, French and a Ghanaian) language were twice

as much as those who speak English and French. More than half of the population (51.7%) has attained basic education comprising of primary (26.2%), JSS/JHS (18.3%) and middle (7.2%). A little below 5 percent of the population has higher education beyond the secondary level to a first degree. One in a thousand persons in the Region has attained post-graduate education.

Eastern Region: On the average, a little more than a third (35.8%) of the population in the region is not literate in any of the languages. The percentages of those who are literate in English only (11.6%) or a Ghanaian language only (11.6%) are the same. In the total regional population, over a fifth (21.2%) are not literate and a little more than half (52.6%) are literate in English and Ghanaian language. The differences in the rates of illiteracy of the rural population are almost twice (26.8%) that of the urban (14.5%). As a consequence, the proportion literate in English and Ghanaian language in the urban population (60.2%) is higher than that in the rural. These differences are higher than the rates for literacy in either English language only or Ghanaian language. The proportions are literate in the combinations of English and French and English, French and Ghanaian language in the rural areas than in urban areas are lower. The differences in literacy rate between the sexes are also large. In the urban populations, less than a tenth (8.4%) of the males compared to almost a fifth (19.7%) of the females are not literate while more than two-thirds (67.9%) of the males compared with a little more than half (53.5%) of the females are literate in English and Ghanaian language. Similar differences exist in the rural populations: almost twice (34%) the proportion of the females compared with males (19.2%) are illiterates; and 55 Percent of the males compared with 38 percent of the females are literate in English and Ghanaian language. Consistently lower proportions of the females are literate in all the combinations of the languages.

Upper West Region: More than a half of the population (59.5%) in Upper West Region were not literate. This is more than twice as high as the national average of 25.9 percent. The data also indicate that less than one-fourth of the population were literate in English and a Ghanaian language while about 15 percent were literate in English language only. The level of literacy was higher for males (49.5%) than for females (33.5%). The data further showed that the proportion of males (51.5%) and females (66.5%) who are not literate is far higher than the national average of 19.8 percent males and 31.5 percent of females. About 14.2 percent of household heads (50-59 years) are literate. The least literate group are household heads in the age group 15-19 years (0.7%). The highest proportion of literacy among male heads is 24.6 percent for those aged 50-59 years and 5.5 percent among female household heads aged 50-59 years. Overall literacy is low and is lower among females than males. Slightly more than a third (33.5%) of the population 6 years and older had primary school education, while almost one fifth had junior high school education. The proportion with senior high education was 12.9 percent, while 4.3 percent had vocational/technical education and 2.7 percent had a bachelor's degree.

Northern Region: About 62.5 percent of the population are not literate in any language. About 19.2 percent are literate in English and a Ghanaian language, 16.3 percent in English only and 1.5 percent in a Ghanaian language only. Less than 1 percent can speak and write English and French

(0.1%) and English, French and a Ghanaian language (0.1%). The region recorded an overall literacy rate of 4.9 percent, substantially lower than the national figure of 21.9 percent. Literacy rates in general increase by age group from 0.5 percent for the 11-19 year group to 10.7 percent for 50-59 year group and decline to 3.4 percent for 70-99 year group. With respect to differences by sex, age-specific literacy rates are higher for male heads of household (31.7%) than for female heads of the same category (12.9%).

2.3.6 Vulnerable Group

Greater Accra Region: About 2.6 percent (103,939) of the population in Greater Accra has a form of disability. Sight (42.2%) is by far the most common disability type in Greater Accra. The other types of disability include emotional (21.3%), physical (23.3%), mental (16.8%), speech (13.2%) and hearing (10.3%). Disability is highest among the population aged 65 years and above, and there are equal proportions of disabled persons in both urban and rural localities. The highest proportion of persons with disability in Greater Accra has basic level of education. One fifth of those with a disability in the region are not literate; 43.3 percent are literate in English and Ghanaian language and 29.0 percent in English only. Finally, while 43.6 percent of persons with disability are not economically active, 51.4 percent are employed and only 5.0 percent are unemployed.

Western Region: There are 66,016 persons with disability in the region representing 2.8 percent of the population. For the entire Region, about 40 percent of Persons with Disability (PWD) are married, 26 percent have never married, 14 percent are widowed and 10 percent are divorced. The distribution of PWD by marital status in the Districts follows this Regional pattern. Sight and physical disabilities are the two most common in the Region.

Ashanti Region: Persons with disability in the region form 16.9 percent of the total in the country, higher than in the other regions. As a percentage of the Ashanti Region's total population, persons with disability are 2.6 percent, slightly lower than the national proportion of 3.0 percent.

Bono Region: The number of persons with disability (PWDs) in the region was 54,038. This constitutes 2.3 percent of the population for the region. The male to female ratio for PWDs is eleven to twelve while urban to rural ratio is ten to thirteen.

Eastern Region: Overall, 3.6 percent of the total population of the Eastern Region has disability. The percentage of the total regional population with disability ranges from 1.8 percent to 6 percent. Eastern Region accounted for approximately 13 percent (94,579 out of 737,743) of all the disability cases reported in the country. Disability of sight and physical disability are the most reported types in the region, constituting 42.3 percent and 29.4 percent respectively of all the cases.

Upper West Region: One out of every twenty-five (4.0%) persons in the Region has a form of disability. Among the age groups, it is generally high among young and older populations. In Urban-rural localities, a higher percentage of people with disability live in rural areas (3.8%) than in urban areas (3.1%). Sight problem is the common type of disability in the Region accounting for 37.5 percent of the population. A higher percentage of females (39.9%) than males (35.1%) have sight problems. About two-thirds (65.7%) of persons with disability in the region have never attended school. More than a quarter (27.4%) of persons with disability in the Region are married. More than half (54.8%) of persons with disability are employed.

Northern Region: The Northern region has 2.5 percent of its population to be persons living with disabilities and this is highest (31.1%) amongst persons within the 0-14 year age group. A greater proportion of the urban population (3.3%) are persons with disabilities compared to 2.7 percent of those in rural localities. The major type of disability within the region is sight disability (28.7%). More than half (51.9%) of the disabled population in the region are males. Apart from sight impairment, the next common disability type suffered by women in the region is emotional disability (24.0%). More than half (53.0%) of all persons with disability in the Northern region are married. Majority of persons with disabilities in the region (66.5%) have never attended school. The highest educational attainment for persons with disabilities in the region is basic education. The non-literate disabled population is 73.3 percent. About 13.0 percent of the disabled population are literate in English and Ghanaian language. More than 60.0 percent of the region's population of persons with disabilities are employed.

2.3.7 Gender Equity and Mainstreaming

Greater Accra, Western, Ashanti, Bono, Eastern, Upper West and Northern Regions: Gender equality is a goal that has been accepted by governments and international organizations. It is enshrined in international agreements and commitments. There are many ongoing discussions about what equality means (and does not mean) in practice and how to achieve it. There are global patterns to inequality between women and men. For example, women tend to suffer violence at the hands of their intimate partners more often than men; women's political participation and their representation in decision-making structures fall behind men's; women and men have different economic opportunities; women are over-represented among the poor; and women and girls make up majority of people trafficked and involved in the sex trade. These issues – and others – need to be addressed in efforts to promote gender equality. Achieving greater equality between women and men will require changes at many levels, including changes in attitudes and relationships, changes in situations and legal frameworks, changes in economic institutions, and changes in political decision-making structures. **Marginalization of Women:** Generally, females are being marginalized resulting in the fact that their views not adequately captured in decision making and therefore making them vulnerable. A larger proportion of female head households exists due to migration of the male counterpart, child neglect etc. Most of the women however have no regular source of remittance. The domestic roles of women include taking care of children. Women are therefore saddled with the responsibility

of providing food, clothes and in some cases the payment of school and hospital fees. The low income earned by these women, therefore inadequate to meet the needs of their households hence their disadvantaged positions economically.

3.0 Overview of Relevant Policy, Legislative and Regulatory Framework

3.1 Institutional Framework

Ghana has the necessary institutional framework with considerable professional expertise that would be required to implement an undertaking such as the Project ESMF Program. The following are the general profiles of key institutions that can be expected to participate and/or provide support in the implementation of the Project ESMF Program.

- **Social Investment Fund (SIF)**

The SIF was set up in 1998 by the Government of Ghana (GoG), African Development Bank (AfDB) and the United Nations Development Program as a rapid, reliable and flexible mechanism for channelling resources and delivering targeted assistance to both urban and rural impoverished communities. The SIF supports economic infrastructure as well as social infrastructure and services. The SIF is currently implementing the Ghana Poverty Reduction Strategy (sponsored by the GoG, AfDB group and the OPEC Fund for International Development (OFID)).

- **Environmental Protection Agency (EPA)**

The EPA formulates the national environmental policy, and coordinates and monitors activities that could have an impact on the environment. The EPA ensures that development plans and programs take into account environmental and social concerns through Environmental Impact Assessment (or ESIA). EPA also ensures regular monitoring of pre-determined environmental indicators. Where necessary, EPA enforces the environmental law. It disseminates public information on the state of the environment and carries out non-formal education programs. The Project ESIA Program will subject to EPA review.

- **Ghana Health Services**

It is responsible for implementing national policies under the control of the Minister of Health through its governing Council – the Ghana Health Council. It increases access to good quality health and manage prudently resources available for the provision of the health services.

- **Land Use and Spatial Planning Authority (LUSPA - formerly Town and Country Planning (TCP))**

The LUSPA is responsible for planning and management of growth and development of cities, towns and villages in the country. It therefore seeks to promote sustainable human settlements development based on principles of efficiency, orderliness, safety and healthy growth of communities.

- **Ministry of Education (MoE)**

The Ministry of Education is responsible for the government and management of Ghana's education. It is responsible for the national curriculum, primarily instituted by Ghana Education Services, which is part of the Ministry. The Tertiary Education Division of the Ministry of Education oversees the state of higher education in the country.

- **Ministry of Roads and Highway (MRT)**

The Ministry of Roads and Highway is responsible for responsible for initiating and formulating road infrastructure policies and programmes in the country. The ministry ensures ensure the provision of affordable, integrated, safe, responsive and sustainable road transport network that will meet the economic, social and environmental needs

- **Electricity Company of Ghana (ECG)**

The ECG is responsible for the provision of quality, reliable and safe electricity services to support the socio-economic growth and development of Ghana.

- **Ghana Water Company Limited (GWCL)**

As a public utility company, GWCL functions as the country's bulk water supplier and oversees the urban water sector. It undertakes capacity building in Water Quality Monitoring and Surveillance in Ghana.

- **Metropolitan/Municipal/District Assemblies (MMDAs)**

The projects fall under the jurisdiction of the MMDAs. The MMDAs are the highest political authority in the project zones. The MMDAs has roughly a total of 70 members each, roughly 70 percent of whom are elected and 30 percent are appointed. MMDAs members are responsible for deliberation, evaluation, coordination and implementation of programs accepted as appropriate for the MMDAs economic development.

- **Land Valuation Division (LVD)**

Kwaku Anim Boateng (Independent Consultant)

The LVD is a division of the Land Commission responsible for the valuation and numeration of properties, assets, structures and facilities within the project development zone. The LVD assesses, values and mark-out all affected properties and identify all the property-affected-persons (PAPs) and prepare a list of all PAPs and associated assets for compensation payments.

- **Non- Governmental Organizations (NGOs)**

There are many local and international NGOs in the country which have been implementing projects in a participatory manner. They are supported by several donor agencies and organizations such as UNICEF, UNDP, DANIDA and Water Aid. There are a few who operate in towns and communities close to the proposed site; these NGO's include socio-serve, Eco-system development society, Dynamic development Society, Planned Parenthood Association of Ghana, to name a few.

3.2 Waste Management

The management of waste in Ghana has Ministry of Local Government and Rural Development as implementer and EPA as regulator, respectively. This responsibility is discharged through the District, Municipal and Metropolitan Assemblies which was directly under the Ministry of Local Government and Rural Development and the offices of the EPA. However, the ultimate responsibility for ensuring that waste is disposed of lies with the institution that generates the waste in line with the principle of "the polluter pays".

In Ghana, institutions through the district/municipal assemblies are responsible for the waste that is generated by their activities. They are required to take practical steps to ensure their separation, storage, treatment, and safe disposals. At the scoping phase, all relevant environmental policies, regulatory obligations, guidelines, and administrative frameworks guiding the Projects implementation, management, monitoring and decommissioning will include:

- International Environmental and Social Conventions.
- National Legislations.
- National Policy Documents.
- National Guidelines and Procedures.

3.3 International Environmental and Social Conventions

Ghana is a signatory to these applicable international conventions:

- The United Nations Convention of Biological Diversity (the Biodiversity convention).
- United Nations Framework Convention on Climate Change.
- Vienna Protocol for the Protection of the Ozone Layer.
- Montreal Protocol on Substances that Deplete the Ozone Layer.
- Basel Convention on the Control of Trans-Boundary Movements of Hazardous Wastes and their Disposal.
- Convention on Access to Information, Public participation in decision making and Access to Justice in Environmental Matters, 1998 (Aarhus Convention).
- Convention Concerning the Protection of the World Cultural and National heritage, 1972
- Convention for the safeguarding of the Intangible Cultural heritage, 2003.
- ILO Conventions including the Core Conventions Protecting Worker's Rights and the UN Conventions protecting the Rights of the Child and of Migrant Workers.
- ILO Convention 87 on Freedom of Association and Protection of the Right to Organize.
- ILO Convention 98 on the Right to Organize and Collective Bargaining.
- ILO Convention 29 on Forced Labour.
- ILO Convention 105 on the Abolition of Forced Labour.
- ILO Convention 138 on Minimum Age (of Employees).
- ILO Convention 182 on the Worst Forms of Child Labour.
- ILO Convention 100 on Equal Remuneration.
- ILO Convention 111 on Discrimination (Employment and Occupation).
- ILO Convention 169 on Indigenous and Tribal peoples.
- UN Convention on the Rights of the Child, and Specially Article 32.1.
- UN Convention on the protection of the Rights of all Migrant Workers and Members of their Families.
- International Bill of Human Rights, 1948.

3.4 Legislation Relevant to Biodiversity

- Land Planning and Soil Conservation Act, 1957

Kwaku Anim Boateng (Independent Consultant)

- Town and Country Planning Ordinance 1945 (Cap 74)
- Economic Plants Protection Decree, 1974 (AFRCD 47)

3.5 Conventions Related to Biodiversity Conservation to which Ghana is signatory

- Convention Concerning the Protection of the World Cultural and National Heritage (16th November 1972).
- Convention concerning Prevention and Control of Occupational Hazards caused by Carcinogenic Substances and Agents (26th June 1974).
- Convention Concerning the Protection of Workers against Occupational Hazards in the working Environment due to Air Pollution, Noise and Vibration (20th June 1979).

3.6 National Legislations and Relevant Statutes

Some of the laws that have relevance to the Project include:

- Environmental Protection Act 490 (1994)
- National Building Regulation, 1996 (LI 1630)
- The Local Government Act, 1993 (Act 462)
- The Constitution of the Republic of Ghana, 1992
- Land Use and Spatial Planning Authority
(formerly Town and Country Planning Ordinance, 1944 (Cap 84))
- Environmental Assessment Regulation 1999 (LI 1652)
- Planning Permission – Local Construction Act 1993 (Act 462)
- Vaccination Ordinance, Cap 76
- Quarantine Ordinance, Cap 77
- Mosquito Ordinance, Cape 75
- Infectious Disease Ordinance
- The Criminal Code, 1960 (Act 29)
- Pesticides Control and Management Act, 1966 (Act 528)
- Energy Commission Act, 1997 (Act 541)

- Factories, Offices and Shop Act, 1970 (Act 328)
- National Museums Decree, 1969, NLCD 387
- Water Resources Commission Act, 1996 (Act 552)
- Fire Protection Act (1994) and Fire Protection Regulations, 2004 (LI 724)
- State Lands Act, 1962 (Act 125)
- State Lands Regulations, 1962 (LI 230)
- National Development Planning Act, 1994 (Act 479)
- Food and Drugs Act, 1992 (P.N.D.C.L. 305 B)

3.7 National Policy Documents

Some of the policy documents that have relevance to the Proposed Project include:

- Forest and wildlife Policy (1994)
- National Land Policy (1999)
- National Environmental Sanitation Policy (1999)

3.8 National Guidelines and Procedures Documents

The national documentation guidelines have relevance to the Proposed Project. The significant ones for review are listed as follows:

- Expanded Sanitation Inspection and Compliance Enforcement Program Guidelines.
- Guidelines for Bio-Medical Waste (2000).
- Guidelines for the Development and Management of Landfills in Ghana
- Environmental Assessment in Ghana, A Guide (1996)

3.9 Ghana Standards

- Ghana Standards for Environment and Health Protection-Requirements for Effluent Discharge (GS 1212, 2019)

Kwaku Anim Boateng (Independent Consultant)

- Ghana Standards for Environment and Health Protection-Requirements for Ambient Air Quality and Point Source/Stack Emissions (GS 1236, 2019)
- Ghana Standards for Health Protection-Requirements for Ambient Noise Control (GS 1222, 2018)
- Ghana Standards Acoustics-Guide for Measurement of Outdoor A-Weighted Sound Levels (GS 1253, 2018)
- Ghana Standards for Environment and Health Protection-Requirements for Motor Vehicle Emissions (GS 1219, 2018)

Table 4.0 **Legal, Regulatory and Policy Review**

| # | Legal, Regulatory Policy, Guidelines | Coordinating Agency | Objectives and Highlights | Applicability /Comments |
|---|--|---------------------|---|---|
| 1 | Basel Convention on the Control of Trans boundary Movement of Hazardous Wastes and their Disposal (UNEP, 1992) | EPA/UN/WHO/MoH | Minimize the generation of hazardous wastes, treat them as close as possible to the source and reduce trans boundary movement of hazardous waste. | Applicable for public health, environmental protection, and safe management of hazardous waste. |
| 2 | Bamako Convention (1991) | EPA/MoH | Treaty banning the importation of any hazardous wastes into Africa, signed by 12 nations (Ghana signatory). | Applicable for public health, environmental protection, and safety. |
| 3 | Stockholm Convention on Persistent Organic Pollutants (UNEP, 2004) | EPA/UN/WHO/MoH | Reduce the production and use of persisted organic pollutants; eliminate uncontrolled emissions of dioxins and furans. | Applicable for public health, environmental protection, and safety. |

| | | | | |
|---|---|-----------------|---|---|
| 4 | Agenda 21 (plan of action for the 21 st Century Adopted by 173 Heads of State at the Earth Summit held in Rio in 1992) | EPA/UN | Minimize the generation of waste, to reuse and recycle, treat, and dispose of waste products by safe and environmentally sound methods. | Applicable for public health, environmental protection, and safety. |
| 5 | WHO and UNEP Initiatives concerning Mercury and Decision VIII/33 of the Conference of the Parties to the Basel Convention on Mercury waste. | EPA /WHO/UN/MoH | Identify populations at risk of exposure to mercury and to reduce Anthropogenic waste. | Applicable for public health, environmental protection, and safety. |
| 6 | “Polluter Pays Principle” | EPA/WHO/MoH | Any producer of waste is legally and financially liable for disposing of that waste in a safe manner. | Application for safe protection of people and the environment. |
| 7 | “Proximity Principle” | EPA/WHO/MoH | Hazardous wastes must be treated and disposed of as close as possible to where they are produced. | Application for safe protection of people and the environment. |

Source: Independent Consultant Data Records

Table 4.0 depict a typical profile of some of the legal, regulatory and policy review governing the proposed project. The compliance regimes of most of the administrative frameworks are enshrined in these regulatory principles and rules. This section also presents a review of the existing applicable environmental regulations and institutions relevant to the project at the local, national, and international levels. The key Environmental Laws and Regulations relevant to the project are shown in **Table 5.0**. **Table 6.0** depicts the key institutional supports to project implementation.

Table 5.0 **Profile of Key Applicable Environmental Regulations and Legislations**

| Serial Number | Act/Rules | Purpose | Applicable (Yes/No) | Reasons for Applicability | Authority |
|---------------|--|--|---------------------|---|---|
| 1 | Environmental Protection Agency (EPA), Act 1994 | To protect and improve overall environment of the nation. | Yes | Oversees all environmental notifications, rules and schedules are issued under this act of EPA establishment. | EPA |
| 2 | Environmental Assessment Regulations, 1999 (LI 1652) | To provide environmental clearance to new development activities following environmental impact assessment. | Yes | All new environmental permitting, notifications, rules and schedules are issued under this act. | EPA (Environmental Assessment and Audit Division) |
| 3 | Factories, Offices and Shops Act, 1970 Act 328 | To protect and improve workers health and safety at the workplace. | Yes | Ensure safe and healthy working environment to protect workers health and safety during construction and operation phases of the project. | EPA (Inspectorate Division) |
| 4 | Environmental Assessment (Amendment) Regulations, 2002 (LI 1703) | To revise environmental permitting fees chargeable to approved new development projects following environmental impact assessment. | Yes | Ensure appropriate environmental permitting fees are applied to an approved new development project. | EPA (Environmental Assessment and Audit Division) |

Source: Independent Consultant Data Records

Table 6.0 **Profile of Applicable Key Institutions Relevant for Project Implementation**

| Serial Number | Institution | Purpose | Reasons for Applicability |
|---------------|-------------|---------|---------------------------|
|---------------|-------------|---------|---------------------------|

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| | | | |
|---|--|---|---|
| 1 | Environmental Protection Agency (EPA) | Ensures that new development programs consider environmental and social concerns through Environmental and Social Impact Assessment (ESIA). | Ensures regular monitoring of pre-determined environmental and social indicators. Enforces social and environmental laws and legislations. Oversees Environmental Permitting of new project developments. |
| 2 | Metropolitan, Municipal, District Assemblies (MMDA) | Highest political authority in the MMDA. Responsible for deliberation, evaluation, coordination, and implementation of new programs acceptable to the socio-economic development of the MMDA. | Responsible for planning the MMDA. Responsible for providing building permits according to zonal plans. |
| 3 | Electricity Company of Ghana | Provision of quality, reliable and safe electricity services to support socio-economic growth and development of Ghana. | Responsible for the supply of electricity. Provides guidance on current and future load capacity requirements. |
| 4 | Ghana Water Company Limited (GWCL) | Functions as the country's bulk water supplier. Oversees water sector. | Responsible for the supply of water. Provides guidance on current and future capacity requirements. |
| 5 | Land Use and Spatial Planning Authority (formerly Town and Country Planning) | Regulates issuing of building permits. Provides building development related permits. | Responsible for the issuance of building permits. |

Source: Independent Consultant Data Records

3.10 Environmental Screening, Determination and Conditions

Ghana Environmental Protection Agency Environmental Guidelines: The Ghana EPA will require that Environmental and Social Assessment (ESA) be carried out for moderately significant impact undertaking (any enterprise, activity, scheme of development, construction, project, structure, investment plan, program, demolition, rehabilitation or decommission) to provide adequate information on the undertaking as the basis for decision-making and decision-taking. The findings of the ESA are compiled in ESIA Report. The projects must meet the basic goals and objectives of AfDB environmental and social policies and guidelines. Further AfDB policies relevant to the project include:

AfDB Environmental Policy: AfDB policy framework on environment policy has been anchored in the concept of sustainable development. The policy stresses the anticipatory nature of sustainable development rather than the reactive responses so predominant in development related decisions.

AfDB Involuntary Resettlement Policy: The primary goal of the involuntary resettlement policy is to ensure that when people must be displaced, they are treated equitably, and that they share in the benefits of the project that involves their resettlement.

AfDB Guidelines on Cooperation with Civil Society Organization: The AfDB considers the African civil society as a primary stakeholder and help to enhance transparency and accountability due to the need to change information disclosure policies and enhance participation of stakeholders in the bank operations. The civil society includes groups such as the; non- governmental Organization (NGO's), Community Based Organizations (CBO's), people's organization, trade unions and religion groups among others. The civil society organizations are central to the banks efforts to implement the participatory approaches especially in reaching to the poor people and women which are the priority target groups who have little influence and control over decisions and actions that affect their lives.

Africa Development Bank (AfDB) has adopted an integrated approach to environmental assessment in the so-called Integrated Environmental and Social Impact Assessment (IESIA) guidelines. The Guidelines' major objective is to provide reference material on how to adequately consider cross-cutting themes while assessing the environmental and social impacts of a project. The IESIA Guidelines assist in the project design, as many potential adverse impacts can be avoided or mitigated by modifying or adding certain project components to the initial design. They also provide guidance on how to adequately consider cross-cutting themes in both the preparation and assessment phases. The cross-cutting themes prioritized by the Bank are the following: poverty, environment, population, gender and participation. In addition, the Bank has recently adopted health priorities that are transversal issues by nature: HIV/AIDS and Malaria control. Consequently, health outcomes are also considered as a cross-cutting theme in the IESIA Guidelines. There are several operational principles discussed in the guidelines, including the following:

- ❖ Gaining and providing information: The bank is expected to make available information to the public and draw knowledge, information from them. The regional member country authorities are expected to be responsive to the civil societies' request, issues and concerns on bank supported programs and projects,
- ❖ Involvement of the civil society organizations (CSO) in policy making: The bank collaborates with the civil society organizations and the regional member country to factor in the interest of the stakeholders in both policy and project activities. The bank takes deliberate measures to remove barriers such as gender biases and other inequalities to allow effective participation,
- ❖ Civil Society Participation in operation: It's the responsibility of the region member country to give responsibility to the CSO in programs financed by the bank loans,

- ❖ To foster effective CSO involvement the AfDB request the regional member country to provide institutional support to CSO for capacity building purposes,
- ❖ The AfDB remains optimistic and committed to effective engagement with the CSO in the future.

AfDB Policy on Poverty Reduction: Poverty is not limited to the lack of the physical resources for development, but also rooted in the inability of poor people to influence forces and decisions that shape their lives. AfDB considers the empowering of the poor people to actively participate in the development interventions for sustainable poverty reduction. The main objective of this policy is to provide a framework for action by putting the poverty reduction at the center of bank lending and non-lending activities for the regional member country. There are several guideline principles highlighted in the policy. These include:

- ❖ The bank focuses in the analysis of incidences and in-depth causes of poverty in Africa and these consequently results in formulation of policies and intervention mechanisms,
- ❖ Support of national capacity building, promotion of participatory approach, development on the new forms of partnership and establishment of poverty monitoring systems,
- ❖ Internal policy coherence to strengthen the existing sector policy and fill gaps in specific areas from poverty reduction,
- ❖ Requires a strong partnership that facilitates the consistence between the bank poverty policy and poverty reduction strategies,
- ❖ Handles the new conceptual framework that expands the concept of poverty beyond income measures and its causes; addresses the economic and non-economic causes of poverty.

The objectives of the policy are to ensure that the disruption of the livelihood of people in the project's area is minimized, ensure that the displaced persons receive resettlement assistance to improve their living standards, provide explicit guidance to Bank staff and to borrowers, and set up a mechanism for monitoring the performance of the resettlement programs. Most importantly, the resettlement plan (RP) should be prepared and based on a development approach that addresses issues of the livelihood and living standards of the displaced person as well as compensation for loss of assets, using a participatory approach at all stages of project design and implementation.

AfDB Environmental and Social Assessment Procedures (ESAP): The main purpose of the Environmental and Social Assessment Procedures (ESAP) is to improve decision making and project results to ensure that Bank-financed projects, plans and programs are environmentally and socially sustainable as well as in line with Bank's policies and guidelines.

The primary objective of the ESAP is to provide a formal process for the internal and inter-departmental environmental and social review of Bank-financed projects, programs and plans. The procedures highlight the various steps that shall be followed to assess environmental and social risks and benefits along the project cycle.

In addition, the ESAP aim to ensure the integration of environmental and social dimensions into the public sector project cycle from country programming to post-evaluation. An integrated approach allows interrelations between environmental and social issues and to favor a multidisciplinary review of key concerns in a timely manner.

The ESIA project report for the proposed initiative complies with the AfDB ESAP main purpose and primary objectives. Impact areas and mitigation measures raised in the Environmental and Social Management and Monitoring Plan for the project are environmentally and socially sustainable-the main purpose for ESAP.

AfDB Environment and Social Safeguards: Integrated Safeguard System (ISS) - African Development Bank has established an Integrated Safeguard System (ISS) for comprehensive projects review and ensuring across the board perspectives of environmental and social linkages. The ISS comprises of four components, all that existed separately but with identifiable operational weakness. The components include: (i) Integrated Safeguard Policy Statement (ISPS) (ii) Operational Safeguards (OS) (iii) Environmental and Social Assessment Procedures (ESAPs) (iv) Environmental and Social Impact Assessments (ESIAs). The Integrated Safeguard System (ISS) encompasses into five number (5No.) operational safeguards addressing the following fields: Environment; Involuntary Resettlement; Gender; Climate Risk Management and Adaptation; Civil Society Engagement Framework; Health; Integrated Water Resources Management; Agriculture and Rural Development and Poverty Reduction. The specific safeguards are briefly described below:

Operational Safeguard 1 (OS 1): This is the main safeguard that guides environment and social assessment as well as climate issues. The safeguard governs the process of determining a projects environment and social assessment requirement. OS 1 is designed to identify access and manage potential environment and social risks and impacts including climate change issues. More specifically, OS1 achieves the following:

- ❖ Identify and assess risks and impacts,
- ❖ Avoid and/or minimize, risks and impact,
- ❖ Provide for stakeholder's participation.
- ❖ Ensure effective management of risks and impacts
- ❖ Contribute to capacity building elements.

The categorization requirements under OS1 – 5 are also considered as support safeguards. Under the safeguards Environmental and Social Impacts Assessment (ESIA) studies are undertaken on clearly defined projects while environmental and social management framework (ESMF) is prepared for programs or plans with a multiplicity of uncertain projects.

Operational Safeguard 2 (OS 2): The safeguard focuses on involuntary resettlements, land acquisition, population displacements and requirements and compensation. It consolidates the policy commitment and requirements on involuntary resettlements and incorporates improvements operational effectiveness.

Operational Safeguards 3 (OS 3): This safeguard is designed to govern biodiversity and ecosystem services for the conservation and promotion of sustainable use of natural resources. Among the focus is on the integrated water resources management where commitments translated into operational requirements.

Operational Safeguard 4 (OS 4); OS4 governs pollution prevention and control, hazardous materials and resource efficiently. It covers a wide range of impacts arising from pollution, wastes and hazardous materials and particularly those under international conventions and regional standards. This also includes greenhouse accounting. The OS4 principles also support OS1 described above.

Operational Safeguard 5 (OS 5): Labour conditions, health and safety are a major concern in projects. The Bank therefore, has established OS5 to address requirements concerning works conditions, rights and protection from abuse and/or exploitation.

Project Categorization: The project screening through OS1 and in support of OS 2 - 5 leads to categorization of the project. The project categories are guided by considered linkage levels as follows:

Category 1: Bank Operations Likely to Cause Significant Environmental and Social Impacts: Category 1 projects are likely to induce significant and/or irreversible adverse environmental and/or social impacts, or to significantly affect environmental or social components that the Bank or the borrowing country considers sensitive. Some program-based operations or other regional and Sector program loans have significant adverse environmental or social risks and are deemed to be Category 1. In some cases, projects are included in Category 1 because of their potential cumulative impacts or the potential impacts of associated facilities.

Any project requiring a Full Resettlement Action Plan (FRAP) under the provisions of the Bank's policy on involuntary resettlement is also deemed to be Category 1. Category 1 program-based operations or regional and sector loans require a SESA, and Category 1 investment projects require an ESIA, both leading to the preparation of an ESMP. For a project requiring a FRAP, the ESIA includes, and if there are no other issues requiring assessment may be limited to, the social assessment needed to prepare the FRAP.

Category 2: Bank Operations Likely to Cause Less Adverse Environmental and Social Impacts than Category 1: Category 2 projects are likely to have detrimental site-specific environmental and/or social impacts that are less adverse than those of Category 1 projects. Likely impacts are few, site-specific, largely reversible, and readily minimized by applying appropriate management and mitigation measures or incorporating internationally recognized design criteria and standards. An operation that involves resettlement activity for which an Abbreviated Resettlement Action Plan (ARAP) is required under the ESAPs is classified as Category 2. Most program-based operations and regional or sector program loans designed to finance a set of subprojects approved and implemented by the borrower or client are included in this category unless the nature, scale or sensitivity of the intended pipeline of subprojects involves either a high level of environmental and social risk or no such risk. Category 2 projects require an appropriate level of environmental and social assessment (SESA for program operations, investment plans, and some corporate loans, or ESIA for investment projects) tailored to the expected environmental and social risk so that the borrower can prepare and implement an adequate ESMP (for an investment project) or ESMF (for a program operation), to manage the environmental and social risks of subprojects in compliance with the Bank's safeguards.

Category 3: Bank Operations with Negligible Adverse Environmental and Social Risks: Category 3 projects do not directly or indirectly affect the environment adversely and are unlikely to induce adverse social impacts. They do not require an environmental and social assessment. Beyond categorization, no action is required. Nonetheless, to design a Category 3 project properly, it may be necessary to carry out gender analyses, institutional analyses, or other studies on specific, critical social considerations to anticipate and manage unintended impacts on the affected communities.

Category 4: Bank Operations Involving Lending to Financial Intermediaries: Category 4 projects involve Bank lending to financial intermediaries that on-lend or invest in subprojects that may produce adverse environmental and social impacts. Financial intermediaries include banks, insurance, reinsurance and leasing companies, microfinance providers, private equity funds and investment funds that use the Bank's funds to lend or provide equity finance to their clients. Financial intermediaries also include private or public sector companies that receive corporate loans or loans for investment plans from the Bank that are used to finance a set of subprojects. Financial intermediary subprojects equivalent to Category 1 and Category 2 are subject to the relevant OS requirements, as if they were directly financed Category 1 or Category 2 projects.

However, if a client will use a Bank corporate loan to finance high-risk investment projects known at the time of loan approval, the loan can be considered Category 1.

AfDB Operational Safeguards: The ESIA will be undertaken to AfDB lenders' requirements. Some financial institutions are either Equator Principles Financial Institutions (EPFIs) or have their own established and highly detailed environmental and social requirements. This ESIA will be completed in line with International EHS Guidelines, Performance Standards and other Sector Specific Guidelines, which take all funding institutes' requirements into account.

Classification of Project: According to the ESMP report developed for the Project, the Project can be classified as “**Category 2**” by AfDB project screening under project categorization because the project will have site-specific environmental and social impacts. Most of the impacts are expected to be less significant and reversible. The project requires environmental and social impact assessment to examine the project's potential negative and positive environmental and impacts and recommend any mitigation and monitoring measures to prevent, minimize or compensate performance. In AfDB operation the purpose of Environmental and Social Impact Assessment is to improve decision-making and decision-taking, to ensure that project options under consideration are sound and sustainable, and that potentially affected persons have been properly consulted.

Other Applicable Guidelines and Policies of AfDB: The other applicable guidelines and policies of the AfDB are:

- ❖ The Bank's Policy on Gender (2001);
- ❖ The Engagement Framework Consolidated by Civil Society Organizations (2012);
- ❖ The Policy on Dissemination and Access to information (2012);
- ❖ AfDB's Strategy for Climate Risk Management and Adaptation to Change;
- ❖ The Environmental and Social Assessment Procedures for Public Sector Operations of the Bank (2014).
- ❖ Handbook on Stakeholder Consultation and Participation in AfDB Projects and Operations (2001)

Table 7.0 and Table 8.0 Summaries of the Operational Safeguards Objectives and Triggers Implication to the Project Components and Category Definition for AfDB Projects.

Table 7.0

Summary of OS Objectives and Triggers Implication to Project Components

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| Operational Safeguards | Description | Objectives | Trigger (Yes/No) and How | Implication |
|------------------------|--|---|--|--|
| OS 1 | Environmental and Social Assessment | <p>1.To identify and assess the environmental and social impacts (including gender) and climate change vulnerability issues of Bank lending and grant financed operations in their area of influence.</p> <p>2.To avoid or if not possible minimize, mitigate and compensate for adverse impacts on the environment and on affected communities.</p> <p>3.To ensure that affected communities have timely access to information in suitable forms about Bank operations and are consulted meaningfully about issues that may affect them.</p> | <p>Yes</p> <p>1.This OS 1 is triggered through the mandatory Environmental and Social Screening Process through which the project is assigned a Category 2 based upon its potential environmental and social risks and impacts in its area of influence. These potential risks and impacts include physical, biological, socio-economic, health, safety, localized impacts and global impacts including Greenhouse gas (GHG) emissions and vulnerability to climate change effects.</p> <p>2.For the preparation of feasibility and design studies for all the project components, the planned works are likely to have less significant environmental and social direct, indirect or cumulative impacts locally and not at the regional level. This OS 1 will thus be triggered.</p> | Based on the outcome of the pre-feasibility studies, the preparation of feasibility and design studies reports under the project components have determined that an ESIA is required including management plans (ESMP and Monitoring). |
| OS 2 | Involuntary Resettlement: Land Acquisition, Population | 1.To avoid involuntary resettlement where feasible, or minimize resettlement impacts where involuntary resettlement | <p>Yes</p> <p>1.This OS 2 is triggered since the project components requires the rebuilding of livelihood and sources of income among</p> | For the pre-feasibility, feasibility, design and ESIA studies these critical requirements will have to be met: |

| | | | | |
|--|--------------------------------|---|--|--|
| | Displacement and Compensation. | <p>is unavoidable, exploring all viable project design.</p> <p>2.To ensure that displaced people receive significant resettlement assistance, preferably under the project, so that their standards of living, income earning capacity, production levels and overall means of livelihood are improved beyond pre-project levels.</p> <p>3.To set up a mechanism for monitoring the performance of involuntary resettlement programs in Bank operations and remedying problems as they arise to safeguard against ill-prepared and poorly implemented resettlement plans.</p> | <p>youths and women for them to recover from the socio-economic and climate related shocks or impact of the Covid-19 pandemic on individual, households and enterprises, especially SMEs. To improve access to technical and climate-resilient skills training and sustainable green climate finance for youths, women and SMEs.</p> <p>2.The project components implementation will require restoration of livelihoods and income and employment opportunities through entrepreneurship and jobs among youth and women. A Livelihood Restoration Plan (LRP) will be prepared as part of the ESIA to cover economic displacement, livelihoods and income and employment restoration through entrepreneurship and jobs creation among youths and women.</p> <p>3. Potentially, the proposed construction could lead to, aside economic displacement, physical displacement of people inhabiting or squatting on</p> | <p>1.A Livelihood Restoration Plan (LRP) will have to be prepared or referenced with Grievance Redress Mechanism for the project components.</p> <p>2.Project components will require the preparation of LRP to address all the issues related to economic displacement by restoration of livelihoods and income and employment opportunities through entrepreneurship and jobs among youths and women.</p> <p>3.A Grievance Redress Mechanism will be required to be defined as part of the ESIA for the project components, taking into consideration the local context.</p> <p>4.The ESIA report of the project components will be disclosed locally, at the national level as well as in the SIF website and the AfDB info-shop.</p> |
|--|--------------------------------|---|--|--|

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|------|-------------------------------------|---|--|---|
| | | | project sites. For this category of PAPs, there may be need for compensation (land-for-land or cash) or support to those who might have to be displaced temporary or permanently. This OS 2 will thus be triggered. | |
| OS 3 | Biodiversity and Ecosystem Services | <p>1.To preserve biological diversity by avoiding, or if not possible, reducing and minimizing impacts on biodiversity.</p> <p>2.In cases where some impacts are unavoidable, to endeavor to reinstate or restore biodiversity including, where required, the implementation of biodiversity offsets to achieve “not net loss but net gain” of biodiversity.</p> <p>3.To protect natural, modified and critical habitats.</p> <p>4.To sustain the availability and productivity of priority ecosystem services to maintain benefits to the affected communities and to sustain project performance.</p> | <p>No</p> <p>1.This OS 3 is not triggered since the project components are not expected to be sited in green fields agricultural farmlands with potential habitat resources for fauna species where there may be potential biodiversity impacts or in areas providing ecosystem services upon which potentially affected stakeholders are dependent for survival, sustenance, livelihood or primary income, or which are used for sustaining the project.</p> <p>2.For the preparation of feasibility and design studies for all the project components, the planned works are likely to have site-specific impacts on nearby non-critical habitats, shrubland and associated grassland fragments, including borrow areas which are not in wildlife corridors and any marshlands.</p> | <p>The pre-feasibility studies outcome has established and confirm the need for preparation of feasibility and design studies reports for the project components.</p> <p>Determination has already been made to conduct an ESIA which will include recommendations on suitable mitigation measures to prevent, minimize, mitigate or compensate for any adverse environmental and social performance.</p> |

| | | | | |
|------|---|--|---|--|
| | | | This OS 3 will thus not be triggered. | |
| OS 4 | Pollution Prevention and Control, Greenhouse Gases, Hazardous Materials and Resource Efficiency | <p>1.To manage and reduce pollutants likely to be caused by a project so that they shall not pose harmful risks to human health and the environment, including hazardous, non-hazardous waste and GHG emissions.</p> <p>2.To set a framework for efficiently utilizing all of a project's raw materials and natural resources especially focusing on energy and water.</p> | <p>Yes</p> <p>1.This OS 4 is triggered since the project components are likely to cause less significant adverse environmental or social impacts owing to the emission of pollutants, waste or hazardous materials covered by national legislation, international conventions or internationally recognized standards or by sustainable resource use. It is also triggered by potentially less significant levels of GHG emissions.</p> <p>2. Especially Component 1 activities may generate pollution to water, land, and air, and consume resources such as energy, water, and raw materials. Certainly, more efficient, and effective use of resources, prevention of pollution and avoidance of GHG emissions, and application of appropriate climate-proof technologies and industry practices/standards/guidelines during construction, operation (including disposal) and</p> | In compliance with OS 4, the technical studies of the proposal will include an analysis of any potential impacts from the project components as well as the identification of potential mitigation measures. |

| | | | | |
|------|-------------------------------------|--|---|---|
| | | | decommissioning phases should be adopted. This OS 4 will be triggered. | |
| OS 5 | Labor Conditions, Health and Safety | <p>1.To protect the workers' rights and to establish, maintain, and improve the employee-employer relationship.</p> <p>2.To promote compliance with national legal requirements and provide due diligence in case national laws are silent or inconsistent with the OS.</p> <p>3.To provide broad consistency with the relevant international labor Organization (ILO) Conventions, ILO Core Labor Standards and UNICEF Convention on the Rights of the Child in cases where national laws do not provide equivalent protection.</p> <p>4.To protect the workforce from inequality, social exclusion, child labor and forced labor.</p> <p>5.To establish requirements to provide safe and healthy working conditions.</p> | <p>Yes</p> <p>This OS 5 is triggered for the project components will involve the engagement or establishment of a temporary or permanent workforce. It may be important for the ESIA to also assess any potential risks and threats likely to emanate between project workers and communities where subprojects may be located. It may be prudent that a code of conduct is made part of contracts signed with employees to foster employee-community relationships.</p> | An ESIA study will be conducted to ensure congenial labor working conditions, health and safety of workforce to be engaged or established by the Project. |

Source: AfDB ESAP Document (2015)

Table 8.0**Category Definition for AfDB Project**

| Serial Number | Category | Description/Definition |
|----------------------|-----------------|--|
| 1 | Category 1 | Bank operations likely to cause significant environmental and social impacts. |
| 2 | Category 2 | Bank operations likely to cause less adverse environmental and social impacts than Category 1. |
| 3 | Category 3 | Bank operations with negligible adverse environmental and social risks. |
| 4 | Category 4 | Bank operations involving lending to financial intermediaries. |

Source: AfDB ESAP Document (2015)

4.0 Determination of Potential Impacts of the Covid-19 Pandemic on SMEs

4.1 SMEs severely negatively affected by the Covid-19 pandemic

- Business failure
- Loss of wages, employment, or non-payment of wages.
- Large fall in sale of priced goods.
- Large rise in price of food.
- Chronic/severe illness or accident of household member.
- Death of household member.
- Break-up of household.

4.2 SMEs response to severe shocks of Covid-19

- Relied on savings to point of exhaustion.
- Exhausted unconditional help from relatives and friends.
- Change eating pattern.
- Sold SMEs assets

4.3 Managing Food Shortage

- Change eating pattern
- Sold assets
- Dependant on remittances from relatives and friends
- Credit food for sustenance.

4.4 Any barriers to accessing credit

- Interest payment too expensive.
- Threat from creditors
- No barriers to credit

5.0 Guidelines for Mitigation and Enhancement Measures

5.1 Strategies to increase income

- Expansion of small businesses
- Financial support from Government
- Financial support to restart SMEs

5.2 Livelihood strategy to undertake as relief for Covid-19 effects

- Getting financial support from Government.
- Restart SME business or do other business.
- Trade – buying and selling

5.3 Transition Allowance Support

Transition support complements other livelihood restoration measures to ensure that youth, women and SMEs can meet their basic needs and maintain their standard of living, once their livelihood supports have been truncated by Covid-19 effects. This should be given to youth, women and SMEs which are vulnerable to access basic goods and services to maintain household standard of living including food, health care and educational cost support. Transition allowance support should be calculated based on the average monthly incomes for youth, women and SMEs business type or on the cost of rent for this targeted group. These costs should be incorporated into the LRP budgets for each group.

5.4 Financial Literacy Training Program

Series of Financial Literacy Training sessions are expected to be delivered to the youth, women and SMEs to support them in making informed decisions about how to use and invest their green climate finance to support their livelihoods. The traditional financial institutions like Ecobank, Agriculture Development Bank, Ghana Commercial Bank, etc., within the project catchment zones can be contacted to offer Financial Literacy Training Program services to the youth, women, and SMEs in the project area. The Financial Literacy Training Program is expected to be in the form of short courses with modules or training sessions to be delivered for 1-2 months for up to three (3) years.

5.5 Formation of Community Livelihoods Committee (CLC) and LRP Steering Committee

Kwaku Anim Boateng (Independent Consultant)

CLC is expected to be formed from community representatives who represent youth, women and SMEs including specific representatives for the vulnerable groups. They are to deliver on finalization and implementation of the LRP on behalf of the wider affected parties. CLC should be formed consisting of fifteen (15) members.

However, the LRP Steering Committee is to be set up to deliver institutional oversight, technical guidance and to make final decisions on the LRP process. The LRP Steering Committee is to be formed consisting of CLC members, representatives of relevant Government institutions (MDAs), Project Developers, Project Advisors and representatives of Traditional Leaders. About twenty-three (23) members should be registered as core members of the LRP Steering Committee.

5.6 LRP Grievance Redress Mechanism Registry

The LRP implementation program is expected to adopt a clearly defined grievance mechanism to register all complaints emanating from the Stakeholders Engagement Plan. The grievance mechanism is to address the following: avenues for raising complaints by youth, women and SMEs; resolve disputes or issues arising from the project cycle including post Covid-19 impacts; LRP implementation program effects.

SIF should develop Grievance Mechanism Forms for registration of complaints or grievances associated with the LRP implementation program. These Grievance Mechanism Forms should be distributed among the traditional leaders, assemblymen and women within the project areas and opinion leaders for easy access to complainants. On the Grievance Mechanism Forms, complainants are expected to provide the following information: name; community or town; telephone number; date; nature of grievance and suggested solution if any. SIF should address issues emanating from the Grievance Mechanism Forms to the satisfaction of the complainants. The grievance redress mechanism process should be dynamic and ongoing and will continue beyond the project implementation cycle.

6.0 Development of Checklist and Guidelines

6.1 Environmental and Social Screening Process

Environmental and social screening marks the beginning of ESIA or ESMP process for any proposed project. The screening should be initiated as early as possible along with the sub-project planning process after the subproject is conceived. The extent of environmental assessment that might be required to be carried out in respect of a proposed subproject will depend on the outcome of the screening process. The purpose of the preliminary screening is to:

- rapidly determine whether proposed projects are likely to have potential negative environmental and social impacts;
- decide if form EA1 needs to be submitted to EPA;
- identify appropriate mitigation measures for activities with adverse impacts;
- incorporate mitigation measures into the project design as appropriate;
- review and approve projects proposals and
- monitor environmental and social impacts and concerns during implementation.

The early screening process will also consider the provisions of the RFP for possible land acquisition and livelihood impacts. SIF as Lead Implementation Team (LIT) must carry out the preliminary environmental and social screening for each proposed subproject by using the checklist (suggested in Annex 2) and liaise with the AfDB and EPA for determination of their significance, assignment of appropriate environmental category, recommendation of appropriate safeguards instrument that should be prepared for the subproject in order that the project implementation is in compliance with the AfDB operational safeguards policies and national environmental requirements of the Post Covid-19 Restoration Program (PCRP) project. If significant impacts are anticipated, the EPA and the Ghana Environmental Assessment (EA) procedures duly followed. When there are minimal or no impacts (as determined using the checklist), SIF LIT must consult internally with their Project Implementation Team (PIT) safeguard persons at the respective Allied Agencies and have a confirmation from the AfDB. Once an agreement is reached, the LIT safeguard person may proceed with the minimum regular reporting requirements which will be discussed and agreed with the AfDB prior to commencement of works/action. No subproject requiring preparation of a safeguards instrument should commence until the said safeguards instrument is completed by the Client, approved by the AfDB and EPA, and disclosed publicly in Ghana and on the AfDB external website.

6.2 Environmental and Social Assessment Procedures to be followed by Projects

The formal environmental approval and permitting processes will be guided by the AfDB operational safeguards which provides guidance on the environmental assessment procedures for AfDB funded projects. The Ghana EIA procedures (EPA, 1994) and EPA Environmental Assessment

Regulation LI 1652 or 1999 have also established a process to screen and evaluate all developments, undertakings, projects and programmes which have the potential to give rise to significant environmental impacts. The two processes are largely similar and the Ghanaian procedures are therefore given in the following sections and will mostly be statutorily followed by all projects to obtain environmental permits. Those projects requiring EPA clearance will only commence when an environmental permit has been procured from the EPA. The Agency has provided the list of projects for which ESIA is mandatory. These are consistent with the AfDB categorization of projects. The Project will be guided by the EPA Environmental Assessment Regulations 1999 to ensure environmental and social compliance.

Initial screening/ assessment: This activity in accordance with the EAR 1999 LI 1652 and is the responsibility of the EPA. This activity will help the EPA in determination of appropriate environmental category of the proposed project. The EPA, on receipt of an application from (Form EA1 or Form EA2) the PCU, including such information as may be required; will carry out an initial assessment taking into consideration factors such as the following:

- Location, size, and likely output of the undertaking;
- Technology intended to be used;
- Concerns of the general public, if any, and in particular concerns of immediate residents if any; and
- Land use, and other factors of relevance to the particular, undertaking to which the application relates.

Where the Agency is satisfied with an initial screening, it registers the activity which is the subject of the application and issues an environmental permit. The extent of environmental and social work that might be required of the Client for the subproject prior to implementation will depend on the outcome of the screening process. The Agency, within 25 days of receiving the Registration or Application Form will take a decision by placing the project at the appropriate level of environmental assessment. The results will be communicated to the implementing agency (Client) with reasons, which could be any of the following:

- approved or
- is objected to ; or
- requires submission of a preliminary Environmental report; or
- requires the submission of an environmental and Social Impact statement.

Reporting under L.I. 1652: The Regulations provide for a number of reports by the proponent of an undertaking. These include the following:

- Screening report;
- Preliminary environmental report;
- Scoping report;

Kwaku Anim Boateng (Independent Consultant)

- Environmental Impact Statement; and
- Annual environmental report.

Screening Report: The screening report is prepared at the earliest stages of the EIA process and allows a determination to be made by the Agency about the level of environmental assessment of a particular undertaking.

Preliminary Environmental Report: In some instances, the Agency may come to the conclusion that an activity requires a preliminary environmental report (PER). Where such a decision is arrived at, the applicant would be required to submit a PER. The PER will contain details extending beyond that contained in the initial application. The new application must state specifically the detailed effects of the proposed undertaking on the environment. Where a PER is approved, it is registered, and an environmental permit is issued. In the event that on receipt of a PER the Agency is satisfied that there will be a significant and adverse impact on the environment, the applicant will be expected to submit an environmental impact statement (EIS) on the undertaking for assessment of the environmental impact of the proposed undertaking.

Scoping Report: The Regulations require that the EIS shall be outlined in a scoping report. The scoping report sets out the scope or extent of the EIA to be carried out by the applicant and includes draft terms of reference (TOR) which must indicate the essential issues to be addressed in the EIS. On the acceptance of a scoping report by the Agency, the applicant is informed to submit an EIS based on the scoping report.

Environmental Impact Statement (EIS): The EIS must address potential direct and indirect impact of the undertaking on the environment at the pre- construction, construction, operation, decommissioning and post-decommissioning phases. Additionally, changes in social, cultural and economic patterns must be dealt with in the EIS.

Annual Environmental Report: A person granted an environmental permit under the Regulations is required to submit an annual environmental report in respect to his undertaking after 18 months from the date of commencement of his operations and thereafter on a 12-monthly basis to the Agency. The EPA is required to define the form and content of the Annual Environmental Report.

Public Consultation: Public participation is provided for in the Regulations. These provisions are secured through advertisement of the scoping notice for comments and public hearings. There is a Technical Review Committee that reviews Environment Impact Statements (EISs) prior to permitting of all undertakings for which EIAs are required. The membership of this committee is constituted on the discretion of the Agency through the use of administrative procedures.

Review and approval of EIA: The proponent submits the final draft EIA to EPA. The report is reviewed by the MMA and by the EPA. Copies of the EIA are placed at vantage points including the EPA Library, relevant MMA, EPA Regional Offices. EPA serves a 21-day public notice in the national and local newspapers about the EIA publication and its availability for public comments.

Public Hearing and Environmental Permitting Decision (EPD): Public Hearing Regulation 17 of the LI 1652 specifies three conditions that must trigger the holding of a public hearing on a project by the Agency. These are the conditions:

- Where a notice issued under regulation 16 results in great public reaction to the commencement of the proposed undertaking;
- Where the undertaking will involve the dislocation, relocation or resettlement of communities and
- Where the Agency considers that, the undertaking could have extensive and far -reaching effects on the environment.

Where a public hearing is held, the processing of an application may extend beyond the prescribed timelines required for EPA's actions and decision-making.

7.0 Institutional Capacity for ESMF Implementation

7.1 Institutional Arrangements

The Social Investment Fund (SIF) and the Allied Agencies would be the main institutions responsible for the Post-Covid-19 Restoration Program (PCRP). The SIF is the implementing agency under the MoF mandated to implement this project. The Regional Coordinating Council and the Environmental Protection Agency are major stakeholders with institutional roles in the areas of coordination, assessment and monitoring. These institutions will be directly involved with the review of the ESMF. The SIF and the allied agencies will coordinate work among the relevant institutions and liaise with management on approval of agreed activities for speedy implementation. A technical team comprising these two institutions will guide the implementation of the project. The successful implementation of the ESMF will depend on the commitment, capacity of personnel and the appropriate and functional arrangements within these institutions.

The project will establish an organizational structure with qualified staff to support management of E&S risks including E&S team for E&S management that are a part of the organizational structure. Given that social investors and service providers will be engaged to deliver activities under sub-component 1.1, it is important that the safeguard team of SIF screen sub-project activities, advise appropriately and ensure that relevant safeguard instrument e.g., ESIA, ESMP, RAP, ARAP, etc. are prepared and cleared by the AfDB before commencement of activities. The contractor(s) to be engaged to undertake renovation works will also have a role to play in the implementation of sustainable environmental and social measures at the sub-project level. Consultation with CSO's NGO's and community representatives will also be crucial.

7.2 Project Steering Committee

A Project Steering Committee (PSC) comprising the SIF Chief Executive Officer and/or other delegated allied agencies officials will provide oversight for the entire implementation team. The PSC will be responsible for assessing and guiding the project implementation progress on the ground and undertake site visits as necessary. Specifically, the PSC will undertake the following functions:

- Provide guidance on strategic, policy and implementation issue.
- Coordinate activities of the SIF, allied agencies and other stakeholders involve in the implementation of the project.
- Review and approve annual work plan and budgets.
- Review quarterly and annual progress reports and make recommendations.
- Guard the implementation trajectory to ensure that project objectives are met.

- Resolves issues that could not be dealt with by lower level authority.
- Provide oversight and ensure the project comply to all environmental and social safeguard requirements of the project.

The PSC will be chaired by the Chief Executive of SIF or his designee and will include representatives of the following allied institutions:

- University of Ghana Medical School;
- University of Ghana Biotechnology Centre;
- University of Ghana Nursing and Midwifery School;
- Ghana News Agency;
- Microfinance and Small Loans Centre (MASLOC); and
- Environmental Protection Agency;

The representatives would be at the Chief Director level for the SIF and at the Director levels for the agencies.

7.3 Project Implementation Team (PIT)

The Project Implementation Team (PIT) comprising team leaders from SIF and Allied Agencies will undertake the following:

- Coordinate work among the relevant institutions.
- Liaise with management on approval of agreed activities for speedy implementation.
- Liaise with Regional Coordinating Councils to ensure their full participation in the supervision of the project.
- Prepare and update the schedule of activities/procurement plans to be executed under the project.
- Review reports submitted by supervising entities.
- Prepare briefs to the SIF leadership (PST)
- Have overall responsibility to ensure the project comply to environmental and social safeguard requirements of the project.

7.4 Regional Coordination Council Oversight Committee (RCCOC)

The Regional Coordination Council (RCC) have responsibility for the project implementation in collaboration with the beneficiary GNA Offices. The RCC has a stake in the provision of land for the proposed project sites (especially Takoradi GNA proposed project site). The RCCOC will undertake the following responsibilities:

Kwaku Anim Boateng (Independent Consultant)

- Liaising with relevant Agencies at the regional level.
- Work with project environmental and social consultants when required.
- Ensure compliance with all recommendations by regulatory agencies.
- Assist in the selection of sub-projects (GNA proposed project sites).
- Work with SIF at the sub-project level.
- Provide oversight responsibility and ensure project comply with environmental and social safeguard requirements of the project at the regional level.

The project will establish Project Implementation Arrangements organogram.

7.5 Environmental Protection Agency

The EPA is the national regulatory agency on the environment and has the mandate to review environmental and social management frameworks prepared in the country before disclosing the document at the EPA website and the info shop of the AfDB. For the PCR, however, EPA's role will be determined by the scale of renovation works that will be undertaken under the project. The EPA will assist the RCC's in monitoring activities that affect human and environment at the sub-project level. They will ensure that activities of contractors and sub-contractors comply with laid down procedures and guidelines that mitigate risks of noise, air/water pollution, waste collection and disposal. The EPA will also deal with complaints that are environmentally related using national guideline and applying requisite sanctions to restore sanity in the operational area of the sub-projects.

7.6 Institutional Strengthening and Capacity Building

The SIF, Allied Agencies, EPA, RCCs and Project Communities are the main implementers of environmental and social safeguards in the project. The other bodies whose functions relate to the project in terms of oversight, project design and technical support include the PSC and the SMEs. The SIF and the Allied Agencies have successfully implemented AfDB projects over many years. SIF, over the previous years, has been implementing Infrastructure Improvement Projects and has adequate staffing and capacity for financial management, procurement, safeguards and monitoring and evaluation. Safeguards capacity at the regional and local level will be upgraded. It is therefore recommended that safeguards training, and clarification of roles be undertaken for the regional staff and community actors. The principal objective of the training will be to

Kwaku Anim Boateng (Independent Consultant)

enhance staff capacity to implement the specific safeguard instruments e.g. ESMP (the ESMP has already been prepared) and RAP which will be prepared during project implementation, where applicable.

A-day training workshops led by the national safeguards team will be organized at the regional level for the PSC, PIT, contractors and sub-contractors. This Workshop will focus on identifying and discussing environmental and social issues that will arise during the implementation of the ESMF and ESIA. They will also sensitize participants about environmental and social considerations of the project guidelines and environmental and social safeguards as indicated in the AfDB OS.

Budgetary Provisions

Budgetary Provisions: The budget and financial support for the cost outlays for Livelihood Restoration Plan (LRP) capacity building of project implementation units is about **USD 300,000.00**.

Table 9.0 **Profile of LRP Budgetary Provisions**

| Serial Number | Description | Cost (USD) | Comments |
|---------------|---|------------|---|
| 1 | Institutional Arrangements | 55,000.00 | Main Institutions to handle the LRP |
| 2 | Project Steering Committee | 50,000.00 | Assessing and guiding the LRP |
| 3 | Project Implementation Team (PIT) | 75,000.00 | Overall implementation team for the LRP. |
| 4 | Institutional Strengthening and Capacity Building | 120,000.00 | Organization of training workshops on LRP implementation and monitoring programs. |
| 5 | Total Budget | 300,000.00 | |

Source: Independent Consultant Data Records

8.0 Development of Monitoring Plan

8.1 Environmental and Social Mitigation, Monitoring and Reporting

Monitoring is a key component of the ESMF during project implementation. Monitoring should be undertaken at the sub-projects implementation phase to verify the effectiveness of impact management, including the extent to which mitigation measures are successfully implemented. Monitoring should involve three areas:

- Compliance monitoring.
- Impact monitoring; and
- Cumulative impact monitoring.

The aim of monitoring would be to:

- Improve E&S management practices.
- Check the efficiency and quality of the EA processes.
- Establish the scientific reliability and credibility of the EA for the project; and
- Provide the opportunity to report the results on safeguards and impacts and proposed mitigation measures implementation.

8.1.1 Compliance Monitoring

This is to verify that the required mitigation measures as set out in the appropriate E&S safeguard instrument are implemented. Compliance monitoring will involve inspections during renovation, refurbishment or construction works. The operational phase of the sub-projects will also be monitored. Compliance monitoring will be done by SIF and RCC with support from EPA.

8.1.2 Impacts Monitoring/Reporting

Monitoring of sub-projects impacts mitigation measures should be the duty of the Environmental and Social Safeguard Officers. They will monitor activities to ensure that works are proceeding in accordance with the laid down mitigation measures. The SIF and RCC should ensure that the

contractor submits quarterly report on work progress and any challenges in observing the E&S safeguards. Moreover, the ESMF impacts identified, methods used, sampling locations, frequency of measurements and definition of thresholds indicating need for corrective actions, cost layout and responsibility assignment have been shown in a matrix format.

Table 10.0 ESMF Monitoring Indicators and Responsibilities

| No | Monitoring level | Monitoring Issue | Verifiable indicators | Responsibility |
|----|-----------------------------|--|---|---|
| 1. | ESMF level | Adequate dissemination of ESMF to stakeholders | Evidence of newspaper disclosure of ESMF. Record of consultations and meetings | PIT; SIF and Allied Agencies Consultants |
| | | | Workshop reports | |
| | | Capacity building and training programmes | Training reports | PIT |
| 2. | Sub- project activity level | Screening of sub project | Checklist completed | PIT; SIF and Allied Agencies |
| | | Completion of EA1 & EA2 forms | Completed EA1 Form & EA 2 Form submitted to the EPA | PIT; SIF and Allied Agencies |

| | | | | |
|--|--|---|--|---|
| | | Adequate mitigation measures provided to manage adverse impacts | ESIA/ESMPs prepared | PIT; SIF and Allied Agencies. consultants |
| | | Project satisfies statutory provisions EPA Act 1994 (Act 490) LI 1652, 1999 | EPA Permit for project | PIT; SIF and Allied Agencies |
| | | Post project monitoring and evaluation | Monitoring reports, annual environmental reports | PIT; SIF and Allied Agencies |

Source: Independent Consultant Data Records

9.0 Inter-Agency Coordination and Public/Sector/NGO Involvement

The feasibility of broad-based participation, government agencies, local NGOs, private sector and affected individuals, groups of people is addressed under this section. Moreover, benefits of broad-based partnership in implementation and monitoring project's outcome is disclosed here.

9.1 Stakeholders Participation Strategy

Both public/community and institutional consultations were carried out as critical form of environmental and social education through awareness creation. The aim was to alert all sections of the population in the immediate vicinity of the project including relevant institutional officers of the requirements of the proposed project and the imminent challenges of the project execution methods. By such participatory strategy all stakeholders, were roped in as part of the consultation process.

9.2 Purpose of Stakeholders Engagement Plan (SEP)

A Stakeholder Engagement Plan was adopted to capture all relevant stakeholders such as government officials, community leadership and potentially interested Non-Governmental Organizations (NGOs). The purposes of the SEP are as follows:

- To describe the Project Proponent's Strategy and Program for engaging with stakeholders in a culturally appropriate manner.
- To ensure the timely provision of relevant and understandable information and to create a process that provides opportunities for all stakeholders to express their views and concerns and allows the Project Proponents to respond to them.
- To identify individual stakeholders, stakeholder groups, communities, organizations and business that have a direct or indirect interest and influence on the project site.
- To establish project lifetime relationship with stakeholders that encompasses a range of activities sharing and consultations, to participation, negotiation and formation of partnership.
- To enable stakeholders to participate and inform the ESIA process and baseline data.
- To keep a record of all meetings (both formal and informal), consultations and any commitments made to facilitate successful management of stakeholder's engagement.

9.3 Strategic Objectives for Environmental and Social Education

The following strategic objectives was adopted as basic principle for environmental and social education:

- Awareness creation and sensitization to the total project environment and its accompanying project impacts.

Kwaku Anim Boateng (Independent Consultant)

- Enhance stakeholder's acquisition of basic understanding of the total project environment, associated project impacts and the critical role they can play in it.
- Transform attitudes and habits of stakeholders towards the total project environment, thereby motivating them to participate in the project and help in its improvement.
- Develop stakeholder's sense of responsibility and adoption of effective solutions to environmental problems.

9.4 Methods of Dissemination for Environmental and Social Education

The major methods adopted for environmental and social education dissemination included the following:

- Exchange of ideas, dialogues, discussions and one-on-one consultations as part of interpersonal communications.
- Focus group discussions as part of interpersonal communications.
- Structural formal interviews as part of interpersonal communications.

9.5 Public Rights

The public has various rights with regards to consultations and engagements as stakeholders on the development and implementation of the proposed project. Such rights was also considered as part of the stakeholder's participation strategy. These public rights are:

- Right of access to information.
- Right to contribute to information.
- Right to challenge decisions.

9.6 Grievance Redress Mechanism

The legal framework for Grievance Redress has bases in the Constitution of Ghana (Article 20), as well as in the State Lands Act (1962). A Grievance Redress Mechanism (GRM) is an integral part of any administration. For accountability, responsiveness and credibility of any administration there should be an efficient and effective GRM to deal with concerns of stakeholders who may have issues with decisions and actions taken. The administration of the sub-projects is no exception to this rule. The main objective of the GRM is to assist an entity to resolve complaints and grievances in timely, effective and efficient manner to satisfy all parties involved. Specifically, it provides transparent and credible process resulting in outcomes that are fair, effective and lasting. It also builds trust and cooperation as an integral component of broader community consultation that facilitates corrective actions.

The SIF through the implementation of the project has put in place a GRM. SIF will identify the weaknesses and harness the existing GRM established under the project. The project will support a GRM system that would have three toll free numbers which complainants or PAPs can directly call. These are land lines that will terminate at the Client Services Unit (CSU) of the SIF. The CSU is an existing unit of the SIF, with professional personnel manning dedicated telephone lines. The personnel have also been given orientation on how to receive calls from PAPs, document relayed information and pass it on to the Project Coordinator's office. In addition, staff at the CSU will also fill in a form (Grievance Register) as they interact on phone with the complainants for record purposes and further processing. Complainants who cannot communicate in English would have the liberty to use their local language as the unit would find an interpreter for ease of communication. Complainants would also be assured of a feedback within 24 hours and the matter would be resolved within 10 working days. Complainants could also use other complaint update channel like email or dropped off written complaints at the CSU for redress. The RCC are important stakeholders in addressing issues therefore complaints received from PAPs at the CSU would be relayed to them by the Project Coordinator (PC) through email or a WhatsApp platform developed for this purpose.

To enhance the system, SMS and coding of grievances will be incorporated into the system to widen its scope. The enhanced GRM would require categorization of grievances to be channeled to the appropriate location of the SIF and the Allied Agencies for redress. If a person is not satisfied with the GRM process and /or results, s/he can appeal to any independent body such as the Commission on Human Rights and Administrative Justice (CHRAJ) to seek redress or go to the law court as the last resort.

9.7 ESMF Disclosure

AfDB policies require continuous engagements with stakeholders during the preparatory and implementation stages of all projects. After incorporating stakeholders' views in all environmental reports for projects, they are made available to project affected groups, local NGOs, and the public at large. Public disclosure of ESIA documents or environmental reports is also a requirement of the Ghana ESIA procedures. However, there is no limitation as to the extent and scope of disclosure. Stakeholder consultations have been undertaken in the preparation of this project as well as the ESMF. SIF and RCC in collaboration with EPA will make available copies of the ESMF in selected public places as required by law for information and comments. Public notice in the media should be served for that purpose.

The notification should be done through a newspaper or radio announcement or both. The notification should provide the following information:

- a brief description of the Project.
- a list of venues where the ESMF report is on display and available for viewing.
- duration of the display period; and
- Contact information for comments.

Kwaku Anim Boateng (Independent Consultant)

The EPA will assist to select display venues upon consultation with SIF and RCC. These would be project sites specific and very much informative to beneficiaries.

9.8 Summary of Public and Community Consultations

Both public and community consultations and engagement which are still on-going were carried out as part of individual consultations for the proposed development. The results are depicted in a matrix format.

Table 14.0

Profile of Individual Consultations

| Date of Consultations | Location | Consultees | Position/Occupation | Comments |
|-----------------------------|---------------------|---|---|--|
| 22 nd March 2022 | SIF Conference Room | Mr. Kofi Frimpong Dr. Albert Kofi Asamoah-Baah Mr. Augustine Donkor-Afram Dr. Kwaku Agbesi Mr. Kwaku Anim Boateng Mrs. Stella Arthur | Executive Director (SIF) – 0244288137 Technical Advisor (SIF) – 0546372969 Finance and Accounting Specialist – 0244853555 Procurement Specialist – 0244622874 Independent Consultant – 0244657627 Executive Director’s Secretary - | Focus Group Discussion: Negotiation meeting with Environmental and Social Impact Assessment Consultant held at the Conference Room of SIF. The meeting discussed the revised scope of works to form the basis for the implementation of the assignment. The meeting agreed that the duration of the assignment shall be six (6) weeks from the date of signing of the contract as specified in the ToR. |
| 29 th March 2022 | GNA Office, Accra | Mr. Kofi Owusu | Managing Director- 0544355300 | Project Appreciation: development of human resources; expansion of infrastructure base; space enhancement; space utilization for developmental program; employment creation and job generation; locality economic enhancement. Project Concerns: fire prevention and control; construction waste generation and disposal; traffic nuisance and control; erosion and siltation episodes; air pollution; noise and vibration effects; public health and safety; pedestrian traffic disruptions; loss of ornamental trees; |
| 29 th March 2022 | GNA Office, Accra | Mr. Norbert Asenso | Director Business Development Department - 054292292 | Project Appreciation: human resource development; infrastructure expansion; enhancement of spacing; utilization of spacing; job creation and employment generation; locality economic enhancement. |

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| | | | | Project Concerns: water and energy consumption increase; incidence of erosion and siltation; air pollution (dust, exhaust fumes and odor); noise and vibration construction waste disposal; construction material hazards; preservation and addition of trees; pedestrian traffic obstruction; contractor must adhere to all requirements that are needed environmentally; contractor needs to evaluate and possibly consider working in the evenings to reduce the effects of the activities on noise and traffic as the location is in the central business district. |
| 29 th March 2022 | Department of Medical Microbiology, Korle Bu, Accra. (University of Ghana Medical School, Korle Bu, Accra) | Professor Kwamena Sagoe | Virologist, Lecturer, Principal Investor, Project Director - 0277408528 | Project Appreciation: human resource development; building facilities expansion; space enhancement; space utilization; development plan phasing (in order of priority); jobs and employment creation and generation. Project Concerns: water and energy consumption increment; soil erosion and siltation of water bodies; air pollution; noise and vibration nuisance; construction waste disposal; construction material hazards; visual impairment and intrusion; traffic flow obstruction and nuisance; public health and safety; occupational health and safety; pedestrian traffic flow disruptions. |
| 30 th March 2022 | School of Nursing and Midwifery (SONM), University of Ghana, Legon, Accra. | Mrs. Lydia Aziato | Professor, Dean - 0244719686 | Project Appreciation: human resource development; Structures and buildings expansion; space enhancement; utilization of available space; jobs creation and employment generation; locality economic enhancement. Project Concerns: Limited trees to be cut; occupational health and safety; public health and safety; traffic flow disruptions and delays; hazards posed by construction materials; noise and vibration pollution; air pollution; soil erosion and siltation of water |

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| | | | | resources; water and energy consumption increment. |
| 30 th March 2022 | Physical Development and Municipal Services Directorate, University of Ghana, Legon, Accra. | Mr. Edmund Sekyere Senyah | Architect - 0243280624 | <p>Project Appreciation: Legon campus economy enhancement; space utilization and enhancement; infrastructure and facilities enhancement; employment creation and jobs generation; development of human resources.</p> <p>Project Concerns: construction materials hazards; construction waste generation and disposal; noise and vibration nuisance effects; water and energy consumption increase; construction traffic congestion and delays.</p> |
| 30 th March 2022 | Biotechnology Centre, University of Ghana, Legon, Accra. | Dr. John Eleblu | Senior Lecturer - 0551149317 | <p>Project Appreciation: employment and jobs creation and generation; key research outputs, products, technologies; economic enhancement for locality; human resources capacity building and development; space utilization and enhancement.</p> <p>Project Concerns: pedestrian traffic obstruction and severance effects; air pollution; fire prevention and control; waste generation and disposal from construction activities; soil erosion and siltation of water bodies; noise and vibration effects; construction traffic flow nuisance; visual intrusion and impairment; occupational health and safety; public health and safety; air pollution.</p> |
| 30 th March 2022 | MASLOC, Accra. (EBank Capital, Ridge, Accra) | <p>Mr. Jim Amegah Mr. Daniel Okuampah</p> <p>Mr. Eugene Agben</p> <p>Mr. Kwaku Anim Boateng</p> | <p>CEO – Eban Capital (0244296059). Director Finance and Strategy – EBank Capital (0208080587). Information Technology Consultant – (0504411414). Independent Consultant – 0244657627</p> | <p>Focus Group Discussion: Digitization of Loan Application and Recovery – commercial banks are not lending to SMEs creating the space for them to be pulled together into groups, trained to change their attitudes and behaviour. Self-management of the groups is necessary for the group executives to guarantee their credit worthiness. Accessibility to loans becomes easier due to self-governing, self-sustaining</p> |

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| | | | | <p>and self-motivating assured by the group operations and dynamics. From MASLOC statistics in Ghana 4.5 million people have bank accounts as compared to an unbanked population of 30.8 million. The unbanked in Ghana form the vast majority of the population. However, out of 30.8 million people, 29.1 million people have mobile phone access and mobile money accounts. There is an estimated 1.7 million people yet to be integrated into the mobile money system. The digitization and automation of the MASLOC loan management system will do a lot to bring more people onto the banking system and mobile money platform and reduce the need for physical cash transactions.</p> <p>Implementation of Livelihood Restoration Program - The focus of the livelihood restoration plan is to support youth and women to quickly re-establish life-support activities to reduce their vulnerability from impacts of Covid-19 pandemic. Given the importance of entrepreneurship and employment creation for youth and women and the links between livelihood, sources of income and vulnerability, it is recommended that the main livelihood support program focuses on skills training. attention should be paid to the needs of disadvantaged groups among those targeted for livelihood intervention. Vulnerable individuals or groups among the youth, women and the SMEs are particularly the marginalized or disadvantaged and who might thus be more likely than others to experience adverse impacts from the Covid-19. Vulnerability can be determined by identifying the likelihood that an individual or a group faces harder conditions as the result of</p> |
|--|--|--|--|--|

| | | | | |
|-----------------------------|------------------|----------------------|----------------------|---|
| | | | | the Covid-19 impacts. This vulnerable status may stem from a group's gender, economic status, ethnicity, religion, cultural behaviour, sexual orientation, language or physical and psychological health conditions. Vulnerable groups may include, among others, female-headed households, those below the poverty line, the landless, those without legal title to assets, ethnic, religious and linguistic minorities, indigenous peoples, those who are disabled, etc. |
| 31 st March 2022 | GNA Office, Tema | Mr. Francis Ameyibor | Manager – 0277438688 | <p>Project Appreciation: enhancement of conducive working environment; human resource improvement and capacity building; replacement of old dilapidated building; enhancement and utilization of space; employment creation and job generation; local economy enhancement.</p> <p>Project Concerns: rainy season construction activities delays; soil erosion and siltation; noise and vibration incidence; air pollution; construction waste removal from site; traffic flow and disruptions; occupational health and safety; traffic disruptions and congestion from construction activities.</p> |

Source: Independent Consultant Data Records

APPENDICES

APPENDIX A – MASLOC , ACCRA – STAKEHOLDERS ENGAGEMENT OF EBAN CAPITAL OFFICIALS IN FOCUS GROUP DISCUSSION OF LIVELIHOOD RESTORATION PLAN (LRP)



EBAN Capital Officials (Left Hand Side)



EBAN Capital officials with Independent Consultant (Right Hand Side)

Kwaku Anim Boateng (Independent Consultant)

POST COVID-19 RECOVERY PROGRAM

STAKEHOLDERS CONSULTATION AND ENGAGEMENT PROGRAM

SCOPING EXERCISE SUMMARY SHEET

Stakeholder Name(s):.....

Affiliation / Occupation:.....

Title:.....

Location:.....

Date:.....

Please tick more than one response for the underlisted items

PROJECT APPRECIATION / BENEFICIAL IMPACTS

- **Human Resource Development**
- **Expansion of Infrastructure**
- **Space Enhancement**
- **Space Utilization**
- **Development Plan Phasing (in order of priority)**
- **Employment Generation and Job Creation**
- **Economic Enhancement for Locality**

PROJECT CONCERNS / NEGATIVE IMPACTS

- **Water and Energy Consumption Increment**
- **Erosion and Siltation Incidence**
- **Air Pollution (Dust , Exhaust Fumes and Odour)**
- **Noise and Vibration Effects**
- **Construction Waste Disposal**
- **Construction Material Hazards**
- **Visual Impairment and Intrusion**
- **Traffic Flow Obstruction / Nuisance**
- **Public /Occupational Health And Safety**
- **Biodiversity Loss**
- **Pedestrian Traffic Obstruction / Severance Effect**

STAKEHOLDER'S MAIN ISSUES OF CONCERN

.....

.....

.....

Kwaku Anim Boateng (Independent Consultant)

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STAKEHOLDERS' RECOMMENDATIONS FOR MAIN ISSUES OF CONCERN ADDRESSAL

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Stakeholder’s signature:.....

NB: Signing this form confirms that you were consulted during the scoping exercise program.

POST COVID-19 RECOVERY PROGRAM

ENVIRONMENTAL FEATURES CHECKLIST FOR SITE SELECTION

PHYSICAL ASPECTS

1. PROJECT LOCATION

- Region
- District / Municipality
- Project Type/Name

2. TYPE OF INFRASTRUCTURE:

- Department of Medical Microbiology, University of Ghana, Korle Bu, Accra.....
- School of Nursing and Midwifery, University of Ghana, Legon, Accra.....
- Biotechnology Centre, University of Ghana, Legon, Accra.....
- Ghana News Agency Office, Accra.....
- Ghana News Agency Office, Tema

3. TYPE OF ACCESS TO EDUCATIONAL INFRASTRUCTURE

- Footpaths.....
- Unmotorable Feeder Road.....
- Motorable Feeder Road.....
- Motorable Paved Road.....

4. PROJECT SITE CONDITIONS

- Wet Period: Accessible..... Inaccessible.....
- Dry Period: Accessible..... Inaccessible.....

5. DEMOLITION OF STRUCTURE(S) TO MAKE WAY FOR PROJECT:

- Structure type..... Structure condition.....

6. Topography of project site landform

- Gentle rolling landscape
- Undulating hilly landscape
- Evidence of potential landslide

7. Hydrology and drainage pattern

- Stream: Name..... Distance from site.....
- River: Name..... Distance from site.....
- Wetland: Distance from site.....
- Floodplain: Distance from site.....
- Potential flooding Area / Site. Yes ☐ No ☐

Biological / ecological aspects

8. Type of flora content / plant species.....

9. Flora content / plant species:

- Threatened..... Not threatened.....

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10. Type of Fauna species.....

11. Fauna species:

- Threatened..... Not threatened.....
- Presence of Cattle route.....

12. Presence of protected areas:

- Forest Reserve.....
- Keta Lagoon.....
- Biodiversity Preserve.....

13. Presence of sensitive developments:

- | | |
|-----------------------------------|-----------------------|
| ➤ Shrine..... | ➤ Cemetery..... |
| ➤ Grove..... | ➤ Mausoleum..... |
| ➤ Borehole..... | ➤ Hand-dug well..... |
| ➤ Pipe borne water..... | |
| ➤ Market..... | ➤ Lorry park..... |
| ➤ Taxi Rank..... | ➤ Clinic..... |
| ➤ Health Center..... | ➤ Hospital..... |
| ➤ CHIPS..... | ➤ Maternity home..... |
| ➤ Traditional Healing Center..... | |

14. Presence of electricity network (National Grid)

- Yes..... How far from project.....

➤ No..... How far from project.....

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✓ Name of Inventory Taker.....

✓ Date.....

✓ Time..... Signature.....

✓ Describe any significant feature that can impact on the project, either Positively or
Negatively.....

.....

✓ Group Number: 1 2

POST COVID-19 RECOVERY PROGRAM ON SKILLS TRAINING, RESEARCH AND PRODUCTIVITY PROJECT

LIST OF ALLIED AGENCIES

| NO | NAME OF AGENCY | CONTACT PERSON | CONTACT NO. | POSTAL ADDRESS | EMAIL |
|----|---|---|--------------------------|------------------------------|--|
| 1 | The Social Investment Fund | Mr. Kofi Frimpong /Dr. Kwaku Agbesi | 0244288137/0244622874 | CT 3919 Cantoments, Accra | kfrimpong@sifghana.org /gbesie@yahoo.co.uk |
| 2 | University Of Ghana Medical school (UGMS) | Prof. Kwamena Sagoe | 0277408528 | P. o Box LG 25 Legon | kwsagoe@ug.edu.gh |
| 3 | School Of Nursing and Midwifery (SONM) | Prof. Lydia Aziato | 0244719686 | P. o Box LG 25 Legon | laziato@ug.edu.gh |
| 4 | Biotechnology Centre (UG) | (i)Prof. Kwame Offei (ii)Dr. John Eleblu | 0544316169 0551149317 | P. o Box LG 25 Legon | offei@ug.edu.gh jeleblu@ug.edu.gh |
| 5 | Ghana News Agency (GNA) | Mr. Norbert Asenso | 0542922922 | Kimbu Road, Ministries Accra | Norbert.asenso@gna.org.gh |

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|-----------|---|--------------------------------------|-------------------|---|--|
| 6 | MASLOC | Mr. Jim Amegah | 0244816552 | PMB 261 Cantoment, Accra | jamegah@ebancapital.com |
| 7 | ST. JOHN'S VOCATIONAL/TECHNICAL SCHOOL, NANDOM | Rev. Bro. Godwin Kuuireme | 0208773381 | Nandom | |
| 8 | OTAAKROM TECHNICAL INSTITUTE, ATWIMA MPONUA DISTRICT | Josephine Boham | 0554581672 | Otaakrom | |
| 9 | NSOATRE TECHNICAL SCHOOL | PRINCIPAL | 0249367031 | | |
| 10 | ABETIFI TECHNICAL INSTITUTE | Samuel Macleod Atua-Baadu | 0558608045 | Abertifi | |

POST COVID-19 RECOVERY PROGRAM

SOCIO-ECONOMIC BASELINE SURVEY

1. Name of respondent:.....

2. District / Metropolitan:.....

3. What is the gender of respondent? Male ☐ Female ☐

4. What is the age of respondent (Please tick one box)

☐ 18 and below

☐ 46 - 55

☐ 18 – 25

☐ 56 - 65

☐ 26 – 35

☐ 66 and above

☐ 36 – 45

5. Marital Status: Married ☐ Single ☐ Widowed ☐

6. Educational Background: Primary ☐ J.H.S ☐

 Middle ☐ S.H.S ☐

 Tertiary ☐ Other ☐

7. Profession or Occupation:.....

8. Total Monthly Income

| TICK | GHS |
|--------------------------|--------------|
| <input type="checkbox"/> | Below 200.00 |

| | |
|--|-----------------|
| | 200.00 – 300.00 |
| | 301.00 – 400.00 |
| | 401.00 – 500.00 |
| | Above 500.00 |

9. What is the respondent's Ethnic group?.....

10. What is the religion of the respondent?.....

11. How many dependents respondents have?.....

12. How many dependents of respondents go to school?.....