COASTAL AQUACULTURE AUTHORITY
Ministry of Agriculture
Government of India
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The Coastal Aquaculture Authority, Chennai is on the look out from suitable candidates for the services of Two (2) Consultants each for a period of six months to assist the Authority in executing certain specific works as given below:

Consultant (1) To prepare a technical manual for the hatchery seed production and sustainable farming of SPF *Litopenaeus vannamei*.

Consultant (2) To design appropriate awareness programmes on sustainable coastal aquaculture.

Consultant (1):

Job responsibilities:

- To assist the CAA in preparing a technical manual for the hatchery seed production and sustainable farming of SPF *Litopenaeus vannamei*.
- The technical manual should be in English with proper illustrations and photographs.

Qualification, experience and age:

- Post Graduate or Doctoral Degree in Coastal Aquaculture/Mariculture/Marine Biology/Fisheries Science or related fields with at least ten years of field level experience relating to shrimp culture.
- The Consultant should have the experience in preparation of technical publications/ manual on aquaculture in general and shrimp farming in particular.
- He should have adequate exposure to SPF *L. vannamei* culture and field experience of working with reputed firms culturing *L. vannamei*.

- The maximum age limit for the retired Government servants would be 62 years and in case of private consultants, the maximum age limit will be 60 years.

Duration of consultancy:

- The consultancy would be for a maximum period of six months; at the end of fourth month, draft of the manual should be submitted for review by concerned organizations for improvement of the text. The final version should incorporate all the suggestions/modifications arrived at during the interactions.

- The content of the technical manual on *L. vannamei* culture should broadly be as given in the Annexure – I and should be consistent with the guidelines issued by the DAHDF on *L. vannamei* culture regarding quarantine, hatcheries and farms.

Consultancy Fee:

- Fee for consultancy shall be as per the norms prescribed by CAA/DOPT for the time being (i.e. limited to a maximum of Rs.25,000/- per month in case of private consultants and Rs.20,000/- per month in case of retired Government officers).

Consultant (2):

Job responsibilities:

- To assist the CAA to design and conduct awareness programmes on responsible coastal aquaculture.

- To prepare technical brochure/to provide technical inputs in the preparation of technical manual.

- To provide technical inputs for design and production of short video films on key principles relating to sustainable coastal aquaculture.

Qualification, experience and age:

- Post Graduate or Doctoral Degree in Coastal Aquaculture/Mariculture/Marine Biology/Fisheries Science or related fields with at least ten years of field level experience relating to shrimp culture, environment monitoring, organisation of awareness programmes to shrimp farmers;

- Should have good communication skills including experience in preparing technical articles/brochures/manuals relating to sustainable aquaculture.

- Knowledge of good farm management practices and on-farm waste reduction strategies, product safety, etc.

- Experience in writing scripts for video films relating to aquaculture will an advantage.

- The maximum age limit for the retired Government servants would be 62 years and in case of private consultants, the maximum age limit will be 60 years.

Duration of consultancy: Six months.

- Fee for consultancy shall be as per the norms prescribed by CAA/DOPT for the time being (i.e. limited to a maximum of Rs.25,000/- per month in case of private consultants and Rs.20,000/- per month in case of retired Government officers).

Candidates who meet the criteria with reference to qualifications and experience may send their bio-data to the Member Secretary, Coastal Aquaculture Authority **on or before 30th June, 2009** at the above address.

Member Secretary
Coastal Aquaculture Authority, Chennai.

Annexure-I.

Contents of the technical manual on SPF *Litopenaeus vannamei* culture

1.0 Introduction

1.1 Major *L. vannamei* producing countries in the world; why *L. vannmei* culture has become popular?

1.2 Production figures for the past five years; export figures indicating percentage of *L. vannamei* to the total exported shrimp – country-wise.

2.0 Identity

2.1 Systematic position of *L. vannamei*

2.2 General description – distinguishing morphological features.

3.0 Geographical distribution

3.1 Natural occurrence of *L. vannamei* in different coasts

3.2 Brief history of introductions to non-endemic areas

4.0 Biology and life history

4.1 Food and feeding, reproduction, maturation and spawning, behaviour, migrations

4.2 Life history

5.0 Seed production

5.1 Selection of broodstock

5.1.1 Factors affecting the quality of broodstock

5.1.2 Criteria for selecting quality broodstock

5.1.3 Sourcing of broodstock

5.1.4 SPF status of broodstock

5.2 Packaging and transportation of broodstock to the targeted hatcheries

6.0 Quarantine for imported broodstock

6.1. Quarantine protocols

6.2. Bio-security considerations

6.3. Testing of samples for diseases

7.0 Hatchery operation

7.1 Maturation

7.1.1 Male-female ratio

7.1.2 Maturation techniques

7.1.3 Environmental and nutritional requirements

7.1.4 Spawning methods

7.1.5 Fecundity

7.2 Larval rearing

7.2.1 Collection of Nauplii

7.2.2 Rearing to Zoea and post larvae stage

7.2.3 Packing of post larvae from hatcheries and transportation to farms

8.0 Culture of *L. vannamei*

8.1 Advantages of culture

8.2 Special requirements (temperature, salinity, water depth, pH, feed, etc.)

8.3 Culture practices followed in different countries, stocking density and productivity in extensive, semi-intensive and intensive culture)

9.0 Farm management

9.1 Bio-security requirements at farm level (fencing, bird scare, separate implements for different farms, etc.)

9.2 Farm preparation

9.2.1 Strengthening of dykes

9.2.2 Depth of ponds to suit the intensity of culture

9.2.3 Soil quality

9.2.4 Reservoir preparation and zero water exchange facilities

10.0 Water management in farms

10.1 Treatment of water in reservoirs, water filtration

10.2 Water exchange during the period of culture

10.3 Release of waste water after harvesting

10.4 Sediment management

11.0 Selection of seed and stocking density

11.2 Determination of stocking density for different types of culture

11.2 Monitoring parameters for good quality seed

11.3 Stocking of seed after acclimatization

12.0 Feed Management

12.1 Selection and storage of feed in the farm

12.2 Composition of feed in general and optimum feed conversion ratio

12.3 Feed constituents for broodstock of *L. vannamei*

12.4 Feed for larvae and post larvae

12.5 Feed for grow out ponds

12.6 Feeding schedule and feeding methods

12.7 Feed quality and nutrient load

12.8 Role of feed in environment protection

13.0 Health Management

13.1 Diseases of *L. vannamei*

13.2 Disease monitoring in farm and hatchery

13.3 Contingency plan to tackle spread of disease

14.0 Harvesting

14.1 Partial harvesting to cater to different customers

14.2 Sequential harvesting depending upon the size of ETS

14.3 Final harvesting methods

14.4 Post harvest handling of shrimp and immediate icing to maintain quality

15.0 Management of wastewater

15.1 Methods of wastewater treatment

15.2 ETS provision, simple designs of ETS

15.3 Role of ETS in the treatment of wastewater

15.4 Discharge of wastewater after treatment away from the points of intake

15.5 General hygiene for protection of environment

15.6 Cluster area approach and common ETS

16.0 Record maintenance

16.1 Maintenance of records at hatchery

16.2 Distribution pattern of seed from the hatchery to farms

16.3 Maintenance of records at farm level regarding the quantity of seed received

16.4 Maintenance of records regarding feed used and growth rate

16.5 Maintenance of records regarding harvesting details and sale proceeds

17.0 Conclusions indicating Do's and Don'ts during various operations

18.0 List of references