

GAF – Focus India
**Gender Research in Aquaculture
& Fisheries in ICAR**

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- Vast country- marine, inland, aquaculture (FW, BW and open sea culture)
 - 4 million people depend on the sector
-
- 9.6 million tonnes during 2013–14
 - Aquaculture sector (6.1 m t) recorded growth of 5-6%





- Ranks second in world fish production, contributing about 5.4 per cent of global fish production
- Contributes about 0.9% to overall GDP and 4.5 % of agriculture GDP
- The total export value is 30213 crores (over 5 billion \$)

POTENTIAL.....

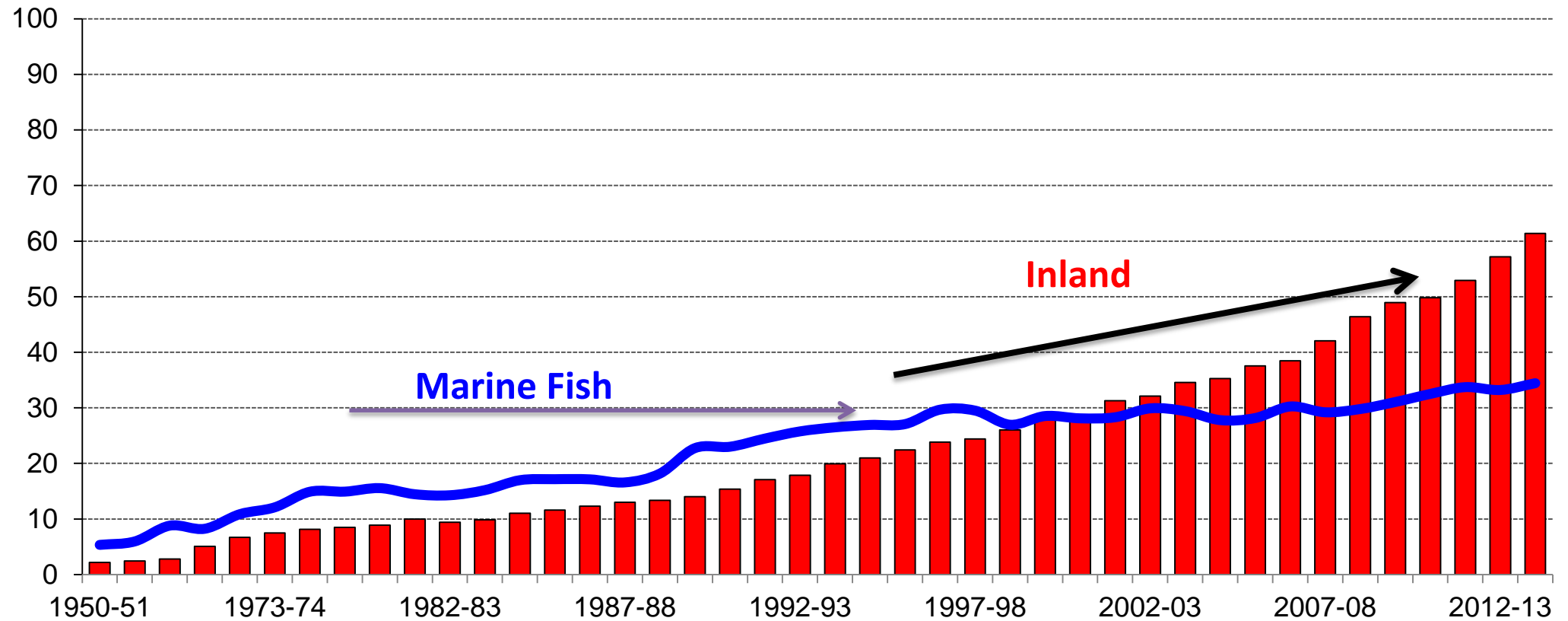
Marine			
Length of coast line (km)	8,118	Exclusive Economic Zone (EEZ) million Sq km	2.02
Continental Shelf ('000 sq km)	530	Number of Fish Landing Centres	1,537
Inland			
Total inland water bodies (million ha)	7.36	Rivers & canals (million km)	0.19
Reservoirs (million ha)	2.91	Tanks & ponds (million ha)	2.41
Flood plain lakes/derelict waters (million ha)	0.80	Brackish water (million ha)	1.24

Supply of Fish:

Marine Fisheries (Hunting and Gathering)

Inland Fisheries (Farming)

mt





- Aquaculture production has shown phenomenal increase and touched 5 million tonnes in 2012 with latest 6.14 million t in 2014
- Freshwater sector - Carp, freshwater prawns, Pangasius, Tilapia
- Brackishwater sector - Whiteleg shrimp (*L. vannamei*), Tiger prawn

Gender Research

Why Gender needs to be studied?

- Women make significant contributions to fishery related activities and form an integral part of the sector - ignoring them will be like ignoring a large portion of the sector
- The opinions and expertise from both men and women are essential for the development and management of the fishery sector.
- The under-representation of women in decision making takes away a large portion of the available pool of expertise - from both the government and the community.
- Mainstreaming means bringing out gender concerns in all aspects of executing policies and programmes from implementation to evaluation so that there is equality in sharing benefits.
- Studies have shown that having more women in an organisation leads to better cooperation among team members and facilitates the decision-making process.

- In the fisheries sector, as in many traditional occupations, there is a high degree of specialization or division of labour.
- In addition to gender division of labour, there are other related factors like differential access to resources, technology, family roles, participation in decision making, political participation etc.
- All these factors result in differential vulnerability, requiring specific coping and adaptation strategies for men and women, in view of the dynamic changes that are taking place in the sector.
- The slow, but definite, exclusion of women from many spheres is becoming part of the process.
- There is need for greater understanding of the roles as well as the processes of change for arriving at participatory solutions and building capacities.

ICAR Experience

- Eight institutes under ICAR undertake research on various aspects of fisheries

Central Marine Fisheries Research Institute, Kochi, Kerala

Central Inland Fisheries Research Institute, Barrackpore, West Bengal

Central Institute of Brackishwater Aquaculture, Chennai, Tamilnadu

Central Institute of Freshwater Aquaculture, Bhubaneswar, Orissa

Central Institute of Fisheries Education, Mumbai, Maharashtra

Central Institute of Fisheries Technology, Kochi, Kerala

National Bureau of Fish Genetic Resources, Lucknow, Uttar Pradesh

Directorate of Coldwater Fisheries Research, Bhimtal, Uttaranchal

Women Scientific Strength



हर कदम, हर डगर
किसानों का हमसफर
भारतीय कृषि अनुसंधान परिषद

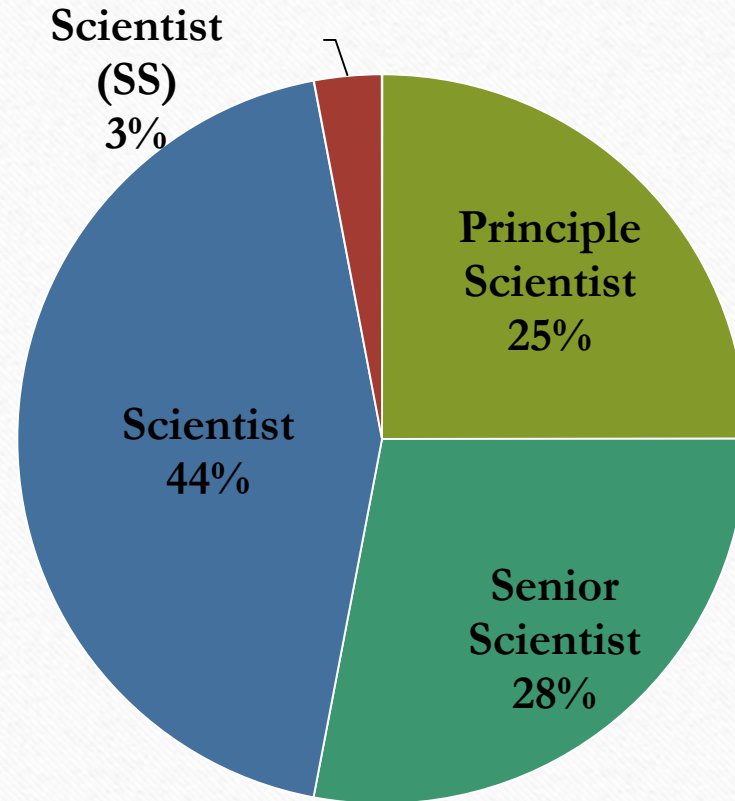
Agrisearch with a human touch



- 105 women work in ICAR Fisheries Institutes in the scientific cadre
- In 2001, 13.92 per cent of the total scientific force in fisheries research (under ICAR) (*Gopal & Thomas, 2001*)

- By 2012, the percentage has increased to 20%
(*Meenakumari et. al. - GAF3 : available on website of genderaquafish....*)
- Women professionals in fisheries steadily increasing over the years

Through a cross section
of women in the
system...



Pertains to 2012 data. Current percentages may vary...

Main research focus in gender on.....

- **Data generation**
- **Micro level studies – roles, constraints, comparative analysis, access**
- **Case studies**
- **Technology interventions and impact studies**

- CMFRI – census
- Fairly elaborate data on the marine sector generated
- Including socio-economic data
 - 3288 marine fishing villages; 1511 marine fish landing centres
 - Population 4 million comprising in 864,550 families.
 - 61% of the fishermen families were under BPL category.
 - The average family size 4.63 and the overall sex ratio was 928 females per 1000 males.
 - 58% of the fisherfolk have some literacy; 38% marine fisherfolk active fishermen
 - 57% of the fisherfolk engaged in fish seed collection were women.
 - Religious composition - 76% Hindus, 15% were Christians and 9% were Muslims.
The overall percentage of SC/ST among the marine fishermen households was 17%.

Micro level studies

Roles

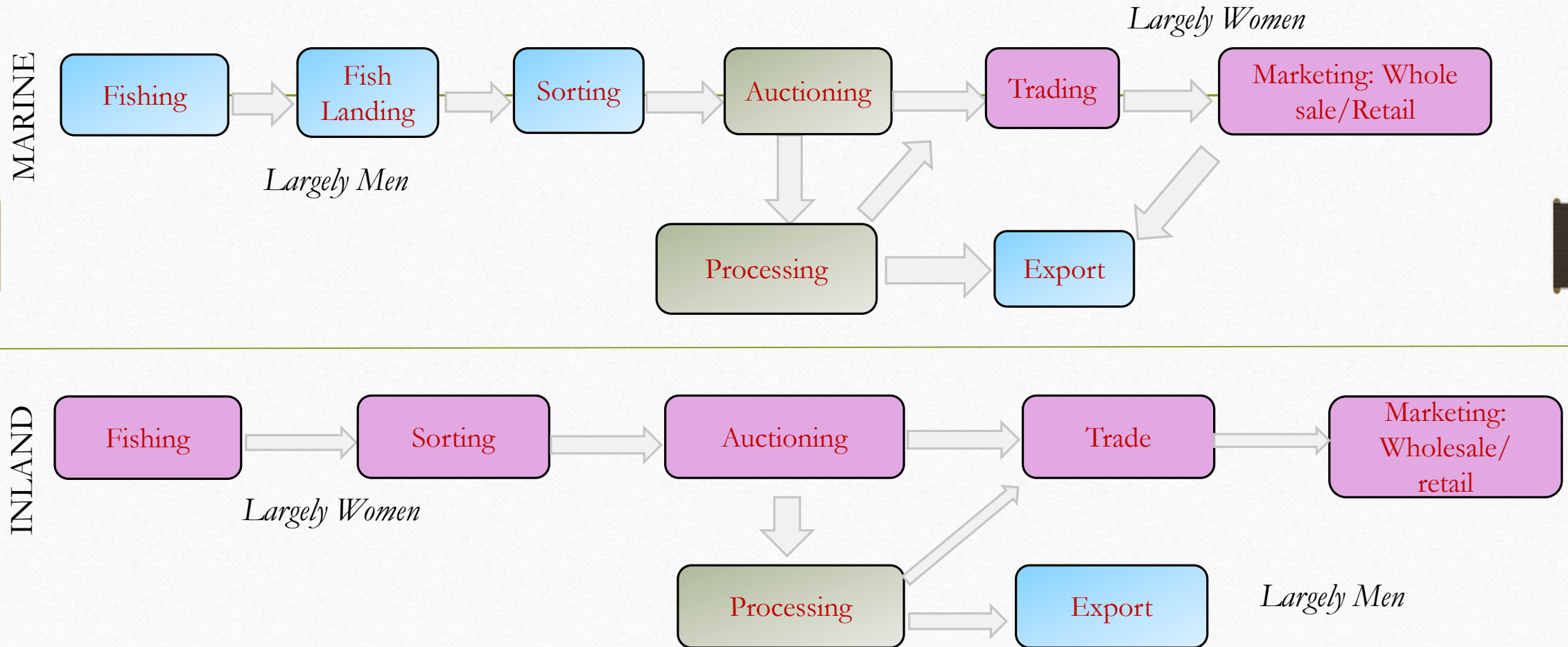
Work Spaces

Constraints

Issues

Gendered Work space

- Where men and women are in the sector



- The roles and work spaces clearly overlap
- There are broad patterns in both the marine and inland sectors
- Women are more present along with the men – both in harvest and post harvest sectors
- Just like any other sector, gendered differences in roles depends on the types of activity being performed; besides other factors - physical, social, cultural, political

Persons involved in actual fishing operation

	Male	Female	Total
Full-time	0.82 million	0.11 million	0.93 million
Part-time	0.92 million	0.15 million	1.07 million
Total	1.74 million	0.26 million	2.00 million

2003

Sector specific ×

- **Women have been involved in both harvest and post-harvest activities**
- **Roles in harvesting are limited to fishing, collection and hand-picking and operating some traditional gears from smaller water bodies**
- **Women are actively engaged in cleaning / collecting - clams, crabs, fish fry, sea-weed etc.**
- **Other ancillary / small scale activities included prawn peeling, fish curing, drying, fresh and dry fish marketing, net making and mending**
- **Seafood industries - women dominate but relegated to floor level unskilled work with very few top-level functionaries**
- **Contribution to income and food security significant**

HARVESTING





POST HARVEST SECTOR





Courtesy of World Fish Center

Women's indirect engagements

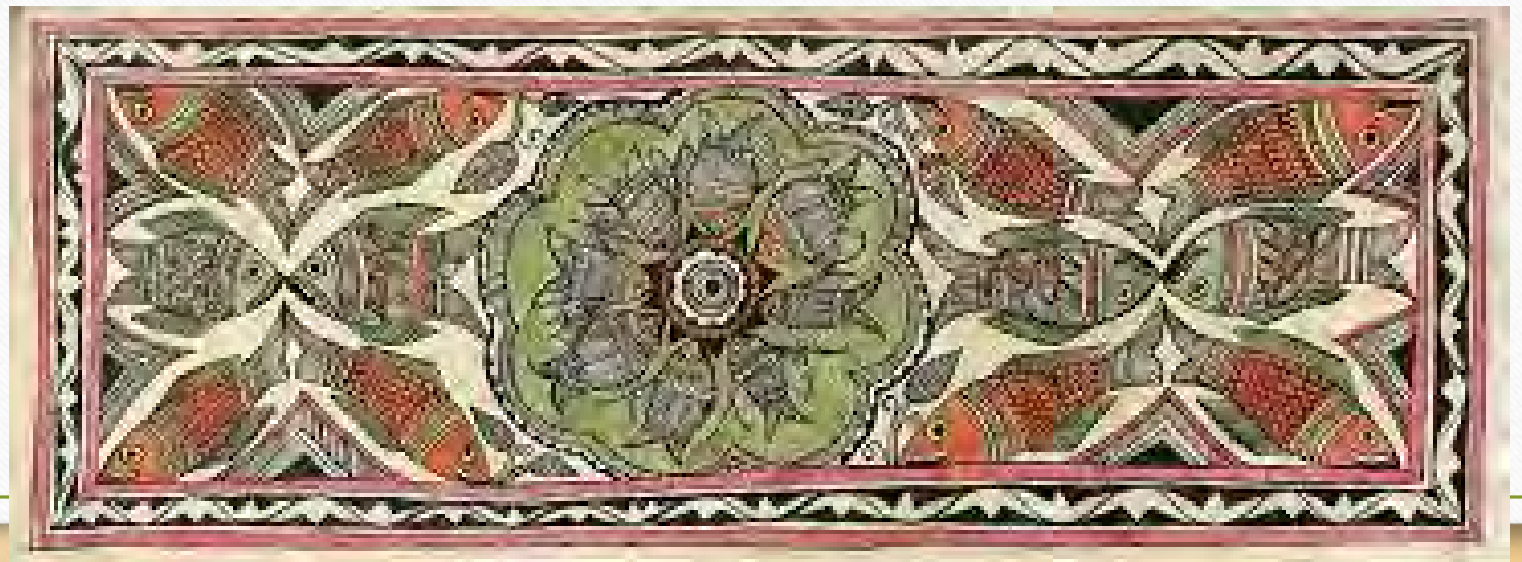
- **House hold management**
- **Child care**
- **Education**
- **Health**
- **Sanitation**
- **Financial management**
- **Maintaining social networks and**
- **Culture of the community**



- Aquaculture sector largely male dominated and women entrepreneurs rarely visible
 - Technology and resources major constraints
 - Success stories documented
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(See Shanti et. al., genderaquafish GAF3)

Madhubani paintings, Bihar, India



Constraints

- Limited access to resources
- Poor say in decision making

- Inadequate training and formal education
- High disparity in ownership of productive assets and wage structure
- Lack of working capital and dependence of informal credit

Generalizations not possible, situations differ and evidences vary.....

Technology interventions and impacts.....



- Modern technologies has affected the community; role and status of fisherwomen
- ICT - knowledge centres was effective in empowering women
- Access to financial services, especially through Self Help group- Microfinance models have improved incomes
- Small Scale Fisheries - Technological advancement has led to marginalisation of women
- Identifying and implementing potential livelihood options through technologies developed at the institutes
- This included edible oyster culture, mussel farming, shrimp farming, crab fattening and culture, seaweed farming, raising fry and fingerlings in seasonal ponds, backyard hatchery management, aquarium fish breeding and culture...
- Location specific and need based training programs for fisherwomen organized to enhance awareness and technical know-how



Impact assessments through

- Quantitative studies – Indices, Analysis
- Qualitative studies





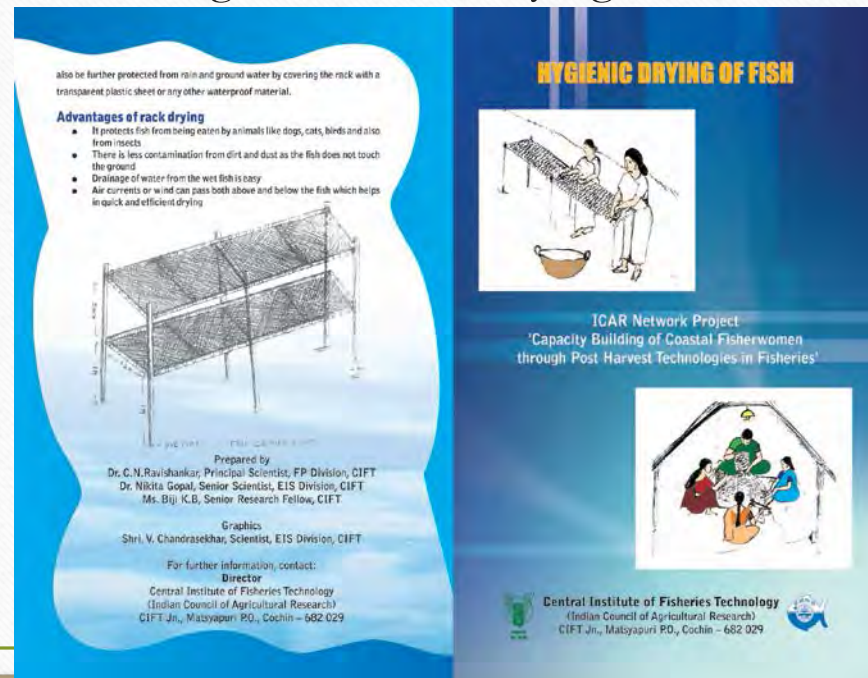
ICAR imparts training programmes for the benefit of fisherwomen



An Institute focused on
Women.....

Directorate of Research on Women in Agriculture (DRWA)

- The Directorate on Women in Agriculture various projects
- Network project with Fisheries Institutes on 'Capacity building of coastal fisherwomen through post-harvest technology'
 - instrumental in demonstrating model fish-drying centres in five states during 2009-2012.



also be further protected from rain and ground water by covering the rack with a transparent plastic sheet or any other waterproof material.

Advantages of rack drying

- It protects fish from being eaten by animals like dogs, cats, birds and also from insects
- There is less contamination from dirt and dust as the fish does not touch the ground
- Drainage of water from the wet fish is easy
- Air currents or wind can pass both above and below the fish which helps in quick and efficient drying

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HYGIENIC DRYING OF FISH

ICAR Network Project
'Capacity Building of Coastal Fisherwomen
through Post Harvest Technologies in Fisheries'

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Other events.....

- All India workshop on “Gainful employment for women fisheries field” in CIFT during 1988
- International conference on “Women in Fisheries” during 2001 through Indian Society of Fisheries Professionals (ISFP)
- CIFE – “Fisherwomen and livelihood: An ergonomics perspectives” during 2003-2006
- CIFT – “Coastal zone management through specific involvement of women and children” during 2004-2007
- ICAR network projects on “ Capacity building of coastal fisherwomen through post harvest technology led by Directorate of Women in Agriculture (DRWA), CIFT, CIFE, College of Fisheries, Orissa University of Agriculture and Technology, Kirishi Vigyan Kendra, Acharaya NG Ranga Agricultural University during 2009-2012

- **National Agricultural Innovation Project (NAIP) of ICAR “Visionary policy analysis and gender”**
- **Global Conference on Women in Agriculture, New Delhi, March 2012**
- **A workshop on ‘Gender in Fisheries: A Future Roadmap’ was organized at CIFT August 2012 - focussed look at gender research for ICAR fisheries research institutes**
 - **Assessment of gender roles and analysis of gender issues**
 - **Opportunities and constraints in performing gender roles**
 - **Power and decision making**
 - **Capabilities and vulnerabilities**
 - **Future strategies for mainstreaming gender equity and empowerment**
- **Gender included as a focal theme during the XII FY Plan period across ICAR (2012-17)**
- **All projects is to take care of the gender dimension in the Institutes**

India through the GAFs

- Kochi, India 2nd Global Symposium on Gender and Fisheries in November, 2007. 17 of 29 papers from Indian experiences

- GAF3, Shanghai- 5 papers
 - case studies of successful women entrepreneurs, impact of micro-finance institutions, perspective on gendered political ecology and also an illustration of introduction of certificate courses for the fisheries students in India in Gender in Fisheries and Aquaculture

- **GAF4, Yeosu, Korea - 5 papers**
 - location-specific interventions for empowerment of women, importance of mangrove conservation to women

(best student paper award), transformation of gender roles in traditional sector, women professionals in fisheries and aquaculture in ICAR and contribution of women towards subsistence.

- **GAF5 – being hosted by India**

WAY FORWARD...



- **Necessity for expanding the work on gender in the fisheries - recognised**
- **Most of the studies have been location specific and generally micro level in scope**
- **Future Focus**
 - **Generation of Gender disaggregated data**
 - **Work on Methodologies – quantitative/ qualitative**
 - **In-depth assessments – quantitative and qualitative**
 - **Dissemination of information**

Catch them young.....

- **Mainstream gender in Academics**
 - **Centre of Excellence in Gender, Kerala Agricultural University**
 - **Gender – IGNOU (one on fisheries...3 units)**
 - **CIFE- MFSc (Fisheries Extension)**

Technology transfer for women's livelihood

Edible oyster culture

Backyard hatchery management

Mussel farming

Integrated aquaculture

Shrimp farming

Management of fish pens and cages

Crab fattening and culture

Ornamental fish breeding and culture

Seaweed farming

Carp poly culture

Pond fish culture

Integrated farming system like fish cum duck,
fish cum poultry and fish cum horticulture

Raising fry and fingerlings in
seasonal ponds

Post harvest value addition like drying and other
processing methods

Carp fry production

Aquaculture activities like

- Manuring pond
- Prawn seed collection
- Workers in fish and shrimp farms, hatcheries and salt pans
- Transport and marketing cultured fish
- Rearing of mud crab
- Ornamental fish culture
- Aqua-feed preparation and processing
- Value-added fish and farm products



- **Specifically we will have to look at:**
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- **Participation of women in resource management and policy decisions need to be explored for ensuring sustainable production in capture fisheries and aquaculture.**

- Formation and strengthening of women self help groups (SHG)
- Technology dissemination to the grass root level
- Convergence of activities and programmes of institutions involved in research and development activities
- Representation of grass root level stakeholders in all levels of planning
- Identification of need based schemes and allocation of funds for the schemes
- Regular monitoring workshops with the involvement of stakeholders and policy makers along with the experts for awareness and support

THANKYOU