Annex III Training Needs Assessment (TNA)
Methodology

1 Identify Key Stakeholders to interview

The purpose of the TNA aims primarily to appraise the sectors and subsectors within the commercial aquaculture industry in the designated ACP Fish II countries in East Africa in relation to their perceived needs. Due to the evident present time constraints in some of the member states, the short period available for its completion, as well as, the contrasting levels of development between ACP Fish II countries, it would be difficult to assign a large sample size of stakeholders for their assessment. Therefore, a small but at the same time representative sample size in each sector will have to be selected. The sample size could vary between 0 (if non-existent) to 10 (if various players are available within the sector), with an ideal size range between 3 to 5 key players whenever possible.

It is important to remember that the aim of this assessment is to consult key stakeholders in relation to their views towards the needs for commercial aquaculture management and development. The outcome expected is to identify key areas of interest, and the knowledge and skills needs of relevant target groups, thereby ensuring the appropriateness of the modules and sessions suggested for the training program.

The TNA sets the framework and common starting point for many of the capacity building activities, as it will evaluate the requirements of the target groups and will define, based on existing knowledge and skills, the appropriate trainees’ profiles and the required further training content.

Key stakeholders involved in commercial aquaculture can be the following:

- Farmers
- Hatcheries
- Aquaculture Extension and Support Officers
- Feed producers
- Infrastructure and Equipment suppliers
- Processors
- Traders (wholesalers, retailers and food service)
- Financial Institutions
- NGO’s
- Governmental Institutions (Fisheries, Agriculture, Environment, Finance and Commerce)
- Research and Education Institutions
- Consultancy companies

Table below describes the key stakeholders within commercial aquaculture and their interactions
2 Questionnaire for TNA

2.1 Survey design

The TNA survey comprise mainly of two semi-structured and open-ended interviews schedules, one directed to aquaculture extension officers and another one to stakeholders involved in commercial aquaculture industry.

2.2 General approach

Initial contact should be made (by telephone, mail, or a quick visit if no other means) with companies and individuals to be interviewed in order to arrange a convenient meeting time, providing reasonable notice. The background to the study should be explained, including comments to the effect that:

The study is being undertaken by the ACP Fish II project and partners on behalf of the development of commercial aquaculture industry in the partner countries.

The content would focus on the respondent’s views of production, trade, and institutional related issues to commercial aquaculture products.

The interview should last no longer than 15 minutes.

If requested, a written summary of the background to the study can be sent to the interviewee by post/fax/email.
Interviews should start with a proper introduction and ice-breaking comments, and the questionnaire should be used as a basis for discussions, attempting to keep the interviews as open-ended as possible when required, but also with some direct questions. The precise wording and order of the questions can vary depending on the content of the preceding part of the interview and the particular interviewee.

Interviewees should be encouraged at all times to provide information free of the interviewer’s perceptions, and should allow (with reason) to talk freely without interruption. When interviewees raise any issues, they should be expanded through further prompting. Probing should also be used to encourage interesting points of discussion.

Where the interviewees may have doubts on a particular issue, information can be presented with prompts including:

Photographs showing the production, process, and trade of farmed fish.

Photographs showing type of fish products characteristics.

Description of common ways to produce and trade farmed fish.

Description of farmed fish products and eating characteristics.

2.3 Questionnaires schedules

2.3.1 Questionnaire to Aquaculture Extension Officers:

1. What is the perceived potential of commercial aquaculture in their region?
2. Specify the main constraints in their region for commercial aquaculture development?
3. In their view, what would be the needs to develop commercial aquaculture?
4. What support programs are and have been available (up to 10 years ago) in your region for commercial aquaculture development? (e.g. Financial, technological (production, health, nutrition, genetics, commercial, regulatory, etc.).
5. What has been the impact of these support programs?
6. What training programs have they received (please name only the ones received recently (e.g. within the last 5 to 10 years))?
7. What techniques or strategies are followed to extend knowledge for commercial aquaculture development? (e.g. from informal talks, to distribution of guidance material, field trips, participatory approach with industry stakeholders (feed plants, vets, hatcheries, etc.), workshops, media promotion, conferences and courses, etc.?)
8. From all these strategies, which ones they perceive having proved to provide the best impact in commercial aquaculture development?
9. Which other strategies (not available) they perceive could be implemented to further enhance commercial aquaculture development?
10. Which strategies have proved to be less effective and why?
11. What have been the main constraints that have hindered or prevented the implementation of these strategies?
12. Which stakeholders from the industry have had the most involvement in commercial aquaculture development in your region?
13. What has been their involvement?
14. Which stakeholders do you perceive can play a greater role in commercial aquaculture development and why?

2.3.2 Questionnaire to Stakeholders other than Extension Officers

1. What is the perceived potential of commercial aquaculture development in the region?
2. What are the perceived main constraints for commercial aquaculture development?
3. What are the perceived main strategies/support programs that should be set up to develop commercial aquaculture?
4. How important is commercial aquaculture for your business? (describe if possible the percentage of income that commercial aquaculture generate to the business and what could be its potential)
5. What has been their involvement in the development of commercial aquaculture?
6. What has been the relationship with support officers and producers?
7. What are the perceived needs in relation to knowledge transfer and information requirements between the aquaculture extension officer and the stakeholder? (type of information and methods to deliver this information)
8. How much is the stakeholder aware of commercial aquaculture activities, inputs supply and services that are available in neighbouring countries?
9. What interaction in between countries are you aware of in relation to input and services supply for commercial aquaculture?
10. What is the willingness of the stakeholder to participate in a joint venture/activity/business relationship with commercial aquaculture operations?
11. How risky is the joint venture/activity/business relationship with commercial aquaculture operations perceived to be by the stakeholder?
12. If so, how would they suggest to mitigate the perceived risk level to promote joint ventures/business relationships with commercial aquaculture operations?

3 Identification of appropriate training methods and adult learning techniques

After TNA, appropriate training methods and adult learning techniques should be identified.
4 Module Development

After completion of all three previous points, all relevant material required to work on the modules development for “the commercial aquaculture management and development training program” should be available.

5 TNA Execution

TNA in South Sudan, Ethiopia, Rwanda and Burundi will be done by Key Experts together with their respective ACP Fish II focal points.

TNA in the remaining ACP fish II countries (Uganda, Kenya & Tanzania) should be carried out by their respective ARWG members.

The details of the members of the Regional Working Group and LVFO representative are given below:

1. Beatrice Nyandat,
   Assistant Director of Fisheries,
   State Department of Fisheries, Ministry of Agriculture Livestock and Fisheries
   P.O. Box 58187-00200, Nairobi, Kenya.
   Cell: +254 720 854571
   Email: tieny30@yahoo.com

2. Ritha Malya
   Assistant Director
   Ministry of Livestock and Fisheries Development, Tanzania.
   Cell: 255754777794
   Email: eliaikaritha@yahoo.co.uk

3. Alio Andrew,
   Principal Fisheries Officer,
   Department of Fisheries Resources, Ministry of Agriculture, Animal Industry and Fisheries
   P.O. Box 4, Entebbe, Uganda.
   Cell: +256 701567189/+256 772567189
   Email: andrewalio@gmail.com

3. Rhoda Tumwebaze
   Senior Fisheries Management Officer,
   Lake Victoria Fisheries Organization
   P.O. Box 1625, Jinja
   Cell: +256 772927889
   Email: rtumwebaze@lvfo.org
Training Needs Assessment (TNA) Findings
Summary

1 Questionnaire to Aquaculture Extension Officers:

15. What is the perceived potential of commercial aquaculture in their region?
   o Reduced supply of aquatic products from capture sector.
   o Suitable resources available (water, land, climate, etc.)
   o Growing demand of aquatic products and better supply of inputs (feed/seed) in some cases.
   o Shift in eating patterns from land to aquatic sources.
   o Potential to integrate with other agri-industries.
   o Easy to integrate into other development programs (agricultural-based and fisheries).
   o Labour available (mainly unskilled).
   o Perceived as a potential business opportunity
   o Increased interest in new activities (aquaculture).
   o Possibility to add-value to aquatic products from aquaculture (certificates, consistency, freshness, etc.).
   o Provides the possibility to produce different species (other fish, crustaceans, molluscs, plants, etc.).
   o Provides economic development to isolated rural areas, preventing emigration (rural-urban).
   o Some political will/incentives available (Saccos in Uganda), GOK funding in Kenya).
   o Policies and regulations are emplaced in some countries.
   o Some funding programs already available for agri-industries that are applicable to aquaculture.
   o Information and extension officers are available.
   o Fish eating culture
   o Under exploitation of available resources

16. Specify the main constraints in their region for commercial aquaculture development?
   o Slow adoption of new and more efficient technologies.
   o Limited access to financial support.
   o Perceived as less profitable business when compared to other agri-industries (e.g. agriculture, poultry & livestock).
   o Cold chain undeveloped in many places, making difficult to trade fresh products.
   o Inefficient markets (undeveloped and unorganised).
   o Limited supply of inputs of good quality (feed & seed).
- High inputs costs.
- Lack of supply of seed of other species.
- Small number of species (only 2 species) and/or strains (with good performance) available in the region for production in aquaculture.
- Ineffective communication and coordination between the different stakeholders of the industry.
- Ineffective communication/coordination between central and regional extension officers in some cases.
- Complex and unclear regulatory framework, involving several organisations/institutions.
- Lack of know how in relation to efficient production techniques and business management (extension officers and producers).
- Insufficient infrastructure (Roads, electricity, telephone, drinking water, etc.)
- Perceived as a high risks activity/investment.
- Inadequate enforcement of standards
- Potential to impact negatively the ecology and the environment if not done properly.
- Perception of high initial investment requirements in new ventures.
- Very often development programs and projects concentrate mainly in production issues/requirement rather than considering a business orientated approach (business strategies).
- Ineffective networking and information transfer amongst stakeholders.
- Poor data recording, keeping and sharing.
- Poor certification and/or compliance of regulations monitoring.
- Market price of fish too low
- Poor marketing strategies
- Dependency Syndrome – farmers always waiting for projects

17. In their view, what would be the needs to develop commercial aquaculture?
- Research focus on actual needs of the industry.
- Improve networking and information sharing between stakeholders.
- Traceability of inputs and final products.
- Supply of quality seed, certifiable and monitored.
- Supply of quality feed at affordable prices and improve performance.
- Better understanding of more profitable markets (niche markets, value-added products, seasonality, etc.).
- Promote economies of scales in small producers through associations and cooperatives.
- Financial backup for start-ups (initial capital investment and operating capital during first production cycle).
- Capacity building on farmers and services providers (extension officers, financers, input suppliers, etc.).
- Promote the benefits of local farmed products vs capture and imported products.
18. **What support programs** are and have been available (up to 10 years ago) in your region for commercial aquaculture development? (e.g. Financial, technological (production, health, nutrition, genetics, commercial, regulatory, etc.).

- DFID, FAO, ADB, USAID, ASARECA, etc.
- Training programs in production, marketing, and business management, group dynamics, etc.
- Infrastructure (fisheries, hatchery, feed plant, demonstration units, etc.)

19. **What has been the impact** of these support programs?

- Acquisition of up to date knowledge, skills and technology.
- Increased aquaculture activities.
- Improved production efficiency and profitability.
- Improved awareness of aquaculture as potential business.
- Reduced post-harvest loses through improved processing skills/knowledge.
- Increased employment opportunities.
- Improved population nutritional and health conditions (Improved fish eating culture).
- Improved supply chain of inputs and outputs.
- Improved attitudes towards aquatic products consumption.
- Improved farmer-extension relationship
- Negative impact has been on over-reliance of farmers on free inputs
- Improved market opportunity at community level.

20. **What training programs** have they received (please name only the ones received recently (e.g. within the last 5 to 10 years))?

- Small percentage of extension officers with high level of education. (Kenya has high percentage of extension officers with high level of education)
- Training available in most issues related to the industry, e.g. production, marketing, record keeping, finance, economics, etc.
- Active training programs with other countries, e.g. Egypt, China, Israel, Thailand, Malaysia, EU, Japan, South Korea, Iceland etc.
- Up to date know how and training available on extension officers of LVFO countries, but not applied/implemented.
- Basic training in South Sudan, Ethiopia, Rwanda and Burundi.
21. What **techniques or strategies** are followed to **extend knowledge** for commercial aquaculture development? (e.g. from informal talks, to distribution of guidance material, field trips, participatory approach with industry stakeholders (feed plants, vets, hatcheries, etc.), workshops, media promotion, conferences and courses, etc.?)
   - Workshops
   - Media promotion (radio, TV, etc.)
   - Field trips for in situ demonstrations, mainly in relation to production issues.
   - Personal assistance/interaction with producers.
   - Provision of printed material (manuals, guides, fact sheets, leaflets, etc.)
   - Funding programs to facilitate extension activities.
   - Networking, meetings, discussions between different stakeholders.
   - Shows, fairs, events to promote aquaculture and/or aquatic products.
   - Information centres promoting aquaculture and aquatic products trade (NAADS).

22. From all these strategies, which ones they perceive having proved to provide the **best impact** in commercial aquaculture development?
   - Field trips to production sites.
   - Practical training.
   - Talk shows.
   - Participatory approach meetings.
   - Trust and familiarisation with extension officer.
   - Field day on a particular subject (practical ad theoretical discussions)
   - Exhibitions, shows and fairs.
   - Information transfer in clusters.

23. Which **other strategies** (not available) they perceive **could be implemented** to further enhance commercial aquaculture development?
   - Increase the types of production systems available (alternative and new technologies available).
   - Adequate funds to provide the extension service.
   - Experience and knowledge of efficient managements of farms.
   - Create farmers associations/cooperatives.
   - Promote accountability when receiving any support.
   - Structured marketing strategies
   - Demonstration farms
   - Experienced and knowledgeable extension officers.
   - Better involvement from private and governmental financial institutions.
   - Government involvement in providing quality inputs when not available.
   - Improve financial/economics business skills on farmers.
   - Clear cost-benefit understanding of the activity.

24. Which strategies have proved to be **less effective** and why?
25. **What have been the main constraints** that have hindered or prevented the **implementation** of these strategies?
   - Inadequate/insufficient staffing
   - Inadequate/insufficient funding
   - Unwillingness to take advice from extension officers.
   - Lack of motivation due to lack of resources available.
   - Inefficient planning of support/service provision.
   - Poor involvement of policy makers.
   - Low representation or non-existent stakeholders in some industry sectors. Lack of proper programmes for technological transfer to extension officer at lower lever.
   - Long procedure in accessing materials for production of quality seeds eg necessary hormones
   - Lack of demonstration and trial ponds at sub county level

26. **Which stakeholders** from the industry have had the most **involvement** in commercial aquaculture development in your region?
   - Farmers
   - Government Institutions, NGOs, CBOs, etc.
   - Private service providers (consultancy)
   - Development partners (FAO, DFID, USAID, GIZ, EU etc.)
   - Input suppliers (feed and seed)
   - Certifying laboratories
   - Drugs and chemicals suppliers
   - Research institutions
   - Processors
   - Educational Centres
   - Wholesalers

27. **What** has been their **involvement**?
   - As per their sector

28. **Which stakeholders** do you perceive can play a greater role in commercial aquaculture development and **why**?
   - Markets for some value-added products.
   - Governmental Institutions and policy makers
   - Finance institutions
   - NGOs and Development partners
   - Input suppliers
2 Questionnaire to Stakeholders other than Extension Officers

1. What is the perceived potential of commercial aquaculture development in the region?
   a) Resources availability
   b) Positive Experiences
   c) Decreasing outputs from the catching sector
   d) Increased demand of fish products
   e) Need of good seeds for restocking programs
   f) Environmental rehabilitation/conservation and protection programs (coral)

2. What are the perceived main constraints for commercial aquaculture development?
   a) Insufficient funding
   b) Poor supply of inputs (feed and seed)
   c) Inadequate extension services
   d) Inadequate equipment available for feed production
   e) Unscrupulous input suppliers (seed & feed)
   f) Unreliable market behaviour
   g) Erratic weather patterns
   h) Inadequate business skills
   i) High costs of inputs and equipment
   j) Lack of knowledge of aquaculture across the border
   k) Risk of theft
   l) Inbreeding issues of wild populations for mix sex production

3. What are the perceived main strategies/support programs that should be set up to develop commercial aquaculture?
   a) Financial support schemes
   b) Marketing strategies
   c) Skilled and experienced staff
   d) Experienced and efficient extension officers
   e) Availability of quality inputs at affordable prices
   f) Efficient network links between producers, input, support and services suppliers.
   g) Training of up to date and efficient new technologies
   h) Definition of potential areas for development
   i) ICT framework for know-how transfer and information update
j) Use of local media un public forums to promote the benefits of farmed products
k) Promote associations and cooperatives to generate economies of scales
l) Quality controls monitoring programs emplaced and standardised
m) Outsourcing
n) Further support to development institutions/organisations
o) Incentives to the activity
p) Traceability and biosecurity
q) Better involvement of the private sector
r) Implementation of development
s) Promotional programs to create awareness from early age in the population
t) Use of local media and public forums to promote the benefit of fish farm products to health
u) Diseases prevention programs

4. **How important** is commercial aquaculture **for your business**? (describe if possible the percentage of income that commercial aquaculture generate to the business and what could be its potential)
   a) Most of interviewees had a high level of interest/involvement in commercial aquaculture

5. **What has been their involvement** in the development of commercial aquaculture?
   a) Market development of value-added products
   b) Market development of input supply
   c) Feed development
   d) Commercial input distribution sector
   e) Development of grow out units
   f) Development of supply chain models
   g) Seed supply
   h) Breeding programs
   i) Create awareness with private sector
   j) Government and mobilised populations involved in aquaculture
   k) Research, consultation and know how transfer

6. **What has been the relationship with support officers and producers?**
   a) Poor communication between R&D, FOs and different sectors
   b) Bond between FOs and farmers

7. **What are the perceived needs in** in relation to **knowledge transfer and information requirements** between the aquaculture extension officer and the stakeholder? (type of information and methods to deliver this information).
   a) Follow up and experience sharing
   b) Committee for discussions
c) Comprehensive package of information available to farmers
d) Practical training programs
e) Workshops, field trips, participatory approach
f) Business skills training
g) Practical experience (extension officers and farmers)

8. How much is the stakeholder aware of commercial aquaculture activities, inputs supply and services that are available in neighbouring countries?
   a) R&D, input suppliers and development organisations are well aware, but small producers and traders no so much.
   b) Interest in self-supply from some countries
   c) Older and bigger operations are normally aware

9. What interaction in between countries are you aware off in relation to input and services supply for commercial aquaculture?
   a) Inputs supply mainly from Uganda to other East African countries.
   b) It is well known within the region what others activities are done

10. What is the willingness of the stakeholder to participate in a joint venture/activity/business relationship with commercial aquaculture operations?
    a) Many prefer sole entrepreneurship
    b) Possibility to generate partnerships through development programs
    c) Vertical integrations between feed plants, hatcheries and grow out farms.
    d) Horizontal integration between farmers
    e) Some lack of confidence when dealing with some producers.

11. How risky is the joint venture/activity/business relationship with commercial aquaculture operations perceived to be by the stakeholder?
    a) Some afraid of losing money when working in ventures
    b) Lack of consistency in the delivery of products
    c) Different level of expertise/awareness from each party
    d) Different involvement level in a venture.
    e) High risk due to low level of expertise available

12. If so, how would they suggest to mitigate the perceived risk level to promote joint ventures/business relationships with commercial aquaculture operations?
    a) Change the mind set of risks
    b) Define middle playground between players
    c) Understanding of win-win partnerships
    d) Commercial clusters, horizontally and vertically.
    e) Development of ICT framework providing solutions for the supply chain.
    f) Economies of scale through partnerships.
g) Employment and adoption of new technologies to reduce risks levels perceived on new ventures