

Government of Ogun State
Ministry of Education, Science and Technology

June 2018

Consultancy Services to Conduct Survey of Secondary School STEM Teachers

Terms of Reference

1 Background

The Education sector is a top priority of the current Ogun State Government and about 20% of the state budget is spent on education. While Ogun is one of the states with the highest levels of literacy in the country, substantial challenges remain, which are being addressed in the *State Education Sector Plan (SESP)* up to 2030 and the *State Education Operational Plan (SEOP)* 2018 to 2020.

Of particular concern to the Government is also the poor performance of the state's skills development eco-system. The formal TVET sector requires a re-engineering and shift towards demand-orientation to meet the skills needs in the labour market. Overall, the public TVET institutions in the state provide a poor learning environment. Technical teachers are not sufficiently available and largely not conversant with up-to-date technologies and training methodologies. Industry linkages of public TVET institutions are weak, if at all existing. Non-formal training in the numerous training centres as well as informal learning in the traditional apprenticeship system also need improvement.

To address some of the multiple challenges related to skills, the Ogun State Government has requested support from the World Bank to overhaul the state's skills development system, specifically to increase access to skills training, to enhance the quality and market relevance of skills programs and to improve Science, Technology, Engineering and Mathematics teaching in secondary schools. Expected results of the planned interventions include:

- Industry is fully participating in the planning, management, monitoring, delivery and funding of skills development initiatives in the state
- Quality and market-relevance of skills development in Ogun State has increased, resulting in an increased rate of employment and self-employment among completers and graduates from skills development institutions (both formal and non-formal)
- An increasing number of young women access market-relevant skills development through both formal and non-formal education and training programs
- Access by vulnerable population groups, including people with disability, to employment-oriented skills development, based on local market needs, is steadily increasing
- Farmers are equipped with better foundational skills resulting in increased productivity of farm activities and agriculture-based value chains
- Youth undergoing apprenticeship training with mastercraftspersons in the informal sector benefit from improved training quality.

- Increased efficiency in the formal TVET provision, through an expansion of dual apprenticeship training and improved management of Technical Colleges
- Improved teaching of STEM subjects in schools encourages more youth to enroll in skills development programs in Technical Colleges and Polytechnics, and to study engineering subjects
- Better match between supply and demand of skills in the labour market as a result of a coherent policy framework and improved public management capacities

World Bank support to the Ogun Skills Program will focus on five intervention areas:

1. Reforming colleges and technical colleges into **Model Technical Colleges** governed with strong conceptual and operational influence of industry, focusing on selected priority economic sectors (centre of excellence approach), and involving advanced and innovative teaching and learning (e.g. dual training, introduction of technology-enabled teaching and learning, integration of academic (literacy and math) education in TVET programs, etc). Existing Technical Colleges would be rehabilitated and revitalized to become Model Technical Colleges.
2. Development of **apprenticeship training** in Ogun State, scaling up the successful pilot project by ABIOCCIMA to include more companies and occupations, and starting a pilot project to enhance the training quality in the informal sector.
3. Strengthening and expanding **demand-driven community-based skills training**, including literacy programs for farmers. The reform area would be strongly focusing on skills development of vulnerable populations and women. To ensure demand-orientation, the establishment of a competitively accessible funding facility would be considered to support market-oriented training provided by different public and private providers in the state.
4. Driving a **reform of the state's TVET** system, including systems for strong private-sector involvement, sustainable financing mechanisms, technical teachers training and further development, monitoring and evaluation and other fields. The formulation of an Ogun State TVET Strategy and the (re-)appointment of a private sector-driven State TVET Board would be important first steps in the reform process.
5. Strengthening the knowledge and practices of **secondary school STEM teachers** through introduction of an innovative and proven teaching program that utilizes interactive technology in the classroom and an enhanced delivery of content, as well as the development and implementation of a Science, Technology, Engineering and Mathematics (STEM) teacher network for Continuous Professional Development (CPD) to provide support and school based continuous professional development opportunities to teachers.

2 Objective of the Consultancy

This assignment will specifically focus on intervention 5 above. The objective of the consultancy is to conduct a skills gaps assessment survey of STEM teachers.

The skills gap analyses must follow internationally accepted and commonly used methodologies in their specific field, and the proposal must include a detailed outline of the intended approach.

3 Specific Tasks

This survey will assist the Ogun State Government to identify gaps in secondary school teacher training (pre- and in-service) with focus on STEM teacher training; and inform the design of planned interventions for STEM teacher improvement under the skills programs.

The consultant is expected to:

- Provide quantitative data and carry out a qualitative survey of STEM students and teachers in at least 500 public and private secondary schools spread across all local government areas of the State, including assessment of the skills gaps of secondary school STEM students and teachers, for both technical content and pedagogical and methodological skills using internationally used instruments and methodologies
- Provide both quantitative data and statistical information on STEM students (including trend of number, number per subject, learning outcomes etc.,) and teachers (including number, sufficient coverage, characteristics; qualifications etc.)
- Provide quantitative data and carry out qualitative survey on STEM pre-service and in-service public and private teacher training institutions
- Provide quantitative data and carry out qualitative survey on STEM private and public teacher training service providers such as universities, education consulting firms, STEM professional associations
- Assess the availability of STEM materials for teacher training in the state
- Assess teachers' competencies in using technology for teaching
- Conduct interviews with STEM teachers to get their perspective on strengths, weaknesses, areas they need pedagogy and technical support
- Assess ICT and e-learning readiness in schools to get insight on infrastructure (bandwidth, hardware etc), readiness of principals and teachers for using ICT.
- Assess teachers' perceptions on students' needs
- Based on the findings recommend further training materials and modules to be offered for in-service STEM teachers and necessary action to be undertaken to address typical skills gaps already during pre-employment educational programs.

4 Deliverables

1. Inception report, four weeks after commencement of the assignment, including for each of the survey a comprehensive description and justification of the methodology used and sample to be selected, the draft survey instruments and a detailed work plan;

2. Interim Report (report and presentation) describing the results of the pilot questionnaire implementation and possible changes to be undertaken;
3. Provide data that is integratable into the MIS system
4. Draft Survey Report;
5. Final Report

5 Payment Schedule

The payment of the consultant will be based on sign off of deliverables by the Ogun State Ministry of Education, Science and Technology and following the payment schedule below:

| Progress Target | Payment Percentage |
|---|---------------------------|
| Contract signature (mobilization) | 10 |
| Inception Report | 10 |
| Interim Report | 20 |
| Draft of final documents and 85% of data for MIS system | 40 |
| Approval of final activity reports | 20 |
| Total | 100 |

6 Time Frame

The assignment should be completed within four months.

7 Organizational Reporting

The consultant will report to the Ogun State Ministry of Education, Science and Technology and will be supervised by a reference group to be appointed by the Commissioner of Education, Science and Technology of Ogun State. The Ministry will submit all relevant information available to the consultant. However, overall it remains the sole responsibility of the consultant to search for and collect all required information.

The consultant will organize all necessary travel and other resources by himself, subject to reimbursement as stipulated in the contract. Reimbursable expenses must be included in the proposal.

8 Expected Profile of the Consultant/consultancy company

Consultancy firms are invited to submit proposals that have a proven track record in conducting and analyzing sample surveys and gap analysis in Nigeria. The consultancy to be selected must provide a team leader who is an experienced researcher and expert in the STEM field and who is fully knowledgeable about state-of-the art research methodologies in the field. Furthermore, the proposal

must show that for the survey an appropriately large and competent team is available to prepare, administer and analyses the survey.

9. The consultancy team should have the following combined qualifications

- Conversant with pertinent discussions around STEM, education sector and secondary schools
- Ability to conduct qualitative and quantitative research
- Ability to produce technical and scientific reports, and visual presentations;
- Information technology literacy;
- Fluency in written and spoken English;
- Experience in working with national and international development agencies.

The following represents a tentative staffing schedule for key consultants. However, the consultancy firm may suggest another staffing arrangement and quantity structure for key staff appropriate to accomplish the required tasks.

| Position | Main tasks | Minimum qualification | Estimated person-months |
|--|---|--|-------------------------|
| Secondary school-STEM survey team leader | <ul style="list-style-type: none"> • Coordination of the entire assignment • Implementation of all activities related to the assignment • organize all necessary travels and other resources • Bear sole responsibility to search for and collect all required information | <ul style="list-style-type: none"> • Minimum of Master's degree in discipline relevant to the assignment • Minimum of 15 years of relevant work experience • Conversant with STEM, Education sector and secondary schools • Ability to conduct qualitative and quantitative research | 4 |
| Researchers (tentatively 3 people) | <ul style="list-style-type: none"> • Support the team leader in all aspects related to the design, planning and implementation of the study • Participate in pilot implementation of the survey • Oversee the field work conducted by enumerators • Conduct qualitative interviews • Contribute to data analysis | <ul style="list-style-type: none"> • Minimum of Master's degree in discipline relevant to the assignment • Minimum of 5 years of relevant work experience • Conversant with STEM, Education sector and secondary schools | 12 |
| Field staff and supportive staff as required | Field work, data entry, logistical support | | |
| Total | | | 16 |