

SECTION V - TERMS OF REFERENCE FOR A CONSULTANCY TO UNDERTAKE COUNTY SUITABILITY MAPPING OF AQUACULTURE FOR THE AQUACULTURE BUSINESS DEVELOPMENT PROGRAMME (ABDP) IN KENYA

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1. INTRODUCTION

i. Programme Background

The Government of Kenya (GoK) in partnership with the International Fund for Agricultural Development (IFAD) is implementing the Aquaculture Business Development Programme (ABDP) whose aim is to increase the incomes, food security and nutritional status of the wider communities of poor rural households involved in aquaculture in the fifteen targeted Counties in Kenya. The Programme cost is KES 14.9 billion and is organized into two mutually supportive components. The first component is on spurring smallholder aquaculture development while the second component is on development of aquaculture value chain.

The ABDP Component I: Smallholder Aquaculture Development will support conducting of county suitability mapping of aquaculture for existing/potential aquaculture facilities/establishments/ponds/reservoirs including cage culture.

ii. Background to previous suitability mapping

The National Aquaculture Development Strategy (NADS) of Kenya has committed the Government to create conducive and enabling environment for investment in aquaculture sector by making readily available information on the economic viability of different aquaculture systems and production technologies appropriate to relevant aquaculture zones. In recognition of the benefits of proper site identification for the orderly development of aquaculture, the then Ministry of Fisheries Development (MoFD) considered to expedite implementation of NADS by conducting a national aquaculture suitability mapping in 2009.

This activity came in handy to facilitate sites selection for ponds constructed through the Fish Farming Enterprise Productivity Program (FFEPP) funded under the Government of Kenya Economic Stimulus Program (ESP) of 2009-2013. The survey was conducted in the country covering all the eight provinces. For the sake of the exercise, the country was subdivided into four regions; Western Kenya Region- (Western & Nyanza provinces), Rift valley Region- (Rift Valley province), Central Kenya Region-(Nairobi, Central & Eastern Provinces) and Coast Region - (Coast and North Eastern

Provinces). A total of 55 districts and 210 constituencies aquaculture suitability maps were developed.

A geographical information system (GIS) was used to evaluate each grid cell on the basis of several land-quality factors important for fish-farm development and operation regardless of the fish species used. The assessment was limited to land-based aquaculture facilities, land, water, and the auxiliary services. The suitability maps generated from the mapping exercise have assisted the aquaculture sub-sector in planning for aquaculture development and notably informed the selection of the 5 ABDP implementing counties based on high aquaculture potential.

However, with devolution, there has been changes in the administrative units from districts to counties, within which sub-counties (smaller administrative units) exist. There has also been notable changes in land use patterns in Kenya as a result of the observed increase in population. Notably, aquaculture in Kenya has evolved to adapt to new and emerging aquaculture production technologies, and to conduct aquaculture as a business. There is therefore need to undertake County suitability mapping and generate new maps especially for the 15 ABDP implementing counties.

iii. Rationale for the Consultancy

Component 1: Smallholder Aquaculture Development will support development of infrastructure for aquaculture production to increase the production base. This will involve rehabilitation of existing production facilities and establishment of new facilities on need basis. There is therefore need to undertake county suitability of existing and potential aquaculture facilities/ establishments/ ponds/ reservoirs including cage culture. This is aimed at identifying agro-ecological zones suitable for different aquaculture production technologies.

The information and suitability maps generated will inform the identification of zones with the proper characteristics to promote aquaculture investments under the project, and will also be useful for future decision making and policy formulation for aquaculture sub-sector in Kenya.

Apart from identifying and informing on aquaculture potential and suitability, the mapping exercise will also identify infrastructural gaps along the aquaculture value chain in Kenya that need critical intervention.

iv. Specific objective of the Study

Undertake county suitability mapping of aquaculture and develop sub-county and county specific suitability maps of aquaculture. Specifically, this assignment aims to;

- Identify and map the geographical locations where aquaculture infrastructures (ponds, cages etc.) are currently established in each county
- Identify and map the zones in each county which have the potential for the development of aquaculture based on an established criterion of “aquaculture suitability”, indicating the aquaculture potential of different zones in each case (low, medium or high).

v. Scope of the Work

The mapping will be undertaken in the 15 ABDP implementing counties namely; Homa Bay, Migori, Kakamega, Kirinyaga, Meru, Tharaka Nithi, Kisii, Kisumu, Siaya, Busia, Embu, Kiambu, Machakos and Kajiado

In order to accomplish the assignment, the following key assignments have to be undertaken in two stages:

Stage 1: Desk review and situational analysis

- Conduct a systematic analysis of existing information of current aquaculture situation in the counties
- Review existing information and reports of aquaculture suitability mapping that were produced by the Department of Fisheries
- Highlight information gaps to be addressed by this study

Stage 2: Field survey

- Consultation with extension field staff, local leaders and other stakeholders in each county to identify the areas where aquaculture is currently practiced
- Develop aquaculture suitability criteria for identifying aquaculture potential zones
- Training county-based staff for data collection
- Undertake data collection in the 15 counties, through a participatory process involving key stakeholders
- Conduct data analysis
- Undertake a stakeholder validation workshop at the County level
- Develop GIS derived maps using ARC-GIS

2. MATERIALS AND METHODS

2.1. Data Collection Methodology

The successful bidder will be expected to undertake a thorough desktop review and analysis of existing information of current aquaculture situation and existing aquaculture suitability mappings. The client will provide such necessary documentation. To define aquaculture suitability criteria, the bidder will need to develop weights for selected variables that relate to aquaculture development.

The approach for training data collectors should be precise and is recommended to develop data collection tools to allow for harmonized data collection and ease for analysis. All related field visits, collection of information and consultations at county level will be undertaken in liaison with the County Programme Coordination office.

The successful bidder will be required to develop a database application for backing up data collected and making available to the programme for reference.

The processing and analysis of collected data, and subsequent preparation of cartography should be done in GIS program. Before the suitability mapping report is finalized, the successful bidder is expected to undertake a stakeholder validation workshop at the county level and incorporate feedback from stakeholders then prepare the final report and GIS Maps. Bidders are also encouraged to propose an innovative, results-oriented methodology for undertaking the study.

2.2. Expected Output

- Sub-County specific aquaculture GIS derived suitability maps for each of the 15 counties
- 15 County specific GIS derived Aquaculture suitability map
- Generate GIS maps for different agro-ecological zones for optimized aquaculture activities
- County validation reports

The final report will broadly have two parts;

Part 1: Review and analysis of the current situation and location of aquaculture activities and infrastructure (ponds, cages, water reservoir etc.) in the county. These should include data on number of ponds, hatcheries, other aquaculture infrastructure, existing farmers and their production/ productivity etc.

Part 2: Mapping and description of aquaculture zones and their potential (high, medium, low).

Among the key variables to consider are:

- The availability of water for aquaculture from different sources (e.g. rainfall, river and no. of months of water availability etc.);
- Weather patterns e.g. temperature during the year
- Topography of the terrain to determine suitability for construction of ponds; avoid areas prone to flooding.
- Type of soil and capacity for water retention (e.g. clay content).
- Accessibility by road
- Competing land and water use with other activities (agriculture, livestock, forestry, tourism, industry, mineral resources, Natural Parks etc.)

2.3. Submission of Request for Proposals

Interested Consulting firms should submit proposals in accordance with information provided in the bid solicitation. The proposal should be organized as follow;

2.3.1 Methodology

The bidder shall detail the proposed methodology and approach for accomplishing the assignment, ensuring that the following are covered;

a) Understanding of the terms of reference:

Any comments on the terms of reference of importance for the successful performance of activities, including the assignment objectives and expected outcomes, thus demonstrating the degree of understanding of the assignment; and an opinion on the key issues related to the achievement of the contract objectives and expected results.

Approach and methodology:

- An outline of the approach proposed for undertaking the study,
- A list of specific tasks and activities considered to be necessary to achieve the contract objectives
- Proposed approach in identification and selection of informants for the study;
- Outline of data collection and analysis methods
- A description of sub-contracting arrangements foreseen, if any, with a clear indication of the tasks that will be entrusted to the sub-contractor(s).

Timetable of activities/ Work plan:

- The timing, sequence and duration of the proposed activities, taking into account mobilization time;
- Identification and timing of major milestones in the performance of the contract, including an indication of how the achievement of these would be reflected in any reports, particularly those stipulated in the terms of reference
- The expected number of working days required from each category of expert each month during the period of performance of the contract.

2.3.2 Required Technical Expertise

A consultant firm will be selected in accordance with the quality and cost based (QCBS) selection method set out in the PPAD ACT 2015 and IFAD regulations. The work shall be carried out by a qualified team with substantial expertise in (i) Suitability mapping (ii) Natural Resource Management; (iii) aquaculture production systems and (iv) data collection and analysis. Evaluation will be based on consulting services-Firms Selection and not Individual Consultant selection. The consultant firm will comprise a team of experts as detailed below:

a) The Lead Technical Expert with the following qualifications:

- i. The lead consultant should have Advanced Degree (Master's Degree) in Natural Resources Management or a related field from a recognized institution of higher learning.
- ii. He/she should have at least eight (8) years of relevant post qualification experience
- iii. At least five (5) relevant assignments performed in the last 3 years with reference letters from the client
- iv. Demonstrated experience in Project management

- v. Have some experience working within donor funded projects
- vi. Good command of national environmental legislation, both at the national and county level and government operations
- vii. Have project management experience.
- viii. Strong analytical skills are required
- ix. Strong IT literacy and competency

(The scope of the assignment requires a strong team leader able to follow the contract, to co-ordinate the work of experts and the relationship with the PCU, relevant national and county government agencies, the private sector, farmer organizations and other stakeholders, and to ensure that the tight timelines and milestones of the contract are met).

b) Aquaculture Specialist with the following qualifications:

- An advanced degree (Master's Degree) in Aquaculture or Fisheries Production from a reputable learning institution
- At least five (5) years of demonstrable working experience in an aquaculture environment in Kenya
- Familiarity with the Kenyan Government legislations and regulations on Fisheries and aquaculture will be an added advantage
- Have project management experience.
- Strong analytical skills are required
- Strong IT literacy and competency

c) GIS Specialist with the following qualifications:

- A Bachelor's Degree in GIS Technology, Geomatics, Environmental Science or related field from a reputable learning institution. An advanced degree (Master's Degree) will be an added advantage
- At least three (3) years of demonstrable relevant working experience
- Knowledge of technical design applications like ArcView GIS or ESRI extensions and AutoCAD
- Demonstrated experience in the development of GIS derived maps
- Strong analytical skills are required

- Strong IT literacy and competency

d) Data Analyst

- A Bachelor's Degree in Statistics, Mathematics or related field from a reputable learning institution. An advanced degree (Master's Degree) will be an added advantage
- At least three (3) years of demonstrable relevant working experience
- The ability to analyze, model and interpret data
- Strong analytical skills are required
- Strong IT literacy and competency

2.3.3 Professional reference

The Firm must provide relevant written references on accomplishments from former clients detailing the exact contract, value and performance standards

2.4. Duration of the assignment

The assignment is expected to take 4 months and should commence immediately upon signing of the agreement.

2.5. Payment Structure and Timeframe

Payment terms will be based on completion of agreed milestones as per contract agreement and shall be made according to the following schedule:

10% - Upon submission of the Inception Reports detailing the clear understanding of the Terms of Reference, proposed methodology and work plan.

10% - Upon submission of Interim Reports detailing findings of the desktop review and situational analysis of aquaculture in the target counties.

20%- Upon submission of a Validation Report of a stakeholder validation workshop at the county level and a Draft Final Report having incorporated feedback and input from stakeholders

60% - Upon delivery and acceptance of the Final reports and GIS suitability maps

2.6. Reporting, Supervision and Working Relations

The consultant will report to the Programme Coordinator on all matters pertaining to the assignment.

The consultant will provide an update on a weekly basis with regards to progress.

The Programme Coordinator can be reached at:

Programme Coordinator

Aquaculture Business Development Programme (ABDP)

IFAD Building, Kamakwa Road, opposite Nyeri Club

P.O. Box 904, 10100, Nyeri, Kenya

Email: info@abdpcu.org

3.0 TECHNICAL EVALUATION

The table 3 below shows how the technical proposal will be evaluated and scored.

Table 3: THE TECHNICAL EVALUATION CRITERIA

#	Main criteria	Sub-criteria	Sub-criteria Scores	Main Criteria Scores
1	Specific experience of the firm related to the assignment	Submit client particulars for works done within the last 3 years. This should include the client name and contact addresses (Telephone, Email and physical addresses) and the details of works completed. Evidence such as contracts, MoUs or Completion Certificate MUST be attached		5
2	Adequacy of the proposed methodology and work plan	Submit proposed methodology to demonstrate understanding of the scope of work including a work plan for implementing the assignment with clear timelines		50
3	Qualifications and competence of the key staff for the assignment (Provide CVs and Commitment letters for the assignment)	3a. Lead Consultant	15	40
		3b. Aquaculture Specialist	10	
		3c. GIS Specialist	10	
		3d. Data analyst	5	
4	Reference / Recommendation letters	Reference or recommendation letters from AT LEAST three (3) clients for similar work done within the last 3 years		5
	Total Points			100

4.0: SPECIFIC RESPONSIBILITY OF THE CONSULTING FIRM

- i. The consulting firm will cater for their personnel operational costs as part of their quoted reimbursable costs and arrange to have their own transport, survey materials and necessary Equipment.

5.0: SPECIFIC RESPONSIBILITY OF THE CLIENT

- i. The client will facilitate the consulting firm with any relevant documents in its possession that will assist in making the consultancy a success.