



ARIAS SOCIETY

Assam Rural Infrastructure and Agricultural Services Society

(An Autonomous Body under Govt. of Assam)

**Project Coordination Unit (PCU) of the World Bank financed
Assam Agribusiness and Rural Transformation Project (APART)**

Agriculture complex, Khanapara, G.S. Road, Guwahati-781022 (Assam, India)

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CONTRACT FOR CONSULTANT'S SERVICES Lump-Sum

Project:

**Assam Agribusiness and Rural Transformation Project
(APART)**

(Project ID: P155617, IBRD Loan No. 8780-IN)

(Procurement Plan Reference No.: IN-ARIAS-10724-CS-CQS)

CONTRACT No.: ARIAS/APART/FISHFED/90/2016

Between

**Assam Rural Infrastructure and Agricultural Services
Society (ARIAS Society)**

Project Coordination Unit, Agriculture Complex, Khanapara, G.S. Road,
Guwahati-781022 (Assam, India); email: spd@arias.in

And

ICAR-Central Institute of Freshwater Aquaculture (CIFA),

Kausalyaganga, Bhubaneswar-751002, Odisha,

Email: director.cifa@icar.gov.in ; cifa@ori.nic.in ;

For the Consulting Services for:

**“Revival of FISHFED, status & function of Fisheries Co-
operatives & Fish Marketing by Fisheries Co-operatives in
the State of Assam”**

Country: India

Date of Signing: 25th October 2018

Nagesh Kumar Barik
Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

[Signature]
State Project Director
ARIAS Society

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I. Form of Contract

LUMP-SUM

This CONTRACT (hereinafter called the "Contract") is made the 25th day of the month of **October, 2018** between, on the one hand, **Assam Rural Infrastructure and Agricultural Services Society (ARIAS Society), Project Coordination Unit, Agriculture Complex, Khanapara, G.S. Road, Guwahati-781022 (Assam, India)** (hereinafter called the "Client") and, on the other hand, **ICAR-Central Institute of Freshwater Aquaculture (CIFA), Kausalyaganga, Bhubaneswar-751002, Odisha, Email: director.cifa@icar.gov.in ; cifa@ori.nic.in ;** (hereinafter called the "Consultant").

WHEREAS

- (a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");
- (b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;
- (c) the Client has received a loan from the *International Bank for Reconstruction and Development (IBRD)* toward the cost of the Services and intends to apply a portion of the proceeds of this loan to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the loan agreement, including prohibitions of withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the loan agreement or have any claim to the loan proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:
 - (a) The General Conditions of Contract (including Attachment 1 "Fraud and Corruption");
 - (b) The Special Conditions of Contract;
 - (c) Appendices:

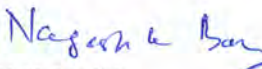
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| Appendix A: | Terms of Reference |
| Appendix B: | Key Experts |
| Appendix C: | Breakdown of Contract Price |
| Appendix D: | Form of Advance Payments Guarantee (DELETED) |

In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C; Appendix D. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

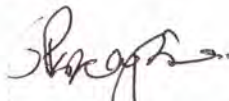
2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:
 - (a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
 - (b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

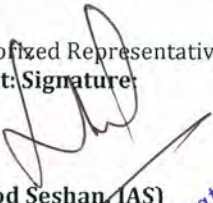
Authorized Representative **for and on behalf of**
Consultants: Signature:


(Dr. N. K. Barik)
Scientist, PI- Agri-Business Incubation Centre
ICAR-Central Institute of Freshwater Aquaculture
(CIFA) Kausalyaganga, Bhubaneswar-751002,
Odisha, Email: director.cifa@icar.gov.in ;
cifa@ori.nic.in ; nageshbarik@hotmail.com ;
nageshbarik.icar@gmail.com


Witness -1:


(Dr. S. Purnamantha)
Fisheries Advisor, ARIAS

Authorized Representative **for and on behalf of**
Client: Signature:


(Vinod Seshan, IAS)
State Project Director,
Assam Rural Infrastructure and Agricultural
Services (ARIAS) Society, Agriculture Complex,
Khanapara, G.S. Road, Guwahati-781022 (Assam,
India); Tel: 0361-2332125;; email: spd@arias.in

Witness -2:


(Sreemant Bhukhan)
MRC Specialist, ARIAS Society

II. General Conditions of Contract

A. GENERAL PROVISIONS

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| 1. Definitions | <p>1.1 Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:</p> <p>(a) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the Special Conditions of Contract (SCC), as they may be issued and in force from time to time.</p> <p>(b) "Applicable Regulations" means Procurement Regulations for IPF Borrowers of date specified in Special Conditions of Contract (SCC).</p> <p>(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).</p> <p>(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.</p> <p>(e) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.</p> <p>(f) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.</p> <p>(g) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).</p> <p>(h) "Day" means a working day unless indicated otherwise.</p> <p>(i) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.</p> <p>(j) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.</p> <p>(k) "Foreign Currency" means any currency other than the currency of the Client's country.</p> <p>(l) "GCC" means these General Conditions of Contract.</p> <p>(m) "Government" means the government of the Client's country.</p> <p>(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.</p> <p>(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant's proposal.</p> <p>(p) "Local Currency" means the currency of the Client's country.</p> <p>(q) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.</p> <p>(r) "Party" means the Client or the Consultant, as the case may be, and "Parties" means both of them.</p> <p>(s) "Procurement Regulations" means the World Bank's Procurement Regulations for IPF Borrowers,</p> <p>(t) "SCC" means the Special Conditions of Contract by which the GCC may be</p> |
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| | <p>amended or supplemented but not over-written.</p> <p>(u) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.</p> <p>(v) "Sub-consultants" means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.</p> <p>(w) "Third Party" means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.</p> |
| 2. Relationship between the Parties | 2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder. |
| 3. Law Governing Contract | 3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law. |
| 4. Language | 4.1. This Contract has been executed in the language specified in the SCC, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract. |
| 5. Headings | 5.1. The headings shall not limit, alter or affect the meaning of this Contract. |
| 6. Communications | <p>6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the SCC.</p> <p>6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the SCC.</p> |
| 7. Location | 7.1. The Services shall be performed at such locations as are specified in Appendix A hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve. |
| 8. Authority of Member in Charge | 8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the SCC to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client. |
| 9. Authorized Representatives | 9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the SCC. |
| 10. Fraud and Corruption | 10.1 The Bank requires compliance with the Bank's Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the WBG's Sanctions Framework, as set forth in Attachment 1 to the GCC. |
| a. Commissions and Fees | 10.2 The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee. Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank. |
| B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT | |
| 11. Effectiveness of Contract | 11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the SCC have been met. |

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| 12. Termination of Contract for Failure to Become Effective | 12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the SCC, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto. |
| 13. Commencement of Services | 13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the SCC. |
| 14. Expiration of Contract | 14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the SCC. |
| 15. Entire Agreement | 15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein. |
| 16. Modifications or Variations | 16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party. 16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required. |
| 17. Force Majeure | |
| a. Definition | 17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies. 17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder. 17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder. |
| b. No Breach of Contract | 17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract. |
| c. Measures to be Taken | 17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure. 17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible. 17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which |

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| | <p>such Party was unable to perform such action as a result of Force Majeure.</p> <p>17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:</p> <ul style="list-style-type: none"> (a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and necessarily incurred, and, if required by the Client, in reactivating the Services; or (b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred. <p>17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.</p> |
| 18. Suspension | <p>18.1. The Client may, by written notice of suspension to the Consultant, suspend part or all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.</p> |
| 19. Termination | <p>19.1. This Contract may be terminated by either Party as per provisions set up below:</p> |
| a. By the Client | <p>19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f):</p> <ul style="list-style-type: none"> (a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18; (b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary; (c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 45.1; (d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days; (e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract; (f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13. <p>19.1.2. Furthermore, if the Client determines that the Consultant has engaged in Fraud and Corruption in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.</p> |
| b. By the Consultant | <p>19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.</p> |

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| | <p>(a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.</p> <p>(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.</p> <p>(c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1.</p> <p>(d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.</p> |
| c. Cessation of Rights and Obligations | 19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit inspection, copying and auditing of their accounts and records set forth in Clause GCC 25 and to cooperate and assist in any inspection or investigation, and (iv) any right which a Party may have under the Applicable Law. |
| d. Cessation of Services | 19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28. |
| e. Payment upon Termination | 19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant: <p>(a) payment for Services satisfactorily performed prior to the effective date of termination; and</p> <p>(b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.</p> |
| C. OBLIGATIONS OF THE CONSULTANT | |
| 20. General | |
| a. Standard of Performance | <p>20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with the third parties.</p> <p>20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.</p> <p>20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.</p> |
| b. Law Applicable to | 20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure |

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| Services | <p>that any of its Experts and Sub-consultants, comply with the Applicable Law.</p> <p>20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when</p> <ul style="list-style-type: none"> (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country. <p>20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.</p> |
| 21. Conflict of Interest | <p>21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.</p> |
| <p>a. Consultant Not to Benefit from Commissions, Discounts, etc.</p> | <p>21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.</p> <p>21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Regulations, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.</p> |
| <p>b. Consultant and Affiliates Not to Engage in Certain Activities</p> | <p>21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project.</p> |
| <p>c. Prohibition of Conflicting Activities</p> | <p>21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.</p> |
| <p>d. Strict Duty to Disclose Conflicting Activities</p> | <p>21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.</p> |
| 22. Confidentiality | <p>22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.</p> |
| 23. Liability of the Consultant | <p>23.1 Subject to additional provisions, if any, set forth in the SCC, the Consultant's liability under this Contract shall be provided by the Applicable Law.</p> |

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| <p>24. Insurance to be taken out by the Consultant</p> | <p>24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the SCC, and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.</p> |
| <p>25. Accounting, Inspection and Auditing</p> | <p>25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs.</p> <p>25.2 Pursuant to paragraph 2.2 e. of Appendix to the General Conditions the Consultant shall permit and shall cause its subcontractors and subconsultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or the accounts and records relating to the performance of the Contract and the submission of the bid, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's and its Subcontractors' and subconsultants' attention is drawn to Sub-Clause 10.1 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Bank's prevailing sanctions procedures).</p> |
| <p>26. Reporting Obligations</p> | <p>26.1 The Consultant shall submit to the Client the reports and documents specified in Appendix A, in the form, in the numbers and within the time periods set forth in the said Appendix.</p> |
| <p>27. Proprietary Rights of the Client in Reports and Records</p> | <p>27.1 Unless otherwise indicated in the SCC, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.</p> <p>27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the SCC.</p> |
| <p>28. Equipment, Vehicles and Materials</p> | <p>28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.</p> <p>28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.</p> |

| D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS | |
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| 29. Description of Key Experts | 29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in Appendix B . |
| 30. Replacement of Key Experts | 30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts. 30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration. |
| 31. Removal of Experts or Sub-consultants | 31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or if the Client determines that a Consultant's Expert or Sub-consultant has engaged in Fraud and Corruption while performing the Services, the Consultant shall, at the Client's written request, provide a replacement. 31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement. 31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client. 31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts. |
| E. OBLIGATIONS OF THE CLIENT | |
| 32. Assistance and Exemptions | 32.1 Unless otherwise specified in the SCC, the Client shall use its best efforts to: (a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services. (b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract. (c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents. (c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services. (d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country. (e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services. (f) Provide to the Consultant any such other assistance as may be specified in the SCC. |

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| 33. Access to Project Site | 33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them. |
| 34. Change in the Applicable Law Related to Taxes and Duties | 34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1 |
| 35. Services, Facilities and Property of the Client | 35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (Appendix A) at the times and in the manner specified in said Appendix A . |
| 36. Counterpart Personnel | 36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in Appendix A . 36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request. |
| 37. Payment Obligation | 37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in Appendix A and in such manner as is provided by GCC F below. |
| F. PAYMENTS TO THE CONSULTANT | |
| 38. Contract Price | 38.1 The Contract price is fixed and is set forth in the SCC . The Contract price breakdown is provided in Appendix C . 38.2 Any change to the Contract price specified in Clause GCC 38.1 can be made only if the Parties have agreed to the revised scope of Services pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in Appendix A . |
| 39. Taxes and Duties | 39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the SCC . 39.2 As an exception to the above and as stated in the SCC , all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant. |
| 40. Currency of Payment | 40.1 Any payment under this Contract shall be made in the currency (ies) of the Contract. |
| 41. Mode of Billing and Payment | 41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1. 41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in Appendix A . The payments will be made according to the payment schedule stated in the SCC . 41.2.1 <u>Advance payment</u> : Unless otherwise indicated in the SCC , an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the SCC . Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) |

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| | <p>is to be in the form set forth in Appendix D, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal portions against the lump-sum installments specified in the SCC until said advance payments have been fully set off.</p> <p>41.2.2 <u>The Lump-Sum Installment Payments.</u> The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.</p> <p>41.2.3 <u>The Final Payment.</u> The final payment under this Clause shall be made only after the final report have been submitted by the Consultant and approved as satisfactory by the Client. The Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the SCC.</p> <p>41.2.4 With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.</p> |
| 42. Interest on Delayed Payments | 42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the SCC . |
| G. FAIRNESS AND GOOD FAITH | |
| 43. Good Faith | 43.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract. |
| H. SETTLEMENT OF DISPUTES | |
| 44. Amicable Settlement | 44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation. 44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 45.1 shall apply. |
| 45. Dispute Resolution | 45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the SCC . |

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II. General Conditions
Attachment 1
Fraud and Corruption

(Text in this Appendix shall not be modified)

1. Purpose

1.1 The Bank's Anti-Corruption Guidelines and this annex apply with respect to procurement under Bank Investment Project Financing operations.

2. Requirements

2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders (applicants/proposers), consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption.

2.2 To this end, the Bank:

a. Defines, for the purposes of this provision, the terms set forth below as follows:

- i. "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- ii. "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
- iii. "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- iv. "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- v. "obstructive practice" is:
 - (a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - (b) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 2.2 e. below.

b. Rejects a proposal for award if the Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring misprocurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;

d. Pursuant to the Bank's Anti- Corruption Guidelines and in accordance with the Bank's prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner;¹ (ii) to be a

¹ For the avoidance of doubt, a sanctioned party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and bidding, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated

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nominated² sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;

- e. Requires that a clause be included in bidding/request for proposals documents and in contracts financed by a Bank loan, requiring (i) bidders (applicants/proposers), consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents personnel, permit the Bank to inspect³ all accounts, records and other documents relating to the procurement process, selection and/or contract execution,, and to have them audited by auditors appointed by the Bank.

service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

- ² A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.
- ³ Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.

III. Special Conditions of Contract

| Number of GC Clause | Amendments of, and Supplements to, Clauses in the General Conditions of Contract |
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| 1.1 (a) | The Contract shall be construed in accordance with the laws of the Republic of India |
| 1.1(b) | The date of the "Applicable Regulations" is: 1 st July 2016 |
| 4.1 | The language is: English. |
| 6.1 and 6.2 | <p>The addresses are:</p> <p>Client: Assam Rural Infrastructure and Agriculture Services (ARIAS) Society Attention: State Project Director, ARIAS Society Address: ARIAS Society, Project Coordination Unit, Agriculture Complex, Khanapara, G.S. Road, Guwahati-781022 (Assam, India); Tel: 0361-2332125; Tele-Fax: 0361-2332564; Email: spd@arias.in</p> <p>Consultant: ICAR-Central Institute of Freshwater Aquaculture (CIFA), Kausalyaganga, Bhubaneswar-751002, Odisha; Attention: Dr. N. K. Barik, Scientist, PI- Agri-Business Incubation Centre/ Team Leader, ICAR-CIFA Phone/ Fax: 0674-2465402/ 2465107; E-mail: director.cifa@icar.gov.in ; cifa@ori.nic.in ; nageshbarik@hotmail.com ; nageshbarik@gmail.com ;</p> |
| 8.1 | "N/A"; |
| 9.1 | <p>The Authorized Representatives are:</p> <p>For the Client: The State Project Director, ARIAS Society For the Consultant: Dr. N. K. Barik, Scientist, PI- Agri-Business Incubation Centre/ Team Leader, ICAR-CIFA</p> |
| 11.1 | N/A |
| 12.1 | Termination of Contract for Failure to Become Effective: The time period shall be 30 (thirty) days from the the date of signing of the Contract. |
| 13.1 | <p>Commencement of Services: The number of days shall be 10 (ten) calendar days.</p> <p>Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.</p> |
| 14.1 | Expiration of Contract: The time period shall be for period of 180 (One hundred eighty) days from the date of effectiveness. The duration may be extended by the client with mutual agreement of the parties (Please refer to the TOR). |
| 21 b. | The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3: Yes |
| 23.1 | <p>The following limitation of the Consultant's Liability towards the Client can be subject to the Contract's negotiations:</p> <p>(a) Except in the case of gross negligence or wilful misconduct on the part of the Consultant or on the part of any person or a firm acting on behalf of the Consultant in carrying out the Services, the Consultant, with respect to damage caused by the Consultant to the Client's property, shall not be liable to the Client:</p> |

| Number of GC Clause | Amendments of, and Supplements to, Clauses in the General Conditions of Contract |
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| | <p>(i) for any indirect or consequential loss or damage; and</p> <p>(ii) for any direct loss or damage that exceeds [insert a multiplier, e.g.: one, two, three] times the total value of the Contract;</p> <p>(b) This limitation of liability shall not</p> <p>(i) affect the Consultant's liability, if any, for damage to Third Parties caused by the Consultant or any person or firm acting on behalf of the Consultant in carrying out the Services;</p> <p>(ii) be construed as providing the Consultant with any limitation or exclusion from liability which is prohibited by the applicable law in the Client's country.</p> <p><i>[Notes to the Client and the Consultant: Any suggestions made by the Consultant in the Proposal to introduce exclusions/limitations of the Consultant's liability under the Contract should be carefully scrutinized by the Client and discussed with the Bank prior to accepting any changes to what was included in the issued RFP. In this regard, the Parties should be aware of the Bank's policy on this matter which is as follows:</i></p> <p><i>To be acceptable to the Bank, any limitation of the Consultant's liability should at the very least be reasonably related to (a) the damage the Consultant might potentially cause to the Client, and (b) the Consultant's ability to pay compensation using its own assets and reasonably obtainable insurance coverage. The Consultant's liability shall not be limited to less than a multiplier of the total payments to the Consultant under the Contract for remuneration and reimbursable expenses. A statement to the effect that the Consultant is liable only for the re-performance of faulty Services is not acceptable to the Bank. Also, the Consultant's liability should never be limited for loss or damage caused by the Consultant's gross negligence or wilful misconduct.</i></p> <p><i>The Bank does not accept a provision to the effect that the Client shall indemnify and hold harmless the Consultant against Third Party claims, except, of course, if a claim is based on loss or damage caused by a default or wrongful act of the Client to the extent permissible by the law applicable in the Client's country.]</i></p> |
| 24.1 | <p>The insurance coverage against the risks shall be as follows:</p> <p>(a) Professional liability insurance, with a minimum coverage of Rs.23,46,135/-</p> <p>(b) employer's liability and workers' compensation insurance in respect of the experts and Sub-consultants in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate;</p> |
| 27.1 | No exceptions to proprietary rights provision |
| 27.2 | The Consultant shall not use any documents, software or project related information for purposes unrelated to this Contract without the prior written approval of the Client. |
| 32.1 (f) | As stated in the TOR |
| 38.1 | <p>The Contract price is: Rs.19,88,250/- (Indian Rupees nineteen lakh and eighty eight thousand two hundred and fifty only) [exclusive of local indirect taxes (i.e. GST)].</p> <p>Any indirect local taxes (i.e. GST) chargeable in respect of this Contract for the Services provided by the Consultant shall be reimbursed by the Client to the Consultant, subject to the Client performing such duties in regard to the deduction of such taxes as per applicable laws of the Government.</p> <p>The amount of such taxes (GST @ 18%) is Rs.3,57,885/- (Rupees three lakh fifty seven thousand eight hundred & eighty five only)</p> <p>At source deductions, however, shall be made as applicable as per Statutory laws of India.</p> |
| 39.1 and 39.2 | <p>The consultants, sub-consultants and the Personnel shall pay the taxes, taxes, duties, fees, levies and other impositions levied under the existing, amended or enacted laws during life of this contract and the client shall perform such duties in this regard to the deduction of such taxes as may be lawfully imposed.</p> <p>The client warrants that the Consultancy services taxes (or its successor tax) paid in India in respect of this contract will be reimbursed on production of documentary</p> |

| Number of GC Clause | Amendments of, and Supplements to, Clauses in the General Conditions of Contract | | | | | | | | | | | | | | | | | |
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| | evidence of payment, subject to the Client performing such duties in regard to the deduction of such taxes as per applicable laws of the Government. | | | | | | | | | | | | | | | | | |
| 41.2 | <p>The payment schedule: {Payment of installments shall be linked to the deliverables specified in the Terms of Reference in Appendix A}</p> <table border="1"> <thead> <tr> <th>Submission</th> <th>Deadline from contract signing date</th> <th>% of contract price to be paid</th> </tr> </thead> <tbody> <tr> <td>Inception report (covering resources deployed, methodology, work plan, milestones etc)</td> <td>Within seven days</td> <td>10%</td> </tr> <tr> <td>Mid-term progress report (indicating the up-to-date progress of the assignment and summary findings as on 90th day of the assignment)</td> <td>Within 100 days</td> <td>20%</td> </tr> <tr> <td>Draft report *</td> <td>Within 150 days</td> <td>30%</td> </tr> <tr> <td>Final report (incorporating all necessary suggestions of the client)</td> <td>Within 180 days</td> <td>40%</td> </tr> </tbody> </table> <p>* ARIAS Society and Director of Fisheries will provide its feedback and suggestions on the draft report within 10 working days from the date of its submission. [Total sum of all installments shall not exceed the Contract price set up in SCC38.1.]</p> | | | Submission | Deadline from contract signing date | % of contract price to be paid | Inception report (covering resources deployed, methodology, work plan, milestones etc) | Within seven days | 10% | Mid-term progress report (indicating the up-to-date progress of the assignment and summary findings as on 90 th day of the assignment) | Within 100 days | 20% | Draft report * | Within 150 days | 30% | Final report (incorporating all necessary suggestions of the client) | Within 180 days | 40% |
| Submission | Deadline from contract signing date | % of contract price to be paid | | | | | | | | | | | | | | | | |
| Inception report (covering resources deployed, methodology, work plan, milestones etc) | Within seven days | 10% | | | | | | | | | | | | | | | | |
| Mid-term progress report (indicating the up-to-date progress of the assignment and summary findings as on 90 th day of the assignment) | Within 100 days | 20% | | | | | | | | | | | | | | | | |
| Draft report * | Within 150 days | 30% | | | | | | | | | | | | | | | | |
| Final report (incorporating all necessary suggestions of the client) | Within 180 days | 40% | | | | | | | | | | | | | | | | |
| 41.2.1 | There shall be no advance payment under the contract. | | | | | | | | | | | | | | | | | |
| 41.2.4 | <p>The accounts are: (To be filled by CIFRI)</p> <table border="1"> <tbody> <tr> <td>Name</td> <td>ICAR UNIT, CIFA</td> </tr> <tr> <td>Account No.</td> <td>10702369125</td> </tr> <tr> <td>Name of Bank</td> <td>State Bank of India,</td> </tr> <tr> <td>Address of Bank Branch, with contact Tel. No. and email</td> <td>Kausalyaganga, Bhubaneswar</td> </tr> <tr> <td>IFS Code</td> <td>SBIN0008874</td> </tr> <tr> <td>GST Regn. No</td> <td>21AAALC1436G1ZV</td> </tr> </tbody> </table> | | | Name | ICAR UNIT, CIFA | Account No. | 10702369125 | Name of Bank | State Bank of India, | Address of Bank Branch, with contact Tel. No. and email | Kausalyaganga, Bhubaneswar | IFS Code | SBIN0008874 | GST Regn. No | 21AAALC1436G1ZV | | | |
| Name | ICAR UNIT, CIFA | | | | | | | | | | | | | | | | | |
| Account No. | 10702369125 | | | | | | | | | | | | | | | | | |
| Name of Bank | State Bank of India, | | | | | | | | | | | | | | | | | |
| Address of Bank Branch, with contact Tel. No. and email | Kausalyaganga, Bhubaneswar | | | | | | | | | | | | | | | | | |
| IFS Code | SBIN0008874 | | | | | | | | | | | | | | | | | |
| GST Regn. No | 21AAALC1436G1ZV | | | | | | | | | | | | | | | | | |
| 42.1 | The interest rate is: 7 % per annum | | | | | | | | | | | | | | | | | |
| 45.1 | <p>Disputes shall be settled by arbitration in accordance with the following provisions:</p> <ol style="list-style-type: none"> <u>Selection of Arbitrators.</u> Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: <ol style="list-style-type: none"> Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to The Indian Council of Arbitration for a list of not fewer than five (5) nominees and, on receipt of such list, the Parties shall alternately strike names there from, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, The Indian Council of Arbitration shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. | | | | | | | | | | | | | | | | | |

| Number of GC Clause | Amendments of, and Supplements to, Clauses in the General Conditions of Contract |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <p>(b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by The Secretary, The Indian Council of Arbitration.</p> <p>(c) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to The Indian Council of Arbitration, New Delhi to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute.</p> |
| | <p>2. <u>Rules of Procedure</u>. Except as otherwise stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract, for contracts with Foreign Consultant . For contract with an Indian firm/agency, the arbitration shall be in accordance with Arbitration and Conciliation Act, 1996 of the Government of India, as in force on the date of this Contract.</p> <p>3. <u>Substitute Arbitrators</u>. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator.</p> <p>4. <u>Nationality and Qualifications of Arbitrators</u>. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country or of the Government's country. For the purposes of this Clause, "home country" means any of:</p> <p>(a) the country of incorporation of the Consultant ; or (b) the country in which the Consultant's principal place of business is located; or (c) the country of nationality of a majority of the Consultant's shareholders; or (d) the country of nationality of the Sub-consultants concerned, where the dispute involves a subcontract</p> |
| | <p>5. <u>Miscellaneous</u>. In any arbitration proceeding hereunder:</p> <p>(a) Proceedings shall, unless otherwise agreed by the Parties, be held in Guwahati, Assam, India.</p> <p>(b) English language shall be the official language for all purposes; and</p> <p>(c) The decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.</p> |

IV. Appendices

APPENDIX A – TERMS OF REFERENCE

For hiring of Consultancy Services for a study on ‘Revival of FISHFED, status of Co-operatives & Marketing’ under World Bank financed Assam Agribusiness and Rural Transformation Project (APART)

BACKGROUND:

1. The Government of Assam (GoA) through Government of India (GoI) has received a loan from the World Bank for implementation of Assam Agribusiness and Rural Transformation Project (APART). Assam Rural Infrastructure and Agricultural Services (ARIAS) Society is the main coordinating agency for the project. The project will be implemented by eight line departments of GoA including their Directorates/Agencies/Commissionerates. ARIAS Society in association with the Directorate of Fisheries now intends to utilize a part of loan to hire a consultancy agency to conduct a study on “Revival of FISHFED, status of co-operatives & marketing”.
2. **Project Development Objective (PDO):** The Assam Agribusiness and Rural Transformation Project aims to “add value and improve resilience of selected agriculture value chains, focusing on smallholder farmers and agro-entrepreneurs in targeted districts of Assam.”
3. There are four components of the project: **The first component is Enabling Agri enterprise Development**, with sub components being (i) enhancing state capacity to attract private investments, (ii) setting up of an Enterprise Development and Promotion Facility (EDPF) (iii) setting up of an Agribusiness Investment Fund (iv) establishing stewardship councils. **The second component is Facilitate Agro Cluster Development** with sub-components being- (i) support establishment of Industry Associations (IAs), (ii) supply chain support. **The third component is Fostering Market Led Production and Resilience Enhancement** with sub components being (i) promoting climate resilient technologies and their adoption (ii) facilitating market linkages through market intelligence and product aggregation (MIC) (iii) Facilitating access to and responsible use of financial services. **The fourth component is project Management, Monitoring and Learning.**
4. The project would support value addition in the production and post-harvest segments of selected agriculture value-chains; facilitate agribusiness investments through inclusive business models that provide opportunities to smallholder farmers as well as stimulate the establishment of new small and medium agribusiness enterprises; and support resilience of agriculture production systems in order to better manage increasing production and commercial risks associated with climate change, in the targeted districts. The project would adopt a cluster and value chain strategy in the targeted districts to generate economies of scale; promote vertical and horizontal links between local agricultural enterprises; enable diffusion of innovations; leverage network externalities; and channel public support for services and infrastructure. The project would enable all the value chain participants to develop competitive and innovative offerings that meet market demands rapidly and successfully.
5. A key project thrust will be on enhancing agglomeration of producers to improve economies of scale in processing and marketing. The project will support fish productivity enhancement (including value and volumes) through essential technology transfer in production and improved post-harvest and market operations and also explore and pilot possible financing modalities to support entrepreneurship and agribusiness. APART will leverage the natural resource advantages of the State as well as improve the agribusiness investment climate. In particular, focus will be on climate resilient market-led production, agribusiness, logistics infrastructure, and MSME finance and insurance.
6. Project beneficiaries will include farmers, Farmer Producer Organizations (FPOs), and agri-entrepreneurs, especially in the MSME segment in the targeted districts. Other beneficiaries would include Sector Stewardship Councils, and other value chain participants.

7. Fishery is one of the important sectors envisaged under the project and Assam Apex Co-operative Fish Marketing and Processing Federation (FISHFED) Limited is under consideration for enabling it to act as a sector management agency to support fisheries component within the scope of activities under APART.
8. FISHFED, a State level Cooperative Federation of Primary Fishery and Pisciculture Societies of Assam was setup by the Government of Assam in 1978 and registered under the Assam Cooperative Societies Act 1949. There are 246 fishermen and fish farmers cooperative societies affiliated to FISHFED covering 27 districts of the state including one SHG viz. *Asom Rajyik Krishak Samannay Samitee*. Present activity of FISHFED is fish production in its farms, trading of fish and fish products, strengthening of Fishery Cooperative Societies, etc. However, FISHFED is presently not doing well due to several reasons so as to support fishery sector as a sector management agency under APART. Further, many of the cooperative societies affiliated to FISHFED are defunct.
9. In light of the above, ARIAS Society, Govt. of Assam now intends to apply a portion of the loan to commission a consultancy assignment for a study on Revival of FISHFED, status and function of the fisheries co-operatives & fish marketing by fisheries cooperatives in the state of Assam.

OBJECTIVE OF THE ASSIGNMENT:

10. The broad objective of the consultancy assignment is to prepare a revival plan for FISHFED as a viable business oriented self sustained organization on business model to enable it to function as a sector management organization to support fisheries activities within the ambit of APART PDO and to study status and function of the fisheries co-operatives & fish marketing by fisheries cooperatives in the state of Assam.

SCOPE OF THE ASSIGNMENT AND THE TASKS TO BE CARRIED OUT BY THE CONSULTANCY FIRM:

11. The overall scope of assignment would include (i) a detailed study and analysis of the present status and functioning of FISHFED, Assam (ii) study of fishery co-operative societies in the State of Assam in general, with a major thrust on those affiliated under FISHFED (iii) study of value chains which involve FISHFED for both fresh and processed fish with a particular focus on marketing (iv) based on the above, prepare a comprehensive and implementable revival plan for FISHFED to transform it into a self supporting business organization in the long run.

12. The Consultancy agency would undertake the following tasks:

- a. Critically review and analyze the present status and functioning of FISHFED, covering-
 - (i) The policies, mandate, vision and mission, if any, including the progress and accomplishments of the schemes /activities implemented by FISHFED;
 - (ii) Organizational structure including district and further below level structures if any, existing & sanctioned strength of technical, managerial and support staff, present and future human resource requirement etc;
 - (iii) Status of movable and immovable assets (type, number, present usage, future requirement etc);
 - (iv) Up-to-date trend of share capital since inception;
 - (v) Annual turnover at least for last five years;
 - (vi) Account statement indicating capital & revenue receipt, expenditure for last five years;
 - (vii) Funding support from various government and non-government organizations and programmes implemented thereof; access to financial resources for future;
 - (viii) Sources of revenue generation for sustenance;
 - (ix) Performance level of FISHFED in relation to the existing infrastructure, financial resources, human resource and capacity/skill in the organisation and reasons for underperformance, if any;
- b. Undertake a critical quick assessment of the present model of functioning of the successful organizations (such as BENFISH, West Bengal; MATSYAFED, Kerala; FISHFED, Odisha, Gujarat State

- Fishermen Co-op. Federation Limited, Gandhi Nagar, Tamil Nadu Fisheries Cooperative Federation, etc) and indicate ways and means of replicating relevant ones from these models in the organisation, structure and functioning of FISHFED and making it an economically and financially sound institution;
- c. Indicate the learning from the past performance of FISHFED, where it worked and where it did not work;
 - d. Understand what fishers and farmers want from their individual cooperative societies as well as from FISHFED;
 - e. Study what market and other gaps FISHFED will fill;
 - f. Analyse what the revived FISHFED will offer that is not already offered by other public or private agencies;
 - g. Assess what kind of fish value chains can the revived FISHFED make an impact;
 - h. Provide a realistic Vision Plan for FISHFED, ie how the FISHFED will look like;
 - i. Indicated its management structure and its business model;
 - j. Make a realistic assessment of **the scope for inclusion of FISHFED as a sector management organization and a partner institution for implementing APART** with a view to supporting fisheries development activities proposed under the project as well as any other Govt. sponsored projects/programmes in the fisheries sector;
 - k. Based on the above analysis and by carrying out backward and forward linkage assessments, work out the best possible strategies for reviving the Assam FISHFED and prepare a realistic action plan incorporating the plan for:
 - i. Providing the requisite support for post-harvest fisheries including fish preservation, transportation and fish marketing activities so as to ensure easy availability of fish to consumers at an affordable price;
 - ii. involving fishery/fishermen co-operative societies in cooperative farming/management of capture fishery resources, culture fisheries and fish marketing;
 - iii. augmenting the income of the fisheries co-operative societies and FISHFED through capture and culture fisheries activities in the State under APART and other Government programmes/projects.

METHODOLOGY:

13. The assessment shall be carried out through:
 - a. personal/direct interaction with all stakeholders (including the co-operative societies and fish traders) either directly or indirectly associated with FISHFED and its activities
 - b. collection, compilation and analysis of primary data/information through structured/semi structured questionnaires prepared in consultation with DoF/ARIAS Society experts
 - c. collection, compilation, review and analysis of secondary data/information from all the relevant and available sources
 - d. site/field verification to assess the existing assets of FISHFED and their operation, maintenance and usefulness for future expansion of activities
 - e. workshops/seminars/Focused Group Discussions (FGDs) with stakeholders based on requirement
 - f. interpretation of the data/information, supported with documentary evidences (including dated photographs, etc) of data collection/field verification visits, and
 - g. preparation of a comprehensive strategy and action plan as per the objectives of the assignment and submitting to the Government of Assam (DoF & ARIAS Society).

Nagesh Kumar Barik

Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

State Project Director
ARIAS Society

DELIVERABLE MILESTONES & PAYMENT ETC.:

14. The consultant has to submit the following to the client:

| Particulars | Due period from contract signing date | Payment % |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------|
| Inception report (covering resources deployed, methodology, work plan, milestones etc) | Within seven days | 10 |
| Mid-term progress report (indicating the up-to-date progress of the assignment and summary findings as on 90 th day of the assignment) | Within 100 days | 20 |
| Draft report * | Within 150 days | 30 |
| Final report (incorporating all necessary suggestions of the client) | Within 180 days | 40 |

*ARIAS Society and DoF will provide its feedback and suggestions on the draft report within 10 working days from the date of its submission.

Note: All reports shall be submitted in soft copy (email and in CD, both in word and PDF format) as well as hard copies (5 nos). Numerical data etc should also be submitted in excel wherever applicable. All report submissions will be followed by a presentation made to the client by the consultant at mutually agreed dates. The power point presentation along with supporting files/ hyperlinks etc should be sent to the client at least one week before the scheduled date of presentation.

REVIEW AND MONITORING OF THE ASSIGNMENT:

15. The progress of assignment against the deliverables would be monitored and reviewed by a Committee constituted by State Project Director, ARIAS Society.

FACILITIES TO BE PROVIDED BY THE CLIENT (DIRECTORATE OF FISHERIES, ASSAM):

16. A brief report on visit to BENFISH (West Bengal State Fishermen's Cooperative Federation Ltd.-an organization under Department of Fisheries, Govt. of west Bengal) by a Govt. team of officers during project preparation and the documents collected from BENFISH as reference material.
17. Give access to required documents, correspondence, and information associated with the assignment as available in the DoF/ARIAS Society.
18. Liaisoning and co-ordination with FISHFED and other stakeholders.

KEY PROFESSIONALS WHOSE CV WILL BE EVALUATED:

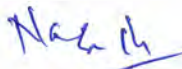
19. The selected Firm/Organization will be required to deploy specialized and expert resources for successful and timely completion of the assignment. Particulars along with brief role of key experts whose CVs will be evaluated are given in the table below:

| Sl | Positions | Qualification and experience | Role (in brief)/Inputs to be provided |
|----|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Team Leader cum Cooperative Management Specialist | Post Graduate (PG) degree/ PG diploma of minimum 2 years duration in Cooperative Management or a closely related field. The Team leader should have a minimum of 10 years' experience in planning, designing along with developing, directing and managing similar assignments. | <ul style="list-style-type: none"> • Overall coordination • Providing inputs in terms of designing plan for revival of FISHFED, modalities and policies for it's future functioning as a guide to fisheries cooperative sector in the state, strategies for promotion of business by FISHFED particularly in the cooperative fishery business and marketing of produce, strengthening of its functioning and revenue generation and management |

| SI | Positions | Qualification and experience | Role (in brief)/Inputs to be provided |
|----|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Fishery Expert | Masters degree in Fisheries Science or a closely related field. The Fishery Expert should have a minimum of 7 (seven) years of experience in fish production/processing, teaching/research/extension in officer/managerial capacity | <ul style="list-style-type: none"> • Providing technical inputs on fish production, processing, fish health management • Pond/beel management practices etc |
| 3 | Business & Entrepreneurship Development Expert | Masters degree/ Post Graduate Diploma of minimum two years duration in Business Administration/Entrepreneurship preferably with specialization in Agribusiness or a closely related field. The Expert should have a minimum of 7 (seven) years of experience in Business Development Management/ Entrepreneurship preferably in Fisheries Sector | <ul style="list-style-type: none"> • Providing inputs on Return on Investment (ROI) in priorities areas, long term entrepreneurship development, B:C ratio, IRR etc of suggested interventions, • Possible areas and extent of investment by FISHFED for entrepreneurial activities for income generation • Source market analytics, business trends of the cooperative societies in fish marketing in the state and scope of development, demand-supply trend etc • Business climate data analysis using statistical / business analysis tools, business plan/ model development for sustainable revenue generation by FISHFED |
| 4 | Value Chain Expert | Bachelors in Fisheries followed by MBA (preferably in Agribusiness or a closely related field) Minimum 7 (seven) years experience in agri value chain management/development related activities (preferably in Fisheries sector) | <ul style="list-style-type: none"> • Forward and backward linkages • Fish logistics • Value chain efficiency & effectiveness |

Note: The consultancy firm/organization may deploy additional non-key resources, (if required) to successfully complete the assignment on time.


State Project Director
ARIAS Society


Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

APPENDIX B - KEY EXPERTS

| Team Composition/Key Expert's Inputs | | | | | |
|--------------------------------------|-----------------------|---------------------------------------------------|---------------------------|------------------------|--------------------|
| No. | Name | Position | Time Input in Person/ day | Remuneration Per month | Total Amount (Rs.) |
| Key Experts | | | | | |
| K-1 | Dr. N. K. Barik | Team Leader cum Cooperative Management Specialist | 30 | 1,20,000 | 1,60,000 |
| K-1 | Dr. N. K. Barik | Business & Entrepreneurship Development Expert | 18 | 1,20,000 | 1,00,000 |
| K-2 | Dr. J. K. Sundaray | Fishery Expert | 22 | 1,80,000 | 1,80,000 |
| K-3 | Dr. Ajmal Hussain | Fishery Expert | 22 | 80,000 | 80,000 |
| K-4 | Dr. P. P. Chakrabarti | Value Chain Expert | 30 | 1,80,000 | 2,45,000 |
| | | | | Total Costs | 7,65,000 |

[Based on the Consultant's Technical Proposal and finalized at the Contract's negotiations]

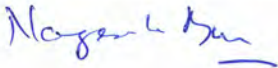
APPENDIX C - BREAKDOWN OF CONTRACT PRICE

| Summary of costs (Rs.) | | | |
|------------------------|------------------|-----------------------------------------|-----------------------------------|
| No. | Item | Quoted Amount as per Financial Proposal | Agreed Negotiated Contract Amount |
| 1 | Remuneration | 7,65,000 | 7,65,000 |
| 2 | Reimbursables | 17,05,000 | 12,23,250 |
| Sub-Total (A) | | 24,70,000 | 19,88,250 |
| (i) | GST (18% on 'A') | 2,47,000 | 3,57,885 |
| Total Cost | | 27,17,000 | 23,46,135 |

| Breakdown of Remunerations | | | | | |
|----------------------------|-----------------------|---------------------------------------------------|------------------------|---------------------------|--------------------|
| No. | Name | Position | Remuneration Per month | Time Input in Person/ day | Total Amount (Rs.) |
| Key Experts | | | | | |
| K-1 | Dr. N. K. Barik | Team Leader cum Cooperative Management Specialist | 1,20,000 | 30 | 1,60,000 |
| K-1 | Dr. N. K. Barik | Business & Entrepreneurship Development Expert | 1,20,000 | 18 | 1,00,000 |
| K-2 | Dr. J. K. Sundaray | Fishery Expert | 1,80,000 | 22 | 1,80,000 |
| K-3 | Dr. Ajmal Hussain | Fishery Expert | 80,000 | 22 | 80,000 |
| K-4 | Dr. P. P. Chakrabarti | Value Chain Expert | 1,80,000 | 30 | 2,45,000 |
| | | | | Total Costs | 7,65,000 |

| Breakdown of Reimbursable Expenses | | | | | | | | | |
|------------------------------------|--------------------------------------------|-------------------------------------------|-----------|----------|------------------|----------------------------------|-----------|----------|------------------|
| No. | Type of Reimbursable Expenses | Quoted as per Fin. Proposal of CIFA (Rs.) | | | | Negotiated Contract Amount (Rs.) | | | |
| | | Unit | Unit Cost | Quantity | Quoted Amt. | Unit | Unit Cost | Quantity | Quoted Amt. |
| 1 | Travel (Including study visit to 5 states) | Nos | 20,000 | 30 | 6,00,000 | Nos | 15,000 | 25 | 3,75,000 |
| 2 | Per diem allowances (incl. study visit) | Nos | 4000 | 60 | 2,40,000 | Nos | 4000 | 60 | 2,40,000 |
| 3 | Local Transportation/ Hiring of vehicle | Nos | 8000 | 30 | 2,40,000 | Nos | 5000 | 30 | 1,50,000 |
| 4 | Hotel costs | Nos | 4000 | 50 | 2,00,000 | Nos | 4000 | 50 | 2,00,000 |
| 5 | Organization of meetings/ workshops | Nos | 15,000 | 15 | 2,25,000 | Nos | 15,000 | 10 | 1,50,000 |
| 6 | Report preparation and other expenses | Lump-sum | | | 1,00,000 | Lump-sum | | | 50,000 |
| 7 | Institutional charges 5% | | | | 1,00,000 | | | | 58,250 |
| Total | | | | | 17,05,000 | | | | 12,23,250 |

[Based on the Consultant's Proposal and finalized during negotiation.]


 Dr. Nagesh Kumar Barik, Ph.D.
 Principal Investigator
 Agri Business Incubation Centre
 ICAR-CIFA, Bhubaneswar-2, Odisha


 State Project Director
 ARIAS Society


 State Project Director
 ARIAS Society

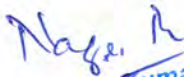
APPENDIX D - FORM OF ADVANCE PAYMENTS GUARANTEE
[See Clause GCC 41.2.1 and SCC 41.2.1]

Format of Bank Guarantee for Advance Payment

(Deleted)

APPENDIX E – MINUTES OF NEGOTIATION

(Attached Separately)


Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha


State Project Director
ARTAR Society

**ARIAS SOCIETY**Assam Rural Infrastructure and Agricultural Services Society
(An Autonomous Body of the Govt. of Assam)**Project Coordination Unit (PCU) of the World Bank financed
Assam Agribusiness and Rural Transformation Project (APART)**Agriculture complex, Khanapara, G.S. Road, Guwahati-781022 (Assam, India)
Tel: +91 361-2332125; Fax: +91 361-2332564; email: spd@arias.in; website: www.arias.in**Minutes of the Negotiation Meeting for hiring a Consultancy Service for Revival of FISHFED,
status & function of Fisheries Co-operatives & Fish Marketing by
Fisheries Co-operatives in the State of Assam**

(Reference: This office letter No.: ARIASS/APART/FISHFED/90/2016/105 dated 28th September 2018)

Dated: 4th October 2018**Time:** 11:00 AM**Venue:** PCU, ARIAS Society

- The negotiation meeting for the aforementioned consultancy assignment was held with Dr. N. K. Barik, Scientist & Principal Investigator, Agribusiness Incubation Centre, Authorized Representative from the ICAR¹-Central Institute of Freshwater Aquaculture (CIFA), Odisha, in presence of the following officials of ARIAS Society: Sri M Rahman, OSD to SPD cum Sr. Procurement Specialist; Sri Baljeet Singh, MA cum Operations Specialist; Sri S. Purkayastha, Fisheries Advisor; Sri S. Sharma, Fishery Coordinator; Sri A. Deka, Asstt. Procurement Engineer; Sri S. Das, Sr. Financial Management (FM) Specialist; Sri Nayan Baruah, Jr. FM Executive; Sri AW Choudhury, Proc. Management Executive (*Attendance sheet at Annex-1*).
- At the outset, the OSD to SPD welcomed Dr. Barik from CIFA and thanked him for furnishing the (a) Authorization letter to negotiate and sign the contract (**Annex-2**) and confirming availability of all the Key Experts for the assignment (b) Undertaking relating to cost-norms (**Annex-3**). Summary of the decisions taken in the Negotiation meeting are as follows:
 - Technical approach, methodology & timeline:** CIFA reiterated the proposed Approach & Methodology and assured that all the reports will be submitted as per the provisions and timeline of the Terms of Reference (ToR) and hence no changes are considered necessary on this aspect. CIFA also re-assured that the assignment will be completed within 180 days.
 - ToR, Staffing schedule, work schedule, logistics, and reporting:** CIFA confirmed that the key experts will commence the services immediately after signing of the agreement for the assignment. No change in the TOR is therefore required.
 - Financial Proposal:** As CQS method of procurement has been followed, discussions were held to negotiate the Staff Rates and Reimbursable Expenses. Representative of CIFA stated that Staff rates are as per the ICAR-CIFA norms and the Institutional charges @5% are as per ICAR Professional Service Guidelines 2014, and a letter has also been furnished.

| Summary of costs | | | | | |
|------------------|-----------------------------------------|--|------------------|----------------------------|------------------|
| No. | Quoted Amount as per Financial Proposal | | | Negotiated Contract Amount | |
| 1 | Remuneration | | 7,65,000 | Remuneration | 7,65,000 |
| 2 | Reimbursables | | 17,05,000 | Reimbursables | 12,23,250 |
| | Sub-Total (A) | | 24,70,000 | Sub-Total (B) | 19,88,250 |
| (i) | GST (10% on 'A') | | 2,47,000 | GST (18% on 'B') | 3,57,885 |
| | Total Cost | | 27,17,000 | Total Cost | 23,46,135 |

| Breakdown of Reimbursable Expenses | | | | | | | | | |
|------------------------------------|--------------------------------------------|-------------------------------------------|-----------|----------|------------------|----------------------------------|-----------|----------|------------------|
| No. | Type of Reimbursable Expenses | Quoted as per Fin. Proposal of CIFA (Rs.) | | | | Negotiated Contract Amount (Rs.) | | | |
| | | Unit | Unit Cost | Quantity | Quoted Amt. | Unit | Unit Cost | Quantity | Quoted Amt. |
| 1 | Travel (including study visit to 5 states) | Nos | 20,000 | 30 | 6,00,000 | Nos | 15,000 | 25 | 3,75,000 |
| 2 | Per diem allowances (incl. study visit) | Nos | 4000 | 60 | 2,40,000 | Nos | 4000 | 60 | 2,40,000 |
| 3 | Local Transportation/ Hiring of vehicle | Nos | 8000 | 30 | 2,40,000 | Nos | 5000 | 30 | 1,50,000 |
| 4 | Hotel costs | Nos | 4000 | 50 | 2,00,000 | Nos | 4000 | 50 | 2,00,000 |
| 5 | Organization of meetings/ workshops | Nos | 15,000 | 15 | 2,25,000 | Nos | 15,000 | 10 | 1,50,000 |
| 6 | Report preparation and other expenses | Lump-sum | | | 1,00,000 | Lump-sum | | | 50,000 |
| 7 | Institutional charges 5% | | | | 1,00,000 | | | | 58,250 |
| | Total | | | | 17,05,000 | | | | 12,23,250 |

Based on the reductions, the total Contract Price after negotiation stands at Rs. 23,46,135/- (including GST).

- PCU officials suggested that during the study-visit to the successful Fisheries Federation of Kerala, Tamil Nadu, Gujarat, West Bengal and Odisha (as per provision of the ToR) by the officials of ICAR-CIFA, one officer from Fishery Directorate/FISHFED and one officer from the PCU may accompany the CIFA Officials, subject to approval by the SPD, ARIAS Society and competent authorities. However, the expenditure of the PCU/Govt. officials shall only be borne by the PCU, ARIAS Society.
- It was decided that based on the Negotiation Minutes, the draft negotiated contract will be shared with CIFA by the PCU.

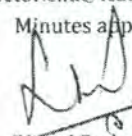
The meeting ended with a vote of thanks from the Chairperson.

Memo No: ARIASS/APART/FISHFED/90/2016/111- A**Dated Guwahati the 6th October, 2018**

Copy to:

- APC and Chairman ARIAS Society, Dispur, Guwahati-6 for favour of information
- All concerned officials of the ARIAS Society/ ICAR-CIFA present in the meeting.
- The Director, ICAR- CIFA, Kausalyaganga, Bhubaneswar-751002, Odisha, Email: director.cifa@icar.gov.in ; cifa@ori.nic.in;**

Minutes approved,


 (Vinod Seshan, IAS)
 State Project Director, ARIAS Society
¹ ICAR: Indian Council of Agricultural Research

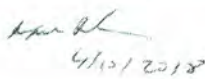
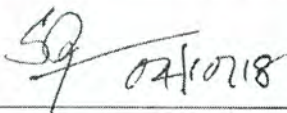
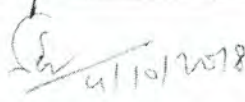
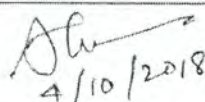
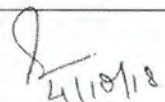

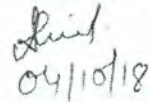
Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

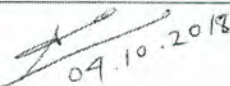

 State Project Director
 ARIAS Society

Attendance Sheet of Negotiation Meeting with ICAR-Central Institute of Freshwater Aquaculture (CIFA) for the "Consultancy Service for Revival of FISHFED, status of Co-operatives & Marketing"

Date: 4th October 2018
Time: 11.00 AM

Venue: PCU, ARIAS Society

| Sl | Name of the Attendant | Name of the Organization | Signature |
|----|------------------------|--------------------------------------------------|----------------------------------------------------------------------------------------------------|
| 1 | | | |
| 2 | Mustaqur Rahman | OSD ARIAS |  4/10/2018 |
| 3 | Dr. Nagesh Kumar Barik | ICAR-CENTRAL INSTITUTE of FRESHWATER AQUACULTURE | Nagesh Barik 4.10.2018 |
| 4 | Baljeet Singh | ARIAS Soc. | Baljeet 4/10/18 |
| 5 | Dr. S. Pankaj Mishra | ARIAS Society |  04/10/18 |
| 6 | Dr. Sampat Mishra | Fishery Co-ordinator ARIAS Society |  4/10/2018 |
| 7 | Sreemant Bhunia | Monitoring and Evaluation Specialist - APART |  4/10/2018 |
| 8 | Sahajit Das | SFMS, ARIASS |  4/10/18 |
| 9 | Nayan Baruah | SFMS, ARIAS |  |
| 10 | Abdul Wahid Chaudhry | PME, ARIAS |  04/10/18 |

11 Amarendra Das AWH, PE & RC, ARIASS 
04.10.2018


Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha


State Project Director
ARIAS Society



भा.कृ.अनु.प. - केन्द्रीय मीठाजल जीवपालन अनुसंधान संस्थान

(आईएसओ 9001: 2015 प्रमाणित संस्थान)

भारतीय कृषि अनुसंधान परिषद

कौशल्यगंग, भुवनेश्वर - 751002, (उड़ीसा), भारत

ICAR - CENTRAL INSTITUTE OF FRESHWATER AQUACULTURE

(An ISO 9001 2015 Certified Institution)

Indian Council of Agricultural Research

Kausalyaganga, Bhubaneswar - 751002, (Odisha), India



Dr. BINDU R. PILLAI
DIRECTOR (Acting)

No.4/CIFA/DC/2018-

Dated: 1 October, 2018

To

The State Project Director
ARIAS Society,
Project Coordination Unit,
Agriculture Complex, Khanapara, G.S. Road,
Guwahati-781022 (Assam, India);

Ref: ARIASS/APART/FISHFED/90/2016/105 dated 28th September, 2018

Dear Sir,

Thank you for consideration of our proposal to provide the consulting services for "Revival of FISHFED, status of Co-operatives & Marketing". As per the requirements from your end. I nominate Dr. N. K. Barik, Scientist and PI-Agri-Busienss Incubation center to represent ICAR-CIFA during the meeting scheduled on 4th October, 2018 at 11 AM, at office of the State Project Director, ARIAS society, Guwahati. I also authorize him with power of Attorney to negotiate and sign the contract on behalf of ICAR-CIFA as per the GCC clause 29 & 30 of RFP Document. I also confirm that all the key experts proposed in the project shall be available for completion of the work as per the proposal.


Thanking you


Yours sincerely,


DIRECTOR

Phone: 0674-2465421, 2465446, 2465502(O), Fax:0674-2465407
E-mail: director.cifa@icar.gov.in/cifa@ori.nic.in, Website: http://www.cifa.in

'Healthy Soils for a Healty Life'


State Project Director
ARIAS Society


Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha



भा.कृ.अनु.प. - केन्द्रीय मीठाजल जीवपालन अनुसंधान संस्थान

(आईएसओ 9001:2015 प्रमाणित संस्थान)

भारतीय कृषि अनुसंधान परिषद

कौशल्यांग, भुवनेश्वर - 751002, (उड़ीसा), भारत

ICAR - CENTRAL INSTITUTE OF FRESHWATER AQUACULTURE

(An ISO 9001:2015 Certified Institution)

Indian Council of Agricultural Research

Kausalyaganga, Bhubaneswar - 751002, (Odisha), India



भा.कृ.अनु.प.
ICAR

From

Dr. N. K. Barik

Scientist and PI- Agribusiness incubation Centre

ICAR-CIFA, Bhubaneswar

Dt: 4.10.2018

To

The State Project Director

ARIAS Society

Government of Assam

Sub: Undertaking for FISHFED study regarding

Sir,

I do hereby undertake the following regarding consultancy proposal for the fished study under your esteemed office

- The project does not involve hiring of any external consultant or manpower beyond organization and all the manpower engaged are internal to ICAR-CIFA.
- The cost norms given in the project including intellectual fee and institutional charges as per the ICAR Professional Service guidelines 2014.

Thanking you

Yours sincerely,

Nagesh Kumar Barik
N. K. Barik

Camp: Guwahati 4.10.2018

Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

Phone: 0674-2465421, 2465446, 2465502(O), Fax:0674-2465407
E-mail: director.cifa@icar.gov.in/cifa@ori.nic.in, Website: http://www.cifa.in

'Healthy Soils for a Healty Life'


Nagesh
Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

State Project Director
ARIAS Society

APPENDIX F – TECHNICAL & FINANCIAL PROPOSAL OF THE CONSULTANT

(Attached Separately)


State Project Director
ARIAS Society


Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha



भा.क.अनु.प. - केन्द्रीय मीठाजल जीवपालन अनुसंधान संस्थान

भारत सरकार द्वारा 2013 में स्थापित संस्थान।

भारतीय कृषि अनुसंधान परिषद

कौशल-विकास प्रकल्प 751002, 3^{डी}बी, भारत

ICAR - CENTRAL INSTITUTE OF FRESHWATER AQUACULTURE

SI-130/001-1995 Centre for promotion

Indian Council of Agricultural Research

Kausalyaganj Bhubaneswar-751002 (Odisha) India



भा.क.अनु.प.
ICAR

[Signature]

26/09/2018

26/9/18

26/09/18

Barik 26/9/18

[Signature]
26/9/18

FINANCIAL PROPOSALS (RFP)
RFP No. : ARIAS/APART/FISHFED/90/2016/90
Consulting Services for:

“Revival of FISHFED, status of Co-operatives & Marketing”

Submitted to

ARIAS SOCIETY

Assam Rural Infrastructure and Agricultural Services Society

(An Autonomous Body of the Govt. of Assam)

Project Coordination Unit (PCU) of the World Bank financed

Assam Agribusiness and Rural Transformation Project (APART)

Agriculture complex, Khanapara, G.S. Road, Guwahati-781022 (Assam, India)

Tel: +91 361-2332125; Fax: +91 361-2332564; email: spd@arias.in

Nagesh Kumar Barik

Nagesh Kumar Barik

Bhubaneswar

14.06.2018

[Signature]
State Project Director
ARIAS Society

Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

Mr.

Section 3 - Financial Proposal - Standard Forms

{Notes to Consultant shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal.

- FIN-1 Financial Proposal Submission Form
- FIN-2 Summary of Costs
- FIN-3 Breakdown of Remuneration
- FIN-4 Reimbursable expenses

26/09/18
26/09/18
26/9
26/9

Balraj

Nagesh
Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

State Project Director
State Project Director
ARIAS Society Page



भा.कृ.अनु.प. - केन्द्रीय मीठाजल जीवपालन अनुसंधान संस्थान

(आईएसओ 9001:2015 प्रमाणित संस्थान)

भारतीय कृषि अनुसंधान परिषद

कौशल्यगंगा, भुवनेश्वर - 751002, (उड़ीसा), भारत

ICAR - CENTRAL INSTITUTE OF FRESHWATER AQUACULTURE

(An ISO 9001:2015 Certified Institution)

Indian Council of Agricultural Research

Kausalyaganga, Bhubaneswar - 751002, (Odisha), India



भा.कृ.अनु.प.
ICAR

Bhubaneswar
Dt: 14.08.2018

To:

The State Project Director,
ARIAS Society, Project Coordination Unit,
Agriculture Complex, Khanapara, G.S. Road,
Guwahati-781022 (Assam, India);

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Revival of FISHFED, status of Co-operatives & Marketing] in accordance with your Request for Proposal dated [16th July, 2018] and our Technical Proposal.

Our attached Financial Proposal is for the amount of Rs 24,70,000 in Indian National Rupees {Rupees twenty four lakhs seventy thousand only}, **excluding of all indirect local taxes (e.g. GST)**. The estimated amount of local indirect taxes (GST) is {Rs 2,47,000 in Indian National Rupees} {Rupees two lakhs forty seven thousand only} which shall be confirmed or adjusted, if needed, during negotiations. The details of the same is given in Form FIN-2}.

Our Financial Proposal shall be valid and remain binding upon us, subject to the modifications resulting from Contract negotiations, for the period of **120 days** after the proposal submission deadline.

No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution.

We understand you are not bound to accept any Proposal you receive.

We remain,
Yours sincerely,

Nagesh Kumar Barik Nagesh Barik
Signature (of Consultant's authorized representative) (In full and initials):

Full name: { Dr. Nagesh Kumar Barik }
Title: { Scientist, PI- Agri-Business Incubation Centre }
Name of Consultant (company's name): ICAR-Central Institute of Freshwater Aquaculture
Capacity: {Team leader and consultants authorized representative}
Address: {ICAR-CIFA, Kausalyaganga, Bhubaneswar}
Phone/fax: {0674-2465402, 2465107 (Fax)} 91-9438381516}
Email: {nageshbarik@hotmail.com, nageshbarik.icar@gmail.com}

Phone 0674-2465421, 2465446, 2465502(O). Fax:0674-2465407
E-mail: director.cifa@icar.gov.in / cifa@ori.nic.in, Website: <http://www.cifa.in>

'Healthy Soils for a Healty Life'

State Project Director
ARIAS Society

Nagesh
Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha



भा.कृ.अनु.प. - केन्द्रीय मीठाजल जीवपालन अनुसंधान संस्थान

(आईएसओ 9001:2015 प्रमाणित संस्थान)

भारतीय कृषि अनुसंधान परिषद

कौशल्यगंग, भुवनेश्वर - 751002, (उड़ीसा), भारत

ICAR - CENTRAL INSTITUTE OF FRESHWATER AQUACULTURE

(An ISO 9001:2015 Certified Institution)

Indian Council of Agricultural Research

Kausalyaganga, Bhubaneswar - 751002, (Odisha), India



Dr Bindu R. Pillai
Director (Acting)

No. CIFA/PMECELL/14/2018-19

Date: 14.08.2018

To

State Project Director
ARIAS Society, Project Coordination Unit
Agriculture Complex, Khanapara, G.S. Road
Guwahati - 701022
Assam

Sub: Submission of Technical and Financial Proposal for Consultancy Service for
"Revival of FISHFED status of co-operative and marketing"

Sir,

It is our pleasure to act as consultant to the World Bank funded consultancy service as above. ICAR-CIFA shall provide all necessary technical support in making the project successful. On the behalf of ICAR-CIFA following scientists will act as consultant and Dr N. K. Barik will act as consultants authorized representative for above said purpose.

1. Dr N. K. Barik, Team leader
2. Dr J. K. Sundaray, Team member
3. Dr P. P. Chakrabarti, Team member
4. Dr Ajmal Hussan, Team member

This is for favour of information and necessary action.

Regards,

Sincerely,

DIRECTOR

Phone 0674-2465421 2465446 2465502(O). Fax.0674-2465407
E-mail: director.cifa@icar.gov.in/cifa@ori.nic.in Website: http://www.cifa.in

'Healthy Soils for a Healthy Life'

Nagesh

Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

[Signature]
State Project Director
ARIAS Society

Form FIN-2: Summary of Costs

Handwritten signatures and dates:
 26/09/18
 26/09/18

| Item | Cost Indian Rupees |
|--------------------------------------------------------------------------------------------------------------------|--------------------|
| Cost of the Financial Proposal | |
| Including: | |
| (1) Remuneration | 7,65,000 |
| (2) Reimbursable | 17,05,000 |
| Sub total | 24,70,000 ✓ |
| <i>with GST</i> Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1} | 27,17,000 |
| Indirect Local Tax Estimates - to be discussed and finalized at the negotiations if the Contract is awarded | |
| (i) GST (10%) | 2,47,000 |
| (ii) Any other applicable Taxes etc. | |
| Total Estimate for Indirect Local Tax | |

Handwritten notes:
 Barik
 26/9

Handwritten signature:
 Nagesh Kumar Barik

Dr. Nagesh Kumar Barik, Ph.D.
 Principal Investigator
 Agri Business Incubation Centre
 ICAR-CIFA, Bhubaneswar-2, Odisha

Handwritten signature:
 Nagesh

Dr. Nagesh Kumar Barik, Ph.D.
 Principal Investigator
 Agri Business Incubation Centre
 ICAR-CIFA, Bhubaneswar-2, Odisha

Handwritten signature:
 State Project Director
 ARIAS Society

FORM FIN-3 : Breakdown of Remuneration

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

Dr. Barik
26/09/18
26/9/18

| Sl. | Name | Position (as in TECH-4) | Expert's input (in person/month) | | |
|------------------------|-----------------------|---------------------------------------------------|--------------------------------------|------------------------------------------|--------------------|
| | | | Person-month Remuneration Rate (Rs.) | Time Input in Person/Month (from TECH-4) | Total Amount (Rs.) |
| KEY EXPERTS | | | | | |
| K-1 | Dr. N. K. Barik | Team Leader cum Cooperative Management Specialist | 1,20,000 | 30 | 1,60,000 |
| K-1 | Dr. N. K. Barik | Business & Entrepreneurship Development Expert | 1,20,000 | 18 | 1,00,000 |
| K-2 | Dr. J. K. Sundaray | Fishery Expert | 1,80,000 | 22 | 1,80,000 |
| K-3 | Dr. Ajmal Hussain | Fishery Expert | 80,000 | 22 | 80,000 |
| K-4 | Dr. P. P. Chakrabarti | Value Chain Expert | 1,80,000 | 30 | 2,45,000 |
| .. | .. | .. | | | |
| | Subtotal | | | | 7,65,000 |
| NON-KEY EXPERTS | | | | | |
| N-1 | .. | .. | | | |
| N-2 | .. | .. | | | |
| .. | .. | .. | | | |
| | Subtotal | | | | |
| | Total Costs | | | | |

21/9/18

Nagesh Kumar

*Dr. Nagesh Kumar Barik, Ph.D.
 Principal Investigator
 Agri Business Incubation Centre
 ICAR-CIFA, Bhubaneswar-2, Odisha*

Nagesh

*Dr. Nagesh Kumar Barik, Ph.D.
 Principal Investigator
 Agri Business Incubation Centre
 Bhubaneswar-2, Odisha*

*State Project Director
 ARIAS Society* 8 / Page

Dr. Barik

Form FIN-4 Breakdown of Reimbursable Expenses

26/9/18
26/9/18
26/9/18

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for calculation of the Contract ceiling amount, to calculate applicable taxes at contract negotiations and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This form shall not be used as a basis for payments under Lump-Sum contracts

| Sl No | Type of Reimbursable Expenses | Unit | Unit Cost(Rs.) | Quantity | Indian Rupee |
|-------|------------------------------------------|----------|----------------|----------|--------------|
| 1 | Travel ✓ | Nos | 20,000 | 30 | 6,00,000 |
| 2 | { Per diem allowances**} | Nos | 4000 | 60 | 2,40,000 |
| 3 | {e.g., transportation Hiring of vehicle} | Nos | 8000 | 30 | 2,40,000 |
| 4 | {e.g., Hotel costs } | Nos | 4000 | 50 | 2,00,000 |
| 5 | Organization of meetings/workshops | Nos | 15,000 | 15 | 2,25,000 |
| 6 | Report preparation and other expenses | Lump sum | | | 1,00,000 |
| 7 | Institutional charges 5% | | | | 1,00,000 |
| | Total | | | | 17,05,000 |

22/9/14

Legend:

"Per diem allowance" is paid for each night the expert is required by the Contract to be away from his/her usual place of residence. Client can set up a ceiling

Nagesh Kumar Barik

Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

Nagesh

Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

State Project Director

State Project Director
ARIAS Society
9 | Page



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 आईएसओ 9001:2015 प्रमाणित संस्थान।
 भारतीय कृषि अनुसंधान परिषद
 कोशलपाण, भुवनेश्वर-751002 (उड़ीसा) भारत।
ICAR - CENTRAL INSTITUTE OF FRESHWATER AQUACULTURE
 (An ISO 9001:2015 Certified Institution)
 Indian Council of Agricultural Research
 Kausalyaganj, Bhubaneswar-751002 (Odisha) India



भा.क.अनु.प.
 ICAR

16/8/18

16.08.2018

16.8.18

95

16/08/2018

TECHNICAL PROPOSALS (RFP)
RFP No. : ARIAS/APART/FISHFED/90/2016/90
Consulting Services for:

“Revival of FISHFED, status of Co-operatives & Marketing”

Submitted to

ARIAS SOCIETY

Assam Rural Infrastructure and Agricultural Services Society
 (An Autonomous Body of the Govt. of Assam)
 Project Coordination Unit (PCU) of the World Bank financed
Assam Agribusiness and Rural Transformation Project (APART)
 Agriculture complex, Khanapara, G.S. Road, Guwahati-781022 (Assam, India)
 Tel: +91 361-2332125; Fax: +91 361-2332564; email: spd@arias.in

Bhubaneswar

Nagesh Kumar Barik

Nagesh Kumar

14.08.2018

Dr. Nagesh Kumar Barik, Ph.D.
 Principal Investigator
 Agri Business Incubation Centre
 ICAR-CIFA, Bhubaneswar-2, Odisha

(Signature)

State Project Director
 01/8 page

(Signature)

Dr. Nagesh Kumar Barik, Ph.D.
 Principal Investigator
 Agri Business Incubation Centre
 ICAR-CIFA, Bhubaneswar-2, Odisha



ARIAS SOCIETY

Assam Rural Infrastructure and Agricultural Services Society

(An Autonomous Body of the Govt. of Assam)

Project Coordination Unit (PCU) of the World Bank financed

Assam Agribusiness and Rural Transformation Project (APART)

Agriculture complex, Khanapara, G.S. Road, Guwahati-781022 (Assam, India)

Tel: +91 361-2332125; Fax: +91 361-2332564; email: spd@arias.in

Project: Assam Agribusiness and Rural Transformation Project (APART)

SELECTION OF CONSULTANTS

[Through Consultants' Qualification Based Selection (CQS) method]

REQUEST FOR TECHNICAL & FINANCIAL PROPOSALS (RFP)

RFP No. : ARIAS/APART/FISHFED/90/2016/90

Selection of Consulting Services for:

“Revival of FISHFED, status of Co-operatives & Marketing”

Client: ARIAS Society, Project Coordination Unit, Agriculture Complex, Khanapara, G.S. Road, And Guwahati-781022; (Assam, India); Tel: 0361-2332125; Tele-Fax: 0361-2332564; email: spd@arias.in

Country: India

Issued on: 16th July, 2018

Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

State Project Director
ARIAS Society

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Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha


State Project Director
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Section-1 : Request for Proposal Letter Consulting Services

Name of Assignment: "Revival of FISHFED, status of Co-operatives & Marketing".

REOI Reference No. : ARIASS/APART/FISHFED/90/2016/56, Dated, Guwahati, the 8th March, 2018

RFP Reference No.: ARIASS/APART/FISHFED/90/2016/90, Dated Guwahati the 16th July'2018

Loan No. IBRD loan No. 8780-IN, Project ID.: P155617;

Country: India

To,

ICAR-Central Institute of Freshwater Aquaculture (CIFA)
Kausalyaganga, Bhubaneswar-751002, Odisha,
Attention: Dr. J. K. Sundaray, Director (Acting)
Email: director.cifa@icar.gov.in ; cifa@ori.nic.in
Ph. 91-674-2465421; 2465446; Fax: 91-674-2465407

Dear Sirs,

1. The Government of Assam (GoA) through the Government of India (hereinafter called "Borrower") has received financing from the International Bank for Reconstruction and Development (IBRD) in the form of a "loan" (hereinafter called "loan") towards the cost of Assam Agribusiness and Rural Transformation Project (APART). The Assam Rural Infrastructure and Agricultural Services (ARIAS) Society (an autonomous body of the GoA, being the nodal monitoring & coordinating agency of APART, as the Client intends to apply a portion of the proceeds of this loan to eligible payments under the contract for which this Request for Proposals is issued. Payments by the Bank will be made only at the request of the ARIAS Society and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the financing agreement. The financing agreement prohibits a withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than the Client shall derive any rights from the financing agreement or have any claims to the proceeds of the loan.
2. The Client now invites **Technical and Financial proposal** to provide the following consulting services (hereinafter called "Services"): **Revival of FISHFED, Status of Co-operatives & Marketing**. More details on the Services are provided in the Terms of Reference attached herewith.
3. It is not permissible to transfer this invitation to any other firm.
4. A firm will be selected under **Consultant's qualifications based selection (CQS)** procedures and in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: www.worldbank.org/procure. This document includes the following documents:
Section 1 - Request for Proposals Letter
Section 2 - Technical Proposal - Standard Forms
Section 3 - Financial Proposal - Standard Forms
Section 4 - Bank's Policy - Corrupt and Fraudulent Practices
Section 5 - Terms of Reference
Section 6 - Standard Forms of Contract (Lump-Sum)
5. Please inform us by **23rd July 2018** in writing at - **The State Project Director, ARIAS Society, Project Coordination Unit, Agriculture Complex, Khanapara, G.S. Road, Guwahati-781022 (Assam, India); Tel: 0361-2332125; email: spd@arias.in**
 - (a) that you have received the Letter of Invitation; and
 - (b) whether you intend to submit a proposal.
6. The technical & financial proposal shall be submitted so as to reach the undersigned by **2.00 PM of 16th August'2018**, at the address provided below. The Proposal will be opened at **2.10 PM of 16th August'2018**, at the same address.

Address: State Project Director, ARIAS Society,
Project Coordination Unit, Agriculture Complex,
Khanapara, G.S. Road, Guwahati-781022; (Assam,
India); Tel: 0361-2332125;
email: spd@arias.in

Yours sincerely,

(Vinod Seshan, IAS)
State Project Director, ARIAS Society,

State Project Director
ARIAS Society



भा.कृ.अनु.प. - केन्द्रीय मीठाजल जीवपालन अनुसंधान संस्थान

(आईएसओ 9001: 2015 प्रमाणित संस्थान)

भारतीय कृषि अनुसंधान परिषद

कौशल्यागंग, भुवनेश्वर - 751002, (उड़ीसा), भारत

ICAR - CENTRAL INSTITUTE OF FRESHWATER AQUACULTURE

(An ISO 9001 2015 Certified Institution)

Indian Council of Agricultural Research

Kausalyaganga, Bhubaneswar - 751002. (Odisha), India



Bhubaneswar
Dt: 14.08.2018

To:

The State Project Director
ARIAS Society, Project Coordination Unit,
Agriculture Complex, Khanapara, G.S. Road,
Guwahati-781022 (Assam, India);

Dear Sir:

We, the undersigned, offer to provide the consulting services for "Revival of FISHFED, status of Co-operatives & Marketing" in accordance with your Request for Technical & Financial Proposals document dated 16th July 2018 and our Proposal.

We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelop.

We hereby declare that:

- (a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.
- (b) Our Proposal shall be valid and remain binding upon us for the period of **120 days** from the date fixed for opening of Technical & Financial proposal.
- (d) We confirm our understanding of our obligation to abide by the Bank's policy in regard to Fraud and Corruption.
- (e) We, along with any of our sub-consultants, subcontractors, suppliers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Client's country laws or official regulations or pursuant to a decision of the United Nations Security Council;
- (f) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.

PTO

Phone 0674-2465421, 2465446, 2465502(O). Fax:0674-2465407
E-mail: director.cifa@icar.gov.in /cifa@ori.nic.in, Website: http://www.cifa.in

'Healthy Soils for a Healty Life'

N. K. Barik
Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

[Signature]
State Project Director
ARIAS Society



भा.कृ.अनु.प. - केन्द्रीय मीठाजल जीवपालन अनुसंधान संस्थान
(आईएसओ 9001:2015 प्रमाणित संस्थान)
भारतीय कृषि अनुसंधान परिषद
कौशल्यागंग, भुवनेश्वर - 751002, (उड़ीसा), भारत
ICAR - CENTRAL INSTITUTE OF FRESHWATER AQUACULTURE
(An ISO 9001:2015 Certified Institution)
Indian Council of Agricultural Research
Kausalyaganga, Bhubaneswar - 751002, (Odisha), India



- (g) We undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts (except in *force majeure* conditions) may lead to the termination of Contract negotiations.
- (h) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than **December 16th, 2018**.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Nagesh Kumar Barik Nagesh Barik 19.06.2018

Signature (of Consultant's authorized representative) {In full and initials}:

| | |
|------------|-------------------------------------------------------|
| Full name: | Dr. Nagesh Kumar Barik |
| Title: | Scientist, PI- Agri-Business Incubation Centre |
| Address: | Kausalyaganga, Bhubaneswar, 751002 |
| Phone/fax: | {0674-2465402, 2465107 (Fax)} |
| Email: | {nageshbarik@hotmail.com, nageshbarik.icar@gmail.com} |

Phone: 0674-2465421, 2465446, 2465502(O), Fax:0674-2465407
E-mail: director.cifa@icar.gov.in /cifa@ori.nic.in, Website: http://www.cifa.in

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State Project Director
ARIAS Society



भा.कृ.अनु.प. - केन्द्रीय मीठाजल जीवपालन अनुसंधान संस्थान

(आईएसओ 9001:2015 प्रमाणित संस्थान)

भारतीय कृषि अनुसंधान परिषद

कौशल्यगंग, भुवनेश्वर - 751002, (उड़ीसा), भारत

ICAR - CENTRAL INSTITUTE OF FRESHWATER AQUACULTURE

(An ISO 9001:2015 Certified Institution)

Indian Council of Agricultural Research

Kausalyaganga, Bhubaneswar - 751002, (Odisha), India



Dr Bindu R. Pillai
Director (Acting)

No. CIFA/PMECELL/14/2018-19

Date: 14.08.2018

To

State Project Director
ARIAS Society, Project Coordination Unit
Agriculture Complex, Khanapara, G.S. Road
Guwahati - 701022
Assam

Sub: **Submission of Technical and Financial Proposal for Consultancy Service for "Revival of FISHFED status of co-operative and marketing"**

Sir,

It is our pleasure to act as consultant to the World Bank funded consultancy service as above. ICAR-CIFA shall provide all necessary technical support in making the project successful. On the behalf of ICAR-CIFA following scientists will act as consultant and Dr N. K. Barik will act as consultants authorized representative for above said purpose.

1. Dr N. K. Barik, Team leader
2. Dr J. K. Sundaray, Team member
3. Dr P. P. Chakrabarti, Team member
4. Dr Ajmal Hussan, Team member

This is for favour of information and necessary action.

Regards,

Sincerely,

DIRECTOR

Phone: 0674-2465421, 2465446, 2465502(O), Fax:0674-2465407
E-mail: director.cifa@icar.gov.in /cifa@ori.nic.in, Website: http://www.cifa.in

'Healthy Soils for a Healty Life'

Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

State Project Director
ARIAS Society

FORM TECH-2: Description of Approach, Methodology, and Work Plan for Performing the Assignment

Include a description of the approach, methodology, and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal}

a) **Technical Approach, Methodology, and Organization of the Consultant's team.**

The state of Assam is among the top states having significant potential for development of freshwater aquaculture. As being the high rate of fish consuming state and lack of marine resources, the freshwater is only source of fishes to the state. Since historical time, the capture fisheries and culture based fisheries were the predominant forms of fish production. However, with the climatological changes, competitive demand for water, demand to produce more food per drop of water, freshwater aquaculture is the only option available. While capture fisheries and culture based fisheries produces fish at the rated of 200-1000 kg/ha, aquaculture has the potential to produce before 6000-7000 kg/ha.

Aquaculture sector is a very dynamic and within a span of 40-50 years, the sector has brought significant innovation in the knowledge, technology, diversified species, intensification protocols, making structure etc. The sector which was started as small experimental endeavors is now handing more than 4-5 times of the fish that is being produced from capture fisheries.

Most of the basic principles, policies, legal framework, and institutional structure are developed immediately after post-independence period where emphasis was placed on the revenue generation, cooperative movements, food for work programme, increasing production etc. These economic and social structures, however are not able to fully meet the demand of the present day challenges. The issues like climate change, entrepreneurship development, value chain creations, private investments, economic sustainability, technology up gradation, safety of fish as food etc. as emerged as predominant factor in determining the structure of present aquaculture system. In many cases, the older structure need to adapt to such change but there a gap in the approaches, methods and stricture in the freshwater aquaculture sector in Assam.


The project focuses on key areas of work as below

- Strengthening institutional framework
- Creation of new value chain
- Improving investment absorption capacity
- Sustainable market led development
- Creation of centralized facilitative organization
- Creation of entrepreneurial ecosystem
- Creation of development clusters.

These areas of work are reflections of the sound development principles in which human creativity, entrepreneurs, enabling environment are the central principle of developments. However, realizing these goals is extremely difficult and has to go through a sustained and complex process of facilitations and capacity building. As business as usual is hardly an option looking at the lack of performance and achievements at the individual and organization level. The existing operating methods and procedures failed to absorb innovations and reform the stricture to face the dynamic challenges of economy and environments. Hence, the approach need to reform oriented with central focus on entrepreneurship development.

Technical approach is to address weaknesses in at various level of operations especially in the area of capacity buildings, networking, resource mobilizations, and innovations. Such capacity building needs to be worked at following level

- Individual
- Organization
- Cluster


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- Ecosystem
- Policy

The three different sets of approach required to strengthen capacity in above domains. At the individual level approach needs to be focused more on the knowledge, skill and motivations. While at the organizational level creating the incentive structure, developing critical resources, creating intellectual property, enhancing absorbing capacity for innovations, access to critical resources etc are important. At the ecosystem, cluster and policy level the approach need to be placed in the enabling the their role as facilitators, promoters and supporters for new initiative taken by the entrepreneurs and organizations. At this level, the focus has to be placed on clarity in the objectives, availability of reliable ground level information, networking with key players is important.

To meet these broad objectives as above the following methods are ideally suited under the present circumstances

- Participatory decision making
- Realistic assessment of the weakness in the present time
- Identifying and removing structural bottlenecks
- Greater decentralization and autonomy in decision making
- Driving towards innovation and new enterprise creations
- Creation of market value and development of supporting value chain
- Development of market and market integration across state
- Capacity building of stakeholders
- Development of networks in input supply and output disposal
- Creation of sound information system at the level of policy making

To identify and develop the proposal for achieving the objective as above, the present study primarily focused on following approaches and methods

- Collection of secondary data to analysis the historical trend in the strength of cooperatives in general and FISHFED in particular.
- Collection of secondary data on legal and institutional framework in which the present system operated
- Collection of primarily data from the stakeholders in the present value chain of fish farming and fish marketing
- Organization of workshop, focus group discussion and interview to get an insight into the strength and weaknesses of the present establishment
- Interaction with the policy makers to develop a perspective on vision, mission for future
- Collecting data and analyzing success factors in others parts of India
- Analysis on the strength and weakness in the present value chain
- Searching for opportunities to strengthen cooperatives and FISHFED
- Development of business plan for potential opportunities like seed, feed, fish processing, value chain management etc
- Development of the strategy for sustainable management FISHFED as central organization for future management of freshwater aquaculture in Assam

- b) **Work Plan and Staffing.** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing understanding of the TOR and ability to translate them into a feasible working plan and work schedule showing the assigned tasks for each expert. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

The overall scope of assignment would include (i) a detailed study and analysis of the present status and functioning of FISHFED, Assam (ii) study of fishery co-operative societies in the State of Assam in general, with a major thrust on those affiliated under FISHFED (iii) study of value chains which involve FISHFED for both fresh and processed fish with a particular focus on marketing (iv) based on the above, prepare a

comprehensive and implementable revival plan for FISHFED to transform it into a self-supporting business organization in the long run.

- (i) Study of the status and functioning of FISHFED, Assam
- (ii) Study of fishery co-operative societies in the State of Assam with focus on FISHFED
- (iii) Study of value chains related to FISHFED
- (iv) prepare a comprehensive and implementable revival plan for FISHFED

Outline for the study

| Sl No | Activities | Area of work | Task | Output | Methodology | Steps (No of days) | Man-days |
|-------|-------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 1 | Study of the status and functioning of FISHFED, Assam | Review of FISHFED organizational structure | 1. The policies, mandate, vision and mission 2. accomplishments 3. Organizational structure 4. Staff strength 5. Staff competence 6. HRD requirements | 1. Strength of the organization 2. Competence and organizational capabilities 3. Weakness need to be addressed in short and long term | <ul style="list-style-type: none"> • Secondary data from FISHHED (HQ) • Secondary data from selected district level offices (5 nos) • Workshop at HQ involving key officials and stakeholders • Workshop at 5 regional level to assess ground realities | <ul style="list-style-type: none"> • Collection of records of FISHFED since inception (2 days) • Collection of information from selected district level organizations (6 days) • Workshops 4 nos (6 days)- | <ul style="list-style-type: none"> • Field days including travel (4+12+12) |
| | | Review of finance and financial management of FISH FED | 7. Assets 8. Gaps in assets 9. Financial strength 10. Turn over 11. Financial management 12. Access to financial resources 13. Source of revenue | 4. Trends in acquisition and ownership of physical and financial resources 5. Scope of monetization of assets 6. Explore potential revenue sources | <ul style="list-style-type: none"> • Data collection of record of FISHFED • Financial viability analysis | <ul style="list-style-type: none"> • Collection of audited accounts of HQ and 5 district level cooperatives (10 days) • Financial viability report (5 days) | <ul style="list-style-type: none"> • Field days including travel (10) • Office day (5) |
| | | Review of FISHFED performance | 14. Performance 15. Gap in level of performance 16. Service delivery to client | 7. Measurement of performance 8. Reasons of low performance 9. Ways and means to improve performance 10. Making service oriented organization | <ul style="list-style-type: none"> • Performance efficiency analysis • Cost benefit analysis • Capacity and competence gap in service delivery | <ul style="list-style-type: none"> • Collection of data in questionnaires (2 days) • Collection of data in questionnaires from clients (2 days) • Gap analysis (3 days) | <ul style="list-style-type: none"> • Field days including travel (15 days) |
| | | Best practices | 17. Success stories in other states 18. Best practices in successful organization | 11. Identification of condition and factors for success 12. Developing best management practices | <ul style="list-style-type: none"> • Documentations of best practices in WB, TN, KR, GJ, OD • Formulate best practices | <ul style="list-style-type: none"> • Visit to 5 states and collecting of data (20 days) • Report on best practices (5) | <ul style="list-style-type: none"> • Field days including travel (15 days) • Office |

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State Project Director
State Project Director
 ARIAS Society

| | | | | | | | |
|---|-------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| | | | | | | days) | day (5 days) |
| 2 | Study of fishery co-operative societies in the State of Assam with focus on FISHFED | Functions and performance of fisheries cooperatives in Assam | 19. Forward and backward linkage strategy 20. Income of cooperative societies 21. Strength and weakness in legal institutional structure | 13. Organizational and institutional weakness 14. Strategies to improve income 15. Identification of technical and institutional innovations in cooperatives Identifications of way and means to improve the legal and institutional structure | <ul style="list-style-type: none"> Data collection on law, rules, procedures, practices Gap analysis | <ul style="list-style-type: none"> Collection of secondary data (2 days) Focus group discussion with key officials (2 days) Focus group discussion with key stakeholders of cooperatives including marketing agents, farmers, fisherman (5 days) | <ul style="list-style-type: none"> Field days including travel (15 days) Office day (5 days) |
| | | Strength of cooperative network | 22. Improving networks | 16. Structure of improved networks in fisheries sector | <ul style="list-style-type: none"> Analysis of weakness in network | <ul style="list-style-type: none"> Analysis and reporting (3 days) | <ul style="list-style-type: none"> Office day (5 days) |
| 3 | Study of value chains related to FISHFED | Analysis of fish value chain in Assam | 23. Role in present and potential value chain 24. Unique business opportunities 25. Market opportunities in fish feed 26. Capacity to manage value chain Creating cooperative network | 17. Structure of value chain in fisheries 18. Weak link in chain 19. Structure of alternative value chain 20. Gaps in the inputs and output delivery 21. Scope of establishment of new enterprises 22. Ways and means to establish improved value chain | <ul style="list-style-type: none"> Documentations of existing value chain Gap analysis Analysis of Business plan of existing enterprises Formulation of strategy for improved value chain | <ul style="list-style-type: none"> Field visits to markets (urban, semi-urban, rural) (10 days) Gap analysis (3 days) Formulation of strategy (2 days) | <ul style="list-style-type: none"> Field day including travel (10 days) Office day (5 days) |
| | | Market structure and performance in Assam | 27. Market opportunities | 23. Opportunities to intervene in the market 24. Create space for stakeholders in the cooperative system to operate | <ul style="list-style-type: none"> Analysis of market chain Analysis of market players Capacity of cooperatives to operate in the market Competitiveness of cooperatives | <ul style="list-style-type: none"> Data collection with questionnaires -50 nos (15 days) Focus group discussion 5 nos (5 days) Data entry and analysis (7 days) | <ul style="list-style-type: none"> Field days including travel (20 days) Office day (10 days) |
| 4 | prepare a comprehensive and implementable | Vision | 28. Develop vision for future 29. Future management | 25. Vision for reformed structure and performance of | <ul style="list-style-type: none"> Formulation of vision for the future | <ul style="list-style-type: none"> Preparation of draft vision (5 days) | <ul style="list-style-type: none"> Field day (5 days) Office |

| | | | | | | |
|--------------------------|----------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| revival plan for FISHFED | | structure | FISHFED | | • Discussion with the senior officials and key stakeholders (3 days) | day (5 days) |
| | Strategy and Roadmap | 30. Business model 31. Branding and visibility 32. Sector management organization | 26. Business model of new enterprises 27. Business model of FISHFED 28. Organizational structure to perform new role as sector management organization | <ul style="list-style-type: none"> Formulate Business Plan For New Enterprises To Be Created Preparation Of Business Model For FISHFED Formulation of structure of futuristic organization of FISHFED | <ul style="list-style-type: none"> Preparation of business plan (15 days) Preparation of business model for fish fed (7 days) Formation of structure of future organization (5 days) Workshops and meeting with key stakeholders and officials (5 days) | <ul style="list-style-type: none"> Field day (10 days) Office day (20 days) |

Summary of activities and work days

| Sl No | Summary of activities | Quantities | Field days including travel | Office days |
|-------|--------------------------------------------|----------------------|-----------------------------|-------------|
| 1 | Secondary data collection | 50 documents/reports | 40 | |
| 2 | Primary data collection | | 60 | |
| 3 | Workshops, meeting, focus group discussion | 28 nos | 18 | |
| 4 | Business plan development | 10 enterprises | | 20 |
| 5 | Data analysis and reporting | 2 draft report | | 20 |
| 6 | Final report after incorporating feed back | 1 final report | | 20 |
| 7 | Travel to Assam | 20 nos | | |
| 8 | Travel to 5 states | 10 nos | | |

Key milestones and deliverables

| Sl | Milestone | No of days | Deliverables | No of days |
|----|-------------------------------------------------------------------------------------------------------------------|------------|------------------|------------|
| 1 | Analysis report on the trends, legal institutional framework, financial health of FISHFED based on secondary data | 15 | Inception report | 35 |
| 2 | Stakeholders perspectives and strength and | 20 | | |

Nagesh

Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

State Project Director
ARIAS Society 12 | Page

| | | | | |
|----|--------------------------------------------------------------------------------------------------------------------------------------|----|--------------------------|----|
| | weakness in the service delivery of FISHED | | | |
| 3 | Analysis report of present value chain and potential opportunities in creation of new value chain/strengthening existing value chain | 15 | Mid term progress report | 40 |
| 4 | Report of success factors in fisheries cooperatives in other states | 30 | | |
| 5 | Report on human, financial, technical, intellectual capacity of FISHFED and Cooperatives | 10 | | |
| 6 | Interim approval of Mid term progress report | 5 | | |
| 7 | Opportunities in value chain, new enterprises and their business plan | 30 | Draft final report | 75 |
| 8 | Development of strategy for creation of sustainable organization | 15 | | |
| 9 | Critical factors in strengthening entrepreneurial ecosystem | 15 | | |
| 10 | Creation of vision and mission | 10 | | |
| 11 | Interim approval of Draft final report | 5 | | |
| 12 | Feed back from policy makers and stakeholders | 10 | Final report | 30 |
| 13 | Final workshop | 5 | | |
| 14 | Interim approval of final report | 5 | | |
| 15 | Editing and finalization of report | 10 | | |

c) **Comments (on the TOR and on counterpart staff and facilities)**

{Your suggestions should be concise and to the point, and incorporated in your Proposal. Please also include comments, if any, on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc.}

Project support is required in communicating to the officials for providing relevant data. Hence, One staff from the project may be identified to coordinate the work of consultants and the project.

Nagesh
Dr. Nagesh Kumar Barik, Ph.D.
 Principal Investigator
 Agri Business Incubation Centre
 ICAR-CIFA, Bhubaneswar-2, Odisha

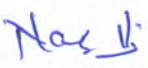
Shub
State Project Director
ARIAS Society

FORM TECH-3 : Work Schedule and planning for deliverables

Work Schedule and planning

| No | Deliverables | Months (in numbers) | | | | | | Total |
|-----|----------------------------------------------------------------|---------------------|---|---|---|---|---|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | |
| D-1 | Inception Report | █ | █ | | | | | 1.5 |
| | 1) Data Collection | █ | █ | | | | | |
| | 2) Drafting | | █ | █ | | | | |
| | 3) Draft Inception Report submission | | | █ | | | | |
| | 4) Incorporating comments of client | | | | █ | | | |
| | 5) Analysis and presentation | | | | | █ | | |
| | 6) Interim approval from client | | | | | | █ | |
| | 6) Delivery of final Inception report to Client | | | | | | █ | |
| D-2 | Mid term progress report | | █ | █ | | | | 1.5 |
| | 1) Data collection from field | | █ | █ | | | | |
| | 2) Data collection from other states | | | █ | █ | | | |
| | 3) Gap analysis | | | | █ | █ | | |
| | 4) Interim approval of Mid term progress report | | | | | █ | █ | |
| | 5) Delivery of midterm progress report to Client | | | | | | █ | |
| D-3 | Draft final report | | | | █ | █ | | 2 |
| | 1) Data collection on Opportunities in value chain | | | | █ | █ | | |
| | 2) Development of strategy | | | | █ | █ | | |
| | 3) Critical factors in strengthening entrepreneurial ecosystem | | | | █ | █ | | |
| | 4) Creation of vision and mission | | | | █ | █ | | |
| | 5) Interim approval of Draft final report | | | | █ | █ | | |
| | 6) Delivery of draft final report | | | | | | █ | |
| D-4 | Final report | | | | | | █ | 1 |
| | 1) Feed back from policy makers and stakeholders | | | | | | █ | |
| | 2) Final workshop | | | | | | █ | |
| | 3) Interim approval of final report | | | | | | █ | |
| | 4) Editing and finalisation of report | | | | | | █ | |
| | 5) Delivery of final report | | | | | | █ | |

| | Bar chart | Time line (month-week) | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-------------------------------------------------|------------------------|---|---|---|---|---|----|---|---|---|----|---|---|---|----|---|---|---|----|---|---|---|----|---|--|--|
| | | M1 | | | | | | M2 | | | | M3 | | | | M4 | | | | M5 | | | | M6 | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | | |
| D-1 | Inception Report | █ | █ | █ | █ | | | | | | | | | | | | | | | | | | | | | | |
| | 1) Data Collection | █ | █ | █ | █ | | | | | | | | | | | | | | | | | | | | | | |
| | 2) Drafting | | █ | █ | █ | | | | | | | | | | | | | | | | | | | | | | |
| | 3) Draft Inception Report submission | | | █ | █ | | | | | | | | | | | | | | | | | | | | | | |
| | 4) Incorporating comments of client | | | | █ | █ | | | | | | | | | | | | | | | | | | | | | |
| | 5) Analysis and presentation | | | | | █ | █ | | | | | | | | | | | | | | | | | | | | |
| | 6) Interim approval from client | | | | | | █ | █ | | | | | | | | | | | | | | | | | | | |
| | 6) Delivery of final Inception report to Client | | | | | | | █ | █ | | | | | | | | | | | | | | | | | | |
| D-2 | Mid term progress report | █ | █ | █ | █ | | | | | | | | | | | | | | | | | | | | | | |
| | 1) Data collection from field | █ | █ | █ | █ | | | | | | | | | | | | | | | | | | | | | | |
| | 2) Data collection from other states | | | █ | █ | | | | | | | | | | | | | | | | | | | | | | |
| | 3) Gap analysis | | | | █ | █ | | | | | | | | | | | | | | | | | | | | | |
| | 4) Interim approval of Mid term progress report | | | | | █ | █ | | | | | | | | | | | | | | | | | | | | |


Dr. Nagesh Kumar Barik, Ph.D.
 Principal Investigator
 Agri Business Incubation Centre
 ICAR-CIFA, Bhubaneswar-2, Odisha


State Project Director
 ARIAS Society
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FORM TECH-4 : Team Composition, Assignment, and Key Experts' inputs

| Sl. | Name | Position | In house staff or external consultant | Expert's input (in person/month) | | | | | | | |
|------------------------|-----------------------|---------------------------------------------------|---------------------------------------|----------------------------------|---|---|---|---|---|-------|-----|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | Total | |
| KEY EXPERTS | | | | | | | | | | | |
| K-1 | Dr. N. K. Barik | Team Leader cum Cooperative Management Specialist | In-house | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 30 |
| K-1 | Dr. N. K. Barik | Business & Entrepreneurship Development Expert | In-house | | | | 6 | 6 | 6 | | 18 |
| K-2 | Dr. J. K. Sundaray | Fishery Expert | In-house | 4 | 4 | 4 | 3 | 3 | 4 | | 22 |
| K-3 | Dr. Ajmal Hussain | Fishery Expert | In-house | 4 | 4 | 3 | 3 | 4 | 4 | | 22 |
| K-4 | Dr. P. P. Chakrabarti | Value Chain Expert | In-house | 5 | 5 | 5 | 5 | 5 | 5 | | 30 |
| .. | .. | .. | | | | | | | | | |
| | Subtotal | | | | | | | | | | 122 |
| NON-KEY EXPERTS | | | | | | | | | | | |
| N-1 | .. | .. | | | | | | | | | |
| N-2 | .. | .. | | | | | | | | | |
| ... | .. | .. | | | | | | | | | |
| | Subtotal | .. | | | | | | | | | |
| | Total | | | | | | | | | | |

- 1 For Key Experts, the input should be indicated individually for the same positions.
- 2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.

FORM TECH-4 (CONTINUED in next page for format of CV)

Nagesh Kumar Barik
 Dr. Nagesh Kumar Barik, Ph.D.
 Principal Investigator
 Agri Business Incubation Centre
 ICAR-CIFA, Bhubaneswar-2, Odisha

[Signature]
 State Project Director
 ARIAS Society

**Form TECH-4: Curriculum Vitae (CV)
(CONTINUED)**

| | |
|-----------------------------------------|----------------------------------------------|
| Position Title and No. | { K-1 & K 2, TEAM LEADER & Business expert } |
| Name of Expert: | {Dr. N. K. Barik} |
| Date of Birth: | {03/08/1973} |
| Country of Citizenship/Residence | |

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

| PhD (Economics) | 2015 | Utkal University | Institutional economics |
|-----------------------------|------|-------------------------------------------|--------------------------|
| M.Sc. (Ag) Agril. Economics | 1998 | College of Agriculture, OUAT, Bhubaneswar | Agricultural economics |
| B.Sc. (Ag) | 1994 | College of Agriculture, OUAT, Chiplima | All agriculture subjects |

Trainings in the relevant field: Given in annexure of detailed CV.

| Sl No | Year | Title |
|-------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | 2000 | Attended training on the Participatory Rural appraisal in National Academy of agricultural Research and Management for 15 days in July. The programme included both theory and practical training and completed successfully. July 7 to July 21, 2000. |
| 2 | 2001 | Joined training program for the foundation course for the Agriculture research service in National Academy of agricultural Research and Management for four months from 1st December 2000 to 30th March 2001. During training successfully completed all phases and evaluations including one month field experience training. |
| 3 | 2002 | Attended the training programme on Role of Social Science in the Agro-biological research organized by Centre for Advances studies, Division of Agriculture Economics, Indian Agriculture Research Institute for 21 days from 13th march to 2nd April, 2002, |
| 4 | 2003 | Workshop-cum-training programme of participatory assessment of inland fisheries resource of Northeastern India. Guwahati 1-12 Dec, 2003 |
| 5 | 2003 | Workshop cum training programme on participatory appraisal of agro-ecosystem. Organized by Zonal coordination unit of KVK, Kolkata and CIFRI Barrackpore, During 13-19 Sept, 2003 |
| 6 | 2003 | Workshop on research priorities of the fisheries research in India. Organized by NAARM, Hyderabad during 10-11. Nov 03 |
| 7 | 2003 | workshop on Research Priorities for Fisheries Management of Indo-Gangetic Basin. At Dhakka, Bangladesh, organized by World Fish Centre, Cairo during December 21-22, 2003. |
| 8 | 2004 | Inception workshop-cum-training on Achieving Greater Food Security and Eliminating Poverty by Dissemination of Improved Carp Strains to Fish Farmers. At World Fish Centre, Penang, Malaysia during April 5-7, 2004. |
| 9 | 2004 | Review Workshop on "strategy and approach for conservation and comprehensive development of fisheries involving community based programmes with special reference to North eastern region held at NER centre Guwahati on August 24-25 2004 |
| 10 | 2007 | Attended workshop-cum-training on "Nature, dissemination and impact of Jayanti Rohu in India" Under the ICAR – WorldFish Centre collaborative project "Achieving greater food security and eliminating poverty through dissemination of the improved carp strains in India" on 15th April, 2007 at CIFRI, Barrackpore |
| 11 | 2009 | Attended 21 day winter school on "Advanced tools and Techniques for Project Formulation, Implementation and evaluation" organized by Department of Extension Education, College of Agriculture, Orissa University of Agriculture and Technology, Bhubaneswar. |
| 12 | 2011 | Attended training programme on Development of Management competencies for CIFA scientist during 5-7 January, 2011 at Xavier Institute of Management, Bhubaneswar |
| 13 | 2011 | Participated in Short course on Applied Multivariate Data Analysis for Social Science and Business Research during 26-30, September. 2011 organized by Regional Center of Central Tuber crop Research Institute, Bhubaneswar. |
| 14 | 2013 | Training programme on Developing Action Plan for IInd Phase livelihood improvement through small animal farming and improvement of productivity and production of inland fish in Odisha |

N. K. Barik
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 Principal Investigator
 Business Incubation Centre
 Bhubaneswar-2, Odisha

N. K. Barik
State Project Director
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| | | |
|----|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | under Intensive training for all sponsored by Ministry of personnel and training Government of India and organized by the Gapabandhu Academy of Administration, Odisha on 19th February, 2013. |
| 15 | 2013 | Attended Training programme of New Business Planning and Development at Directorate of Agribusiness Development - Tamil Nadu Agricultural University (TNAU), Coimbatore, June 18-21, 2013. |

Employment record relevant to the assignment: *{Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}*

| Period | Employing organization/your title and position, contact information | Country | Summary of activities performed relevant to the Assignment |
|----------------------|----------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------|
| 30.6.1998- 29.6.1999 | Consultant to DFID, New Delhi | India | Consultant to Western Orissa Rural Livelihood Project as study team member on Knowledge system |
| 30.11.99 to 15.10.07 | Scientist, Central Inland Fisheries Research Institute, Barrackpore | India | Research and Development Detailed in annexed CV |
| 16.11.07 till date | Central Institute of Freshwater Aquaculture, Kausalyaganga, Bhubaneswar, Orissa, India | India | Detailed in annexed CV |

Membership in Professional Associations and Publications: Association of Agriculture Economics Review, Inland Fisheries Society of India, Association of Aquaculturists, Society of Krishi Vigyan Kendra.

Language Skills (indicate only languages in which you can work): English, Hindi, Assamese, Bangla, Odia

Adequacy for the Assignment:

| Detailed Tasks Assigned on Consultant's Team of Experts: | Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Design plan for revival of FISHFED, | Given in annexure of detailed CV |
| Strategy for promotion of business by FISHFED | Given in annexure of detailed CV |
| Business plan development and Return to investment in future strategies | Given in annexure of detailed CV |
| Market analysis and strategy to strengthen marketing structure | Given in annexure of detailed CV |
| Developing strategy for institutional reforms | Given in annexure of detailed CV |

Nageshbarik@hotmail.com

Expert's contact information: (e-mail....., phone.....) *9438381516*

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Nagesh Kumar Barik *Nagesh Barik* {day/month/year} *14.07.2018*
Name of Expert Signature Date
Nagesh Kumar Barik *Nagesh Barik* {day/month/year} *14.07.2018*
Name of authorized Representative of the Consultant (the same who signs the Proposal) Signature Date

Nagesh
Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

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Shub
State Project Director
ARIAS Society

Form TECH-4: Curriculum Vitae (CV) (CONTINUED)

| | |
|-----------------------------------------|----------------------------------|
| Position Title and No. | { K-2 Member and Fishery Expert} |
| Name of Expert: | {Dr. J. K. Sundaray} |
| Date of Birth: | {16/04/1970} |
| Country of Citizenship/Residence | |

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

| Level | Year of Passing | Institute/ University | Subject(s) with major field | Class/ Division/ Grade/ Percentage/ OGPA |
|--------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|-----------------------------------------------|------------------------------------------|
| 10+2 | 1987 | CHSE, ODISHA | Physics, Chemistry, Mathematics & Biology | 3rd |
| Graduation | 1990 | OUAT, ODISHA | Zoology Honours | 1 st Distinction |
| Masters | 1992 | RAVENSHAW UNIVERSITY, ODISHA | Zoology (Fishery Science as Special Paper) | 1st |
| Post Graduate Diploma in Fisheries Science | 1994 | ICAR-CIFE, MUMBAI | Fisheries Science | 1st |
| Ph.D. | 2004 | KYUSHU UNIVERSITY, FUKUOKA, JAPAN | Animal and Marine Bioresource Science | Completed Successfully |
| Training Course in Science Journalism | 2014 | NATIONAL COUNCIL FOR SCIENCE & TECHNOLOGY (DST) & INDIAN SCIENCE COMMUNICATION SOCIETY, LUCKNOW | Science Journalism | A+ |
| Post Graduate Diploma in Patent Law | 2015-2016 | NALSAR UNIVERSITY OF LAW, HYDERABAD | Post Graduate Diploma in Patent Law | B+ |

Trainings in the relevant field:

| Duration of training | Title of the training and name of the institution | Period | |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------|
| | | From (DD/MM/YYYY) | To (DD/MM/YYYY) |
| 5-9 days' duration | One week Bioinformatics Training Program on Perspective and current trends in Bioinformatics CCMB, Hyderabad | 12/09/2007 | 18/9/2007 |
| | MDP on Public Private Partnership for Innovation in Agriculture, Indian Institute of Management, Lucknow | 20/07/2009 | 24/07/2009 |
| | Knowledge Discovery in Data Bases: Data, information and Knowledge (DInK10), Indian Statistical Institute, Kolkata | 11/01/2010 | 15/01/2010 |
| | MDP on Finance Management in Scientific Organization, Xaviers Institute of Management, Bhubaneswar | 21/11/2011 | 26/11/2011 |
| | Indian Patenting Procedures, patents Search, drafting and International filling, Rajiv Gandhi National Institute of Intellectual Property Management, Nagpur | 19/09/2016 | 23/09/2016 |
| | MDP on Priority Setting, Monitoring and Evaluation (PME) of Agricultural Research Projects, National Academy of Agricultural | 04/08/2014 | 08/08/2014 |

Nagesh Kumar Barik, Ph.D.
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State Project Director
 ARIAS Society
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| | | | |
|-----------------------------|------------------------------------------------------------------------------------------------------------------|------------|------------|
| | Research Management, Hyderabad | | |
| 10-20 days' duration | Management of Giant Freshwater Prawn Hatchery (ICAR-CIFE, Mumbai) | 02/08/1994 | 17/08/1994 |
| | Coastal Zone Management (University of Agricultural Science, Bangalore) | 10/01/2000 | 19/01/2000 |
| | Mangrove Based Aquaculture/Agriculture/Ecology (ICAR-CIFRI, Kolkata) | 14/09/2004 | 23/09/2004 |
| 21- 89 days' duration | Development of High End Multimedia Resource Materials for Effective Teaching and Learning, ICAR-NAARM, Hyderabad | 28/04/2005 | 18/05/2005 |
| | Recent Advances in Biochemical & Molecular Techniques and their application in Aquaculture, ICAR-CIFE, Mumbai | 28/03/2006 | 17/04/2006 |
| More than 90 days' duration | Certificate Course in Computer Application, MICR, Mumbai | 24/01/1993 | 15/04/1993 |
| | Foundation Course on Agricultural Research Services, ICAR-NAARM, Hyderabad | 03/10/1997 | 30/01/1998 |
| | Intensive Japanese Language Course, International Student Centre, Kyushu University, Fukuoka, Japan | 11/10/2000 | 09/03/2001 |

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

| Period | | Employing organization and your title/position. Contact information for References | Country | Summary of activities performed relevant to the Assignment |
|--------------------------------|-------------------------------|-----------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 26 April 2013 | Continuing | Head of Division –Division of Fish Genetics and Biotechnology ICAR-CIFA, Bhubaneswar | INDIA | Research management and coordination, Technology development and commercialisation, Resource generation, Human Resource Development, Outreach activities, national and international collaboration & Consultancy. |
| 12 January 2017 | Continuing | Director (Acting) ICAR-CIFA, Bhubaneswar | INDIA | Research management and coordination, Technology development and commercialisation, Resource generation, Human Resource Development, Outreach activities, national and international collaboration & Consultancy. |
| 13 th October 2010- | 25th April 2013 | Principal Scientist & Officer-in-Charge ICAR CIBA-Kakdwip | INDIA | Research management and coordination, Technology development and commercialisation, Resource generation, Human Resource Development, Outreach activities, national and international collaboration & Consultancy. |
| August 2007 | 12 th October 2010 | Senior Scientist ICAR CIBA-Chennai | INDIA | Research, Technology development, Training, Extension and Consultancy |
| 08 September 2006 | July 2007 | Senior Scientist ICAR CIBA-Kakdwip | INDIA | Research, Technology development, Training, Extension and Consultancy |
| 08 September 2003 | August 2006 | Scientist (SS) ICAR CIBA-Kakdwip | INDIA | Research, Technology development, Training, Extension & Consultancy |
| April 1999 | August | Scientist | INDIA | Research, Technology development, |

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| | | | | |
|----------------|------------|-------------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------|
| | 2003 | ICAR CIBA-Kakdwip | | Training, Extension & Consultancy |
| 27 August 1997 | March 1999 | Scientist ICAR CIBA-Chennai | INDIA | Research, Technology development, Training, Extension & Consultancy |
| December 1994 | June 1997 | Aquaculturist Suryo Foods & Industries Limited, Bhubaneswar | INDIA | Commercial production of shrimp, Satellite shrimp farm development, Post-harvest management, Export & Consultancy |

Membership in Professional Associations and Publications:

1. Association of Aqua culturist, Bhubaneswar
2. Odisha Environmental Society, Odisha
3. Zoological Society of India, Boodhgaya
4. Zoological Society of Kolkata, Kolkat
5. Applied Zoologist Research Association, Cuttack
6. The biotech Research Society if India (BRSI), Trivandrum
7. Society for Comparative endocrinology, Chennai
8. Indian Fisheries Association, Mumbai
9. Inland Fisheries Society of India , Kolkata
10. Society for Costal Aquaculture and Fisheries In India, Chennai

Language Skills (indicate only languages in which you can work):

Speaking: Odiya, English, Bengali, Japanese and Hindi
Writing: Odiya, English

Language Skills (indicate only languages in which you can work): _____

Adequacy for the Assignment:

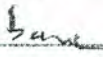
| Detailed Tasks Assigned on Consultant's Team of Experts: | Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Providing technical inputs for sustainable management of aquaculture | Given in annexure of detailed CV |
| Providing plan for establishment of profitable aquaculture system | Given in annexure of detailed CV |

Expert's contact information: (e-mail....., phone.....)

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

JITENDRA KUMAR SUNDARAY  {day/month/year}
14/09/2018

Name of Expert Signature Date
Nagesh Kumar Barik  Nagesh Barik 14.09.2018

Name of authorized Representative of the Consultant (the same who signs the Proposal) Signature Date


Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha


State Project Director
ADP-2018-19

Form TECH-4: Curriculum Vitae (CV)

(CONTINUED)

| | |
|----------------------------------|------------------------------------------------|
| Position Title and No. | { K3- Member, Fishery expert} |
| Name of Expert: | {Mr. Ajmal Hussan} |
| Date of Birth: | {07/12/1982} |
| Country of Citizenship/Residence | Indian B-14/48, Kalyani, Nadia, West Bengal |

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

| Sl. No | Degree | University | Year | Division (% Marks) | Subject |
|--------|-----------------------------------------|--------------------------------------------------------------------------------------------------|------|-------------------------------------------------|-----------------------------------------------------|
| 1. | Master of Fisheries Science (M.F.Sc.) | Karnataka Veterinary, Animal and Fisheries Sciences university (College of Fisheries, Mangalore) | 2010 | 1 st Class with distinction (91.90%) | Fisheries Science (Fisheries Environment & Ecology) |
| 2. | Bachelor of Fisheries Science (B.F.Sc.) | Central Agricultural University, Imphal (College of Fisheries, Agartala) | 2006 | 1 st Class (82.90%) | Fisheries Science |
| 3. | Higher Secondary | Tripura Board of Secondary Education | 2001 | 1 st division (65.7%) | Science |
| 4. | Secondary | Tripura Board of Secondary Education | 1999 | 1 st division (72.9%) | ----- |
| 5. | ICAR NET | ICAR, New Delhi | 2012 | --- | Fisheries Science |
| 6. | ICAR ARS | ICAR, New Delhi | 2014 | ---- | Fisheries Resource Management |

Trainings in the relevant field:

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

| Period | Employing organization and your title/position. Contact information for References | Country | Summary of activities performed relevant to the Assignment |
|--------|------------------------------------------------------------------------------------|---------|------------------------------------------------------------|
| | | | |
| | | | |
| | | | |

Ajmal Hussan
13/08/18

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State Project Director
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Membership in Professional Associations and Publications:

- i) Life Member of "Agricultural Research Service Scientists Forum (ARSSF)
- ii) Life Member of "Indian Society of Coastal Agricultural Research (JISCAR)"

Publication:

Papers: 06 nos.; Book Chapter: 02 nos.; Article: 07 nos.

Language Skills (indicate only languages in which you can work): English

Adequacy for the Assignment:

| Detailed Tasks Assigned on Consultant's Team of Experts: | Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks |
|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Providing technical inputs for sustainable management of aquaculture | Given in annexure of detailed CV |
| Development of seed production protocols and profitable aquaculture enterprises | Given in annexure of detailed CV |

Expert's contact information: (e-mail: ajmalhussan82@gmail.com, ajmal.hussan@icar.gov.in
phone: 9123376945/8420212856)

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

| | | |
|---------------------------------------------------------------------------------------|-----------------|--------------------------|
| Name of Expert | Signature | Date (day/month/year) |
| Mr. AJMAL HUSSAN | Ajmal Hussan | 13/08/18 |
| Name of authorized Representative of the Consultant (the same who signs the Proposal) | Signature | Date |
| | Nagesh K. Barik | 14.08.2018 |

Important Note: CVs not signed by the respective experts may not be considered for technical evaluation

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Bhubaneswar-2, Odisha

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Form TECH-4: Curriculum Vitae (CV)
(CONTINUED)

| | |
|----------------------------------|----------------------------------------------------------|
| Position Title and No. | { K4- Value chain expert} |
| Name of Expert: | {Dr. P. P. Chakrabarti} |
| Date of Birth: | {13/07/1961} |
| Country of Citizenship/Residence | India/ B-14/151, Kalyani, Nadia, West Bengal - 741235 |

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

| Exam./ Degree | Board/ University | Subject | Year | Remarks |
|------------------|-----------------------------------------------------------------------------|-------------------------------------------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ph.D. | Calcutta University, West Bengal | Agricultural Chemistry and Soil Science | 1991 | Thesis Title - Seasonal influence on the forms of Nitrogen and Sulphur along with microbial population in some selected localities of coastal saline soils of West Bengal (Sundarban Region) |
| ARS | ICAR, New Delhi, Ministry of Agriculture & Farmers Welfare, Govt. of India. | Ag. Chem./ soil science/ fertility/ microbiology etc. | 1991 | ----- |
| M. Sc. | Calcutta University | Agricultural Chemistry and Soil Science | 1983 | 1 st Class (rank – 2 nd) Thesis Title: Characterisation of organic matter content of Calcutta city wastes compost |
| B.Sc. | Calcutta University | Chemistry | 1981 | 2 nd Class |
| Higher Secondary | West Bengal Council of Higher Secondary Education | Science | 1978 | 1 st division with national scholarship from WBCHSE board |
| Secondary | West Bengal Board of Secondary Education | General | 1976 | 1 st division with national scholarship from WBBSE board |

Trainings in the relevant field: as given in annexure of detailed CV

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

As given detailed CV

| Period | Employing organization and your title/position. Contact information for References | Country | Summary of activities performed relevant to the Assignment |
|--------------------------|--------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------|
| [e.g., May 2005-present] | [e.g., Ministry of, advisor/consultant to. For references: Tel...../e-mail...../ Mr. Hbbbb, deputy minister] | | |
| | | | |
| | | | |

Nagesh
Dr. Nagesh Kumar Barik, Ph.D.
Principal Investigator
Agri Business Incubation Centre
ICAR-CIFA, Bhubaneswar-2, Odisha

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State Project Director
ARIAS Society

Membership in Professional Associations and Publications: _____

Language Skills (indicate only languages in which you can work): English

Adequacy for the Assignment:

| Detailed Tasks Assigned on Consultant's Team of Experts: | Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Forward and backward linkages | Given in annexure of detailed CV |
| Fish logistics | Given in annexure of detailed CV |
| Value chain efficiency & effectiveness | Given in annexure of detailed CV |

Expert's contact information: (e-mail: ppcifa09@gmail.com, phone: 9432245479)

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

13/08/2018
(day/month/year)

Name of Expert: Dr Parthe pratim Chakrabarti Signature: Parthe pratim Chakrabarti Date: 13/08/2018
(day/month/year)

Name of authorized Representative of the Consultant (the same who signs the Proposal): Nagesh Kumar Barik Signature: Nagesh Barik Date: 14.08.18

Important Note: CVs not signed by the respective experts may not be considered for technical evaluation

Nagesh
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List of Experts

| Sl | Positions | Qualification and experience | Role (in brief)/Inputs to be provided |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <p>Team Leader cum Cooperative Management Specialist & Business & Entrepreneurship Development Expert</p> <p>Dr Nagesh Kumar Barik Scientist (Senior Scale) Agril.Economics</p> | <p>B.Sc. (Ag), M.Sc. (Ag) Agril. Economics, PhD (Economics)</p> <ul style="list-style-type: none"> • Developed business plan of 15 technologies developed by CIFA • Assessed impact of aquaculture technologies i.e Improved rohu, portable hatchery, CIFABROOD, Magur, Murrel, Pabdda • Evaluated six aquaculture technologies viz, carp seed production, carp culture, demand feeder, processed product, cryomilt application, magur hatchery • Disseminated 10 aquaculture technologies Improved rohu, portable hatchery, CIFABROOD, Magur, Murrel, Pabdda, carp seed production, carp culture, demand feeder, processed product, cryomilt application, magur hatchery • Led and established aquaculture business incubation center of CIFA • Developed the data base on the wetland fisheries and marketing of fish in Assam • Assessed ex-ante impact of the genetically improved rohu in India • Developed leasing policy for the wetlands of Assam • Assessed economics of the fisheries of wetlands of Assam • Assessed the potential of the fish marketing of Orissa, Assam and Chilika lake • Established Agri-Business incubation center (ABI) of ICAR-CIFA and operated from incenption in 2013 t ill date • Incubated 43 numbers of aqua-entrepreneurs • Developed infrastructure worth of 2 crores for ABI – CIFA | <p>Overall coordination Providing inputs in terms of designing plan for revival of FISHFED, modalities and policies for it's future functioning as a guide to fisheries cooperative sector in the state, strategies for promotion of business by FISHFED particularly in the cooperative fishery business and marketing of produce, strengthening of its functioning and revenue generation and management</p> |
| 2 | <p>Fishery Expert</p> <p>Dr. Jitendra Kumar Sundaray Director Acting Head, Division of Fish Genetics & Biotechnology</p> | <ul style="list-style-type: none"> • Masters degree in Fisheries Science or a closely related field. The Fishery Expert should have a minimum of 7 (seven) years of experience in fish production/ processing, teaching/ research/extension in officer/ managerial capacity • Ph. D (Animal & Marine Bioresources Science), Kyushu University, Fukuoka, Japan • Academic awards • Recipient of Hiralal Chaudhary Young Scientist Award-2008 • Experience- 18 years • Book Chapter-18 no • Publication-30 no | <p>Providing technical inputs on fish production, processing, fish health management Pond/beel management practices etc</p> |

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| <p>3 Fishery Expert</p> <p>Mr. Ajmal Hussan Scientist Fish Health Management Division</p> | <ul style="list-style-type: none"> • Masters degree/ Post Graduate Diploma of minimum two years duration in Business Administration/Entrepreneurship preferably with specialization in Agribusiness or a closely related field. The Expert should have a minimum of 7 (seven) years of experience in Business Development Management/ Entrepreneurship preferably in Fisheries Sector • Technologies developed/involved • Breeding and seed production techniques of <i>Mystus gulio</i>. • Poly- & mono-culture techniques of <i>Mystus gulio</i>. • Identification of constrains to Aquaculture Development of East Kolkata Wetland: • Evaluation of armoured catfish threats in EKW • Initiative to identify the impact of unregulated aquaculture in Moina, West Bengal • Dissemination of Five technologies | <p>Providing inputs on Return on Investment (ROI) in priorities areas, long term entrepreneurship development, B:C ratio, IRR etc of suggested interventions,</p> <p>Possible areas and extent of investment by FISHFED for entrepreneurial activities for income generation</p> <p>Source market analytics, business trends of the cooperative societies in fish marketing in the state and scope of development, demand-supply trend etc</p> <p>Business climate data analysis using statistical / business analysis tools, business plan/ model development for sustainable revenue generation by FISHFED</p> |
| <p>4 Value Chain Expert</p> <p>Dr P. P. Chakraborty Principal Scientist Microbiology</p> | <ul style="list-style-type: none"> • Bachelors in Fisheries followed by MBA (preferably in Agribusiness or a closely related field) Minimum 7 (seven) years experience in agri value chain management/development related activities (preferably in Fisheries sector) • Ph.D., Calcutta University • Soil and water chemistry • M.Sc (Ag.Chem & Soil Chem) • Calcutta University, • Soil chemistry • B.Sc(Chemistry Hons) • Calcutta University • Chemistry (Inorganic, Physical & Organic) • Higher secondary <p>Technology developed/ varieties released:</p> <ol style="list-style-type: none"> 1. Technology developed for Pabda induced Breeding, seed production and culture practice. 2. Technology developed for <i>M. gulio</i> induced Breeding seed production and culture practice. 3. Fish based integrated farming system using high value crops. | <p>Forward and backward linkages</p> <p>Fish logistics</p> <p>Value chain efficiency & effectiveness</p> <p>Teaching/Trainings conducted:</p> <p>14 trainings in Arunachal Pradesh, 25 trainings in Assam, 1 training in Manipur, 16 trainings in Meghalaya, 3 trainings in Mizoram, 5 trainings in Nagaland, 6 trainings in Tripura and more than 20 trainings in CIFA headquarter as well as regional centre.</p> <p>Publications:</p> <p>Research papers: 32 Books: 4 Technical Article: 8</p> |

Brief CV of Dr. N. K. Barik

| | |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name | Nagesh Kumar Barik |
| Designation | Scientist |
| Address | Central Institute of Freshwater Aquaculture, Kausalyaganga, Bhubaneswar, Orissa, India- 751 002 |
| Tel/Fax | 0674-2465430 ; 2465407(Fax) |
| E-mail | Nagesh.barik@cifamail.in |
| Date of birth | 3 rd August 1973 |
| Name of Institute presently working | Central Institute of Freshwater Aquaculture |
| Postal address of the Institute with Tel/Fax No. and E-mail | Central Institute of Freshwater Aquaculture, Kausalyaganga, Bhubaneswar, Orissa, India- 751 002 Ph: 0674-2465 446 ; 2465407 (Fax) nageshbarik@rediffmail.com |

Educational Qualification

| Sl No. | Qualification | Year | Institution | Area of specialization |
|--------|-----------------------------|------|-------------------------------------------|--------------------------|
| 1 | PhD (Economics) | 2015 | Utkal University | Institutional economics |
| 2 | M.Sc. (Ag) Agril. Economics | 1998 | College of Agriculture, OUAT, Bhubaneswar | Agricultural economics |
| | B.Sc. (Ag) | 1994 | College of Agriculture, OUAT, Chiplima | All agriculture subjects |

Professional Experience

| Post held | Institution | Period | Remarks |
|-----------|----------------------------------------------------------------------------------------|----------------------|---------|
| Scientist | Central Inland Fisheries Research Institute | 30.11.99 to 15.10.07 | |
| Scientist | Central Institute of Freshwater Aquaculture, Kausalyaganga, Bhubaneswar, Orissa, India | 16.11.07 till date | |

Major Achievements

- Developed business plan of 15 technologies developed by CIFA
- Assessed impact of aquaculture technologies i.e Improved rohu, portable hatchery, CIFABROOD, Magur, Murrel, Pabdda
- Evaluated six aquaculture technologies viz, carp seed production, carp culture, demand feeder, processed product, cryomilt application, magur hatchery
- Disseminated 10 aquaculture technologies Improved rohu, portable hatchery, CIFABROOD, Magur, Murrel, Pabdda, carp seed production, carp culture, demand feeder, processed product, cryomilt application, magur hatchery
- Led and established aquaculture business incubation center of CIFA
- Developed the data base on the wetland fisheries and marketing of fish in Assam
- Assessed ex-ante impact of the genetically improved rohu in India
- Developed leasing policy for the wetlands of Assam
- Assessed economics of the fisheries of wetlands of Assam
- Assessed the potential of the fish marketing of Orissa, Assam and Chilika lake

Relevant trainings

| Sl No | Year | Title |
|-------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | 2000 | Attended training on the Participatory Rural appraisal in National Academy of agricultural Research and Management for 15 days in July. The programme included both theory and practical training and completed successfully. July 7 to July 21, 2000. |
| 2 | 2001 | Joined training program for the foundation course for the Agriculture research service in National Academy of agricultural Research and Management for four months from 1st December 2000 to 30th March 2001. During training successfully completed all phases and evaluations including one month field experience training. |
| 3 | 2002 | Attended the training programme on Role of Social Science in the Agro-biological research organized by Centre for Advances studies, Division of Agriculture Economics, Indian Agriculture Research Institute for 21 days from 13th march to 2nd April, 2002, |
| 4 | 2003 | Workshop-cum-training programme of participatory assessment of inland fisheries resource of Northeastern India. Guwahati 1-12 Dec, 2003 |
| 5 | 2003 | Workshop cum training programme on participatory appraisal of agro-ecosystem. Organized |

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| | | by Zonal coordination unit of KVK, Kolkata and CIFRI Barrackpore, During 13-19 Sept, 2003 |
| 6 | 2003 | Workshop on research priorities of the fisheries research in India. Organized by NAARM, Hyderabad during 10-11. Nov 03 |
| 7 | 2003 | In workshop on Research Priorities for Fisheries Management of Indo-Gangetic Basin. At Dhakka, Bangladesh, organized by World Fish Centre, Cairo during December 21-22, 2003. |
| 8 | 2004 | Inception workshop on Achieving Greater Food Security and Eliminating Poverty by Dissemination of Improved Carp Strains to Fish Farmers. At World Fish Centre, Penang, Malaysia during April 5-7, 2004. |
| 9 | 2004 | Review Workshop on "strategy and approach for conservation and comprehensive development of fisheries involving community based programmes with special reference to North eastern region held at NER centre Guwahati on August 24-25 2004 |
| 10 | 2007 | Attended workshop on "Nature, dissemination and impact of Jayanti Rohu in India" Under the ICAR – WorldFish Centre collaborative project "Achieving greater food security and eliminating poverty through dissemination of the improved carp strains in India" on 15th April, 2007 at CIFRI, Barrackpore |
| 11 | 2007 | Attended 8th Asian Fisheries Forum, Kochin Nov 20-23, 2007 |
| 12 | 2007 | Attended National Symposium on "Ecosystem Health and Fish for Tomorrow" organized by Inland Fisheries Society of India during December, 14-16, 2007. |
| 13 | 2008 | Attended Brain storming meet on Aquaculture 2025: Challenges and Opportunities during 7-8 June, 2008 organised by Central Institute of Freshwater Aquaculture and Association of Aquaculturists, Bhubaneswar |
| 14 | 2008 | Attended workshop on "Application of Bioinformatics and statistics in aquaculture in India" organized at CIFA, Bhubaneswar during 24-26, April 2008. |
| 15 | 2008 | Attended Project launching workshop on "exploring potential for fish marketing in India" on 3rd January, 2008 at NCAP, New Delhi |
| 16 | 2008 | Attended and presented two paper in 8th Indian Fisheries Forum during Nov 22-26, 2008 at Kolkata organized by Asian Fisheries Society Indian Branch, Inland Fisheries Society of India and Central Inland Fisheries Research Institute, Barrack pore. |
| 17 | 2009 | Attended 21 day winter school on "Advanced tools and Techniques for Project Formulation, Implementation and evaluation" organized by Department of Extension Education, College of Agriculture, Orissa University of Agriculture and Technology, Bhubaneswar. |
| 18 | 2010 | Attended workshop on group certification of aqua societies organized by NACA and MPEDA during 27 th and 28 th October, Kakinada, Andhra Pradesh India |
| 19 | 2010 | Attended workshop on Network Meeting of Aquaculture Scientists in Northeastern Region during 11-12, March, 2010 at Gangtok, Sikkim |
| 20 | 2011 | Attended training programme on Development of Management competencies for CIFA scientist during 5-7 January, 2011 at Xavier Institute of Management, Bhubaneswar |
| 22 | 2010 | Attended the review workshop of All India Coordinated Project on Application of Plastics in Agriculture at SKUAST –K, Kashmir during 17-18, August, 2010 |
| 23 | 2011 | Participated in Short course on Applied Multivariate Data Analysis for Social Science and Business Research during 26-30, September. 2011 organized by Regional Center of Central Tuber crop Research Institute, Bhubaneswar. |
| 24 | 2013 | Participated in the workshop on "Draft Action Plan for IInd Phase livelihood improvement through small animal farming and improvement of productivity and production of inland fish in Odisha under Intensive training for all sponsored by Ministry of personnel and training Government of India and organized by the Gapabandhu Academy of Administration, Odisha on 19th February, 2013. |
| 25 | 2013 | Attended Training programme of New BPD at Directorate of Agribusiness Development – Tamil Nadu Agricultural University (TNAU), Coimbatore, June 18-21, 2013. |
| 26 | 2015 | Workshop on feasibility study of exchange programme between India and China organized by FK, Norway at Bangkok, Thailand during 12-14 October, 2015 |
| 27 | 2015 | 32 nd National Convention December 7 –9, 2015 Conference on Patinformatics for Technological Competitive Intelligence and Licensing. CSIR-National Chemical Laboratory Dr. Homi Bhabha Road Pune 41 1 008 India |
| 28 | 2016 | 19-22 October, 2016 International conference on Asian Science park Association at Hyderabad. Asian Science Park Association 20th Annual Conference - Special registration fee for Govt Recognized Business Incubators and Science Parks. International Crops Research Institute |

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| | for Semi-Arid Tropics (ICRISAT) is organizing the 20th International Annual Conference of Asian Science Park Association (ASPA) to be held from 19 - 22 October 2016 at HICC, Hyderabad, India. |
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Externally Funded Project

| | Project, period, funding |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Principal Investigator (project leader) of the project "ICAR-WorldFish Centre (CGIAR) Collaborative project on "Achieving greater food security and alleviating poverty by dissemination of the improved carp strain to the fish farmers of India" from April 2004 to March 2007. Total funding Rs 23.0 lakhs |
| 2 | Principal Investigator (project leader) of the project "Exploring potential of the fish marketing in India" as a collaborative project of CIFA and NCAP, New Delhi, funded by National Fisheries Development Board, Hyderabad from June 2008 to December 2009. Total funding: 6.0 lakhs |
| 3 | Co-Principal Investigator (project partner) of the Project Sustainable livelihood improvement through integrated freshwater aquaculture, horticulture and livestock development in Mayurbhanj, Keonjhar and Sambalpur districts of Orissa funded by National Agricultural Innovation Project (NAIP), Indian Council of Agricultural Research, New Delhi. From June 2008 to till June 2014. Total funding Rs 503 Lakhs |
| 4 | Co-Principal Investigator (project partner) of the project :Quality seed production and stock upgradation of carps through use of cryopreservation technology in the selected hatcheries of India. Funded by National Fisheries Development Board (NFDB) Hyderabad, February, 2009 to March 2012. Total funding Rs 30.86 lakhs |
| 5 | Principal Investigator (project leader) of the project :Impact assessment of the FRP carp hatchery in India. Funded by All India Coordinated project on application of Plastics, Indian Council of Agricultural Research, New Delhi, from August, 2008 to October 2012. Total Funding Rs 6.23 lakhs |
| 6 | Co-Principal Investigator (project partner) of the Project Title: Impact assessment of the Freshwater fisheries Technology in India" (ICAR-APCESS funded Project from November 2007 to October 2008. Total funding Rs 11.2 lakhs |
| 7 | Principal Investigator (project leader) PI of the project: Assessment of Income, health and income of the fish farmers in India. Funded by Department of Animal Husbandry, Dairy And Fisheries, Ministry of Agriculture, Government of India from February 2009 to December, 2011. Funding Rs 2.3 lakhs |
| 8 | Co-Principal Investigator (project partner) of the project: "Development of Better Management Practices (BMP) for Pangasianodon hypophthalmus farming in India" Funded by National Fisheries Development Board from Feb, 2010 to December, 2011. Total funding Rs 48.00 lakhs |
| 9 | Coordinator (Project leader) of the Project PI of the project Biochemistry Information System (BTIS) (DBT Funded Project) from April, 2008 to June 2009 and Co-PI after July 2009. Funded by Department of Biotechnology, Government of India. Total funding 4-5 lakhs per year |
| 10 | Co- Principal investigator (Project partern) of the project: Design Development and Evaluation of plastic Gadgets for hygienic fish marketing. Funded by AICRP on Application for plastics in Agriculture (ICAR). From June 2012- May, 2015. |
| 11 | Principal Investigator of the project: Business Planning and Development Unit. Funded by National Agriculture Innovation Project supported by World Bank. From May 2013 to June 2014. Total funding Rs 166 lakhs |
| 12 | Co-Principal Investigator in the project "Carp seed production in mobile hatchery and rearing for livelihood development of SC/ST communities in selected districts of Odisha" Funded by: Dept. of Biotechnology, Govt. of India, New Delhi. Project Duration: 9 June 2009- 8 June 2012 Project Budget: Rs 50.044 lakh |
| 13 | Co-Principal Investigator in the project "Application of Plastics in Aquaculture" operating at CIFA of the All India Coordinated Research Project (AICRP) on "Application of Plastics in Agriculture" Funded by: ICAR-AICRP (It is a Planned Scheme of ICAR). Project Duration: May 1988 onwards till date |
| 14 | Co-PI of the Project "Carp seed production in mobile hatchery and rearing for livelihood development of SC/ST communities in selected districts of Odisha Project duration 15 July 2014 to July, 2017 Funded by Department of Biotechnology (Government of India) |
| 15 | PI of the Project "Agri-Business Incubation Center" under National Agricultural innovation Fund of ICAR. 1.1.2016 to 2017 |
| 16 | DBT (GoI) funded project Productivity and production enhancement of freshwater ponds through BMP and aquaculture for livelihood development of the Aila affected SC/ST communities of Islands of the Sunderbans, West Bengal (Project Duration: 2016 – 2018) (Project Budget: Rs 49.814 lakh) |

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| | (Acting as Co-PI of the Project) |
| 17 | PI of the project agri-business incubation center (NAIF-component II) 2017-2020 |
| 18 | Establishment of Aquaculture Field School and Technical Service Centers of Freshwater Aquaculture in Odisha" |
| 19 | Development of micro-incubation center for freshwater aquaculture of Odisha (PI of the project) |
| 20 | National Fisheries Development Board, Hyderabad has sanctioned a project entitled "Demonstration of efficacy of carp brood stock diet "CIFABROODTM" in increasing quality seed production of Indian Major Carps in selected states of India to ICAR-Central Institute for Freshwater Aquaculture, Bhubaneswar, Odisha. |
| 21 | Establishment of micro-incubation centre for freshwater aquaculture in Odisha during March 2018 to March 2020 funded by RKVY-Odisha Rs 4.44 Crores |
| 22 | Establishment of Aquaculture field school in Odisha during March 2018 to March 2020 funded by RKVY-Odisha Rs 1.56Crores |

Contract/Consultancy projects

| | | |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Principal Investigators of the consultancy project on "Development of business plan for aquaculture development in the rainfed areas" funded by Revitalizing Rainfed Agriculture Network, Wassan, Hyderabad from Nov 2013 to December, 2015. Cost Rs 15.00 lakhs | <ul style="list-style-type: none"> Capacity building of stakeholders from Odisha, Madhya Pradesh, Jharkhand, West Bengal |
| 2 | Co PI of the project "Evaluation of the beel fisheries development project" under Assam Rural Infrastructure and Agricultural Service Project (ARIASP) of World Bank during 2001-2002. Funding Rs 4.5 lakhs | <ul style="list-style-type: none"> Evaluated worldbank proposal of funding |
| 3 | PI of the consultancy project "Building adaptive capacities of small inland fishers for climate resilience and livelihood security , Madhya Pradesh funded by United National Climate Adaptation Board with executive organization as Towards Actions and Learning (TAAL), Bhopal cost 8.22 lakhs | <ul style="list-style-type: none"> Capacity building' Development of value chain Development of project strategy |
| 4 | PI of ABI-FRP hatchery contractual services to provide technology and technical support to the end users of the FRP hatchery across the country costing Approx. 40 lakhs per year | <ul style="list-style-type: none"> Provide gadget and technical support to end users |
| 5 | Co-PI of Development of Detailed project report for establishment of fish feed mill at Kalyanit West Bengal under West Bengal Dairy and Poultry Development Corporation, Government of West Bengal. Total cost Rs 2.5 lakhs | <ul style="list-style-type: none"> Development of DPR |

Summary of publications: (Recent)

Journal papers

| Sl No | Year | Title |
|-------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | 2004 | Katiha, P.K. and Barik, N.K. (2004) Governance, institutions and policies for fisheries of floodplain wetlands. Indian Journal of Agricultural Economics, 59 (3): 490. |
| 2 | 2005 | Katiha, P. K., S. Dutta, and N. K. Barik (2005). Pen culture for fish seed raising in beels of Assam: Economics and constraints. J. Inland Fish. Soc. India, 37(1): 23-29 |
| 3 | 2006 | N. K. Barik and K. K. Sarma (2006). Beel fisheries Resource management and impact on livelihood status of people in Majuli island of Assam. J. Inland Fish. Soc. India, 38(1): 35-42 |
| 4 | 2006 | Barik N. K., B. K. Gorai, M. Choudhury (2006) Impact of the changes in the regulatory regimes on sustainability of fisheries: A case study of Dhir beel of Assam. J. Agricultural Economics Research Review, 20 (1) |
| 5 | 2008 | P. Kumar, M. M. Dey and N. K. Barik (2008) Farm economics of genetically improved carp strain in Major Asian countries and carp seed policy model. Agricultural Economics Research Review (21) |
| 6 | 2008 | Barik N. K. (2008) Leasing arrangements and its implications for the fisheries of the floodplain wetlands of Assam. J. Inland Fish. Soc. India, 40(1) |
| 7 | 2008 | N. K. Barik, K. D. Mahapatra, N. Sarangi, B. S. Giri and S. Ayyappan (2008). Impact of genetically improved (Jayanti) rohu in India. Economics Research Review |
| 8 | 2008 | Swain, S. K., S. K. Singh, P. Routray and N. K. Barik (2008) Ingenious ornamental fishes: status, |

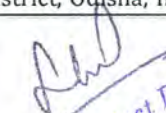
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| | | issues and strategies for propagation and conservation. E-planet. Vol. 6/2 July 2008. |
| 9 | 2011 | Radheyshyam, G. S. Saha, N. K. Barik , A. E. Eknath, H. K. De, L. Safui, S. Adhikari and S. Chandra, 2011. Constraints to fish production in community ponds in Orissa, India. Aquaculture Asia 16 (1): 25-30. |
| 10 | 2012 | Ekka, A., .Katiha,P. K., Pandit, A., Barik, N.K. ,Salim, S.,and Ganesh kumar, B.(2012) Socio-economic status of fishers of reservoirs In India,Journal of the Inland Fisheries Society of India.Vol . 4 4 (2): 71-78 |
| 11 | 2013 | Salim,S. S., Sathiadhas,R.,Narayanakumar,R.,Katiha,P.K., Krishnan,M. ,Biradar,R.S., Gopal,Nikita., Barik, N.K. , and Ganesh Kumar, B. (2013) Rural Livelihood Security: Assessment of Fishers' Social Status in India.Agricultural Economics Research ReviewVol. 26 (Conference Number): 21-30 |
| 12 | 2011 | Barik, N. K. , and Atibudhi, H. N.(2011) Impact of aquaculture in the small multiple use water bodies. Journal of Aquaculture. 19:35-46 |
| 13 | 2013 | Dey, M. M., Kumar, P., Chen, O. L., Khan, Md. A., Barik, N. K. , Li, L.,Nissapa,A., Pham, N.S. (2013) Potential impact of genetically improved carp strains in Asia . Food Policy 43: 306–320 |
| 14 | 2013 | Radheyshyam, Saha,G. S., Safui, L., Eknath, A, E., Adhikari, S., De, H.K., Barik. N. K. , and Chandra, S.(2013) Status and economy of community fish farming in rural Odisha. Indian J. Fish., 60(4) : 59-67 |
| 15 | 2013 | Sarkar,Bikash.,Sahu,B.B.,Mohapatra,B.C., Barik,N.K. ,Majhi,D., Jayasankar, P., Bhatnagar, P.R. (2013) Design and Development of an Innovative Mobile Fish Vending Unit for Retailers International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075,Volume-2 (3):158-162 |
| 16 | 2013 | Sahu, B.B., Sarkar, B., Mahapatra, B.C., Barik, N.K. , Pillai, B.R., Lalrinsanga., P.L, Patra, G., Jayasankar, P., Ghosal, M. K., Bhatnagar, P.R (2013) Development and performance of microbound larval feed dispenser in macrobrachinmrosenbergii hatcheries. Asian Journal of Animal Science.Vol 8 (1): 40-43 |
| 17 | 2013 | Barik, N. K. , and Atibudhi, H. N.(2013) Aquaculture in multiple use water bodies: Institutional perspectives. Eplanet 11 (2) |
| 18 | 2013 | Sahu, B.B., Bikash Sarkar, B.C. Mohapatra, N.K. Barik , B.R. Pillai, P.L. Lalrinsanga, G. Patra, P. Jayasankar, M.K. Ghosal and P.R. Bhatnagar 2013. Development and performance of a microbound larval feed dispenser in Macrobrachium rosenbergii hatcheries. The Asian Journal of Animal Science, 8(1): 40-43. |
| 19 | 2014 | Barik,N. K. ,and Atibudhi, H. N., (2014) Transaction Cost and Economics of Aquaculture Management in small Multiple Use Water Resources. Agricultural Economics Research ReviewVol. 27 |
| 20 | 2014 | Nikita Gopul, P, Jeyanthi, Arathy Ashok, Shyam S. Salim, Pradeep Katilia, M. Krishnan, Nagesh Kumar Barik , B. Ganesh Kumar, R. Narayana Kumai and R, Sathiadas.(2014) Fishers in Post-harvest Fisheries Sector in India : An Assessment of Socio-economic Status. Fishery Technology 51 (2014) : 213 - 219 |
| 21 | 2014 | B.B. Sahu, M.K. Pati, N.K. Barik , P. Routray, S. Ferosekhan, D.K. Senapati and P. Jayasankar (2014) Record of Skeletal System and Pin Bones in Table Size Hilsa Tenualosa ilisha (Hamilton, 1822). World Journal of Fish and Marine Sciences 6 (3): 241-244, 2014 .ISSN 2078-4589. DOI: 10.5829/idosi.wjfds.2014.06.03.83178 |
| 22 | 2014 | Binod Bihari Sahu1, Nagesh Kumar Barik , Bikash Chandra Mohapatra, Badri Narayan Sahu, Hrushikesh Sahu, Prithviraj Sahoo, Dukhia Majhi1, Nirmal Chandra Biswal, Prafulla Kumar Mohanty and Pallipuram Jayasankar (2014) Valorization of Fish Processing Waste through Natural Fermentation with Molasses for Preparation of Bio Fertilizer and Bio Supplement. Journal of Environmental Science, Computer Science and Engineering & Technology. E-ISSN: 2278-179X. September 2014-November 2014; Sec. A Vol.3.No.4, 1849-1856. |
| 23 | 2014 | B. C. Mohapatra*, N. K. Barik, D. Majhi, S. K. Mahanta and H. Sahu (2014) Demonstration of carp seed production and rearing in remote area : a case of a farmer of badabishola, Mayurbhanj district, odisha. J. Aqua. 22 pp 29-37 |
| 24 | 2015 | P. N. Ananth, P.R. Sahoo, B.K. Pati, A.K. Dash1, N.K. Barik, P. Jayasankar and S.R.K. Singh (2015) A Study on the performance of small holder carp hatcheries in Khordha district of Odisha State, India. Eco. Env. & Cons. 21 (1) : 2015; pp. (329-336) |
| 25 | 2015 | N. K. Barik (2015) Transformation of Multiple Use Water Bodies for Freshwater Aquaculture — Determinants of Technology Adoption and Collective Action: A Study in Odisha. Agricultural Economics Research Review. Vol. 28 (Conference Number) 2015 pp 167-175. DOI: |

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| | | 10.5958/0974-0279.2015.00031.2 |
| 26 | 2016 | B.B. Sahu, B.C. Mohapatra, N.K. Barik, H. Sahu, P. Sahoo, N.C. Biswal, P.K. Mohanty, U.L. Mohanty, S. K. Mahanta, P. Jayasankar (2016) In-Vitro Assessment of Plankton Production Using Fish Hydrolysate. International Journal of Innovative Studies in Aquatic Biology and Fisheries (IJISABF) Volume 2, Issue 1, 2016, PP 14-24 ISSN 2454-7662 (Print) & ISSN 2454-7670 |
| 27 | 2016 | Sahoo PR, Ananth PN, Dash AK, Pati BK, Barik NK and P Jayas ankar (2016) Institution based intervention on promoting composite fish culture in rural Odisha: A case of KVK-Khordha. International Journal of Fisheries and Aquatic Studies 2016; 4(4): 190-195 |
| 28 | 2016 | Bikash Chandra Mohapatra, Sudeep Kumar Mahanta, Hrushikesh Sahu, Dukhia Majhi and Nagesh Kumar Barik (2016) Induced Breeding of Indian Major Carps in FRP Hatchery at Farmer's Field. International Research Journal of Natural and Applied Sciences Vol. 3, Issue 5, May 2016 IF- 3.827 ISSN: (2349-4077) |
| 29 | 2016 | Mohapatra, B.C., P.P. Chakrabarti, N.K. Barik, D. Majhi, S.K. Mahanta, H. Sahu, S. Lenka, A. Nanda, S. Mishra and P. Jayasankar 2016. Portable FRP carp hatchery: A tool for biodiversity conservation in Fisheries. Journal of Andaman Science Association, 21(1): 104-108. . |
| 30 | 2016 | Himansu Kumar De, . Radheyshyam, Gour Sundar Saha, Lekha Safui, Suresh Chandra, Subhendu Adhikary, Nagesh Kumar Barik, Ambekar E. Eknath (2016) Impact of Aquaculture Field School On Community Fish Farming. Indian Journal of Fisheries. Vol 63, No 2 (2016) |
| 31 | 2016 | B. B. Sahu, N. K. Barik, A. Paikaray, A. Agnibesh, S. Mohapatra and P. Jayasankar (2016) Fish Waste Bio-Refinery Products: Its application in Organic Farming. International Journal of Environment, Agriculture and Biotechnology (IJEAB) Vol-1, Issue-4, Nov-Dec- 2016 http://dx.doi.org/10.22161/ijeab/1.4.30 ISSN: 2456-1878 |
| 33 | 2016 | Barik, N. K. (2016) Potential in Improving Nutritional Security through Aquaculture Development in India: A Regional Level Analysis. Agricultural Economics Research Review. Vol. 29 (Conference Number) 2016 pp 99-109. DOI: 10.5958/0974-0279.2016.00037.9 |
| 34 | 2016 | Barik, N. K (2016) Aquaculture practices in small multiple-use water bodies in Odisha, India. J. Inland Fish. Soc. India, 48 (2) : 19-28, 2016 |
| 35 | 2017 | Sahoo, P. R, PN Ananth, S Nandi, JK Sundaray, NK Barik, P Jayasankar (2017) <u>Early Breeding and Seed Production of Indian Major Carps: Attributes of the Innovation from an Adaptive Trial</u> Current Agriculture Research Journal 5 (1) |
| 36 | 2017 | Binod Bihari Sahu, Nagesh Kumar Barik, Padmanav Routray, Aloka Agnibesh, Ambarish Paikaray, Satyapriya Mohapatra, Jitendra Kumar Sundaray (2017) <u>Comparative studies on carcass characteristics of marketable size farmed tilapia (Oreochromis niloticus) and silver barb (Puntius gonionotus).</u> International Journal of Fisheries and Aquatic Studies 2017; 5(2): 06-09 |
| 37 | 2017 | Barik, N. K. (2017) Freshwater fish for nutrition security in India: Evidence from FAO data. <u>Aquaculture Reports. Volume 7</u> , August 2017, Pages 1-6. https://doi.org/10.1016/j.aqrep.2017.04.001 |
| 38 | 2017 | Binod Bihari Sahu, Upali Sahu, Nagesh Kumar Barik, Aloka Agnibesh, Ambarish Paikaray, Satyapriya Mohapatra, Jatindra Kumar Sahu (2017) Bio-refinery products from shell fish processing waste: Application of Chitin, Chitosan, Chitooligo saccharides and Derivatives in Organic Agriculture. International Journal of Fisheries and Aquatic Research. ISSN: 2456-7248, Impact Factor: RJIF 5.44 www.fishjournals.com . Volume 2; Issue 4; July 2017; Page No. 27-31 |
| 39 | 2017 | P. P. Chakrabarti, a. Ghosh, b. C. Mohapatra, n. K. Barik, a. Das, k. Kumar, s. C. Mondal, d. Majhi, a. Mistry and p. Jayasankar (2017) Alternate livelihood development for 'Aila' affected tribal people through aquaculture in Bali Island of the Sunderban, West Bengal, India. Indian J. Fish., 64 (Special Issue): 14-21, 2017 . DOI: 10.21077/ijf.2017.64.special-issue.76186-03 |
| 40 | 2017 | B.B. Sahu, K.C. Das, N.K. Barik, A. Paikaray, A. Agnibesh, S. Mohapatra, K. N. Mahanta, S.K. Nayak, P. Jayasankar (2017). Development of Fish Hydrolysate (Bind-Add+) incorporated extruded pellets and its performance in Tilapia (Oreochromis niloticus) feeding trial. International Journal of Advanced Engineering Research and Science (IJAERS) [Vol-4, Issue-1, Jan- 2017]. https://dx.doi.org/10.22161/ijaers.4.1.19 ISSN: 2349-6495(P) 2456-1908(O) |
| 41 | 2018 | B.C. Mohapatra, N.K. Barik, U.K. Udit, M. Samanta, P. Das, S.C. Rath, J. Mohanty, S.K. Sahoo, H. Sahu, S.K. Mahanta, A. Paikaray, K. Anantharaja, K. Murmu, I. Sivaraman, D. Majhi and U.L. Mohanty (2018) Area saturation model of freshwater aquaculture technology demonstration for livelihood development of tribal farmers of Niladriprasad Gram Panchayat of Banpur Block, Khordha District, Odisha" in J. Natural Resources & Development; Vol 13 (1), 2018 |
| 42 | 2018 | Bikash Chandra Mohapatra and Nagesh Kumar Barik (2018) . Development of model village cluster for aquaculture: A case in Begunia block of Khordha district, Odisha, India. International |


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| | Journal of Fisheries and Aquatic Studies. 534-539 |
| | International Journal of Fisheries and Aquatic Studies 2018; 6(2): 534-540 |

Books/Manuals (Selected)

| Sl No | Year | Title |
|-------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | 2003 | Sugunan V.V.; Saha P.K. & Barik N.K. (2003). Handbook on pen culture of fish and prawn, CIFRI, Barrackpore, 65 p. |
| 2 | 2004 | Bhaumik U. K, D. Nath, S. Samanta, A. K. Das, V. R. Suresh, N. K. Barik , S. Sahu, P. Maurya, S. Saha. (2004). Fisheries resource system of Assam: A participatory appraisal. Central Inland Fisheries Research Institute. Barrackpore. |
| 3 | 2008 | B. Ganesh Kumar , K.K. Datta, P.K. Katiha, T. Ravishankar, N.K. Barik, P.S. Ananthan, R. Suresh, Ramachandra Bhatta, K. Ravindranath, P. Shinoj, Shyam S. Salim, G. Vidya Sagar Reddy, P. Kumar, R. Sathiadhas (2008) . Exploring Market Opportunities for Fisheries Sector in India. National Centre for Agricultural Economics and Policy Research New Delhi – 110 012. 426 p |
| 4 | 2012 | Sahoo, P. K, Mohanty, J., Das, P. C., Mohanta, K. N., Barik, N. K and P. Jayasankar (2012) CIFA: 25 years of Freshwater Aquaculture Research. Central Institute of Freshwater Aquaculture, Bhubaneswar. pp 195 |
| 5 | 2012 | K. Das Mahapatra, P. Routray, N. K.Barik , P. Jayasankar (Eds.) 2012, Quality fish seed production through brood fish management in SAARC countries. SAARC training programme, 1-10 October, 2012. Central Institute of Freshwater Aquaculture, Bhubaneswar, India 200 p. |
| 6 | 2013 | Mohapatra, B.C, Das, B. K, Mohanta, K.N., Chakrabarti, P. P., Barik, N. K. , Jayasankar, P., (2013) Carp Culture in Freshwater Ponds. ISSN:0972-0146. Central Institute of Freshwater Aquaculture. 36 P |
| 7 | 2014 | Jayasankar, P., Mohanta, K.N., Barik N. K. , Ferosekhan, S., Adhikari, S. (2014) Proceedings of Expert Consultation on Water Resilient Aquaculture-Vision For 2050. Central Institute of Freshwater Aquaculture (CIFA), Bhubaneswar |
| 8 | 2014 | P. Routray, N. K. Barik and B. C. Mohapatra (eds) (2015) Training manual on the seed and fish production of the Indian major caprs and Tilapia in Rainfed areas for the programme during July 24-26, 2014 under RRA consultancy project |
| 9 | 2014 | N. K. Barik, P. Routray, B. C. Mohapatra, Rajesh Kumar (2014) Business plan for aquaculture development in rainfed areas with special focus on carps and tilapia for the training programme during August 26-28, 2014 under RRA consultancy project |
| 10 | 2015 | P. Routray, N. K. Barik and B. C. Mohapatra (eds) (2015) Training manual on the seed and fish production of the Indian major caprs and Tilapia in Rainfed areas for the programme during 28 th Feb- 1 st March, 2015 under RRA consultancy project |
| 11 | 2015 | Contributed significantly in preparation of document Vision 2050: ICAR Central Institute of Freshwater Aquaculture, Bhubaneswar |
| 12 | 2016 | P. Jayasankar, B. R. Pillai, P. C. Das, P. K. Sahoo, S. K. Sahoo, J. K. Sundaray, N. K. Barik, Ferosekhan, I. Sivaraman, P. Panigrhi, Subrat Dash (2016) Proceedings of the state level "Collaborative State Level Research-Industry-Farmer-Extension Interaction Workshop on Freshwater Aquaculture Development in Odisha" ICAR- Central Institute of Freshwater Aquaculture, Bhubaneswar. Pp 18 |
| 13 | 2016 | Compendium on Portable FRP Carp Hatchery for training programme during 7-10 July, 2015. Published by CIFA, Bhubaneswar, Odisha in 2016. |
| 14 | 2016 | Ananth Natarajan, Dash, A.K., Singh, S., P R Sahoo, S. Behera, N K Barik and P. Jayasankar A Compendium of Success Stories through Participatory Technology Assessment, Demonstration and Advisory Services by KVK-Khordha. Publisher: ICAR-Central Institute of Freshwater Aquaculture, |
| 15 | 2017 | Mohapatra, B.C., N.K. Barik, P.P. Chakrabarti, B.R. Pillai and J.K. Sundaray 2017. FRP carp hatchery in India: Adoption, impact and issues. Central Institute of Freshwater Aquaculture, Bhubaneswar: Pp 1-66. ISBN:978-81-935417-0-8 |

Book chapters (Selected)

| Sl No | Year | Title |
|-------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | 2008 | N. K. Barik (2008) "Priorities, decisions and evaluation of fisheries management and governance of floodplain wetlands in India" in A. K. Roy and N. Sarangi (eds) Applied Bioinformatics, Statistics and Economics in Fisheries Research. New India Publishing Agency. |

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 35 | Page

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| | | New Delhi, 551-564 |
| 2 | 2008 | Swain, S.K. and N.K. Barik (2008). Breeding and Culture of Ornamental Fishes in India: An Emerging Cottage Industry. New Frontiers of Zoology (Ed: B.N. Pandey and P.N. Panday) Pp 111- 129, Narendra Publishing House, Delhi, 359 pp. |
| 3 | 2009 | Swain, S.K. and N.K. Barik (2009). Technological information on ornamental fishes- a resource for entrepreneurs, National workshop cum training on Bioinformatics and information management in aquaculture (Ed; N.K. Barik) 187-197 pp |
| 4 | 2011 | Barik, N. K (2011) Aquaculture in Rainfed areas of India: emerging possibilities for food and nutrition security in Mishra , P. K., Osman, M., Satendra and Venkateswarlu, B (eds). 2011. Techniques of water conservation and rainwater harvesting for drought management, SAARC Training programme, 18-29 July, 2011. Central Research Institute of Dryland Agriculture (CRIDA), Hyderabad, India, pp695-71 |
| 5 | 2011 | Barik, N. K. (2011) Socio economic context of impact of Portable hatchery in India. Mahapatra B.C, Sarkar. B, Barik N.K & Jayasankar. P(edited) (2011) Application of Plastics in Aquaculture. Published by Director CIFA. Central Institute of Freshwater Aquaculture, Bhubaneswar. 97-112 |
| 6 | 2012 | N. K. Barik (2012) Transforming life through community aquaculture: a case of tribal village in Odisha. Radheyshyam, G. S. Saha, H. K. De (Eds) Aquaculture Success Stories. Central Institute of Freshwater aquaculture. Bhubaneswar. 112-116 |
| 7 | 2012 | Barik, N. K. and Das Mahapatra, K. 2012. Impact of improved carp strain in India, pp. 88-97. In: K. Das Mahapatra, P. Routray, N. K. Barik, P. Jayasankar (eds). Quality fish seed production through brood fish management in SAARC countries. CIFA, Bhubaneswar, India. 2012. 200 p. |
| 19 | 2013 | Mahapatra B. C., NK Barik , P. Jayasankar (2013) Improvement of rural livelihoods through aquaculture : A case study of Western Odisha. Training compendium of Overseas Project and services Limited. |
| 8 | 2014 | Nagesh Kumar Barik , Rakesh Kumar, R.Narayanakumar, M. Krishnan, Pradeep Katihia, K.Ponnusamy and Shyam.S.Salim (2014) Freshwater Aquaculture. in R . Sathiadas, Shyam, S. Salim and K Narayanakumar (Eds) Livelihood status of Fishers in India Published by Central Marine fisheries research Institute, Cochin p 155-190. ISBN 978-93-82263-05-0 |
| 9 | 2014 | Nagesh Kumar Barik (2014) The role of farmer organizations in facilitating aquaculture marketing in India in Asia Pacific Fisheries commission.2014. Report of the Fifth Regional Consultative Forum Meeting , Responsible management of fisheries and aquaculture in Asia pacific, Hyderabad, India, 19-21 June, 2014. FAO regional office of Asia Pacific, Bangkok, Thailand, RAP Publication 2014/23 p 48 |
| 10 | 2015 | Barik, N. K. 2015. A framework for the Impact Assessment and Livelihood Analysis In. A. Mishra, S.R.K.Singh and P.N.Ananth (2015). Methodological Initiatives for Accelerating Technology Application by KVK- Proceedings. ICAR-ATARI, Jabalpur.83pp |
| 11 | 2016 | P. Jayasankar, B. R. Pillai, P. C. Das, P. K. Sahoo, S. K. Sahoo, J. K. Sundaray, N. K. Barik, Ferosekhan, I. Sivaraman, P. Panigrhi, Subrat Dash (2016) Proceedings of the state level "Collaborative State Level Research-Industry-Farmer-Extension Interaction Workshop on Freshwater Aquaculture Development in Odisha"ICAR- Central Institute of Freshwater Aquaculture, Bhubaneswar. Pp 18 |
| 12 | 2016 | Compendium on Portable FRP Carp Hatchery for training programme during 7-10 July, 2015. Published by CIFA, Bhubaneswar, Odisha in 2016. |
| 13 | 2016 | Ananth Natarajan, Dash, A.K., Singh, S., P R Sahoo, S. Behera, N K Barik and P.Jayasankar A Compendium of Success Stories through Participatory Technology Assessment, Demonstration and Advisory Services by KVK-Khordha. Publisher: ICAR-Central Institute of Freshwater Aquaculture, |
| 14 | 2016 | Barik, N. K. and Sunderay, J. K. (2016) Aquaculture and Food security in India. Souvenir article. National Seminar on Priorities in Fisheries and Aquaculture (11-12 March, 2017). 275-280 |
| 15 | 2017 | Barik, N.K (2017) Entrepreneurship as agenda for Agricultural Reform: Role of Mass Media in Ananth, P. N., De, H.K and J.K. Sundaray. 2017. E-Souvenir: Fostering Faster Reach of Innovations from Aquaculture Research through Media; A Science Communication Perspective. ICAR-Central Institute of Freshwater Aquaculture, Bhubaneswar, Odisha India. pp 75-83 |

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| 16 | 2018 | Nagesh Kumar Barik (2018) Contributions of aquaculture to the nutritional security in India-primer. In Nayak, A.K., Tripathi, R., Shahid, Md., Mohapatra, S.D., Panda, B.B., Dhal, B. (2018) A Compendium of invited lectures of workshop on Food and Nutritional Security in India: Issues and Challenges under DEVIL project held at ICAR-NRRI, Cuttack on 7th February 2018. pp 50-57. |
| 17 | 2018 | Nagesh Kumar Barik (2018) Entrepreneurial Avenues for Enhancing Farmers' Income Souvenir- Extension Strategies and Challenges for Doubling Farmers' Income in (Sadangi, B.N., Nanda, P., Swain, P., Jeeva, J.C., Raj, R.K., De, H.K., Mohapatra, B.P., Kumar, G.A.K. and Gayatri, M., Eds.). IEC2018, February 1-3, 2018, ICAR-CIWA, Bhubaneswar pp 210-220 |

Special assignments

| Sl No | Year | Title |
|-------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | 2007 | Members to draft fisheries report of the 11 plan documents |
| 2 | 2008 | Business manager of Inland fisheries society of India, Barrackpore (2007-2008) |
| 3 | 2011 | Members to draft fisheries part of the 12 th plan document of rainfed farming |
| 4 | 2012 | Business manager of Association of Aqua culturists, Bhubaneswar (2012-14) |
| 5 | 2014 | Co-coordinator of ICAR-NAIP Krishi Parivartan Yatra covering five states with 36 farmers across the country during 11-19 May, 2014 |
| 6 | 2014 | Country presentation on the role of farmers organization in aquaculture at Regional Fisheries Commission Meeting of FAO at Hyderabad |
| 7 | 2015 | Leader of the midterm review of the fisheries programme of Poor Area Civil Society (programme of Department for International Development, UK) to review programme operational in Jharkhand and Bihar |
| 8 | 2017 | Appointed as Expert for technology commercialization by Agro-Innovate corporation on 4.1.2017 |
| 9 | 2017 | Nominated as guide to Mr. Mrutunjaya Sabat, MFSC student of OUAT Bhubaneswar for MSC Thesis for the period 2016-17 and 2017-18 |
| 10 | 2017 | Visited to New Delhi to discuss and finalize EFC and Cadre strength of CIFA during 5-7 April, 2017 |
| 11 | 2017 | Members for preparation of report to the parliamentary committee on agriculture on 9 th Nov, 2017 |
| 12 | 2018 | Formulated DPR for the development of value chain of the aquaculture in Nabrangpur district |
| 13 | 2018 | Formulated project for the creation of master trainer in freshwater aquaculture to NFDB |
| 14 | 2017 | Formulate project to bring fund from RKVY |

Nagesh Barik
Signature 14.01.2018

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State Project Director
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Brief CV of Dr Jitendra Kumar Sundaray

Name: SUNDARAY JITENDRA KUMAR

Designation/Present position: HEAD OF DIVISION, Division of Fish Genetics & Biotechnology, ICAR-CIFA, Bhubaneswar

Official address for communication: Head- Division of Fish Genetics & Biotechnology

ICAR-Central Institute of Freshwater Aquaculture,

Kausalyaganga, Bhubaneswar, Odisha, India-751002

Tel: 91-674-2465421; Ext- 204/303 Fax: 91-674-2465407

Email ID: jsundaray@gmail.com/sundarayj@yahoo.com

Mobile number: 91-9437166872

Qualification:

| Level | Year of passing | Institute/ University | Subject(s) with major field |
|-----------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|--------------------------------------------|
| 10+2 | 1987 | CHSE, ODISHA | Physics, Chemistry, Mathematics & Biology |
| Graduation | 1990 | OUAT, ODISHA | Zoology Honours |
| Masters | 1992 | RAVENSHAW UNIVERSITY, ODISHA | Zoology (Fishery Science as Special Paper) |
| Post Graduate Diploma in Fisheries Science | 1994 | ICAR-CIFE, MUMBAI | Fisheries Science |
| Ph.D. | 2004 | KYUSHU UNIVERSITY, FUKUOKA, JAPAN | Animal and Marine Bioresource Science |
| Other Qualifications (Relevant to the post applied for) Training Course in Science Journalism | 2014 | NATIONAL COUNCIL FOR SCIENCE & TECHNOLOGY (DST) & INDIAN SCIENCE COMMUNICATION SOCIETY, LUCKNOW | Science Journalism |
| Post Graduate Diploma in Patent Law | 2015-2016 | NALSAR UNIVERSITY OF LAW, HYDERABAD | Post Graduate Diploma in Patent Law |

- Discipline/Area of specialization: **Reproductive physiology, Molecular endocrinology and Aquaculture**
- Teaching experience/Employment history

| Designation | Pay Scale/ Pay Band with Grade Pay/Research Grade Pay | Major discipline of work experience | Nature of work | Institute | Place of posting | Period | |
|--------------------------------------------------------------|-------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------|---------------------|-------------------|
| | | | | | | From (DD/MM / YYYY) | To (DD/MM / YYYY) |
| Director (Acting) | 37400-67000 RGP-10000/- | Fish Genetics and Biotechnology | Research Management | ICAR-CIFA, Bhubaneswar | HQ- Bhubaneswar | 12 January 2017 | 25 April 2018 |
| Head of Division - Division of Fish Genetics & Biotechnology | 37400-67000 RGP-10000/- | Fish Genetics and Biotechnology | Research management and coordination, Technology development and commercialization, Resource generation, Human Resource Development, | ICAR-CIFA, Bhubaneswar | HQ- Bhubaneswar | 26 April 2013 | Continuing |

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|-----------------------------------------|-------------------------|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------|--------------------------------|-------------------------------|
| | | | Outreach activities, national and international collaboration & Consultancy. | | | | |
| Principal Scientist & Officer-in-Charge | 37400-67000 RGP-10000/- | Brackishwater Aquaculture, Homestead Farming system. | Research and human resource management at Regional Centre, National and international collaboration, Technology development for resource poor farmers, Fostering innovation at rural level Training, Extension & Consultancy | ICAR-CIBA, Chennai | Kakdwip Research Centre of ICAR-CIBA, Kakdwip, 24 Paraganas, South, West Bengal | 13 th October 2010- | 25th April 2013 |
| Senior Scientist | 37400-67000 RGP-8000/- | Fish Breeding and Coastal Aquaculture | | ICAR-CIBA, Chennai | HQ- CIBA, Chennai | August 2007 | 12 th October 2010 |
| Senior Scientist | 15600-39100 | Brackishwater Aquaculture and Traditional Farming | Research, Technology development, Training, Extension and Consultancy | ICAR-CIBA, Chennai | Kakdwip Research Centre of ICAR-CIBA, Kakdwip, 24 Paraganas, South, West Bengal | 08 September 2006 | July 2007 |
| Scientist (SS) | 10000 - 325 - 15200 | Brackishwater Aquaculture and Traditional Farming | Research, Technology development, Training, Extension & Consultancy | ICAR-CIBA, Chennai | Kakdwip Research Centre of ICAR-CIBA, Kakdwip, 24 Paraganas, South, West Bengal | 08 September 2003 | August 2006 |
| Scientist | 8000 - 275 - 13500 | Brackishwater Aquaculture and Traditional Farming | Research, Technology development, Training, Extension & Consultancy | ICAR-CIBA, Chennai | Kakdwip Research Centre of ICAR-CIBA, Kakdwip, 24 Paraganas, South, West Bengal | April 1999 | August 2003 |
| Scientist | 2200 - 75 - 2800 | Fish Breeding and coastal aquaculture | Research, Technology development, Training, Extension & Consultancy | ICAR-CIBA, Chennai | ICAR-CIBA, Chennai | 27 August 1997 | March 1999 |
| Aquaculturist | 4200 - 6000 | Shrimp | Commercial | Suryo Foods | Balasore, | December | June |

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| | | Aquaculture | production of shrimp, Satellite shrimp farm development, Post-harvest management, Export & Consultancy | & Industries Limited, Bhubaneswar | Odisha | r 1994 | 1997 |
|--|--|-------------|--------------------------------------------------------------------------------------------------------|-----------------------------------|--------|-----------|------|

- Editorial activity/Journal Reviewer
 - Chief Editor: Journal of Aquaculture, Association of Aquaculturist
 - Reviewers in, Aquaculture, Fish Physiology and Biochemistry, Journal of Aquaculture, Indian journal of fisheries,
- Number of publication (International/National)
 - Research Publications: 82 (International 58 + National -24)
 - Book chapters: 22
 - Popular articles: 13
 - Students guided: 13 (1 Ph.D and 12 M.Sc/M.F.Sc)
 - Projects completed: 12
 - Projects associated at present: 05
 - Books edited: 4
 - Technology series: 4
 - Extension series: 27
 - Conference proceedings: 12
 - Training manual: 18
- Paper published

| Sl. No | Authors, Year of publication, Title of the paper | Journal Name, Volume and Page No. |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| 1 | Irfan Ahmad Bhata, Mir Ishfaq Nazirb Irshad Ahmad, Gireesh-Babu Pathakota, Chanu T., Mukunda Goswami, Sundaray J. K and Rupam Sharma (2018) Fabrication and characterization of chitosan conjugated eurycomanone nanoparticles: in vivo evaluation of the bio distribution and toxicity in fish | Biomac, https://doi.org/10.1016/j.ijbio.2018.02.067 |
| 2 | Deeptha Chakravarty, Asish Mondal1, Jitendra Kumar Sundaray , Subhra Bikash Bhattacharyya, Abhijit Mitra (2017). Quality of Extensive Brackish Water Polyculture Farm Effluents at Different Production Levels and its Impact on the Receiving Environment | International Journal of Innovative Studies in Aquatic Biology and Fisheries (IJISABF), Vol 3, PP 5-14. |
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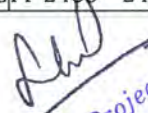
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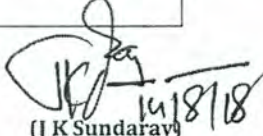
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| 78 | Kiran Dashrath Rasal, Vemlawada Chakrapani, Amrendra Kumar Pandey, Avinash Rambhau Rasal, Jitendra Kumar Sundaray , Arun Ninawe and Pallipuram Jayasankar (2017). Status and Future perspective of single nucleotide polymorphisms(SNPs) markers in farmed fishes: Way ahead using next generation sequencing. | Gene Reports. Vol 6, PP 81-86. |
| 79 | Sambid Swain, N K Chadha, J K Sundaray , P B Sawant and E M Chanda Prajnadarshini (2016) Effect of Vitamin C Dietary supplementation on growth ad survival of grey mullet, <i>Mugil cephalus</i> (Linnaues, 1758) Fry | Asian Journal of Microbiology Biotechnology Enviornemntal Scinece. Vol 18, PP 91-95. |
| 80 | Mohd.Ashraf Arather, Irfan Ahmad Bhat, Pravesh Kumar Rathor, Gireesh Babu P, Aparna Chaudharai, Sundaray Jitendra Kumar and Rupam Shamra (2016). In silico analysis and expression studies of Kisspepetin gene in C | Journal of Biomolecular Structure and Dynamics, Vol 35, Pp 2485 - 2496. |



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| | <i>Catla</i> . | |
| 81 | Swagat K. Patra , Chakrpani Vemulawada , Meenati M. Soren , Jitendra K. Sundaray , Manoj K. Panda and Hirak K. Barman (2018) Molecular characterization and expression patterns of Nanog gene validating its involvement in the embryonic development and maintenance of spermatogonial stem cells of farmed carp, <i>Labeo rohita</i> | Journal of Animal Science and Biotechnology (2018) 9:45 https://doi.org/10.1186/s40104-018-0260-2 |
| 82 | R. Pattanayak , R. Das ,A. Das , S. K. Padhi , S. Pattnaik , S. S. Sahu , C. S. K. Mishra , S. S. Mishra , S.N. Sahoo ,J. Debbarma, C. S. Mohanty, G. Sinam, J. K. Sundaray , P. Swain (2018) Biosafety Evaluation of Zinc Oxide Nanoparticles (ZnO NPs) on Polypedates maculates (Gray, 1830) | International Journal of Zoological Investigations Vol. 4, No. 1, 61-72 (2018) |


(J K Sundaray) 14/8/18

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Brief CV of Dr. AJMAL HUSSAN

| | |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name: | AJMAL HUSSAN |
| Designation: | SCIENTIST |
| Organisation: | ICAR-Central Institute of Freshwater Aquaculture |
| Division: | Aquaculture Production and Environment Division |
| Category: | General |
| Complete Address (Office) | Regional Research Centre, ICAR-Central Institute of Freshwater Aquaculture (Field Station of RRC, CIFA, Rahara) A-5 (Phase-III) Santalpara, Kalyani 741235, Nadia, West Bengal |
| Complete Address (Residence) | House No. 48 (Ground Floor); B-14, Kalyani-741235 Nadia, West Bengal |
| Phone (O) | (033) 2582 4015 [Kalyani] |
| Mobile | 9123376945/8420212856 |
| E-mail: | ajmalhussan82@gmail.com ajmal.hussan@icar.gov.in |

Education: UG, PG, PhD, Post Doc

| Sl. No. | Degree | University | Year | Division (% Marks) | Subject |
|---------|-----------------------------------------|--------------------------------------------------------------------------------------------------|------|-------------------------------------------------|-----------------------------------------------------|
| 1. | Bachelor of Fisheries Science (B.F.Sc.) | Central Agricultural University , Imphal (College of Fisheries, Agartala) | 2006 | 1 st Class (82.90%) | Fisheries Science |
| 2. | Master of Fisheries Science (M.F.Sc.) | Karnataka Veterinary, Animal and Fisheries Sciences university (College of Fisheries, Mangalore) | 2010 | 1 st Class with distinction (91.90%) | Fisheries Science (Fisheries Environment & Ecology) |

Master Degree Thesis Title:

"Lethal and Sublethal toxicity of mercury and cadmium on catla seed"

Details of employment Record

| Sl. No. | Name of Organisation | Designation | From | To | Scale of pay |
|---------|-----------------------------------------------------------|-----------------------|------------|------------|------------------------------|
| | Department of Fisheries, Government of Tripura. | Block Fishery Officer | 23.04.2008 | 26.12.2014 | Rs.10300 - 34400 + GP 4800/- |
| 1. | ICAR-National Academy of Agricultural Research Management | Scientist | 01.01.2015 | 31.03.2015 | Rs.15600 - 39100 + GP 6000/- |
| 2. | ICAR-Central Institute of Freshwater Aquaculture | Scientist | 01.04.2015 | till date | Rs.15600 - 39100 + GP 6000/- |

RESEARCH EXPERIENCE

| SL. NO. | YEAR | TOPIC OF RESEARCH | SPONSORING AGENCY | GIST OF RESEARCH |
|---------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | 2015-2018 | Studies on technical and economic feasibility of integrated crop-livestock-fish farming system involving <i>Mystus gulosus</i> , <i>E. vacha</i> , <i>C. reba</i> , <i>P. sarana</i> and <i>O. niloticus</i> along with carps. (Co-PI) | ICAR-CIFA | <ul style="list-style-type: none"> ➤ Seed rearing and grow out (mono- & poly-) culture methodology of <i>Mystus gulosus</i> in fresh water. ➤ Integrated culture model involving high value crops-livestocks-carps & catfish. |
| | 2016- | Evaluation of increasing production | | ➤ Evaluation of fish growth in |

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|----|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. | 2018 | of safe fish with feed in sustainable waste water aquaculture (Co-PI) | ICAR-CIFA | sewage fed system with different supplementary feeding schedule. ➤ Evaluation of stress in terms of Histopathological changes in sewage fed fish. |
| 3. | 2017-2019 | Development of user friendly portable pabda hatchery with tubifex culture & rainwater harvesting facilities under 'Application of Plastics in Aquaculture'. (PI) | AICRP (External Project) | ➤ Design & fabrication of pabda breeding/ hatching pool. ➤ Pabda broodstock development. |
| 4. | 2017-2020 | Adaptation and mitigation strategies in fisheries and aquaculture to climate change with special reference to freshwater aquaculture. (Co-PI) | NICRA (External Project) | ➤ Evaluation of effects of temperature on breeding performance of fishes. |

Technologies developed/involved

1. Breeding and seed production techniques of *Mystus gulio*.
2. Poly- & mono-culture techniques of *Mystus gulio*.

Details of publications (In Bibliographic Form):

a) Research Paper:

- **Hussan, A.,** Choudhury, T.G., Prakash, C., Tripathi, G., Jayasankar, P., Chadha, N.K., Sundaray, J.K. and Dhamotharan, K. (2016). Feasibility of using Diluted and Chemically Treated Wastewater for Fish Culture. *Fishery Technol.*, 53: 96-104.
- **Hussan, A.,** Choudhury, T.G., Ahmed, I., Gita, S., Das, A., Udit, U.K., Chakrabarti, P.P. and Mandal, R.N. (2016). Effect of Mercury and Cadmium on the Oxygen Consumption and Gill Histology of Catlacatla (Ham. 1822). *Proc. Natl. Acad. Sci., India, Sect. B Biol. Sci.*, DOI 10.1007/s40011-016-0806-z.
- Udit, U.K., Nandi, S., Meher, P. K., **Hussan, A.,** Das, R., Sundaray, J.K. and Jayasankar, P. (2017). DNA barcoding of *Puntius sarana* (hamilton, 1822) : species validation and phylogenetic assessment. *J. Exp. Zool. India*, 20(1): 273-279.
- Chakrabarti, P.P., Mohapatra, B.C., **Hussan, A.,** Das, A., Mandal. R. N., Ghosh, A., Choudhuri, G. and Jayasankar, P. (2017). Induced Breeding of Carps for Seed Production in FRP Hatchery. *Adv. Appl. Sci. Res.*, 8(1):88-93.

b) Scientific Article:

- **Hussan, A.** and Choudhury, T. G. (2016). Bioremediation: Cost-effective Alternative to Clean Environment. *Aqua International*, October 2016 issue, pp: 40-47.
- **Hussan, A.,** Choudhury, T. G., Vinay, T. N. and Gupta, S. K. (2016). Common problems in aquaculture and their preventive measures. *Aquaculture Times*, 2(5): 6-9.
- **Hussan, A.** (2016). Threats to fish diversity of East Kolkata Wetlands and Conservation needs. *Aquaculture Times*, 2(6): 10-15.
- **Hussan, A.,** Choudhury, T. G., Das, A. and Gita, S. (2016). Suckermouth Sailfin Catfishes: A future threat to aquatic ecosystems of India. *Aquaculture Times*, 2(6): 20-22.
- Gita, S., **Hussan, A.** and Choudhury, T. G. (2017). Impact of Textile Dyes Waste on Aquatic Environments and its Treatment. *Environment & Ecology*, 35 (3C):2349-2353.
- **Hussan, A.,** Hoque, F., Das, A. and Chakrabarti, P. P. (2017). Care to Reduce Stress. *Aquaculture Times*, 3(4): 49-55.

Details of extension activities:

Summary of Training/ Demonstration etc. conducted to disseminate knowledge & technology:

| | | | |
|----------|-----------|---------------------------------------------------------------------------------------------------------|---------|
| Training | under NEH | i) Assam – 03 nos. ii) Arunachal Pradesh – 02 nos. iii) Mizoram – 01 no. iv) Tripura – 03 nos. | 09 nos. |
| | under TSP | i) West Bengal – 02 nos. | 02 nos. |

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| | on campus training | i) Kalyani FS of ICAR-CIFA -04 nos | 04 nos. |
| Total number of training conducted: | | | 15 nos. |

Other Activities:

a) Other research activities & achievements

1. Biology of river catfish *Eutropiichthys vacha* studied in captivity
2. Development of integrated of farming system model: Performance evaluation of various high value and conventional horticultural crops, poultry and ducks are ongoing.
3. Feed application in sewage-fed water evaluated which showed to induce stress in Indian major carps, hampering ultimate growth performance.

b) Identification of constrains to Aquaculture Development of East Kolkata Wetland:

- Considering the growing conflict between the Aquaculturist and unwanted fishes/animals in East Kolkata Wetlands (EKW) a face-to-face interaction-cum-data collection programme was initiated from the Month of February, 2017. Data collected till date documents the widespread invasion of suckermouth armored catfishes (*Pterygoplichthys sp.*), incident of presence of Alligator Gar (*Atractosteus spatula*) in the pond fisheries of EKW along with seasonal wildlife animal dominance, which are causing a significant ecological and economic damage to this Ramsar Site.

c) Evaluation of armoured catfish threats in EKW

- Data collected through on-field survey and face-to-face interaction with stakeholders and evaluated the threats non-native suckermouth armoured catfish belonging to the genus *Pterygoplichthys* (Loricariidae) are posing on economics and biodiversity of East Kolkata Wetlands (EKW). Information analysis indicates that, this unwanted fish species already became a threat to this internationally important wetland area. Results were presented in an international seminar (11th Indian Fisheries & Aquaculture Forum held at Kochi between 21-24 November, 2017) to attract immediate collaborative scientific intervention to save this 'Ramsar Site' from debacle.

d) Initiative to identify the impact of unregulated aquaculture in Moyna, West Bengal

- To evaluate the present practices and ensure future sustainability of the Aquaculture of Moyna Block under Purba Medinipur a study was initiated. From the study need of intervention of ICAR-CIFA with its technologies was felt for the sustainability of the Aquaculture at Moyna, and several programs in this direction are in progress currently.

Date: 14.08.2018

Signature of the Scientist

I hereby certify that the above mentioned information furnished above by me is true and correct.

Ajmal Hossain 14/08/18

Ajmal Hossain 14/08/18

Nagesh Kumar
14.08.2018

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Brief CV of Dr. P. P. Chakrabarti

Name: Dr. P.P. Chakrabarti
 Date of birth: 13 July 1961
 Sex (M/F): Male
 Address: B-14/151, Kalyani, Nadia, West Bengal - 741235
 Designation: Principal Scientist
 Department: Aquaculture Production and Environment Division
 Institute: ICAR – Central Institute of Freshwater Aquaculture
 Address: Regional Research Centre, ICAR-CIFA,
 A-5 (Phase-III), Santalpara, Kalyani, Nadia,
 West Bengal – 741235.
 Telephone: Mob: 09432245479, Office: 033-25924015
 E-mail: ppcifa09@gmail.com

Education (Post-graduation onwards) & Professional Career:

| Exam./ Degree | Board/ University | Subject | Year | Remarks |
|---------------|-----------------------------------------------------------------------------|-------------------------------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ph.D. | Calcutta University, West Bengal | Agricultural Chemistry and Soil Science | 1991 | Thesis Title - Seasonal influence on the forms of Nitrogen and Sulphur along with microbial population in some selected localities of coastal saline soils of West Bengal (Sundarban Region) |
| ARS | ICAR, New Delhi, Ministry of Agriculture & Farmers Welfare, Govt. of India. | Ag. Chem./ soil science/ fertility/ microbiology etc. | 1991 | 26 years of experience Joined in Aquaculture Production and Environment division of ICAR-CIFA, continuing till date |
| M. Sc. | Calcutta University | Agricultural Chemistry and Soil Science | 1983 | 1 st Class (rank - 2 nd) Thesis Title - Characterisation of organic matter content of Calcutta city wastes compost |

Position and Employment:

| Sl. No | Organization | Designation on Joining | From (Date) | To (date) | Nature of Duties |
|--------|---------------------------------------------------------------------------------------------------------------------|----------------------------|-------------|------------|-------------------------------------------|
| 1. | Biofertiliser Development Centre, Ministry of Agriculture & Co-operation . Govt. of India, Jabalpur, Madhya Pradesh | Senior Technical Officer | 25.10.1988 | 31.05.1991 | Senior Technical Officer |
| 2. | CIFA (ICAR), Bhubaneswar | Scientist | 01.06.1991 | 04.08.1995 | Research & Extension |
| 3. | West Bengal University of Animal and Fishery Science, Govt. of West Bengal | Assistant Professor | 1995 | 1996 | Teaching |
| 4. | CIFA, Bhubaneswar & Regional centre of CIFA, Kolkata | Senior Scientist | 05.08.1995 | 04.08.2000 | Research & Extension |
| 5. | Regional centre of CIFA, Kolkata, West Bengal | Senior Scientist | 05.08.2000 | 04.08.2008 | Research & Extension |
| 6. | Regional centre of CIFA, Kolkata, West Bengal | Principal Scientist & Head | 05.08.2008 | Till Date | Research management, Research & Extension |

Field of specialization:

1. Increasing farm income through fish culture and allied activities in remote areas in North Eastern Hilly States.
2. Increasing fish production and productivities at freshwater ponds.
3. Nutrient management in fresh and wastewater environment.

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4. Creation of alternative livelihood through fish based integrated high value agri-horti-livestock for small and marginal farmers.
5. Developing protocols of breeding and culture of diversified high value small indigenous fish species like pabda (*Omopk* sp.), eurohaline *M. gulio* (nona tengra), *A. mola*, *C. reba*, *L. bata*, *M. vittatus* etc. in composite fish culture.
6. Developing skilled manpower in fish breeding and culture
7. Creation of alternative livelihood through fish based integrated farming system to the tribals of Sunderban islands and other areas of West Bengal.

Professional Experience:

- After acquiring Ph. D. Degree in Agriculture-Chemistry and soil science from Calcutta University he joined as a microbiologist in Biofertiliser Development Centre, Ministry of Agriculture and Co-operation, Govt. of India at Jabalpur and served for four years.
- Joined as ARS service in 5th August 1991 in Aquaculture Production and Environment division of ICAR-CIFA, at CIFA, Bhubaneswar, after in service training.
- He was deputed to W.B.U.F.S. by the ministry to build up new fishery faculty, after four and half years service at CIFA Headquarter.
- After one year he joined in Regional Research Centre, CIFA at Kalyani. Since then he is serving in different capacity, at Rahara and Kalyani
- He has worked for development work of aquaculture of CIFA in 8 NEH states of India as a Chairman of North East Development in Fisheries by CIFA since 1998.
- Handled more than 20 research projects funded by ICAR-CIFA, AP-CESS World Bank, Ministry of Environment and Forest, DBT etc.
- During last 15 years he has been engaged in the projects for developing seed production and culture of regionally preferred fish species like *O. pabda*, *O. bimaculatus*, *M. vittatus*, *M. gulio* etc.

Major Contributions in value chain development in India:

Arunachal Pradesh:

- Development of a innovative technological park with diversified freshwater fish species alongwith integrated fish based agri-horti livestock fish species at sonajuli, District Papumpare.
- Demonstration of Composite Fish culture and Pig-cum-Fishery in all the district of Arunachal Pradesh showed a increment of more than three times (nearing 1000 kg to 3500 kg /ha/year).
- Early breeding of IMC, Establishment of FRP Hatcheries

Assam:

- Boosting quality fish seed production in entire Assam by supply of appreciable number of FRP hatcheries.
- Establishing cluster of Magur Hatcheries and trained catfish breeder in and around Nalbari and Barpeta district
- Production of *Omopk bimaculatus* at barak valle through training and technology transfer.
- Demonstration of Composite fish culture at Manushmari, Udalgiri distric and Pig-cum-Fisah culture in 4 district of fish culture showed a three times increment of fish production in this disturbed areas. Establishing multiplies unit of improved Jayanti Rohu at Bagibari and Nalbari. Thus availability of quality improved Rohu was made available in the state itself and CIFA adopted farmers were awarded best fish farmer award from the Government.
- Creation of Skilled Manpower (more than 2000) in fish breeding and advanced fish culture techniques in Assam.
- 1st time fish seed production in FRP hatchery at Majuli, assam.
- Supply of FRP hatcheries towards the side of the 11 Beels of Assam for increase of quality fish seeds in beels.

Tripura:

- Establishing two Pabda hatcheries (State fish of Tripura) in Melaghar and Lembucherra and transfer of Pabda breeding and culture technology through training and Demonstration.
- Early breeding of IMC through improve of CIFA BROOD™ of 5 state government farms.
- Organising workshops, seminars involving all the North Eastern states at Agartala.
- Demonstration of Duck-cum-Fish culture in


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Nagaland:

- Demonstration of Paddy-cum-fish and Pig-cu-Fish culture at Khekio village and other places, Nagaland.
- Hatchery establishment and production of quality fish seed at state government farms.
- Establishing ornamental units at Dimapur.
- Training and demonstration of farm made feed at Phek district at Kohima.

Manipur:

- Increase of quality fish seed through installation of several hatcheries.
- Demonstration of semi-intensive scientific fish culture resulting 10000 kg/ha/year.

Mizoram:

- Training, Demonstration and hatchery establishment

Sikkim:

- Training, Demonstration and exposure visits of freshwater fish culture and ornamental fisheries.

Meghalaya

- Demonstration of scientific composite fish culture in all the districts and integrated fish-livestock culture has not only increased fish production from nearing 700 kg/ha/year to around 3500 kg/ha/year but also increased farm income considerably.
- Demonstration of cage culture and Nongmahir reservoir, Meghalaya.
- Creation of skilled manpower in fisheries through training and Demonstraion.
- CIFA adopted farmer from killing, ditrict Ri-bhoy received best farmer award also.
- Popularization of modern scientific fish culture through awareness in farmers meet, farmers fair etc.

West Bengal:

- Activities at Bali, Sundarban Island under DBT project has been selected display and presentation to the honorable Prime Minister, India and Shooting was completed.
- Significant contribution to create alternative livelihood of small and marginal poor farmers through fish based integrated farming system using high value crops towards doubling farm income.
- He has engaged tribal development work under TSP program of ICAR-CIFA for 5 years in West Bengal. He has substantially increased fish production in salt affected ponds of Sunderban islands, red and lateritic pond soils of Dumduma, Birbhumi, West Bengal.

Technology developed/ varieties released:

1. Technology developed for Pabda induced Breeding, seed production and culture practice.
2. Technology developed for *M. gulosus* induced Breeding seed production and culture practice.
3. Fish based integrated farming system using high value crops.

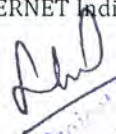
Honors/Awards Received:

1. National Scholar from Secondary Examination & onwards.
2. First Class Second in Post Graduation Degree under Calcutta University, West Bengal.
3. Best ICAR Team Research Awards in 2000.
4. Award for outstanding research contribution & development from Science Association of Bengal on National Science Day, 2010.
5. Lifetime Achievement Awards from Department of Fisheries, Govt. of Assam in 2016.
6. Fellowship Award from Wildlife Protection Society of India in 2017.

Training Participated:

1. NARM refresher training course of 6 months in 1991
2. 10 days training on Radio Chemistry and application of radioisotopes organised by CWRDM, Calicut, Dept. of Physics, University of Calicut and Indian association of nuclear chemists and allied scientists, Bhabha atomic research centres at Kojikode, Kerala during 9-19 March, 1993.
3. 7 days training on Nutrient Management in Aquaculture organised by Visva Bharati, Santiniketan during 9-15 July, 1995
4. 21 days Winter school on Aquatic ecosystem and health management organised by ICAR-CIFRI, Barrackpur, W.B. in 2003.
5. 5 days training on Introduction on LAN/WAN Technologies organised by ERNET India and ICAR during 23-27 July, 2004


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Documentary published:

Biotechnology Based Programme for Societal Development published by DBT, Govt. of India with the support of NFDC, <http://www.dbtindia.nic.in/videos/> and/or <https://www.youtube.com/watch?v=ZDEVbEUylU4>

Completed Research Projects :

| Sl. No. | Title of the Project | Funding Agency | Duration |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------|
| 1 | Pond Bioenergetics, Digestive enzymes and Microflora in fish and prawn under aquaculture in National Agriculture Research Project (NARP Phase II/ World Bank) - as Co-Investigator | (NARP Phase II/ World Bank) | 30.09.1992-29.05.1996 |
| 2 | Aquaculture as a tool for utilisation and treatment of domestic sewage funded by the National River Conservation Directorate, Ministry of Environment and Forests - as Co-Investigator | MoEF | 01.02.1994-31.03.1996 |
| 3 | Breeding and culture of some nonconventional food fishes like <i>Anabas testudineus</i> , <i>Labeo calbasu</i> , <i>Mystus vittatus</i> and <i>Ompok pabda</i> (Institute based project) - as Co-Investigator | CIFA/ICAR | 01.04.1997-31.03.2005 |
| 4 | Microflora and Quality of Fish cultured in sewage-fed waters with reference to shelf-life and public health (A.P. cess fund) - as Co-Principal Investigator | A. P. Cess fund, ICAR | 16.01.1995-15.01.1998 |
| 5 | Mass scale seed production of Ompok & mystus sp., study on growth performance using different diets under variable physico-chemical conditions as (Institute based project) Co-Investigator | CIFA/ICAR | 01.04.2005-31.03.2009 |
| 6 | Study of fish biodiversity, breeding and culture of carps and some selected ornamental fishes in North-eastern state of Meghalaya (Institute based project) as Co-Investigator | CIFA/ICAR | 01.04.2004-31.03.2008 |
| 7 | Aquaculture in changing climate-A study based on perceptions of Freshwater aquaculture as Co-Investigator | CIFA/ICAR | 01.04.2008-31.03.2011 |
| 8 | Accumulation, magnification and removal of heavy metals in sewage-fed ecosystem as Principal Investigator | CIFA/ICAR | 26.10.1999-25.04.2003 |
| 9 | Studies on soil resource for assessing pond productivity in contrasting agro- ecological regions of West Bengal as Principal Investigator | CIFA/ICAR | 01.05.2001-30.04.2004 |
| 10 | Aquaculture development in North Eastern Hill Region 2000-2008 as Principal Coordinator | CIFA/ICAR | 01.05.2003-30.04.2008 |
| 11 | Grow out culture of <i>Ompok pabda</i> and breeding of <i>Ompok bimaculatus</i> as Principal Investigator | CIFA/ICAR | 01.04.2009-31.03.2012 |
| 12 | Development of Livelihood Through Freshwater Aquaculture of North-eastern states as Co-Investigator | CIFA/ICAR | 01.04.2009-31.03.2012 |
| 13 | Characterization and utilization of wastes of wastes in Aquaculture as Principal Investigator | CIFA/ICAR | 01.04.2011-31.03.2014 |
| 14 | Development of Better Management Practices for <i>Pangasianodon hypophthalmus</i> (a part of the project of RRC, Vijayawada, AP) as Co-Investigator | NFDB | 15.07.2011-15.10.2011 |
| 15 | Performance of few high values regionally preferred fishes along with small indigenous freshwater fish species (SIFFS) in agri-horti-live stocks integrated culture system as (Institute based project) Principal Investigator | CIFA/ICAR | 01.04.2012-31.03.2015 |
| 16 | Demonstration and Dissemination of Freshwater Aquaculture Technologies for Tribal farmers of India as Co-Investigator | CIFA/ICAR | 01.04.2012-31.03.2015 |
| 17 | Impact assessment of cat fish & Murrel aquaculture in India. as Co-Investigator | CIFA/ICAR | 01.04.2013-31.03.17 |
| 18 | Risk and benefit assessment of an illegally introduced fish species <i>Piaractus brachipomus</i> , Pacu in India as Co- | NFDB | March Oct, 2016 |

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| Investigator | | |
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Ongoing Research Projects:

| SI No. | Title of Project | Funding Agency | Duration |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------|
| 1 | Productivity and production enhancement of freshwater ponds through BMP and aquaculture for livelihood development of the Aila affected SC/ST communities of Islands of the Sundarban, West Bengal as Principal Investigator | DBT | 03.03.2016-03.03.2019 |
| 2 | Studies on technical and economic feasibility of integrated crop-livestock-fish farming systems involving <i>Mystus gulio</i> , <i>Eutropiichthys vacha</i> , <i>Cirrhinus reba</i> , <i>Puntius sarana</i> and <i>Oreochromis nilotica</i> along with carps as Principal Investigator | CIFA/ICAR | 01.04.2016-31.03.2018 |
| 3 | Evaluation on increasing production of safe fish with feed in sustainable waste-water aquaculture as Co-Investigator | CIFA/ICAR | 01.04.2016-31.03.2018 |
| 4 | Impact assessment of aquaculture technology as Co-Investigator | CIFA/ICAR | 01.04.2017-31.03.2019 |

Place: Kalyani

Date: 14.08.2018

As the principal Investigator
14/08/18

Signature

Nagesh Barik
14.08.18

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