

Higher Fisheries Education: Way Forward



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Fisheries and Aquaculture

- Fisheries and Aquaculture are vibrant economic activities, and have been the fastest growing food production systems during the last three decades.

Supply from Capture
Fisheries & Aquaculture

150 million
tonnes

Used as human food

115 million tonnes

Estimated apparent per capita supply of about **17 kg**

Fish accounts for....

15.7% of Global population's intake of animal protein

Fisheries and Aquaculture: Indian Context

Fisheries accounts for....

5.8% ○ Agricultural GDP

1.1% ○ National GDP

Contributing substantially for the livelihood and nutritional security of the people!

Skilled human resources **Most Important**

Lack of it leads to...

- *Poor implementation of development and welfare programs*
- *Ineffective service delivery systems*

Generating competent professional human resources

One of the most critical inputs in driving the engine of sustainable fisheries and aquaculture

Importance of Consultation process

- Commercialization & Globalization of education in the context of GATS
- Reorienting Fisheries Education: The Knowledge Vs Skills Dilemma
- Distance Education and E-learning in Fisheries
- Industry / Students Perspective of Fisheries Education
- Student Perspectives of Fisheries Education
- Standards for infrastructure and faculty positions
- Need and relevance of Fisheries Council of India
- HRD assessment and requirements



Uniform, relevant and updated curriculum

Effective Learning Methodology

Competent Faculty

Adequate Infrastructure

Emphasis on basic sciences in course curricula: Emulation of successful models

Gender dimensions of the fisheries and aquaculture

Lay focus on quality research

Employability and Recruitment

Regulatory mechanism

Globalization and Infusing PPP models in Fisheries education

National awareness program on fisheries

Coping with Frontier Knowledge: Space Technology & Fisheries

**The Way
Forward**

Uniform, relevant and updated curriculum

- IV Deans Committee constituted by ICAR has helped revise and update the graduate curriculum.
- Broad Subject Matter Area-Fisheries, ICAR has made a template for postgraduate curriculum with uniform nomenclature for specialization at Masters and PhD levels.
- Though the present Accreditation system of ICAR desires this, there is no guarantee that these exercises are done in the absence of mandatory requirement.
- A policy has to be evolved for a mechanism to bring all fisheries and related disciplines under single umbrella.

Effective Learning Methodology

- An ideal learning environment-motivating factor for encourage both students and teachers.
- The policy shall encourage participatory and interactive learning approaches in both class room and the field using various ICT tools like **video conferencing**.
- The learning process and environment need to be transformed by integrating the contents, training, technologies and services to produce learning outcomes required for the knowledge era.
- The policy shall encourage preparation of University level text books for many fisheries subjects by the expert faculty.

Central elements of creating conducive learning environment

- Bringing attitudinal change among the faculty
- Providing opportunities for continuously upgrading their competency levels
- Encouraging expertise from the industry, NGO sector and Development Departments to join academic institutions as faculty through lateral entry.
- Encouraging short term faculty positions
- Permanent faculty may be encouraged to work on deputation to industry, Development Depts., and NGOs.

Adequate Infrastructure

- The minimum required infrastructure has to be arrived at based on the requirement of ensuring the standard of education.
- Out of the box ideas need to be explored for addressing this through innovative financial support to the state colleges.

Emphasis on basic sciences in course curricula

- Emphasis on laying strong foundation in basic sciences for pursuing sound research.
- Curriculum in fisheries and aquaculture should cover vast number of basic and applied courses with a battery of optional courses/electives in various areas.

Gender Mainstreaming

- Fisheries is one sector which has greatly benefitted by the field level participation of women in various levels.
- Number of girl students strength is increasing in the Fisheries Colleges and this should bring more women to fisheries education, research and development sectors.

Lay focus on quality research

Nature 2004 report:

We are **22nd** in the global ranking in number of impact making scientific publications - below China, South Korea and Poland.

- In the field of Fisheries, India has enormous opportunity to improve the quality of research and thereby bring greater benefits to farmers.
- **China** has made tremendous progress, largely with the good investment in research and translating research results in to practical reality.
- **Its high time we wake up to the realities!!**

Employability and Recruitment

- Orient the educational program to produce *job creators* instead of *job seekers*.
- Colleges shall be encouraged to nurture bright ideas/innovations among the students/faculty.
- Students shall be provided a platform to develop these into commercially viable ventures and launch them in the market.

- The lack of specialized statutory body like AICTE or Veterinary Council of India has been the main impediment.
- It is desirable that a statutory **Fisheries Council of India** with attendant State level bodies is established.

Globalization and Infusing PPP models

- Two-thirds of the national R&D expenditure comes from central government and a quarter from Industry.
- Except in sectors like pharmaceuticals and drugs, our industry does not appear to be making major investments in or demands on Indian Science.
- Higher education, growing at 20% per annum worldwide, is counted as one of the most important ingredients in knowledge-based economies.
- The education policy for fisheries shall be sensitive to this phenomenon of globalization of education services.
- Premier institutions has to be encouraged setting up global education centers in collaboration with suitable overseas partners.

National awareness program on fisheries

- For the healthy development of brain and heart, public need better education on this fish as a healthy food.
- A major National and State level awareness programs and publicity campaigns to create wider awareness is imperative
- **Fish in Noon-meal scheme - A Game Changer..??**

Coping with Frontier Knowledge: Space Technology

- Remote sensing satellites have proven to be of substantial economic benefit to fisheries among all farm sectors.
- Currently investigations are underway for using them for generating round-the-year- *PFZ advisories (Potential Fishing Zone)* in locations with significant period of cloud cover like Andaman.
- Utilization of scatterometer data for fish needs to be imaginatively explored.
- The fisheries curricula should enable the graduating students to comprehend the potential of emerging tools and knowledge and pursue research in such frontier areas.

Thank You