CERTIFICATION SCHEME FOR SUSTAINABLE AQUACULTURE IN INDIA

'SHAPHARI'

GUIDELINES

FOR

CERTIFICATION OF SHRIMP HATCHERIES IN INDIA

FOR

ANTIBIOTIC FREE SEED PRODUCTION

1. Introduction:

Aquaculture has become a critical source for ensuring food and nutritional security in India. However, its rapid growth has led to increased disease incidences, prompting the use of antibiotics and other pharmacologically active substances-particularly in shrimp farming, which is export-oriented. Residues exceeding international limits have resulted in export rejections, while global markets increasingly demand residue-free seafood.

To sustain export growth and ensure compliance with international standards, the sector must shift towards antibiotic-free production supported by strong biosecurity and responsible chemical use.

In response, MPEDA has initiated stakeholder consultations to address antibiotic misuse in hatcheries. A key outcome is the proposed "Certification of Hatcheries" scheme to ensure the production of antibiotic-free shrimp seed. A committee comprising AISHA representatives, progressive farmers, and MPEDA officials has been formed to develop this framework.

The scheme emphasizes adoption of Better Management Practices (BMPs), robust biosecurity protocols, and responsible input use to ensure quality, residue-free seed production. It is aligned with FAO guidelines on aquaculture certification and aims to strengthen the sustainability and global competitiveness of Indian shrimp exports.

2. Objective:

To establish hatchery certification system for production of antibiotic-free shrimp seed to enhance consumer confidence, meet international standards and promote hassle free export.

3. Definitions:

a. **'SHAPHARI'** is a Sanskrit word for superior quality of fishery product suitable for human consumption**.**

b. **Export Oriented Species.** Shrimp Species having export potential including *P.monodon, L.vannamei, P.indicus, P.merguiensis*, Scampi, or any other species to be decided by the Competent Authority. The new species will be added to the list on fulfilling the following criteria:

i. Export Potential of the species
ii. Availability of suitable technology
iii. suitability of the species for farming.

c. **Unit:** A Hatchery, involved in production/rearing of young ones (seeds) for supplying to grow out farms having a direct or indirect relation to seafood exports.
d. **Aqua Farm:** A aqua farm is a grow-out facility producing export-oriented shellfish/finfish species.
e. **Hatchery:** A hatchery is a place for artificial breeding, hatching, and rearing through the early life stages of aquatic animals - finfish and shellfish in particular. The term also includes the Nauplii Rearing Centres, which source nauplii from other sources and rear to Post Larval stages for supplying to farms.
f. **Antibiotics and pharmacologically active substances:** Medicines used to prevent & treat bacterial infections for broodstock/larvae/post larvae in a hatchery notified by competent authority time to time. (Appendix 4 & Appendix 5).
g. **Certification:** A process that assesses conformity of a product or process to the certification standards. It adopts a procedure by which accredited Certification Bodies, based on an audit, provide written or equivalent assurance that food safety management systems and their implementation conform to specified requirements of product or process.
h. **Authorized Signatory of the application:** The person authorized to apply for certification under the scheme for certification of hatcheries. Such authorization is valid only if all the partners/members of Executive Board of Society/Trust/Board of Directors unanimously approved by a special resolution (Certified by Managing Director in case of Private/ Public Ltd Companies).
i. **Competent Authority:** The Competent Authority for the scheme will be the Chairman/Chairperson, MPEDA or an officer duly authorized by a written office order from Chairman/Chairperson, MPEDA.
j. **Standards:** The standards mean the standards defined for the purpose of enabling the hatchery operators to match the hatchery infrastructure and hatchery BMPs in order to qualify for certification under the scheme.
k. **Compliance levels:** The level of compliance required to be met by the hatchery for different standards prescribed. The levels are classified as Major, Minor and Recommendations. The Major compliance requirements are of mandatory nature and have to be achieved by the hatchery for getting the certification. The minor compliance requirements are to maintain the quality of the seed, environment protection and social responsibility. As regards to the requirements of the recommendatory nature, the standards are advisories for maintaining seed quality and to meet the social and environmental responsibility.

4. Standards:

The standards for certification of hatcheries for production of antibiotic free seeds have been developed through a process of consultations with the experts in the field of hatchery operation, government agencies involved in Research & Development, Regulatory agencies, and developmental bodies and general public. The standards are being developed by

following the international norms for transparency like ISEAL code. The standards proposed will be improved on a continuous basis in keeping with the modification in the scope of the scheme, improvements in the technology and scientific knowledge to ensure high quality, disease free and residue free seed production. The standard developed is annexed as **Annexure 1.**

5. Guidelines for Good Hatchery Management

The hatcheries are entitled to adopt any science based Better Management Practice for producing and supply of quality seeds, free of any antibiotic residues. For producing disease free and residue free shrimp seed, it is imperative to ensure good biosecurity set up as well as responsible use of chemicals, while adopting any good hatchery operating guidelines. The guidelines for Hatchery operations are given in **Annexure 2.**

6. Guidelines for Auditors:

The certification procedures involve audit of the hatchery facility and surveillance of the implementation of the BMPs in hatchery operation. Auditors are selected and empanelled by a designated auditor selection committee comprising of experts chosen from different fields such as hatchery operation aqua farming and environmental protection or social welfare. Committee will follow the prescribed norms for selection of auditors.

The auditors will have no prior knowledge about the hatcheries they have to audit as they will be assigned to audit hatcheries on a random basis. In case of surveillance audit the visit to hatcheries shall be unforeseen and unexpected, i.e., the hatcheries will have no prior knowledge of the upcoming audit.

The auditors will have to follow the hatchery audit format and guidelines provided to them and enter their observations/findings in the respective columns. The guidelines for auditors are given in **Annexure 3.**

7. Hatchery certification process:

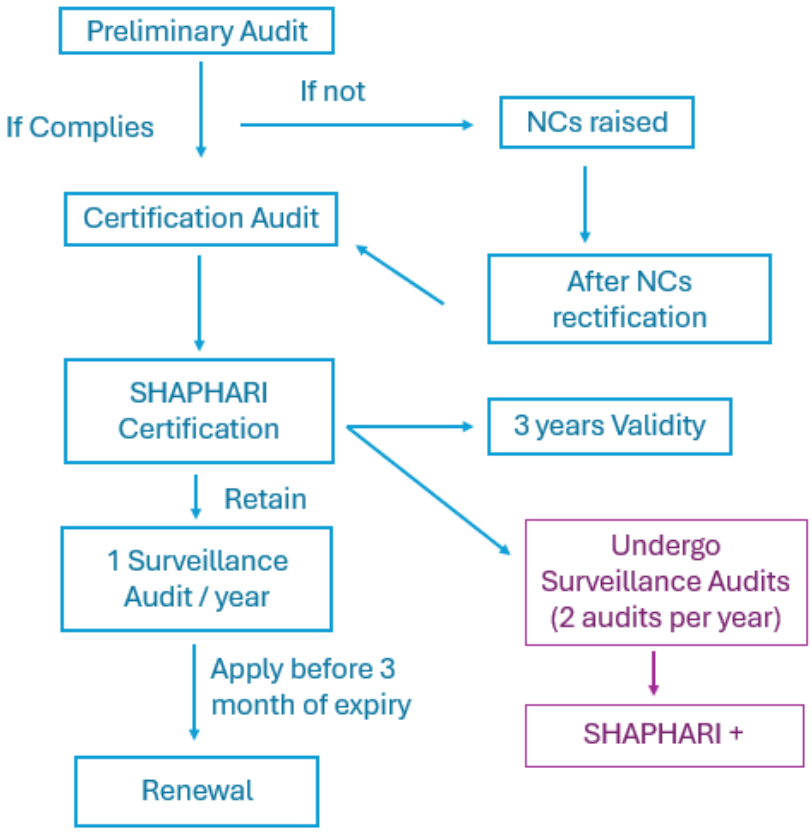
a. Application:

Hatcheries having basic infrastructure facilities and willing to operate their hatcheries with a clear intention of producing healthy and antibiotic residue free shrimp seed should apply to MPEDA to get certified. If the application is complete in all respects and the unit meets the eligibility conditions, the hatchery will have to pass through a Gap/preliminary audit and certification audit and qualify for the issue of certificate. SHAPHARI, Certification of hatcheries for the production and supply of antibiotic free seed production is purely a voluntary one.

b. Gap Audit (Preliminary Audit):

The application of the hatchery accepted by the MPEDA field office will be forwarded to the certification cell (CC) which in turn after scrutiny assigns the job of Gap audit/ preliminary audit to an auditor from the empanelled auditors. The Auditor visits the hatchery and carries out the audit as per the procedure – records the details in the audit format. Nonconformity (NC) if any will be intimated to the hatchery and the hatchery has to close the NCs within 30 days. Failure to close the NCs within the stipulated period will lead to the rejection of the application. If everything is as per the standards, CC recommend the hatchery for Certification audit. The hatchery may avail the assistance of the field office of MPEDA for clearing the NCs.

SHAPHARI AUDIT PROCESS FLOW



c. Certification Audit:

The CC assigns an Audit Committee for carrying out the Certification Audit of the unit. Certification audit committee consists of three empanelled auditors. The Audit Committee visits the hatchery, checks the records as well as takes samples of brood stock/post larvae/hatchery water/inputs etc., as per the procedure for analysis. The samples are sent to designated laboratories for analysis.

The Committee may consider the results of samples collected and tested during the same production cycle under the National Residue Control Plan (NRCP) or National Surveillance Programme for Aquatic Animal Diseases programmes (NSPAAD), as analyzed in the laboratories of MPEDA / Rajiv Gandhi Centre for Aquaculture.

If all the records are in order, conform to the standards and results of the analyses are negative for antibiotics and pathogens, the hatchery with a score equal to or greater than 80 will be cleared for issue of SHAPHARI Certificate. The scoring criteria is given in Annexure 4.

d. Issue of Certificate:

The hatcheries recommended by the auditors after Certification Audit will be issued a certificate for production and supply of antibiotic and disease-free seeds. The Certified Hatcheries will be subject to regular surveillance and unforeseen, random surveillance to ensure that the hatcheries are producing seeds as per the standards.

e. Validity of Certificate

The Certificate issued is valid for a period of three years.

f. Surveillance Audit:

The CC assigns the Surveillance audit to an auditor who conducts random surveillance visit to the hatchery and collect samples for testing banned antibiotics and diseases listed by the World Organization for Animal Health. The auditor can also consider the results of samples collected and tested during the same production cycle under the National Residue Control Plan (NRCP) or National Surveillance Programme for Aquatic Animal Diseases programmes (NSPAAD), as analyzed in the laboratories of MPEDA / Rajiv Gandhi Centre for Aquaculture.

At least one Surveillance audit per year is mandatory to retain the SHAPHARI certificate.

g. Shaphari Plus

A hatchery that is Shaphari certified for the second consecutive period will be issued a Shaphari Plus certificate.

h. Grievance redressal

If a hatchery is having any grievance, they may approach the officer in charge of the MPEDA field office with a written request or an email. The officer in charge of the MPEDA field office may review the records and if necessary recommend another surveillance visit through the certification cell at HO and make a decision within 30 days. Details on the process of certification process is given in **Annexure 4.**

8. Scheme Governance:

The Marine Products Export Development Authority (MPEDA) is the custodian of the Scheme. The governance of the scheme will be as given below:

i. Competent Authority: The Competent Authority for the scheme will be the Chairman/Chairperson, MPEDA.

ii. Steering and ethics Committee: Steering and ethics committees are advisory bodies that are made up of senior stakeholders and experts to ensure that certification process align with the set objectives, to monitor progress, approving changes related to scope or budgets, conflict resolution, provide guidance on different issues that will help the certification scheme to produce deliverables eventually. The committee ensure that the entire certification process progress in an atmosphere of transparency and accountability. The committee shall be headed by the Chairman, MPEDA with members as follows;

a) Director, MPEDA.
b) Representatives of EIC, CMFRI, CIFT, CIBA, CAA, NFDB, SFD, and one member each from SEAI, Hatchery Association and Farmers Associations.

iii. Standard Setting Committee:

The Standard setting committee is responsible for governance, assurance and monitoring and or evaluation of the standard. Recent scientific studies as well other relevant international norms or sector specific standards will be considered for inclusion by the committee as and when required. Experts in specific areas shall also be invited to contribute for improving the contents of the standard. Feedback collected from the stakeholders shall also be included in standard development. The committee will review that standards at least once in a year. The committee will be headed by Director, MPEDA with the following members.

a) Representative of CAA
b) One representative of ICAR institute like CMFRI/CIBA/CIFT
c) Representative of EIC
d) Two Farmer representatives to be nominated by the Farmers association
e) Two representatives to be nominated by the Hatchery Association

iv. Certification Cell:

Certification cell will be responsible for implementation of the scheme and day to day operational monitoring of the scheme. Certification cell shall be responsible for

a) Constitution of selection committee for selection of Auditors and to assist the selection committee for identification and empanelment of Auditors.
b) Allotment of auditors for preliminary audit, certification audit, and surveillance audit of the hatchery applied for the registration.
c) Database maintenance with regard to received applications for certification, audit reports, surveillance reports, non-compliant reports, compliant reports, sample collection and lab analysis reports pertaining to each hatchery applicant.
d) Issuing certificate for the eligible hatcheries based on the approved guidelines.
e) Uploading real-time information in MPEDA website.
f) Initiate complaint resolution process as per the guidelines with regard to certification from the hatcheries.
g) Convening Standard committee meetings, Appellate committee meetings, Steering and ethics committee meetings as and when required for the smooth conduct of the certification scheme.
h) Co-ordination of the activities of various committees.

v. Appellate body (Grievance Redressal body)

Appellate body is a three-member committee of experts with the following members.

a) Director, MPEDA.
b) Representative of the Hatchery Association.
c) Representative from CAA/CIBA/CIFT/CMFRI/EIC/SFD

The body will be constituted by inviting nominations from the said organizations/departments for acting as members of the committee.

The Appellate committee will be responsible for resolving conflicts / complaints / eligibility issues, certification challenges and claims of irregularities with regard to the Certification application which could not be resolved by the Certification cell.

9. Conclusion:

The hatcheries are the backbone of the farming sector. India has a total of 549 numbers of hatcheries with a installed capacity of about 99.55 billion seeds per annum. Most of these hatcheries are established in the states of Andhra Pradesh and Tamil Nadu and most of them produce *L.vannamei* seeds and few of them are producing *P. monodon* and finfish seeds. All the hatcheries are registered under Coastal Aquaculture Authority (CAA) and operate as per CAA guidelines. The hatcheries in India produces around 72 billion seeds using 1.92 lakh imported brood stock and about 5.26 lakh brood stock produced domestically from imported SPF PL's. All *L.vannamei* broodstock imported are

quarantined in the Aquatic Quarantine Facility (AQF) operated by RGCA - MPEDA and supplied to hatcheries in order to ensure disease free seed production.

However, there is not enough control on the quality of seed supplied to the farmers. In a world in which the demand for fishery products are increasing certification appears to be a possible way to bring about a greater degree of control and sanity in the system and supply of safe seafood with better quality. The role of certification programs will not only provide consumers with a safe product but it will also ensure better returns to farmers, reduction in rejections of export consignments and will lead to increased export earnings.

Shaphari' the certification of hatcheries has importance in this context and will help Hatcheries to produce best quality seeds free of any antibiotics and diseases following Good Aquaculture Practices and it will in turn help the farmers to get the best quality seeds for their farms.

10. ANNEXURE

Annexure: 1

10.1 STANDARDS FOR HATCHERIES

Use of antibiotics in aquaculture is a major concern of the global consumers. The consumers in all major importing countries demand residue free fish/shrimp and as a consequence the regulatory authorities have started putting in place various measures for ensuring residue free food fish. India is showing sustained increase in seafood exports and provides valuable foreign exchange through seafood exports. Sustainability of aquaculture is also related to the biosecurity protocols and the responsible use of chemicals and pharmacologically active substances in hatcheries. Certification of hatcheries for production of antibiotic free seed will provide solution antibiotic free shrimp production. This will also act as a tool to improve the consumer confidence.

For certification of hatcheries, science-based standards which are achievable and improved on a continuous basis are developed. The standards, which help the applicants for certification, are structured in such a way to make the hatchery operate in environmentally and socially responsible way taking care of food safety aspects. The standards help the hatchery operators to assess their operations themselves and facilitate audit.

a. Scope: The standards shall apply to hatcheries located in all places and irrespective of scale of operation of hatcheries. The standards are intended for shrimp hatchery operators in the country and designed to help all category of seed producers.

b. Species covered: The standards apply more specifically to the native species*, Penaeus monodon* and P*. indicus* and the exotic species, *Litopenaeus vannamei*, but is also applicable for all export-oriented fish/shellfish species.

c. Unit of certification: The individual hatchery is considered to be a unit for the purpose of certification.

d. The standards and the guidelines framed are based on FAO guidelines on responsible aquaculture / Good Aquaculture Practices. The certification standards are also in conformity with the FAO guidelines on certification.

e. Guiding Principles:

i. **Complying with the existing national and local laws and regulations:** Any activity that is carried out as a form of business or commercial activity should be carried out according to the law of the land. Therefore, it is pertinent to ensure compliance with the existing national and local laws/regulations.

ii. **Hatchery operations shall be carried out in an ecologically and environmentally responsible manner:** Conduct hatchery operations to minimize impacts on surrounding resource users. Conscious efforts to reduce discharged

water from hatchery and/or ensuring the quality of discharged water meet the standards prescribed for hatchery discharge by the concerned regulatory authority.

iii. **Responsible use of chemicals and production of residue free shrimp seed:** Use chemicals and drugs that may have adverse impact on ecosystems and human health in a responsible manner and avoid antibiotic and unwanted chemical treatments. Chemical treatments can cause stress to delicate organisms like shrimps. The management practice should be oriented for prevention of diseases both in hatcheries and farms.

iv. **Biosecurity:** Avoid release or escape of exotic species and transgenic into environment. Escape of exotic species into the environment can cause negative impacts on the native populations in several ways.

v. **Traceability:** Keeping proper records of each and every action involved in the hatchery operations is part and parcel of Better Management Practices followed. This would not only help the decision makers to fall back on the records to verify what went wrong in operations and to identify the root cause of failure, if any. Keeping records would also help in auditing of the hatchery operations by an external audit party (Government regulatory body or a third party). Keeping proper records also lends transparency in operation and help building consumer confidence.

vi. **Community relations and social responsibility:** Hatcheries may follow the Corporate Social Responsibility guidelines of the Government and the applicable labour laws.

The Standards:

1.	**Complying with the existing national and local laws and regulations**
	Justification: Aquaculture is a business producing food for human consumption using natural resources that have multiple users and impacts. Therefore, the concerned state and central government agencies should have the pertinent information on the units engaged in production. The national certification program for hatcheries requires that all hatchery units desirous of supplying their produce for exports comply with the existing laws pertaining to establishment of hatchery units.
	Operationalization / execution: Hatcheries desirous of supplying their produce to export oriented aquaculture units shall possess required documents in proof of compliance to existing national and local laws and regulations. In the coastal areas, the hatchery units shall possess the registration with Coastal Aquaculture Authority and/or enrolment by MPEDA. Hatcheries located beyond the jurisdiction of the Coastal Aquaculture authority shall have the registration of the respective state government and/or enrolment by MPEDA.
2.	**Hatchery operations shall be carried out in an ecologically and environmentally responsible manner**
	Justification:

	Coastal and inland areas are having diverse and ecologically sensitive environments, which are breeding grounds or nursery grounds for a number of aquatic species and also veritable habitats for birds and other wildlife. Mangroves are also considered as barriers for coastal erosion due to winds, waves and storms besides forming excellent resources for the local people.
	Operationalization/execution: 1. **Location of Hatcheries:** Hatcheries shall not be located in the legally prohibited areas such as mangrove areas and other wet land areas. Hatcheries shall possess necessary clearances viz., Coastal Aquaculture Authority clearance or clearance from competent authority with regard to the nature of the land on which the hatchery is located.
	2. **Ensuring animal health and environmental health:** Hatchery operations shall be carried out in conformity with any form of Good Management Practices/Better Management Practices/Best Management Practices and the hatchery shall possess a written down Standard Operating Procedure developed thereon.
3.	**Food safety: Responsible use of chemicals and production of residue free shrimp seeds**
	Justification: Consumers across the world are demanding healthy and safe food. Presence of residues of harmful substances such as antibiotics and other banned pharmacologically active substances is undesirable and a potential human health hazard. The consumers are entitled to get safe food that is free from residues of drugs and chemicals that may pose health hazard to them. Detection of residues of banned antibiotics and residues of others beyond the mandated residue limits may lead to rejection of export consignments and the consequent economic losses to the concerned. Apart from the residues of the drugs and chemicals, the microbial contamination and hygiene also are critical for supply of safe food. Improper/indiscriminate use of antibiotics and chemicals may lead to antimicrobial resistance that can affect shrimp/fish/other species or even human beings and environment. Presence of antibiotics in fish/shrimp and presence of AMR genes in bacteria associated with aquatic system may also be due to influx of wastewater contaminated with antibiotics from terrestrial sources into the source water. Use of antibiotics such as Chloramphenicol and Nitrofuran metabolites are banned in almost all countries. Apart from these, there is selective ban on use of chemicals such as malachite green, hormones, etc., in many countries.
	Operationalization / execution: 1. Ensure safety of the water sourced for hatchery intake purpose. The intake water could be the source of antibiotics, pesticides and chemicals. Therefore hatcheries should be vigilant on the quality of the water, carry

	out chemical analysis when there is potential contamination of the water source. 2. Not to use any antibiotics and banned pharmacologically active substances • Adopt good health management practices and thereby prevent disease problems. • Produce quality seeds successfully in commercially manner without using antibiotics and banned pharmacologically active substances. • Hatcheries may keep declaration by the input suppliers to the effect that no banned drugs or other banned pharmacologically active substances are applied in the product. 3. Use only inputs that are approved/registered with CAA: • Hatcheries should have a list of inputs approved/registered by the CAA and ensure that they do not use any input that does not feature in the list. • Hatchery technical personnel should be aware of the ingredients of the inputs and the harmful effects of the banned pharmacologically active substances. 4. The Hatchery technicians should undergo Aquaculture Technician Training to update their knowledge and understanding periodically.
4.	**Biosecurity:**
	Justification: Success of hatchery operation depends on preventing the entry of infectious pathogens in the system. There are many stages in hatchery operation associated with the potential risk of introduction of pathogens into the system. Each hatchery shall identify the critical points where there is risk of introduction of pathogens and where the risk can be mitigated by adopting suitable biosecurity measures. A Standard Operating Procedure (SOP) detailing the Health Management Plan for disease prevention and control and ensuring biosecurity shall be available in the hatchery. The SOP should be a comprehensive document that covers each stage or process of the production cycle and updated periodically based on new scientific information of biosecurity protocols. All workers in the hatchery should be trained on the biosecurity protocols to be followed.
	Operationalization / execution:
	1. All hatchery workers should be aware of the documents and understand the SOPs. The understanding of the SOPs may be verified by interview during hatchery audit. 2. All hatchery workers should be given training on the biosecurity protocols and hygiene protocols. 3. All broodstock and other live/fresh/frozen aquatic organisms brought into the hatchery should be screened for pathogens or accompanied by Health status documents. 4. Containers and implements used for transportation of live animals (Larvae/Post larvae/Brooders/Spawners) shall be cleaned and disinfected before reuse.
5.	**Record keeping and Traceability:**

	Justification: Traceability is a system of keeping records throughout the value chain and chain of custody of produce from hatchery to the end user/consumer. It is a system to assure the end user that all the production process are in compliance with the standards for food safety and carried out in an environmentally sustainable and socially acceptable manner. The records may be maintained electronically in the form of databases or papers, registers, files or documents or a combination of any of these.
	Operationalization / execution: Record keeping should be carried out diligently with utmost care and records should be maintained in a proper manner. 1. Records of each production unit should be kept separately so as to facilitate traceability and audit of each unit separately, preferably indicating. i. Name or identity (identification number if any) of the unit ii. Seed Production Capacity of the unit iii. Source of brood stock, Maturation, spawning & hatching details iv. Larval/PL rearing details v. Stocking date, number of nauplii/larvae of post- larvae/fry stocked and its source. vi. Details of feed used in each production cycle of the hatchery operation should be kept, particularly the live feed, used has to be recorded vii. Records of each input used in the hatchery production cycle, shall be maintained with product name, batch/lot number and manufacturer name. 2. Sales record with the details of the purchaser and farm shall be maintained. 3. Water quality testing, disease diagnostic tests and tests for screening antibiotic and other pharmacologically active substance are highly desirable. Name of the laboratories and the results thereof also may be included in the records 4. In order to ensure the traceability along with whole chain of custody, hatchery will have to keep record of dealings with one step backward and one step forward link. 5. The hatchery shall keep records of any customer complaints related to the seed supplied. They shall also keep records of the investigations carried out on the complaints and action taken to address/mitigate the grievances/complaints 6. Hatcheries shall retain the records for a minimum period of two years
6.	**Community relations and social responsibility:**
	Justification: Aquaculture has to be carried out as an activity co-existing with other interests in the coastal and inland areas. Every effort needs to be made to maintain good community relations.

	Operationalization / execution: • While setting up hatchery unit, the management shall take into consideration of the other conflicting interests in the locality and ensure that the traditional rights of the local people are not restricted/curtailed. • Hatchery Management shall interact with the local community to avoid any conflicts. • Hatchery shall engage labour from the local communities as far as possible. • Hatchery shall pay wages to the workers following the local and national laws in force. • Hatchery shall not engage forced or bonded labour in any form. • Hatchery shall not discriminate workers in compensation, worker training, promotion, termination and retirement. • There shall not be any sort of harassment to the workers. • The hatcheries may also follow the applicable CSR guidelines. • The hatchery workers should have proper identity, and their ages to be verified with Aadhaar card/ any other government issued identification document. • No child labour; employing children below 15 years is not permitted. • The Hatchery should maintain a Salary register for the staff, and the salary should be credited to the bank account of the worker by Direct Bank Transfer (DBT). • A Declaration may be collected from the worker and maintained as a record, who opts to receive the wages in cash.

Annexure 2

10.2. OPERATING GUIDELINES

The Hatcheries are entitled to follow any scientific hatchery management practices. However, the management practices shall at the least conform to the guidelines issued by the Coastal Aquaculture Authority wherever applicable. As the focus of the certification is on the production and supply of antibiotic-free seed, the hatcheries shall possess the necessary infrastructure for ensuring required biosecurity measures and adopt Hatchery BMPs, which may include measures other than use of antibiotics to control infections.

Following are the general guidelines for the adoption of BMPs for the production and supply of antibiotic free seed.

Infrastructure:

1. Fencing delimiting the hatchery premises to regulate entry.
2. Gated entrance with a tyre bath.
3. Water intake system, filtration system.
4. Separate facilities for Water treatment and reservoirs for Maturation and larval culture.
5. Physically separate production facilities for Maturation and Larval culture.
6. Maturation section shall have separate provisions for broodstock holding and maturation, spawning, hatching and nauplii holding. An area demarcated for microscopic examination for quality of egg and nauplii etc.
7. Spawning section can have facility for individual or mass spawning.
8. Fresh feed preparation room: This is another high-risk area for pathogen introduction into the production system. Fresh food is also important component in the maturation process. This section must have door and windows with mosquito mesh to avoid entrance of flies and other insects.
9. Larval culture section should have separate facilities for algae, artemia and laboratory area for daily observation of the animals.
10. Microalgae section to have two areas, pure culture area and mass production area
11. Artemia cyst hatching section should preferably be a separated from the larval section and have hatching tanks with its own air and water pipeline system.
12. A properly designed hatchery must have a system for discharged water treatment with a provision for sedimentation, chemical and physical treatments etc.
13. Diagnostic labs facilities including PCR for testing of viral, bacterial and other relevant pathogens should be available or the hatchery can have an arrangement with an external lab.
14. A physically separate packing area with required facilities for seed packing shall be available.

Hatchery BMPs

Good hatchery operations target ensuring ideal water quality conditions for different stages of life cycle of the fish/shrimp/crab so as to ensure optimal production, prevent contamination, environmental deterioration due to effluent, and maintain good community relations. The term Better Management Practices hints at continuous efforts in improvement in achieving the objectives of hatchery operations in successive cycles of operations.

Standard Operating Procedures (SOPs):

Each hatchery should develop and display its own set of Standard Operating Procedures (SOPs) outlining the preventive control protocol for the hatchery covering brood stock management, seed production plan, hatchery water preparation, feed and feeding, larval and post larval health management, harvesting and postharvest handling etc. It should be a comprehensive document that covers each stage or process of the production cycle. The document should include details of all the Preventive control points (PCPs) and describe how to perform each task to control the associated risk. Once the protocol for hatchery operation is documented, the SOPs should be available for all workers in an accessible place.

As new information becomes available, the SOPs should be reviewed and updated. Any changes may be inserted as amendment and must be communicated to all personnel. A register indicating the distribution list may be maintained. Training in biosecurity maintenance should be an important component of the hatchery process. All workers of hatchery should be trained on the SOPs and should be aware of the biosecurity protocols.

HACCP approach for development and implementation of biosecurity protocols:

The HACCP approach is a preventive risk management system based upon a hazard analysis and can be applied as a risk management tool to control vital pathogens at shrimp research and production facilities. The preventive control points (PCP) identified for the maturation and hatchery stages of shrimp production are:

1. Water intake system
2. Brood stock, nauplii
3. Feeds, particularly the live and wet feeds.
4. ETP
5. Entry points – entry points to maturation, spawning, larval, post larval sections shall be provided with disinfection facilities like hand wash, foot dip etc. There should be disinfection of the hatchery implements and feeds arriving into each section.
6. The other potential risks to be covered by the implementation of the SOPs and HACCP are disease vectors (human and animal), facilities and equipment. Seed packing and transport, Vehicle including trays/tanks

A Flow diagram maybe created for the hatchery facility detailing all operations and the movement of shrimp and larvae through the production system and PCPs must be identified for each area (Quarantine, maturation, hatchery, algal culture, artemia production etc.). The following areas, but not limited to them, are to be considered.

Facility entrance: Control at entrance for workers, administrative employees, vehicles and other disease vectors

Water treatment: All the water used in production units must be treated appropriately to kill pathogens and their hosts

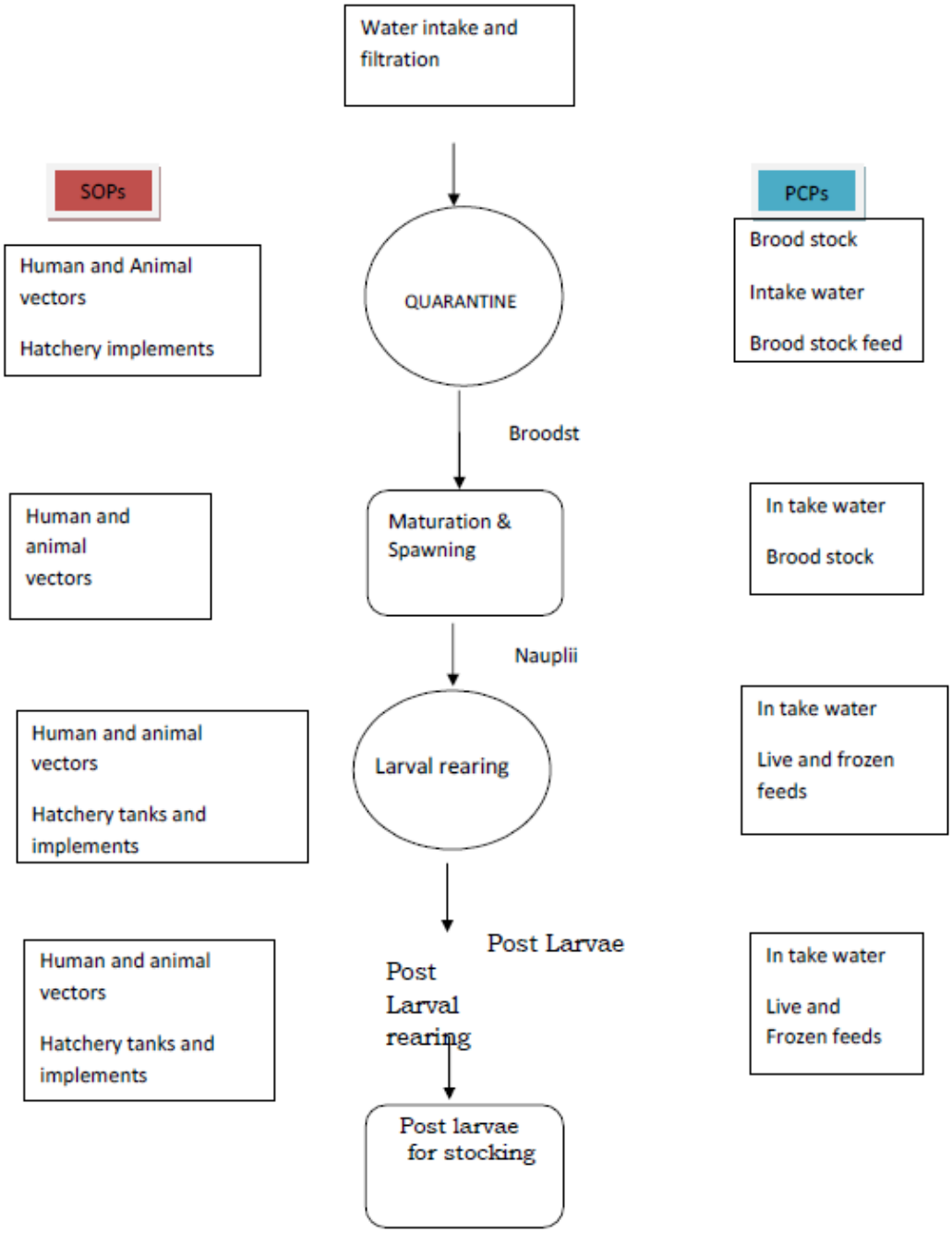
Maturation: Quarantine of incoming broodstock, checking and disinfection of fresh feed, cleaning of tanks and waste and airlines disinfection of broodstock, egg, nauplii and equipment.

Hatchery: Regular dry-out periods, cleaning and disinfection of buildings, tanks, filters, water and airlines and equipment, quality control and disinfection of fresh feeds; separation of working materials for each room and each tank.

Algae: Restricted entrance of personnel to algal laboratory and tank facilities; equipment water and air disinfection; sanitation and quality control of algae and chemical used.

Artemia: Cyst disinfection, nauplii disinfection, tank and equipment cleaning and sanitation.

Hatchery operation flow chart depicting the components, PCPs and SOPs to prevent disease occurrences



Note:

1. Separate implements for each section with exclusive staff for different production units with SOP chart / exhibits are advisable.

2. In house lab facilities shall depict the protocols adopted for monitoring the health of the larval and post larval stages of the hatchery.

Restriction of entrance: to the hatchery in general and each area in particular to the authorized personnel: all staff and administrative personnel entering the production areas must comply with the procedures in the SOPs.

Special care must be taken with vehicles (personnel or shrimp transport vehicles) because they may have visited other hatcheries or shrimp farms before arrival.

Entry of potential disease vectors into the hatchery facility must be controlled. Some shrimp viruses are found in a range of terrestrial animals such as insects and birds. While it is not possible to control all potential animal vectors, their entry can be minimised by the use of physical barriers such as fencing, nets or mesh to exclude birds and insects. Aquatic animal can be excluded by ensuring that there are no direct means of entry from open-water sources, especially via inlet pipes and drainage channels. All water entering the facility should be filtered and disinfected, and all drainage channels should be screened and/or covered, where possible, to prevent entry and establishment of wild aquatic animals.

i. Quarantine (Broodstock/nauplii)

- For *P. monodon* hatcheries that are not using SPF there should be a quarantine facility to keep and evaluate the broodstock quality. The broodstock should remain in the facility atleast for two days. During this period samples can be tested for potential viral pathogens, AHPND, EHP etc.
- For hatcheries which do not have a broodstock section and use spawners, must screen the spawners for the diseases of concern.
- Apart from the molecular tests the physical examination of the brood stock for its size, health and condition of the gills, appendages and general body surface has to be carried out.
- For *L. vannamei*, SPF broodstock imported from approved suppliers and routed through the AQF at Chennai (or any other designated AQF) or purchased from approved Broodstock Multiplications Centres in the country supplying SPF broodstock quarantine is not mandatory.

ii. Maturation and spawning

- Water quality in Maturation and spawning tanks should be kept as steady as possible. In the case of *L. vannamei*, depending on the mating techniques adopted, the males and females can be kept in the same tank or separate tanks. Spawning room is separated from maturation room and spawning can be done individually or collectively depending on the production targeted, space availability and manpower etc. Maintenance of optimal water temperature and other water quality parameters is very important in getting good results.

- The Maturation section requires supply of fresh feeds for getting good results. In view of the risk involved in introduction of pathogens, the feed preparation should be carried out in a separate bio-secure room and measures such as footbath, hand wash etc., should be provided for preventing any cross contamination have to be taken.

iii. Larval rearing

Larval rearing involve stocking of nauplii in the Larval rearing tank and providing optimal water quality conditions, providing required quality and quantity feeds, monitoring larval health, sampling and population estimation etc. The activities should be guided to maximise the production without compromising on the larval quality. The required biosecurity protocols for disease prevention and HACCP protocols for preventing contamination with chemical and drug residues have to be followed.

Evaluating larvae and post-larvae quality - Three level observations:

- **Level 1. -** Visual inspection of larviculture tank and in visual observation of the animals in a glass jar – gives a primary information of the condition of the larvae. The observation of swimming behaviour, response to light, distribution in the water column, etc., are indicators of the condition of the larvae.
- **Level 2. -** Observation of the animals with a microscope in the laboratory – to determine development stage, the degree of gut repletion, presence of epibionts, necrosis etc.
- **Level 3. -** complex analysis, usually done in specialized laboratories. May include microbiological analysis, histology, PCR etc.

Summary of Level 1 observations and scores

Criteria	Score	Stage	Observation
Swimming activity		All stages	Daily (2) observations
Active (>95%)	10		
Intermediate (70-95%)	5		
Weak (on bottom) (<70%)	0		
Phototropism		**Zoea**	Daily (2) observations
Active (>95%)	10		
Intermediate (70-95%)	5		
Weak (on bottom) (<70%)	0		
Faecal string		**Zoea**	Daily (2)
(cord)			observations
Present(90-100%)	10		

Intermediate (70-90%)	5		
Absent (<70%)	0		
Luminescence		**Mysis**	Night observations of the tank
Absent	10		
Present (<10%)	5		
Abundant (>10%)	0		
Homogenous stage		All stages	Daily (2) observations
High (80-100%)	10		
Intermediate (70-80%)	5		
Low (<70%)	0		
Intestinal contents		Mysis	Daily (2) observations
Full (100%)	10		
Half (50%)	5		
Empty (<20%)	0		

Summary of Level 2 assessments and scores

Criteria	Score	Stage	Observation
Hepatopancreas (lipid vacuoles)		All stages	Daily (2) observations
High (>90%)	10		
Moderate (70-90%)	5		
Low (<70%)	0		
Intestinal content		**All stages**	Daily (2) observations
Full (>95%)	10		
Moderate (70-95%)	5		
Empty (<70%)	0		
Necrosis		**All stages**	Daily (2) observations
Absent (0%)	10		
Moderate (<15%)	5		
Severe (>15%)	0		
Deformities		**All stages**	Daily (2) observations
Absent (0%)	10		
Moderate (<10%)	5		

Severe (>10%)	0		
Epibionts		**All stages**	Daily (2) observations
Absent (0%)	10		
Moderate (<15%)	5		
Severe (>15%)	0		
Baculovirus		**Mysis**	Daily (2) observations
Absent (0%)	10		
Moderate (<10%)	5		
Severe (>10%)	0		

When all of these level 1 and 2 observations are made and recorded for each tank of larvae at each stage and the appropriate scores given in each case, an overall picture of larval health can be derived, with higher numbers relating to healthier larvae and vice versa. With experience, it becomes easy to judge the overall health of each tank of larvae and to recommend courses of action to combat the problems, depending on the scores obtained.

Level 3 observations utilizing molecular techniques are not normally required until post larvae are ready to transfer to growing facilities. PCR techniques are commonly used to test for major pathogens.

iv. Post Larval Rearing

Post larval observation and quality assessment

Summary of post larval quality assessment using Level 1 procedures:

Criteria	Observation	Qualitative assessment	Score
Moulting	Moults in the water	< 5%	10
	Moults not sticking to head of PL	5-10 %	5
		➢ 10%	0
Swimming Activity	Activity level of post-larval behaviour	Active	10
		Intermediate	5
		Low	0

Direct observation of Luminescence	Night time observation of the tank	< 5%	10
		5-10 %	5
		>10%	0
Survival rate and clinical history of tank	Estimation of survival rate in each tank	>70%	10
		40-70 %	5
		<40 %	0

Summary of post larval quality assessment using Level 2 procedures

Criteria	Observation	Qualitative assessment	Score
Muscle Opaqueness	Opaque muscle in tail of PL	<5%	10
		5-10%	5
		>10 %	0
Deformities	Deformities in limbs and head	<3%	10
		3-10%	5
		>10%	0
Size variation of CV	Calculation of CV of post larval size	<15%	10
		15-25%	5
		>25 %	0
Gut contents	Degree of fullness of digestive tract	Full	10
		Moderate	5
		Empty	0
Colour of the Hepatopancreas	Relative colouration of Hepatopancreas	Dark	10
		Pale	5
		Transparent	0

Condition of the Hepatopancreas	Relative quantity of lipid vacuoles	Abundant	10
		Moderate	5
		Low	0
Epibiont fouling	Degree of fouling by eipibionts	<5%	10
		5-10%	5
		>10%	0
Melanization	Melanization of body or limbs	<5%	10
		5-10%	5
		>10%	0
Gill Development	Degree of branching of gill lamelle	Complete	10
		Intermediate	5
		Slight	0
Intestinal Peristalsis	Movement of gut muscle	High	10
		Low	5
Baculovirus	Daily (2) observation of Mysis	Absent (0%)	10
		Moderate (<10%)	5
		Severe (>10%)	0
Muscle to Gut Ratio	Comparison of ratio between muscle and gut thickness	>3:1	10
		1-3:1	5
		1:1	0
Stress Test	If <75%, re-testing is recommended	>75%	

Post larval quality assessment using Level 3 procedures

Level 3 assessment should be carried out on a statistically determined number of post-larvae (usually 150 for a population of >10000) from each tank (in order to provide a 95% confidence level at 2% prevalence in the result) using PCR techniques for detection of important pathogens. Only acceptable result for any of these viral pathogens is a negative result, which would be given a score of 10.

v. Seed packing and transport

Seed packing and transport area is a neglected area with regard to the biosecurity aspects. However, as this area comes in contact with the public and the material they bring for seed transport etc., there is a potential risk of pathogen transmissions into the hatchery. Therefore, proper care need to be taken ensure that the public that are entering the area and the implements they bring should be properly disinfected.

vi. Record keeping

Keeping proper records of each actions involved in the day-to-day hatchery operations is part and parcel of Good Management Practices followed. This would not only help the decision makes to fall back on records to verify what went wrong in operations and to identify the root cause of failure, if any. Keeping records would also help in auditing of the hatchery operations by an external audit party (Government regulatory body or a third party).

Records of all inputs purchased, and their daily use shall be documented systematically so that the mass balance of the items can be assessed/verified at any time. The product wise details such as: Batch number, Manufacturing date, expiry date, Quantity etc., should be part of the record.

Records should also be kept on the sourcing of broodstock. Observation on the quality of brood stock; Quantity and date of purchase, quarantine done if any, pathogens tested and identified if any, number of broodstock used for eye-stalk ablation and maturation, spawning and hatching records; nauplii produced and its quality assessment records; stocking records, quality assessment records, survival and yield records in Larval and Post Larval sections etc., have to be necessarily maintained.

Records of sale of seeds to farms also are very important. Details of farms to which the seeds are supplied should be available. Hatcheries shall also keep records of tests carried out for discharged water from hatcheries.

vii. Use of antibiotics and chemicals:

Use of antibiotics and other pharmacologically active substances shall be avoided. Prevention of disease occurrences shall be the norm. Only products and inputs registered with the regulatory authority (CAA) should be used.

The Government of India in the Gazette of India Extraordinary, dated 10th July 2002, vide order No.729 (E) of the Ministry of Commerce and Industry has prohibited the use of 20 antibiotics/ other pharmacologically active substances in the culture of or in any hatchery for producing the juveniles or larvae or nauplii of; or in any unit manufacturing feed for; or in any unit pre-processing or processing shrimps, prawns or any other variety of fish and fishery products. The prohibited substances include Chloramphenicol, Nitrofurans (including Furaltadone, Furazolidone, Nitrofurnatoin, Nitrofurazone), Sulphamethoxazole, Sulfanoamide drugs (except approved sulfadimethoxine, Sulfabromomethazine and Sulfaethoxypyridazine), Fluroquinolones Glycopeptides, Aristolochiaspp, Chloroform, Chloropromazine, Colchicine, Dapsone, Dimetridazole, Metronidazole, Ronidazole, Ipronidazole and other nitromidazoles, Clenbuterol, and Diethylstibestrol (DES).

In addition to the above list, EIC has indicated the Maximum Residual Levels for tetracycline (0.1 ppm), oxytetracycline (0.1 ppm), Trimethoprim (0.05 ppm) and oxolinic acid (0.3 ppm).

There is ample evidence that hatcheries can be run in a commercially successful way without using any antibiotics or other pharmacologically active substances.

Sampling procedure for seeds.

The procedure followed for collection of samples is similar to that adopted for NRCP can be adopted. Duplicate samples are required. Samples should be signed and sealed both by the drawer and hatchery owner/authorized person.

Standard procedure for the detection of the listed antibiotics is as follows:

Following procedure is adopted for analysis of samples:

Sl. No	Antibiotic	Methodology reference
1	Chloramphenicol	AFSSA FOUGERES, Chloramphenicol Identification by LC MS MS, Nov 2002
2	Nitrofuran metabolites (AOZ, AMOZ, AHD, SEM, DNSH)	1) Aquaculture products Detection, Identification and confirmation of residues of Nitrofuran Metabolites by LC MS MS. EU Ref, method from State Institute for Quality Control of Aquaculture products -National Referal Lab,RIKILT Wageningen University & Research,Wageningen Food Safety Research Institute, Netherlands. 2) Development of a multi-class method to determine nitroimidazoles, nitrofurans, pharmacologically active dyes and chloramphenicol in aquaculture products by liquid chromatography-tandem mass spectrometry. By Dongmei Chena, Jean-Michel Delmas, Dominique

		Hurtaud-Pessel, Eric Verdon.
3	Nitromidazole (IPZ, DMZ, MNZ, RNZ with OH compounds)	Journal of Chromatography B ; Volume 960, 1 June 2014, Pages 105-115
4	Tetracyclines with 4epimers (TC, OTC & CTS)	AOAC Official Method of Analysis 20th Edition 2016 chapter 23, p 22-25 (995.09) Chlortetracycline, Oxytetracycline and Tetracycline in Edible Animal Tissue by Liquid Chromatography Method.
5	Sulfonamides (11 compounds)	Simultaneous determination of 32 antibiotics in aquaculture products using LC MSMS. G.Fedorova et al./Chemical Papers 68 (1) 29–36 (2014).
6	Quinolones & Fluroquinolones (9 compounds)	Lesley Johnston, Lindsey Mackay, Meg Croft (2002), Journal of Chromatography A, 982 (2002) 97-109, " Determination of Quinolones and Fluroquinolnes in fish tissue and seafood by high performance liquid chromatography with electrospray inonisation tandem mass spectrometric detection".

viii. Discharge water Management:

Adoption of Better Management Practices in hatchery operations can improve quality of discharged water and reduce discharged water quantity. The Hatchery management should make efforts to improve discharged water quality to meet the discharged water standards specified by the Coastal Aquaculture Authority. In addition, the hatcheries operating beyond the jurisdiction of CAA shall ensure that the chloride content of the discharged water shall be less than the limit given in the standard.

ix. Community relations – Labour welfare and social responsibility

Hatchery and other aquaculture operations should be carried out in harmony with the local communities. Hatcheries shall not obstruct the access of the local people to their traditional uses. Hatchery management shall try to get the confidence of the local communities by interacting with them on are gular basis, providing common amenities as part the Company's Social Responsibilities (CSR).

The hatchery shall employ workers from the local communities. Providing minimum wages prescribed in the local and national laws, ensuring worker safety and welfare such as proper living conditions, drinking water, bathrooms, toilets, working hours etc. should ensured as far as possible.

Annexure 3

GUIDELINES FOR AUDIT AND AUDITORS

Introduction:

Audit is the process which assesses and evaluates the product or process of unit and lays foundation for the certification process. The audit process has to be conducted in a simple and transparent manner in order to ensure the product or process are evaluated to assess how far they match with the standards prescribed. The audit process and guidelines for the auditor is designed with this objective in mind.

Selection of Auditors

The auditors for the scheme are selected by following a selection process. ~~Lead~~ Auditors are also selected from the national fisheries research institutes by requesting the respective institute to nominate the eligible scientists to be auditor for the certification scheme. MPEDA shall also nominate eligible auditors for empanelment. Such nominated auditors will be issued an offer of empanelment order detailing the terms and conditions of the empanelment. Candidates will have to return the signed copy of the offer of empanelment in acceptance. Signing of the offer of empanelment will amount to signing an undertaking in acceptance of the terms and conditions therein. Such candidates will be provided training on the certification programme. Upon acceptance and successful completion of the training programme, the candidate will be included in the panel of auditors and will be duly informed by issuing an empanelment order.

Terms and conditions of empanelment:

1. The empanelment is for a period of 3 years from the date of empanelment
2. Empanelment should not be construed as an employment of MPEDA.
3. As per the requirement for audit, intent will be issued to the empaneled auditor on a random basis.
4. Upon acceptance of the intent, the empaneled auditor will be assigned an audit work order.
5. Auditor has to carry out the audit as per the guidelines issued.
6. Auditors will be eligible for TA, Daily allowance and accommodation as applicable to officer in the level of Deputy Director in MPEDA.
7. In addition to the above, an honorarium of Rs.2000/day shall be paid on
8. completion of audit.
9. Auditor needs to maintain the confidentiality of the work assigned to and findings thereof.
10. Auditor with business/family relation with a hatchery shall not audit that particular hatchery. In case of any such relation, this may be revealed upon receiving the intent for auditing the hatchery. The auditor will not be assigned audit of that hatchery. In the instance of any such relationship coming to the knowledge of MPEDA after the audit, the concerned auditor will be removed from the panel.
11. Once audit work order is issued to the auditor, the auditor shall complete the work and

submit the report in the stipulated timeframe.

12. Signing of the offer of empanelment will amount to signing an undertaking in acceptance of the terms and conditions.
13. An empaneled auditor can opt for de-empanelment. However, de-empanelment is subject to the completion of all the works assigned and settlement of dues if any.

Procedure for assigning Auditors:

1. Empaneled auditors will be assigned audit work by the CC on random basis ~~through an automated online system.~~
2. An intent will be generated and forwarded to the assigned auditor from the online system. The intent will indicate the time period and the jurisdiction/ area of the hatchery to be audited.
3. The auditor has to accept or decline the audit assignment. In case the auditor declines, the reason may be stated.
4. While submitting the reply to the intent, the auditor may list out the hatcheries in the jurisdiction with which he/she has any relationship (business/family).

Timeline for Certification:

S.No	Activities	Duration
1.	Verification of the application and supporting documents by the field office	1 day
2.	In case of any defects or insufficient documentation, the application shall be returned to the beneficiary in written form from the date of receipt of the application	Within 7 days
3.	Resubmission of the application by the beneficiary from the date of return of the application by the MPEDA field office	Within 15 days
4.	Forwarding the eligible application to the HO, MPEDA by field office	2 days
5.	Verification of SHAPHARI application by HO	2 days
6.	The Gap audit / preliminary audit of the unit shall be assigned from the date of approval of the application by the MPEDA Head Office	Within 15 days

Procedure for conducting audit

The audit consists of an opening meeting, a site audit, the collection of necessary samples, a review of management records and procedures, and a closing meeting. All points in the standards shall be addressed. Any non-conformity raised during the evaluation is recorded by the auditor in the formal report.

1. Auditor will be issued guidelines for conducting audit along with the work order,

containing details of name and location of the hatchery, time frame for the audit etc.

2. Immediately after receiving the work order, auditor has to submit a travel programme suiting to the time frame. On approval of the travel plan**,** MPEDA will make arrangement for air travel. For the purpose of travel by road/rail and accommodation, advance amount may be requested along with the travel plan. Auditor may seek the assistance of the MPEDA field office for logistical arrangements, if any required.
3. CC will intimate the hatchery regarding the impending preliminary/certification audit of the hatchery. However, as the surveillance audit is supposed to be unforeseen and unexpected, the same will not be intimated to the hatchery.
4. Auditor may visit various sections of the hatchery, observe operations with special focus on the inputs used and the records maintained thereof.
5. Auditor will have to collect and dispatch the samples for analysis as per the procedure of conducting certification and surveillance audit. (sample analysis reports are expected to be upload by the concerned labs online, if not, the reports will be sent by e mail to CC and the concerned auditor). Audit observations are to be recorded in the online system and submitted as soon as the audit is completed.
6. Upon receiving the lab reports, the surveillance auditor or lead auditor of the certification audit will close the audit report.

Procedures for sample collection

The auditors/committee designated to conduct the audit process will have to follow the prescribed procedures for collection and dispatch of samples for antibiotics and disease diagnostic purpose.

Types of samples to be collected for antibiotic testing:

1. Water
2. Dry feed
3. Water conditioning substances (Probiotics, prebiotics, etc.,)
4. Post Larvae

Types of samples to be collected for disease diagnosis
Post Larvae (To be pooled from samples from different tanks)

Tests to be conducted for antibiotics:

1. Chloramphenicol
2. Nitrofuran metabolites (AOZ, AMOZ, AHD&SEM)
3. Nitroimadozole (IPZ, DMS, MNZRNZ with OH compounds)
4. Tetracycline (TC, OTC,CTC)
5. Sulfonamides (11 compounds)
6. Quinolones & Fluouroquinolones (9 compounds)
7.

Tests to be conducted for diseases:
WOAH listed diseases:

1. Acute Hepato Pancreatic Necrosis Disease (AHPND)

2. Hepatobacter penaei (necrotising hepatopancreatitis)
3. Infectious Hypodermal Haematopoietic Necrosis Virus (IHHNV)
4. Infectious Myo Necrosis Virus (IMNV)
5. Taura Syndrome Virus (TSV)
6. White Spot Syndrome Virus (WSSV)
7. Decapod Iridescent Virus(DIV1)
8. Yellow Head Disease (YHD)

Non-WOAH diseases:

1. Enterocytozoon Hepato penaei(EHP)
2. Monodon Baculo Virus(MBV)
3. Necrotising Hepato pancreatitis(NHP)
4. Laem-Singh Virus (for *P. monodon* only)
5. Translucent Post Larvae Disease (TPD)

Any other WOAH listed or non-WOAH diseases notified in future

Procedure for collection and dispatch of samples is furnished at Appendix: 5

Syllabus for Training of Auditors:

1. Concept of "Certification of Hatcheries for Antibiotic Free Seed production"
2. Brief on hatchery operations
3. Antibiotic residue in seafood and its impact on seafood export market.
4. Auditing process
5. Testing the auditing skills and attributes of auditors by conducting a written examination

A list of those auditors who have successfully completed the training programme shall be empaneled by the Certification Cell.

Key Shrimp hatchery standards and procedure for auditing and ensuring compliance

Standard	**Operationalization / Execution**	**What to inspect**	**Compliance level requirement**
Comply with applicable national and local laws	i. Maintain documents in support of the compliance to applicable national and local laws	CAA License or Enrollment Card or Registration with the State Government	Major
	ii. Maintain documents in support of ownership rights	Title deeds/lease deeds	

Hatchery operations shall be carried out in an ecologically and environmentally responsible manner	i. Hatcheries shall not be located in the legally prohibited areas such as mangrove areas and other wet land areas. ii. Hatchery operations shall be carried out in conformity with any form of Good Management Practices / Better Management Practices / Best Management Practices and the hatchery shall possess a written down Standard Operating Procedure developed there on.	CAA/Local authority approval Hatchery SOP Manual and Hatchery operation records. Check records to see whether the manual is actually followed for day-to-day operations	Major
	iii. Hatchery discharged water should match the standards of CAA	Check records and match with the CAA standards	
Responsible use of chemicals and production of residue free shrimp seeds	i) Use only CAA Registered/approved products ii) Suppliers declaration for the absence of antibiotics in the products iii) Keep test reports of products if any in support of absence of antibiotics iv) Hatchery technical personnel should be aware of the ingredients of the inputs and the harmful effects of the pharmacologically active substances	SOP & records	Major Recommendation Major Recommendation

Biosecurity	i) Display a copy of the SOP detailing the bio security protocols ii) Display biosecurity instructions for the benefit of workers in each section iii) Keep records of training conducted for workers on biosecurity protocols iv) Keep records of health status of brood stocks and live organisms brought in	SOP Display boards Hatchery records Hatchery records	Major Advisory Major Minor
Record keeping and traceability	1. Records of each production unit should be kept separately indicating i. Name or identity (identification number if any) of the unit. ii. Capacity of the unit iii. Stocking date, number of nauplii/larvae stocked and its source iv. Details of feed used in each stage of the hatchery operation for each production cycle v. Product Name, batch number, lot number and manufacturer name and quantity of each input used in the hatchery production cycle. 2. Sales record with date, time, quantity, details of purchaser and mode of transport. 3. Water quality testing, disease diagnostic tests and tests for screening antibiotic and other pharmacologically active substance are	Hatchery records	Minor Major

	highly desirable. Name of the laboratories and the results thereof also may be included in the records 4. The hatchery shall keep records of any customer complaints related to the seed supplied. They shall also keep records of the investigations carried out on the complaints and action taken to address/mitigate the grievances/complaints 5. Hatcheries shall retain the records of discharged water management and maintain discharge parameters as per CAA standard (Please see Appendix 1).		Major Major
Community relations and Social responsibility	i) Hatchery shall not obstruct access to fishing and other public facilities. ii) Hatcheries employ workers from local communities as far as possible iii) Employee rights shall be protected iv) Workers shall be paid wages and privileges as per existing laws v) Hatchery management should interact with the local public to promote good relationships	Visual inspection Check employee records Interview employees Employment records Check for any documentary evidence	Major Recommendation Recommendation Recommendation

Note:

Guidance on judging requirements:

i. **Major:** shall be complied, if not certification will be denied.

ii. **Minor:** Hatchery will have to make efforts to comply with, at least to some extent in due course of time.

iii. **Recommendation:** If not complied will not disqualify the hatchery from getting certification. But successive audits will have to follow up for any improvement in compliance.

Annexure 4

PROCESS OF 'SHAPHARI' CERTIFICATION FOR PRODUCTION OF ANTIBIOTIC FREE SHRIMP SEED

Application:

Individual hatchery units desirous of availing certification under the scheme should apply to MPEDA office along with required documents. If the application is complete in all respects and the unit meets the eligibility conditions the hatchery will be eligible for the next phase of certification process.

Eligibility conditions:

The certification scheme is open to all hatcheries engaged in seed production of export-oriented species. Initially we have started the scheme for only Shrimp. The coverage can be subsequently expanded to other species under culture. The hatchery should be registered with State Fisheries Department / Coastal Aquaculture Authority. Hatcheries having basic infrastructure facilities and willing to operate their hatcheries with a clear intention of producing healthy and residue free shrimp seed and paid the required fee are eligible to apply for certification. They should be willing to undergo audit by the designated auditors and agree to be part of the surveillance program for shrimp seed quality. Hatcheries, qualifying the audit and participating in the surveillance program will be given scores as per the provisions of the scheme.

Certified units:

The details of the certified units will be available in the public domain.

The list of hatcheries applied for certification, certified hatcheries and its status in certification will be displayed in MPEDA website. MPEDA will also conduct publicity to promote certified hatcheries.

CERTIFICATION PROCESS FLOW CHART

- Hatchery operator may apply in the prescribed format ~~in the online platform~~ along with the required documents and fee.

- Mere submission of application will not make the hatchery entitled for receipt of certificate for production and supply of antibiotic free seeds. The hatchery will have to pass through the prescribed levels of audit and qualify for the issue of certificate.

- The field office after due verification, accept the completed application. In case of incomplete applications, clarifications will be sought from the applicants by the field office. The applicant has to submit the clarifications within the stipulated time failing which the application will be rejected automatically.
- The application accepted by the field office will be forwarded to the certification cell automatically. Certification cell after scrutiny assigns the hatchery for preliminary audit.

Preliminary Audit

- The CC assigns auditor from among the empanelled auditors to carry out the preliminary (Gap) audit of the unit.
- Auditors will be selected on a random basis.
- The Auditor visits the hatchery and carries out the audit as per the procedure – records the details in the online platform. Non-conformity if any will be intimated to the hatchery online and the hatchery has to close the NC's within 30 days. An extension period of another 30 days will be allowed, if the hatchery submits a requisition for extension with proper justification. Failure to close the NC's within the stipulated period will lead to the rejection of the application.
- If everything is as per the standards, recommend the hatchery for Certification audit
- The hatchery may avail the assistance of the field office of MPEDA for clearing the NCs.

Certification Audit

- The CC assigns the Audit Committee for carrying out the Certification Audit of the unit
- Certification audit committee consists of three auditors from the pool of empanelled auditors.
- The Audit Committee visits the hatchery, checks the records as well as takes samples of brood stock/larvae/hatchery water/inputs etc., as per the procedure for analysis. The samples are sent to designated laboratories for analysis.
- The Committee may consider the results of samples collected and tested during the same production cycle under the NRCP or National Surveillance Programme for Aquatic Animal Diseases programmes, as analysed in laboratories of MPEDA / Rajiv Gandhi Centre for Aquaculture.
- If all the records are in order, conform to the standards and results of the analyses are negative for antibiotics the hatchery will be cleared for issue of Certificate for production and supply of antibiotic free seeds.
- If there are any shortcomings in the hatchery records and the adoption SOPs the hatchery will be issued an NC report for taking necessary corrective actions.
- After taking necessary corrective actions, the unit will intimate the same to the CC and the CC will arrange for an audit to verify the veracity of the corrective actions taken. This audit will be done by a designated auditor from the panel.
- On receipt of confirmation report of the auditor, the hatchery will be issued with SHAPHARI Certificate.

Surveillance Audit

- The CC assigns a Surveillance auditor for carrying out the Surveillance of the hatchery.
- The Certified Hatcheries will be subject to regular and unforeseen, random surveillance to ensure that the hatcheries are producing seeds as per the standards.
- Publicizing details of hatcheries
- Details of certified hatcheries will be placed in MPEDA web site.
- Validity of Certificate: The Certificate issued is valid for a period of three years.

Procedure for renewal of Certification:

- Three months before the expiry of the validity, the hatchery will need to apply for renewal of certification.
- If any quality complaint is received from farmers against the certified hatchery or NRCP samples collected by MPEDA showed positive, the hatchery shall be subjected to surveillance audit.

Rejection or Cancellation of Certification:

- Applications of Hatcheries which do not conform to the standards or failing to produce antibiotic free seeds will be rejected. When such applications are rejected, the reasons for rejection will be cited in the rejection letter.
- If a certified hatchery is tested positive for antibiotics at any point of time the certificate issued to the hatchery will be suspended with immediate effect and the hatchery will be subjected to an emergency surveillance and an investigation will be carried out by a designated auditor within a period of 7 days.
- The hatchery will be issued a show cause notice as to why the certificate issued should not be cancelled. The hatchery will be given 21 days to respond to the show cause notice.
- The suspension of the certificate will continue till a decision is made based on the report of the investigation and the response of the hatchery to the show cause notice. If necessary the officer in charge of the FO will give a personal hearing to the hatchery operator before taking a decision on the hatchery.
- If the hatchery is aggrieved at the decision of the officer in charge of the FO, can appeal to the appellate authority
- The appellate authority will consider the investigation report, response of the hatchery to the show cause notice, the surveillance audit reports and any other relevant documents and if necessary, conduct a personal hearing before making a decision on the appeal. Decision of the appellate authority will be final.

- The hatchery can apply for certification, afresh on completion of one year from the date of cancellation of the certificate.

Grievance redressal:

- If any hatchery is having any grievance about the score accorded to them they may approach the officer in charge of the MPEDA field office with a written request or email. The grievances can also be submitted online in the designated portal. The officer in charge of the MPEDA field office may review the records and if necessary recommend another surveillance visit through the certification cell at HO and make a decision within 30 days.
- If the hatchery is not satisfied with the decision of the officer-in-charge of the field office, they may appeal to the appellate authority with evidences in support of their claim for higher score. The appellate body after examining the evidences may revise the score or recommend a status quo of the scores.

Issuing authority:

The issuing authority for the Certificate for Hatcheries antibiotic free seed production of hatcheries is Director, MPEDA or any other officer authorised by Chairman/Chairperson, MPEDA.

Terms and conditions of the Certification:

- The scheme for certification of hatcheries for production and supply of antibiotic free seed production is purely a voluntary one.
- Any hatchery engaged in production and supply of shrimp seeds and desirous of availing the benefit of certification is eligible to apply.
- Hatcheries having basic infrastructure facilities and willing to operate their hatcheries with a clear intention of producing healthy and residue free shrimp seed can avail the benefit of certification under the scheme subject to fulfilling the conditions.
- The application for certification will have to be accompanied with an application fee. Hatcheries which have applied in the prescribed format and paid the required fee are eligible for registration/enrolment for certification.
- The hatcheries should be willing to undergo audit by the designated auditors and agree to be part of the surveillance program for shrimp seed quality.
- Hatcheries, qualifying the two ~~three~~ levels audit and found to meet the required criteria will be issued a certificate for production of quality, antibiotic free shrimp seed.
- A list of certified hatcheries will be published in the MPEDA web site.
- The certified Hatcheries will continue to be covered under the hatchery surveillance program and the surveillance team will carry out random surveillance of the hatcheries.

The scores accorded are subject to change on the basis of changes in performance of the hatcheries as assessed during the subsequent surveillance results.

- The Certificate is valid for a period of three years.
- On expiry of the hatchery will have to apply for renewal of the certificate by paying a prescribed fee.
- If any quality complaint is received from farmers or NRCP samples collected by MPEDA tests deviated from the surveillance reports based on which the hatchery was graded, the hatchery can be subjected to surveillance again.
- Certified Hatcheries which are tested positive for antibiotics at any point of time will be suspended and issued a show cause notice as to why the certificate should not be cancelled.
- The show cause notice would be issued by the officer in charge of the concerned MPEDA field office.
- The suspended hatchery will be immediately put on emergency surveillance and an investigation will be carried by the designated auditor with in a period of 7 days. The hatchery will be given 21 days to respond to the show cause notice.
- The suspension of the certificate will be continued till a decision is made on the basis of report of the investigation and the response of the hatchery to show cause notice. After going through the investigation report and the response of the hatchery and a personal hearing with the hatchery operator, the officer in charge of the field office will make a decision and convey it to the hatchery.
- The hatchery could appeal to the appellate committee the decision of the officer in charge within a period of 30 days. The appellate committee will consider the investigation report, response of the hatchery to the show cause notice, the surveillance audit reports and any relevant documents and if necessary conduct a personal hearing before making the decision on the appeal. The hatchery will be eligible to apply for certification on completion of one year from the date of cancellation of the certificate.
- In case of any dispute in the laboratory test reports, the samples may be sent for confirmation to third party labs in ICAR institutes (CIBA, CIFT, CMFRI, and NBFGR) or to State Fisheries University laboratories.

Guidelines for hatchery surveillance:

Hatchery surveillance will be carried out by the designated auditors assigned by the Certification Cell.

Surveillance will involve the following activities:

The grading can be based on the following 4 criteria:

- Results of the samples taken and analysed as part of the surveillance
- For General Record Maintenance
- For Seed Quality testing records
- Customer complaint and redressal records

As the disease problems and the antibiotics are the main factors importance is given for these aspects in the evaluation. The remaining three aspects are evaluated on a scale of 1-10 each for arriving at the final scores and the grades. The evaluation scheme detail for the four criteria's are given below:

1. Results of the samples taken and analysed as part of the surveillance

A. Antibiotics:

1.	Negative for all Banned Antibiotics	30 Marks
2.	Negative for all other antibiotics	20 marks

B. Diseases/Pathogens

1.	Negative for WOAH Pathogens	10 Marks
2.	Negative for Non-WOAH pathogens	10 Marks
3.	General Record Maintenance evaluation	1-10 Marks
4.	Seed Quality testing records evaluation	1-10 Marks
5.	Customer complaint and redressal records	1-10Marks

The hatcheries will be categorized into three categories according to the score obtained for further surveillance and renewal on expiry of the validity of the certificate. They are: Hatchery getting an overall score of 80 % Hatcheries getting a score of 60- <80 % and those getting score of less than 60 % The score will be generated online on the basis on results of the analyses entered in the report and the auditors observations on the records maintained at the hatchery as per following table.

1. Sampling for antibiotics residue and diseases:(PL-10-20)

S. No	**Test for antibiotic residue**	**SCORE**	
		Any antibiotic detected	**Antibiotics not detected**
	Banned	0	50
1	Chloramphenicol		
2	Nitrofuranmetabolities (AOZ, AMOZ, AHD & SEM)		
3	Nitromidazole (IPZ, DMZ,MNZ,RNZ with OH compounds)		
	Others		
1	Tetracycline (TC, OTC, CTC)		
2	Sulfonamides (11 compounds)		

3	Quinolones and flouroquinolones (11 compounds)		

2. Seed test results for diseases

1	**WOAH listed diseases**	**SCORE**	
		Any WOAH listed disease detected	WOAH listed disease not detected
i.	Acute hepatopancreatic necrosis disease	0	10
ii.	Hepatobacter penaei (necrotizing hepatopancreatitis)		
iii.	Infectious Hypodermal and Haematopoietic Necrosis Virus		
iv.	Infectious Myo Necrosis Virus		
v.	Taura syndrome Virus		
vi.	White Spot Syndrome Virus		
vii.	Decapod Iridescent Virus		
vii	Yellow Head Disease		
2.	**Non-WOAH listed diseases**	**SCORE**	
		Any non-WOAH listed disease detected (as per CAA list)	Non-WOAH listed diseases not detected (as per CAA list)
i.	Monodon Baculo Virus	0	10
ii.	Necrotizing Hepato Pancreatitis		
iii.	Laem-Singh Virus (for *P.monodon* only)		
iv.	Translucent Post Larvae Disease (TPD)		
	Total		**20**

3. Evaluation of hatchery records

Sl. no.			Compliance score
1	**General record maintenance evaluation**		
i)	Records on compliance to national and local laws	CAA License / Enrollment Card / Registration with the State Government, Title deed/lease deed.	3
ii)	Records on environment & social responsibility in the Hatchery operations	General Hygiene and sanitation in hatchery premises (toilets, garbage disposal etc.)	1
		Records on CSR activities	1
iii)	Records on responsible use of inputs and production of residue free shrimp seeds, biosecurity and traceability records.	Presence of a signed copy of SOP Manual.	1
		Hatchery records maintained as per SOP manual.	1
		Display of SOP pertaining to biosecurity protocols.	1
		Records of training conducted for workers on biosecurity protocols	1
		Records on product name, batch number, lot number and manufacturer name and quantity of each input used in the hatchery production cycle.	1
2	**Seed quality testing record evaluation.**	Records on routine observation of larvae/seed during the production cycle Level 1 Observations Level 2 Observations Level 3 Observations	 1 1 3
		Records on disease diagnostics (Broodstock / Nauplii and post larvae) for WOAH listed diseases prevalent in the country with name of the laboratory	**5**

3	**Customer complaint redressal record.**	Records on seed sales with details of the farmer	**5**
		Records on customer complaints related to the seed supplied. Also records of the investigations carried out on the complaints and action taken to address / mitigate the grievances / complaints	**5**
	Total		**30**

Grand Total (1+2+3) = 100

Annexure: 5

GLOBAL AQUACULTURE CERTIFICATION SCHEMES

A. Background:

Global production from aquaculture is growing substantially and provides increasingly significant volumes of fish and other aquatic food for human consumption. The concept of eco-labelling, branding and certification schemes for aquaculture has gained significant importance in the global trade and marketing of fish and fish products. The demand for eco-labelling and certification for both aquaculture and capture fishery are driven by large-scale retailers and food business operators (FBOs) with focus on food safety, environmental sustainability and social criteria. The label enables the retailers and brand owners to meet the growing consumer demand for products which originate from sustainably managed fisheries and aquaculture systems. Retailers use eco-labels as a tool to express their Corporate Social Responsibility (CSR) and thereby promote the sale of such labelled products.

A range of schemes exists in the fisheries sector, with each scheme having its own criteria, assessment processes, levels of transparency and sponsors. What is covered by the schemes can vary considerably: bycatch issues, fishing methods and gear, sustainability of stocks, conservation of ecosystems, and even social and economic development. The sponsors or developers of Standards and certification schemes for fisheries sustainability also vary: private companies, industry groups, NGOs, and even some combinations of stakeholders. A few governments have also developed national ecolabels.

B. Eco-labelling

Ecolabelling is a market-based tool to promote the sustainable use of natural resources. Ecolabel are seals of approval given to products that are deemed to have fewer impacts on the environment than functionally or competitively similar products. The ecolabel itself is a tag or label placed on a product that certifies that the product was produced in an environmentally friendly way. The label provides information at the point of sale that links the product to the state of the resource and/or its related management regime. Sitting behind the label is a certification process. Organizations developing and managing an ecolabel set standards against which applicants wishing to use the label will be judged and, if found to be in compliance, eventually certified. The parent organization also markets the label to consumers to ensure recognition and demand for labelled products. The theory is that ecolabels provide consumers with sufficient information to enable them to recognize and choose environmentally friendly products.

C. Branding

Branding is the process of creating and disseminating the brand name. In the case of fisheries, branding can be applied to the entire output of a country, region or company, as well as to individual products. Branding may involve advertising and other marketing campaigns.

Branding allows producers and retailers to promote certain qualities of a product that are often purported to be unique or otherwise sought after. Branding can involve both third party certification, and own-brands. Branding a product can be used to convey many messages to consumers, including issues related to aspirational qualities, environmental issues, quality, and the provenance/source of products (i.e. a particular company, a region or a country).

D. Certification

Certification is a procedure by which certification body or entity gives written or equivalent assurance that a product, process or service conforms to specified requirements. Certification may be, as appropriate, based on a range of audit activities that may include continuous audit in the production chain.

Key elements of a typical certification scheme

A typical certification scheme is constituted by the following elements:

- A standard-setting organization, in charge of developing standards or coordinating the standard development process, preferably in consultation with a number of stakeholder groups.
- A clearly defined set of objectives that the scheme is aiming to achieve.
- A set of certification standards that describes the characteristics that a process or product should have to be certified by the scheme.
- A certification process (operated for example by one or more certification bodies [CBs]) that assesses conformity of a product or process to the certification standards.

Benefits of Certification

- ✓ Demonstrate to buyers that product are safe and responsibly produced.
- ✓ Scrutinize operations and make changes to improve
- ✓ Improve employee training and awareness
- ✓ Improve operational efficiency

Benefits the farmers get out of certification

- ✓ Technical assistance and training from sponsors
- ✓ Market access and committed buyers
- ✓ Enhanced biosecurity and reduced risk

- ✓ Better collaboration with neighbouring farms
- ✓ International recognition as sustainable producers of safe food.

Objectives of Certification schemes:

The important objectives of labelling and certification schemes are to communicate verifiable and accurate information, encourage demand and supply of eco-friendly products and services, reduce ecosystem degradation and stimulate market-driven continuous environmental improvement.

Technical guidelines on aquaculture certification

FAO in collaboration with the Network of Aquaculture Centres in Asia-Pacific (NACA) developed guidelines for the development and implementation of credible aquaculture certification scheme.

The guidelines cover four broad ranges of issues which are considered relevant for certification. Aquaculture certification schemes may cover one or all of these issues.

- **Animal health and welfare:** Aquaculture activities should be conducted in a manner that assures the health and welfare of farmed aquatic animals, by optimising health, minimising stress, reducing phases of the production cycle.
- **Food safety and quality:** Aquaculture activities should be conducted in a manner that ensures food safety and quality by implementing appropriate standards and regulations as defined by FAO/WHO, Codex Alimentarius and in related codes of practice and guidelines developed within the context of the Codex Alimentarius Commission and any other relevant organisation.
- **Environmental integrity:** Aquaculture should be planned and practised in an environmentally responsible manner in accordance with appropriate national and international rules and regulations.
- **Social responsibility:** Aquaculture should be conducted in a socially responsible manner, within national rules and regulations, to benefit aquaculture workers, local communities, investors and the country.

E. The Major Globally Accredited Certification Schemes in Aquaculture

At present there are at least 30 certification schemes and eight key international agreements relevant to aquaculture certification. At least another nine initiatives were also identified as addressing sustainability issues and creating a framework for differentiating sources of aquatic products in this respect.

i. Schemes promoted by retailers

Sl. No.	Schemes	Website
1.	GLOBAL GAP	www.GLOBALGAP.org

2.	Safe Quality Food	www.sqfi.com & www.fmi.org
3.	Carrefour	www.carrefour.com

ii. Schemes promoted by the aquaculture industry

Sl. No.	**Schemes**	**Website**
1.	Global Aquaculture Alliance & Aquaculture Certification Council, Best Aquaculture Practices (BAP)	www.gaalliance.org www.aquaculturecertification.org www.bapcertification.org.
2.	Shrimp Seal of Quality (SSoQ)	
3.	SIGES – SalmonChile	www.salmonchile.cl
4.	Scottish Salmon Producers Organisation Code of Practices	www.scottishsalmon.co.uk

iii. Schemes promoted by Government agencies

Sl. No.	**Schemes**	**Website**
1.	Thai Quality Shrimp	www.thaiqualityshrimp.com
2.	Certification schemes in China a) Safety agri-food certification b) China GAP Green food standard	
3.	Vietnam GAP and CoC programme	
4.	Hong Kong Accredited Fish Farm Scheme	www.hkaffs.org/en/

iv. Certification schemes provided by NGO's

Sl. No.	**Schemes**	**Website**
1.	Marine Aquarium Council	www.aquariumcouncil.org
2.	International Standards Organization	www.iso.org

v. Organic certification schemes

Sl. No.	Schemes	Website
1.	International Federation of Organic Agriculture Movements	www.ifoam.org
2.	Natureland	www.naturland.de
3.	Soil Association	www.soilassociation.org
4.	Bio Gro New Zealand	www.bio-gro.co.nz
5.	Bio Suisse	www.bio-suisse.ch/en/home.php
6.	KRAV	www.krav.se

vi. Fair trade certification schemes

Sl. No	Schemes	Website
1.	Alter-Trade Japan	www.altertrade.co.jp
2.	Ethical Trading Initiative	www.ethicaltrade.org
3.	Fairtrade Labelling Organizations International	www.fairtrade.org.uk

vii. Animal welfare and "free-range" schemes

Sl. No.	Schemes	Website
1.	Freedom food	www.rspca.org.uk
2.	Label Rouge/td>	

viii. Other organizations and schemes which may have relevance to aquaculture certification

Sl. No.	Schemes	Website
1.	WWF aquaculture dialogues and standards	www.worldwildlife.org/cci/aquaculture.cfm
2.	Marine Stewardship Council	www.msc.org
3.	Seafood Watch of the Monterey BayAquarium	www.seafoodwatch.org

4.	Environmental Justice Foundation	www.ejfoundation.org
5.	Federation of European Aquaculture Producers	www.FEAP.info
6.	International Fair-Trade Association	www.ifat.org
7.	Swiss Import Promotion Programme	www.sippo.ch

F. Selected eco-labelling schemes in aquaculture

A number of certification schemes are available for aquaculture products. The most important aquaculture certification schemes are discussed below:

i. Best Aquaculture Practices (BAP)

Best Aquaculture Practices (BAP) is the world's most trusted, comprehensive and proven third-party aquaculture certification program. It has been improving the environmental, social and economic performance of the aquaculture supply chain and growing the global supply of responsibly farmed seafood since 2002. It addresses every key element of responsible aquaculture, including environmental responsibility, social responsibility, food safety, animal welfare, traceability, and more.

BAP Certification is available for the following

- ✓ Shrimp farms and hatcheries
- ✓ Tilapia
- ✓ Channel catfish farms
- ✓ Pangasius farms
- ✓ Seafood processing plants
- ✓ Feed mills
- ✓ Salmon Farms

ii. GLOBALGAP

It was established in 1997 by Euro-Retailer Producers Working Group (EUREP). In 2007, it became GLOBAL GAP aimed at addressing consumer concerns toward food safety, environmental sustainability and labour welfare, in addition to reducing costs for producers by providing a single set of standards accepted by a wide range of retailers. EUREP developed harmonised standards and procedures following Good Agricultural Practices (GAP). GLOBAL GAP is implemented by Food PLUS, a non-profit limited company based in Germany, which is responsible for facilitating GLOBAL GAP activities, serving as the legal owner of the normative documents and hosting the GLOBAL GAP secretariat.

GLOBAL GAP certification can be issued to individual farms or to a group of farmers who

must fulfill a set of requirements including conducting regular internal inspections. GLOBAL GAP is also developing guidance documents for smallholders to assist the process of group certification. GLOBAL GAP standards allow other schemes to be benchmarked against it, through which standards from other certification schemes can be recognized as equivalent to the GLOBAL GAP standards.

GLOBAL GAP standards are process (and not product) standards and address food chain operators only, and hence GLOBAL GAP labels are not visible on the packaging of the product itself, although GLOBAL GAP products are sometimes sold in separate recognizable areas within supermarkets.

iii. Marine Stewardship Council (MSC)

The MSC certification is the world's most rigorous, science-based standard criteria for sustainable seafood. Globally, over 11 per cent of the annual global harvest of wild fisheries is engaged in the MSC programme. Globally more than 19,500 seafood products are certified and eco-labeled by MSC.

The three basic principles of MSC Certification are

- **Principle (P1):** A fishery must be conducted in a manner that does not lead to overfishing or depletion of the exploited populations and for those populations that are depleted, fishery must be conducted in a manner that demonstrably leads to their recovery.
- **Principle (P2):** Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species on which the fishery depends).
- **Principle (P3):** Fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

Considering their commercial value in overseas markets, 10 marine fisheries from India have been identified as the targeted fishery for securing the eco-labelling certification of the Marine Stewardship Council (MSC). Blue swimming crab caught in gillnet from Mandapam, Tamil Nadu; shrimp by trawl from Kollam; red ring shrimp by trawl from Kollam; squid by trawl from Kollam; flower shrimp by trawl from Mandapam; cuttlefish by trawl from Kollam; lobster by trap from Nagercoil and Kanyakumari; skipjack tuna by hook and line from Lakshadweep; Japanese threadfin bream by trawl from the south west coast are the ten fisheries identified by a panel of stakeholders in India's marine fisheries sector.

Clam fishery in the Ashtamudi estuary in Kolam district of Kerala is the first in India to receive Marine Stewardship Council (MSC) certification.

iv. Aquaculture Stewardship Council (ASC)

The ASC is an independent non-profit organization and labelling organization that establishes protocol on farmed seafood while ensuring sustainable aquaculture. The ASC provides sustainable and responsible aquaculture producers with a stringent certification and labelling scheme guaranteeing to consumers that the seafood they are purchasing is sustainable for the environment, and socially responsible. The Aquaculture Stewardship Council was founded in 2010 by the World Wide Fund for Nature (WWF) and the Dutch Sustainable Trade Initiative (IDH).

The ASC standards address the following seven principles:

a. Legal compliance (obeying the law, the legal right to operate)
b. Preservation of natural environment and biodiversity
c. Preservation of water resources
d. Preservation of diversity of species and wild populations (e.g. preventing escapes which could pose a threat to wild fish)
e. Responsible uses of animal feed and other resources
f. Ensuring good animal health (e.g. no unnecessary use of antibiotics and chemicals)
g. Ensuring social responsibility (e.g. no child labour, health and safety of workers, freedom of assembly, community relations)

ASC will be working with independent, third-party entities to certify farms which are in compliance with its standards. So far ASC has finalized standards for 11 species of fishes and has certified more than 200 farms spread across 37 countries and there are over 1120 products carrying ASC label.

v. Friend of the Sea (FoS)

FoS is a Italy-based fisheries and aquaculture certification scheme promoted by the Earth Island Institute, an international, independent, non-profit environmental organisation. FoS standards are available for both wild fisheries and aquaculture. FoS Sustainable Aquaculture criteria are as follows:

a. No impact on critical habitats (e.g. mangroves, waste lands etc.)
b. Compliance with waste water parameters
c. Reduction of escapes and by catches to a negligible level
d. No use of banned anti-foulants or growth hormone
e. Compliance with social accountability
f. Gradual reduction of carbon footprint.

vi. Naturland (Germany)

It is a German based organization in the field of organic agriculture and is one of the pioneering standard organisations in the field of organic aquaculture development. Naturland developed the first species-specific standards in 1995, starting with carp, followed by salmonids, bivalve molluscs and shrimps. Naturland certified products are marketed internationally and are well accepted by major market players. Today,

Naturland has certified more than 30 farms and aquaculture projects.

vii. Thai Quality Shrimp (TQS)

TQS has been developed by the Thai Department of Fisheries (DoF) with the support of various international organizations like World Bank. The Good Aquaculture Practices (GAP) programme and the Code of Conduct for responsible shrimp farming (CoC) provide the support for the TQS programme. The GAP programme mainly focuses on food safety and implements good practices at the hatchery and farm level to ensure that products are fresh and do not contain residues of chemicals and antibiotics or microbial contaminants. The Code of Conduct for responsible aquaculture (CoC) encompasses guidelines for the entire production chain including feed mills, hatcheries, farms and processors.
The Thai CoC programme is based on the Food and Agriculture Organization (FAO) Code of Conduct for Responsible Fisheries (CCRF) and International Principles for Responsible Shrimp Farming (WWF, 2007). The criteria include site selection, farm management, stocking densities, feed, health, medication, effluents, proper harvesting and transportation, farmers' organisation, data collection as well as social responsibilities.

Both the GAP and the CoC programme are operatively managed, inspected and certified by the Thai Department of Fisheries (DoF). TQS has so far certified 97 farms and 28 hatcheries.

viii. Bio Suisse (Switzerland)

Bio Suisse is the Association of Swiss Organic Farmers' Guidelines for organic aquaculture was developed in 2000 and the first product (Trout) has been certified in 2001. Bio Suisse certified products are mainly marketed in Switzerland where the label is well received by consumers and retailers. Bio Suisse requires that aquaculture operation should not disturb ecological balance, the natural population should not be threatened and the basic principles of sustainability are to be adhered to.

Only native fish species adapted to regional conditions are to be raised. Use of genetically modified or triploid fish is prohibited. Parent and young stock must not be fed with antibiotics, growth promoters or hormones.

For salmonids and other carnivorous species, the addition of fish meal and oil is permitted provided the same is derived from residues from fish processing or from provably sustainable fishing. The entire fish farm must be engaged in organic fish production. Parallel production of organic and non-organic fish is not permitted.

ix. Debio (Norway)

Debio is a membership-based Norwegian organic organisation. Debio performs auditing and certification assignments of organic production. Debio has certified 3 aquaculture operations; salmon, trout and cod. The main markets for these products are Norway, Sweden, the UK and Germany.

G. Global Sustainable Seafood Initiative

It was found that with the rise in global demand of seafood production, mostly from aquaculture can have negative impact on the environment and one way of providing assurances of more sustainable practices in both aquaculture production and wild capture fisheries is the use of seafood certification schemes. But the increasing number of schemes, and competition between them, has led to confusion among producers, retailers and consumers over what is credible.

H. Global Benchmark Tool

GSSI's global partnership has been working with FAO since 2013. It's based on internationally recognized FAO documents: the Code of Conduct for Responsible Fisheries (CCRF), the Guidelines for Ecolabelling of Fish and Fishery Products from Marine/Inland Capture Fisheries, and the Technical Guidelines for Aquaculture Certification (FAO Guidelines). After exhaustive public consultations, including pilot testing with certification scheme owners, the Benchmark Tool is now accepted by FAO, large seafood buying companies and NGOs as the best way of recognising robust and credible certification schemes.

The Global Sustainable Seafood Initiative (GSSI) was created to fill the need for a globally accepted tool to provide an objective and transparent assessment of the performance and provide recognition of credible and responsible seafood certification schemes.

Objectives of the GSSI

a. Creating an internationally agreed set of criteria and indicators to measure and compare the performance of seafood certification and labeling programs, in order to facilitate their implementation and use;
b. Provide an international Multi-Stakeholder Platform for collaboration, knowledge exchange in seafood sustainability; and
c. Reduce cost by eliminating redundancy and improving operational efficiency of seafood certification and labeling programs thereby increasing affordability and flexibility within the supply chain.

Once a scheme successfully completes the Benchmark Process, the scheme is formally and publicly announced as 'GSSI recognized'. This means that they are 'in alignment' with the FAO Code of Conduct for Responsible Fisheries, FAO Ecolabelling Guidelines (for fisheries or aquaculture) and FAO Technical Guidelines for Aquaculture Certification for aquaculture. The Marine Stewardship Council (MSC) and GLOBAL G.A.P have been recognised by Global Sustainable Seafood Initiative (GSSI).

Appendix: 1

CAA Standards for discharged water from hatcheries

Parameter	Frequency	Final Discharge Point	
		Coastal Marine Waters	Creek or estuarine courses
pH (standard units)	Monthly	6.0 – 9.0	6.0 – 9.0
Suspended solids (mg/L)	Quarterly	100	100
Dissolved Phosphate (as P) mg/1Max	Monthly	0.4	0.2
Free ammonia as (NH3-N) (mg/L)	Monthly	1	0.5
5-day BOD (mg/L)	Quarterly	50.0	20.0
COD mg/1Ma	Quarterly	100	75
Dissolved oxygen (mg/L)	Monthly	Not less than 3	Not less than 3
Total Nitrogen (as N) mg/l	Monthly	2.0	2.0
Nitrate N(ppm)	Monthly	1.0	0.5

N. B. For hatcheries located in freshwater areas: No discharge with chloride content of above 800 mg/L into freshwater areas.

Appendix: 2

STANDARDS OF EFFLUENTS

(As issued by Coastal Aquaculture Authority)

Standards for treatment of wastewater discharged from the aquaculture farms, hatcheries, feed mills and processing units

Parameter	Frequency	Final Discharge Point	
		Coastal Marine Waters	Creek or estuarine courses
pH (standard units)	Monthly	6.0 – 9.0	6.0 – 9.0
Suspended solids (mg/L)	Quarterly	100	100
Dissolved Phosphate (as P) mg/1Max	Monthly	0.4	0.2
Free ammonia as (NH3-N) (mg/L)	Monthly	1	0.5
5-day BOD (mg/L)	Quarterly	50.0	20.0
COD mg/1Ma	Quarterly	100	75
Dissolved oxygen (mg/L)	Monthly	Not less than 3	Not less than 3
Total Nitrogen (as N) mg/l	Monthly	2.0	2.0
Nitrate N(ppm)	Monthly	1.0	0.5

https://caa.gov.in/uploaded/doc/Guidelines%20for%20Regulating%20Coastal%20Aquaculture.pdf

Appendix: 3

LIST OF PATHOGENS TO BE EXCLUDED FROM THE BROODSTOCK MULTIPLICATION CENTRE

(as issued by the Coastal Aquaculture Authority)

Sl. No.	**WOAH Listed Disease**	*P.monodon*	*L.vannamei*
1	Infectious hypodermal and haematopoietic Necrosis (IHHNV)	√	√
2	Infectious Myonecrosis (IMNV)	√	√
3	Taura Syndrome (TSV)	√	√
4	White spot disease (WSSV)	√	√
5	Yellow head disease (YHV)	√	√
6	Acute hepatopancreatic necrosis disease (AHPND)	√	√
	Non-WOAH listed disease but of concern to India		
7	Necrotising Hepato pancreatitis (NHP)	√	√
8	Spherical Baculoviruses (*Penaeus monodon*-type baculovirus) (MBV)	√	√
9	Laem-Singh Virus	√	--
10.	Translucent Post Larvae Disease (TPD)	√	√

Appendix: 4

List of Antibiotics and other pharmacologically active substances banned for using in shrimp aquaculture*

Sl. No.	Antibiotics and other Pharmacologically Active Substances
1.	Chloramphenicol
2.	Nitrofurans including: Furaltadone, Furazolidone, Furylfuramide, Nifuratel,Nifuroxime, Nifurprazine, Nitrofurantoin, Nitrofurazone;
3.	Neomycin;
4.	Nalidixic acid;
5.	Sulphamethoxazole;
6.	Aristolochiaspp and preparations thereof;
7.	Chloroform;
8.	Chlorpromazine;
9.	Colchicine;
10.	Dapsone;
11.	Dimetridazole;
12.	Metronidazole;
13.	Ronidazole;
14.	Ipronidazole;
15.	Other nitroimidazoles;
16.	Clenbuterol;
17.	Diethylstilbestrol (DES);
18.	Sulfonamide drugs (except approved Sulfadimethoxine;
19.	Sulfabromomethazine and Sulfaethoxypyridazine);
20.	Fluroquinolones
21.	Glycopeptides

***** Any other substances banned time to time

Appendix: 5

List of Antimicrobials or groups of antimicrobials reserved for treatment of certain infections in humans by EU

1. Antibiotics
    a) Carboxypenicillins
    b) Ureidopenicillins
    c) Ceftobiprole
    d) Ceftaroline
    e) Combinations of cephalosporins with beta-lactamase inhibitors
    f) Siderophore cephalosporins
    g) Carbapenems
    h) Penems
    i) Monobactams
    j) Phosphonic acid derivates
    k) Glycopeptides
    l) Lipopeptides
    m) Oxazolidinones
    n) Fidaxomicin
    o) Plazomicin
    p) Glycylcyclines
    q) Eravacycline
    r) Omadacycline
2. Antivirals
    a) Amantadine
    b) Baloxavir marboxil
    c) Celgosivir
    d) Favipiravir
    e) Galidesivir
    f) Lactimidomycin
    g) Laninamivir
    h) Methisazone/metisazone
    i) Molnupiravir
    j) Nitazoxanide
    k) Oseltamivir
    l) Peramivir
    m) Ribavirin
    n) Rimantadine
    o) Tizoxanide
    p) Triazavirin

q) Umifenovir
r) Zanamivir

3. Antiprotozoals
    a) Nitazoxanide

Appendix:6

Shrimp fixation protocol –PCR Analysis

1. Introduction:

Sample material or target organ is specific to the disease or pathogen to be tested for and on both the size of animals and the objective of testing, i.e. diagnosis of overt disease, detection of subclinical pathogen carriers or sampling for targeted surveillance to demonstrate freedom of a specified disease. The methods available for diagnosis of crustacean diseases include the traditional methods of morphological pathology (direct light microscopy, histopathology, and electron microscopy), bioassay methods with susceptible indicator hosts, and molecular methods (gene probes and PCR).

PCR based molecular detection methods are readily available from the literature and some are available in kit form from commercial sources for the WOAH listed pathogens

1. Acute Hepato Pancreatic Necrosis Disease (AHPND)
2. Hepatobacter penaei (necrotising hepatopancreatitis)
3. Infectious Hypodermal Haematopoietic Necrosis Virus (IHHNV)
4. Infectious Myo Necrosis Virus (IMNV)
5. Taura Syndrome Virus (TSV)
6. White Spot Syndrome Virus (WSSV)
7. Decapod Iridescent Virus(DIV1)
8. Yellow Head Disease (YHD)

Samples taken for molecular tests for WOAH- listed crustacean diseases may be combined as pooled samples of no more than five specimens per pooled sample of juveniles, sub adults and adults. However, for eggs, larvae and post larvae pooling of larger numbers (e.g.~150 or more eggs or larvae or 50 to 150 post larvae depending on their size/age) may be necessary to obtain sufficient sample material.

2. Materials required

a) 95% ethanol
b) 5 ml Sterile Syringe
c) Disposable gloves
d) Tissue roll
e) Label with pencil
f) Blade or scissors
g) Appropriate container with size and no of shrimp being fixed

3. **Frozen shrimps (Export purposes) for PCR analysis**
   a) Please arrange to send 250g of shrimp samples from each lot or batch. The number of samples to be tested per lot may please be followed as per the standard protocol or requirement.
   b) The sample may please be labelled properly with requisite information such as batch no. etc.
   c) The sample may be hand delivered or dispatched through courier.
   d) The sample may please be packed with sufficient quantity of dry ice (3 to 4 kg) in a thermocol box.
4. **Fixation by using 95% ethanol for infected or routine testing Shrimp Larvae and Post larvae**

   Whole shrimps larvae minimum 100 - 150 No's immersed directly into 95% ethanol.

- **Juveniles to adults**
   a) Select the live / moribund shrimp samples.
   b) Aseptically dissect the target organs like, Hepatopancreas, muscle, Pleopods, gills, collect feacal samples and necrotized or deformed tissue or discolored tissue in case of animal exhibiting abnormal signs and symptoms(5 Nos of samples are necessary each of having all target organs)
   c) Immerse the dissected organs in a leak proof container with 95% ethanol
   d) If the whole animal is needed for further analysis inject 95% ethanol laterally into HP, for better penetration of preservative pierce the cuticle area
   e) If abdominal region is desired, inject 95% ethanol into 3-4 anterior abdominal segments and 6th Posterior abdominal segments.
   f) Wrap the animal in tissue paper to completely cover and immersed into 95% ethanol in room temperature depending on the size (larger shrimp for longer time) of the shrimp.
   g) Make labels (using pencil) to sample containers/zip lock covers.

5. **Shipment of samples;**

   a) Wrapped samples to be dipped into the 95 % ethanol and transfer the sealable plastic bags.
   b) Label the samples by using pencil.
   c) Place bag within a second sealable bag. The samples covered by appropriate box and properly mention sending address.

6. **Labelling instructions**

a) This package contains specimens for scientific analysis.

b) The specimens are non-infectious, non-hazardous and of no-commercial value.

7. Correspondence

MPEDA Quality Control Laboratory (Chemical & Micro Biology), MPEDA House, Panampilly Avenue, P B No.4272, KOCHI-682036, Kerala Tel: 91-484-2311033, 2315199 Fax: 91-484-2313361 E-mail: lab.koc@mpeda.gov.in	**Project Manager** **Central Aquaculture Pathology Laboratory (CAPL)** Rajiv Gandhi Centre For Aquaculture (RGCA), TTTAC, Door no. 3/197, Poompuhar Road, Karaimedu Village, Sattanathapuram P.O., Sirkali Taluk, PIN - 609109, Nagapattinam Dt., Ph: 04364- 265214, 265200. **Email:** rgcapatholab@gmail.com, rgcacgl@gmail.com

Note: Kindly intimate (Phone or email) the before sending samples and enclosed with sample Requisition forms.

Appendix: 7

INSPECTION REPORT OF PRELIMINARY AUDIT

Auditor's Name	
Audit Date	
Activity Audited	
Capacity:	
Name of the Hatchery	
Hatchery reference code	

1. HATCHERY FACILITY DETAILS

S.No	Particulars	
1.	Species	☐ *L.vannamei* ☐ *P. monodon* ☐ *P. indicus* ☐ Others _____
2.	Source of Water and Nature of water intake system	☐ Open well ☐ Bore well ☐ Reservoir ☐ Others _____
3.	Water Treatment System	☐ Ozone ☐ Chlorine ☐ UV ☐ Others _____

4.	Reservoir Capacity	
5.	Broodstock Maturation	☐ Yes ☐ No • No of Tanks_____ • Surface area of each tank_____ (M^2)
6.	Larval and Post Larvae Rearing Section	☐ **Indoor** ☐ **Outdoor** • No. of tanks _____ • Water volume of each tank _____ (M^3/MT)
7.	Live feed section	**Algae** ☐ **Type 1** ☐ **Type 2** ☐ **Type 3** ☐ **Others** _____ **Artemia – Brand** • Artemia Brand _____ _____
	Micro Particulate (Feed Used) If yes, Brand used	☐ Yes ☐ No Brand: _____

	Whether the hatchery has any record of testing positive for antibiotic residue in the recent past (If yes, please specify)	☐ Yes ☐ No

2. Compliance details

Standard	Operationalization/ Execution	Documents for Inspections	Compliance level requirement	Compliance
Comply with applicable national and local laws	Maintain documents in support of the compliance to applicable national and local laws	CAA License or Enrollment Card or Registration with the State Government	**Major**	**YES/NO**
	Maintain documents in support of ownership rights	Title Deeds /lease deeds	**Major**	**YES/ NO**
Hatchery operations shall be carried out in an ecologically and environmentally responsible manner	Hatcheries shall not be located in the legally prohibited areas such as mangrove areas and other wet land areas.	CAA/Local authority approval	**Major**	**YES/ NO**
	Hatchery operations shall be carried out in conformity with any form of Good Management Practices /Better Management Practices /Best Management Practices and the hatchery shall possess a written down Standard	Check Hatchery SOP Manual and Hatchery operation records. Verify hatchery records to see	**Major**	**Yes/No**

	Operating Procedure developed thereon.	whether the manual is actually followed for day-to-day operations		
	Hatchery ~~effluent~~ discharged water should match the standards of CAA	Verify records and match with the CAA standards	**Major**	**Yes/No**
Responsible use of chemicals and production of residue free shrimp seeds	i. Use only CAA Registered /approved products	Verify CAA registration number of the inputs used in the hatchery	**Major**	**Yes/No**
	ii. Suppliers declaration for the absence of antibiotics in the products		**Recommend ation**	**Yes/No**
	iii. Test reports of products in support of absence of antibiotics		**Major**	**Yes/No**
	iv. Hatchery technical personnel should be aware of the ingredients of the inputs and the harmful effects of the pharmacologically active substances	Interact with the hatchery operator	**Recommend ation**	**Yes/No**
Biosecurity	i. Display a copy of the SOP detailing the Biosecurity protocols	Displayed SOP	**Major**	**Yes/No**
	ii. Display biosecurity instructions for the benefit of workers in each section	Display boards	**Minor**	**Yes/No**

	iii. Keep records of training conducted for workers on biosecurity protocols	Hatchery records	**Major**	**Yes/No**
	iv. Keep records of health status of broodstocks and live organisms brought in from oversees	Hatchery records	**Minor**	**Yes/No**
Records keeping and traceability	Records of each production unit should be kept separately indicating i. Name or identity (identification number if any) of the unit ii. Seed production capacity of the unit iii. Source of broodstock, Maturation, spawning & hatching details iv. Larval/PL rearing details v. Capacity of the unit vi. Stocking date, number of nauplii /larvae stocked and its source vii. Details of feed used in each stage of the hatchery operation for each production cycle viii. Product Name, batch number, lot number and manufacturer name and	Hatchery records	**Minor**	**Yes/No**

	quantity of each input used in the hatchery production cycle.			
	Sales record with date, time, quantity, details of purchaser and mode of transport	Hatchery records	**Major**	**Yes/No**
	Water quality testing, disease diagnostic tests and tests for screening antibiotic and other pharmacologically active substance are highly desirable. Name of the laboratories and the results thereof also may be included in the records	Hatchery records	**Major**	**Yes/No**
	The hatchery shall keep records of any customer complaints related to the seed supplied. They shall also keep records of the investigations carried out on the complaints and action taken to address /mitigate the grievances /complaints	Hatchery records	**Major**	**Yes/No**
	Hatcheries shall retain the records of ~~effluent~~ discharged water	Hatchery records	**Major**	**Yes/No**

	management and maintain discharge parameters as per CAA standard			
Community relations and Social responsibility	Hatchery shall not obstruct access to fishing and other public facilities.	Visual Inspection	**Major**	**Yes/No**
	Hatcheries employ workers from local communities as far as possible	Check employee records	**Recommend ation**	**Yes/No**
	Legal Identity of Hatchery employees	Check Aadhar Card or any other Govt issued ID cards	**Minor**	
	Child labour	Check the age with ID cards	**Minor**	
	Employee rights shall be protected	Interview employees	**Recommend ation**	**Yes/No**
	Workers shall be paid wages and privileges as per existing laws	Employment records	**Recommend ation**	**Yes/No**
	Hatchery management normally interact with the local public to promote good relationships	Check for any documentary evidence	**Recommend ation**	**Yes/No**

3. Recommended / Not Recommended for Certification Audit

☐ Recommended	☐ Not Recommended

Signature with date

Name of the Auditor

Appendix: 8

COMMITTEE AUDIT REPORT

AUDIT DETAILS

Lead Auditor*	
Auditor 1*	
Auditor 2*	
Application Number*	
Hatchery Name*	
Audit Date *	
Audit Type *	

EVALUATION OF HATCHERY RECORDS

			NC Recorded (Yes/No)	Maximum Score	Score obtained
1.	Test reports on WOAH listed	☐ Broodstock		-	-

	disease free status	☐ Post Larvae (attach reports)			
2.	General Record Maintenance (Records on compliance to National and local laws)	☐ CAA Registration ☐ MPEDA Enrolment ☐ State Fisheries Registration ☐ Title Dead/Lease Dead (attach documents)		3	
3.	Records On Environment & Ecology	☐ General Hygiene and sanitation in hatchery premises (toilets, garbage ☐ Records on CSR activities (attach documents)		1 1	
4.	Other Mandatory Records	☐ SOP Manual ☐ Hatchery Records Maintained as Per SOP Manual ☐ Display of SOP pertaining to Biosecurity Protocols Training		1 1 1	

		☐ Records of training conducted for workers on biosecurity Protocols ☐ Records on inputs		1 1	
5.	Seed Quality test record evaluation	Records of Larval quality observation ☐ **Level 1:** Visual observation ☐ **Level 2:** Microscopic Examination ☐ **Level 3:** Pathogen Screening Test (PCR, Microbiology etc) ☐ Records on Disease Diagnosis for WOAH listed diseases (Broodstock, Nauplii and Post Larvae)		1 1 3 5	
6.	Customer Complaint redressal record	☐ Records on seed sales		5	

		☐ Records on customer complaints related to the seed supplied. Also records of the investigations carried out on the complaints and action taken to address / mitigate the grievances /complaints		5	

TOTAL SCORE **00**

		NC Recorded
Have you collected samples	☐ Yes ☐ No Sample 1: Sample 2: Sample 3: Sample 4:	
Sample for Group A test		
Lab to send*		

Type of Species		
Quantity		
Sample state*		
Date of dispatch*		
Transport Mode*		
Packet Serial No.		
Jurisdiction*		
Sample for Group B test		
Lab to send*		
Type of Species		
Quantity		
Sample state*		
Date of dispatch*		
Transport Mode*		
Packet Serial No.		
Jurisdiction*		
Sample for Pathogen test		
Type of Species*		
Quantity		
Sample state*		
Date of dispatch*		
Transport Mode*		
Packet Serial No.		

Jurisdiction*		

50! Score Will Be Allocated Based On Test Results From QC Labs

20! Score Will Be Allocated Based On Test Results From RGCA Labs

TOTAL SCORE 00

Reports Summary

CONSOLIDATED TOTAL SCORE 00

Application recommended to surveillance audit		
Lead Auditor	☐ Yes ☐ No	
Auditor 1	☐ Yes ☐ No	
Auditor 2	☐ Yes ☐ No	

Signature with date

Name of the Lead Auditor

Signature with date
Name of the Auditor 1

Signature with date
Name of the Auditor 2

Appendix: 9

SURVEILLANCE AUDIT REPORT

Audit No: _____

AUDIT DETAILS

Lead Auditor*	
Application Number*	
Hatchery Name*	
Audit Date *	
Audit Type *	

STOCK POSITION:

S.No	Stock position at the time of Audit	Free from WOAH listed diseases based on available test results	Numbers
1.	Broodstock	Yes / No	Male: Female:

2.	Larvae		(in millions)
	Nauplii		
	Zoea (i+ii+iii)		
	Mysis (i+ii+iii)		
3.	Post Larvae	Yes / No	

EVALUATION OF HATCHERY RECORDS

Test reports on WOAH listed disease free status

☐ Broodstock

☐ Post Larvae

(attach reports/image)

GENERAL RECORD MAINTENANCE

	Yes/No	Maximum Score	Score obtained
Records on Compliance to National and Local Laws			
CAA Registration		3	
MPEDA Enrollment Card / Registration with the State Government			
Title Dead/ Lease Dead			
Record on Environment & Ecology Maintenance			
General Hygiene and sanitation in hatchery premises (toilets, garbage disposal etc.)		1	
Records on CSR activities		1	
Records on responsible use of inputs and production of residue free shrimp seeds, biosecurity and traceability records			
SOP Manual		1	
Hatchery Records Maintained as per SOP Manual		1	

Display of SOP pertaining to Biosecurity Protocols		1	
Records of training conducted for workers on biosecurity Protocols		1	
Records on inputs		1	

SEED QUALITY TESTING RECORD EVALUATION

	Yes/No	Maximum Score	Score obtained
Records of Larval Quality Observation			
Level 1: Visual observation		1	
Level 2: Microscopic Examination		1	
Level 3: Pathogen Screening Test (PCR, Microbiology Etc)		3	
Records on Disease Diagnostics for WOAH listed Diseases (Brood Stock, Nauplii and Post Larvae)		5	

CUSTOMER COMPLAINT REDRESSAL RECORD

	Yes/No	Maximum Score	Score obtained
Records on Seed Sales		5	
Records on customer complaints related to the seed supplied. Also records of the investigations carried out on the complaints and action taken to address/mitigate the grievances/complaints		5	
TOTAL SCORE		**30**	

Have you collected samples	☐ Yes ☐ No Sample 1: Sample 2: Sample 3: Sample 4:
Sample for Group A test	
Lab to send*	
Type of Species	
Quantity	
Sample state*	
Date of dispatch*	
Transport Mode*	
Packet Serial No.	
Jurisdiction*	
Sample for Group B test	
Lab to send*	
Type of Species	
Quantity	
Sample state*	
Date of dispatch*	
Transport Mode*	

Packet Serial No.	
Jurisdiction*	
Sample for Pathogen test	
Type of Species*	
Quantity	
Sample state*	
Date of dispatch*	
Transport Mode*	
Packet Serial No.	
Jurisdiction*	

50! Score Will Be Allocated Based On Test Results From QC Labs

20! Score Will Be Allocated Based On Test Results From RGCA Labs

REPORTS SUMMARY

RECOMMENDED/NOT RECOMMENDED

CONSOLIDATED TOTAL SCORE 00

Signature with date

Name of the Lead Auditor

Appendix: 10

NON-COMPLIANCE REPORT (model)

Assessor' s name:	Assessment date:		Capacity: Technical Assessor
Date	Non-Compliance no.	Activity assessed:	

Non-Conformity raised:

1	
2	

Reference of standard:	Classification of NC: Major/minor/recommended

Corrective action proposed by the Laboratory:

1	
2	

Assessor's comments on corrective action proposed by the Laboratory:

Remarks by Lead assessor

NC open / closed