



Is fishing gendered? Women as equal partners in KRS reservoir fisheries, India



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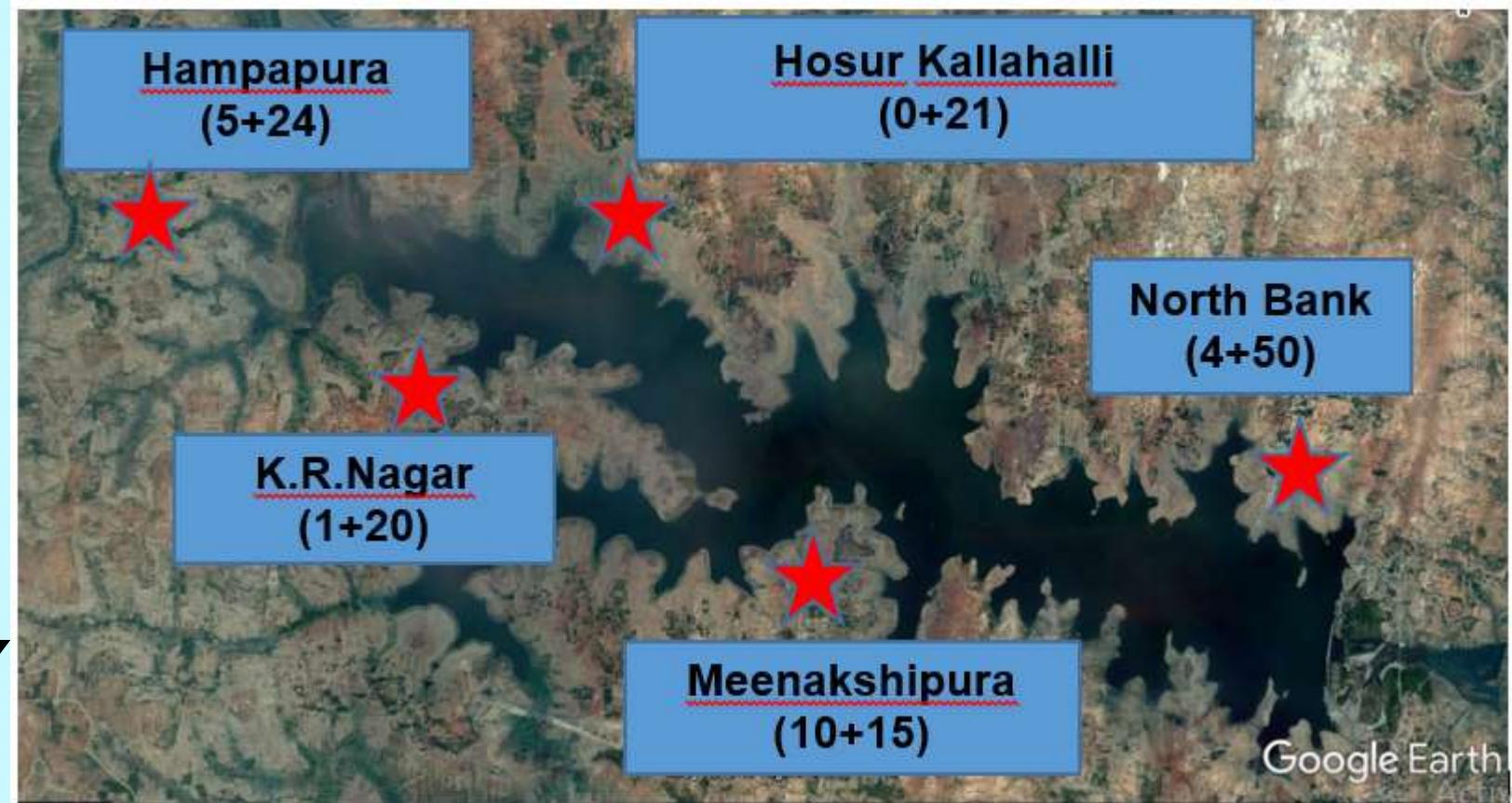
Introduction

- Reservoirs are the single largest inland fisheries resource covered 3.15 million ha area in India.
- Classification –Small (<1000 ha), Medium(1000-5000 ha), Large (>5000 ha), (MoA).
- Estimated fish production- Small (49.50 kg/ha), Medium(12.30 kg/ha) and Large(11.43 kg/ha), (Sugunan, 1995).
- In terms of cost of production, aquaculture requires about Rs.10,000 crore to produce 1 million ton of fish whereas the fish production from reservoirs require a far less investment (sugunan,2007,2014).
- Today Karnataka occupies a prominent position in the reservoir resources of the country.
- Large reservoirs constitute 80% of the total area, followed by the medium (13%) and small (7%) ones, (Sugunan, 1995).
- It is Important to study the fisheries development and fishers' development in the reservoirs, mainly identify gap and problems of fish productivity and fishers' development.

Locale of Study



KARNATAKA

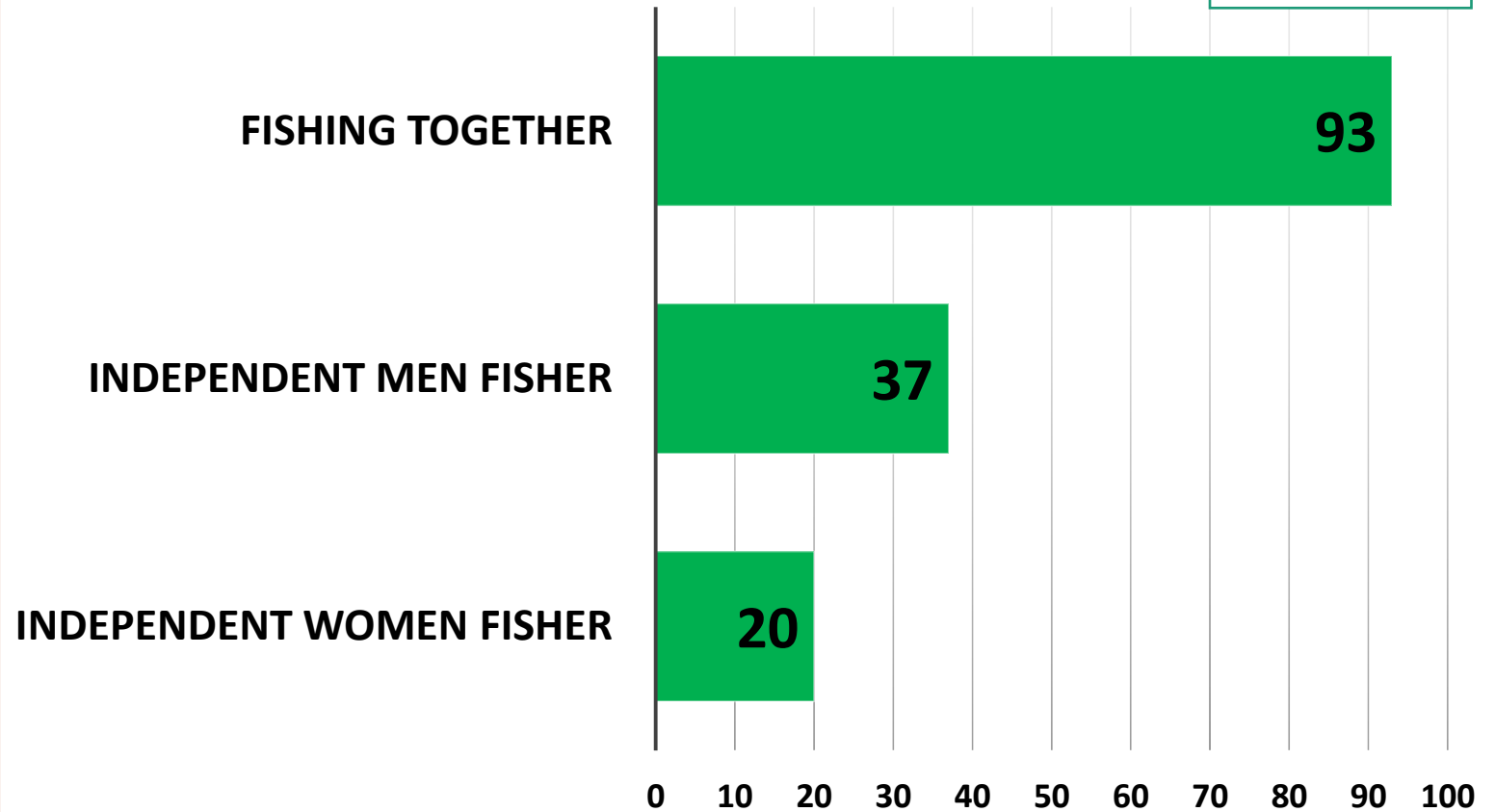


(Independent women fisher + fishing together/individual men fisher)



Sample Composition

n=150



Increase/decrease in number of independent women fisher depends on the per day fish catch

Independent women fisher involvement higher after the fishing ban season mainly availability higher fish catch

Hydrological profile of Reservoir

General Information	Krishna Raja Sagar reservoir
Name of the river	Cauvery
Year of impoundment	1944
Location of reservoir	Mandya and Mysore (Southern India)
Reservoir	
Water spread area of reservoir	12,924 ha at FRL 1960 ha at DSL
Catchment area	10619 km²
Irrigation potential / command area	50,000 ha
Elevation at Dead Storage Level (D.S.L.)	R.L 18.288 m
Mean Depth	30.17 m
Length of shoreline	292 km
Dam	
Height of the dam	39.8 m (130.80 ft)
Length of the dam	2620 m (8600 ft)
No. of sluices	21

Governance - KRS

Ownership

Krishna Bhagya Jala Nigam limited (KBJNL)

Water Resources Department of Karnataka

Cauvery Neeravari Nigam Limited (CNNL)

Karnataka Neeravari Nigam Limited (KNNL)

Fishing Rights

Department of Fisheries (DoF)

Fisherwomen Cooperative Society

Leased 2008 to 2017

Fishermen Cooperative Society- Hampapura

Cauvery Dalit Backward Fisherwomen Cooperative Society (Dysfunctional)

Particulars	Up to 2007	2008 -2017
Leasing/ licensing system	<ul style="list-style-type: none"> - Licensing system by DoF - Drag net -₹ 12000/per unit/year - Gillnet and others- ₹ 500-1000/per unit - Revenue for DoF- ₹ 132787/year - Criteria: Residence within 5km periphery of reservoir. 	<ul style="list-style-type: none"> - DoF lease to Fishermen Cooperative Society-Hampapura (Nodal agency) - Lease amount ₹ 2,40,825 (2008- 09) ₹14,32,098 (2016-17) - Renewed for another 5 more years from 2013 - In practice: Managed by private contractor
Stocking Arrangement	<ul style="list-style-type: none"> - DoF responsible for stocking - Average stocking – 4 lakhs fry/year (Common Carp, Rohu and Mirgal) - Average stocking density -51fry /ha 	<ul style="list-style-type: none"> - FCS responsible for stocking - Average stocking- 114 lakh advanced fry/year (IMC and Common Carp) - Average stocking density -1531/ha

Fisheries Profile

S.N	Particulars	Krishna Raja Sagar Reservoir
1	Effective Water Spread Area (ha)	7442 ha
2	Major Fish Species	<i>Catla catla</i> , <i>Labeo calbasu</i> , <i>Cirrhinus mrigala</i> , <i>Cyprinus carpio</i> , <i>Ompok pabda</i> ,
3	Minor Fish Species	<i>Channa spp.</i> , <i>Oreochromis niloticus</i> <i>Oreochromis mossambicus</i> , <i>Puntius ticto</i>
4	Fish production tons/year	220.15 tons (2015-16) Peak 758 tones (2012-13)
5	Seed stocked	96 lakhs advanced fry (2012-13)
6	Stocking density / ha (Advanced fry)	1289
7	Fish catch/fisher	Per day average catch 4.38 kg Peak fishing season the catch range from 20-80 kg



Fishers Profile

S.N.	Particulars	Krishna Raja Sagar Reservoir
1	Location	Mandya and Mysore districts Karnataka
2	No. of fishing villages	25
3	No. of Fishers'	593 (DoF, 2016)
4	Religion	Hindu and Muslim
5	Infrastructure facilities available	Primary, Secondary and Higher School facilities, Primary Health care centres etc.
6	Education / Literacy rate*	70.40% (Mandya) 72.79% (Mysore)



Ongoing litigation

- ✓ Factionalism within FCS- **Two group of fishers**
- ✓ Conflict between Contractor and DoF
- ✓ After 2013 the stocking has stopped and subsequently production decreased
- ✓ Fishers' want: **Licensing system (2018 onwards licensing system)**
- ✓ Paradox: **Licensing may benefit fishers by removing contractor but may not help improve stocking / increase catch in short term unless DoF / FCS is turned around.**



Social profile

n=150

- **Nativity:** All the fishers were native to the reservoir. Though the Tamil speaking fishers are present in the reservoir periphery, they have become permanent inhabitants.
- **Religion:** In reservoir periphery 92% are **Hindus** and 8% are **Muslims**
- **Language:** Majority of fishers 63.3% **speak** Kannada, 29.3% speak Tamil and 7.3% are Urdu speaking
- **Family type / size:** In reservoir region nearly **68% live in** nuclear family and **60.75% have family size of less than 5 members.**

Sub-caste

n=150

Sub-caste	Percentage
Sembadavar (OBC)	26.3
Nayakka (ST)	20
Gowda (OBC)	4
Bestha (OBC)	2
Muslim(OBC)	8
Dalit (SC)	39.7

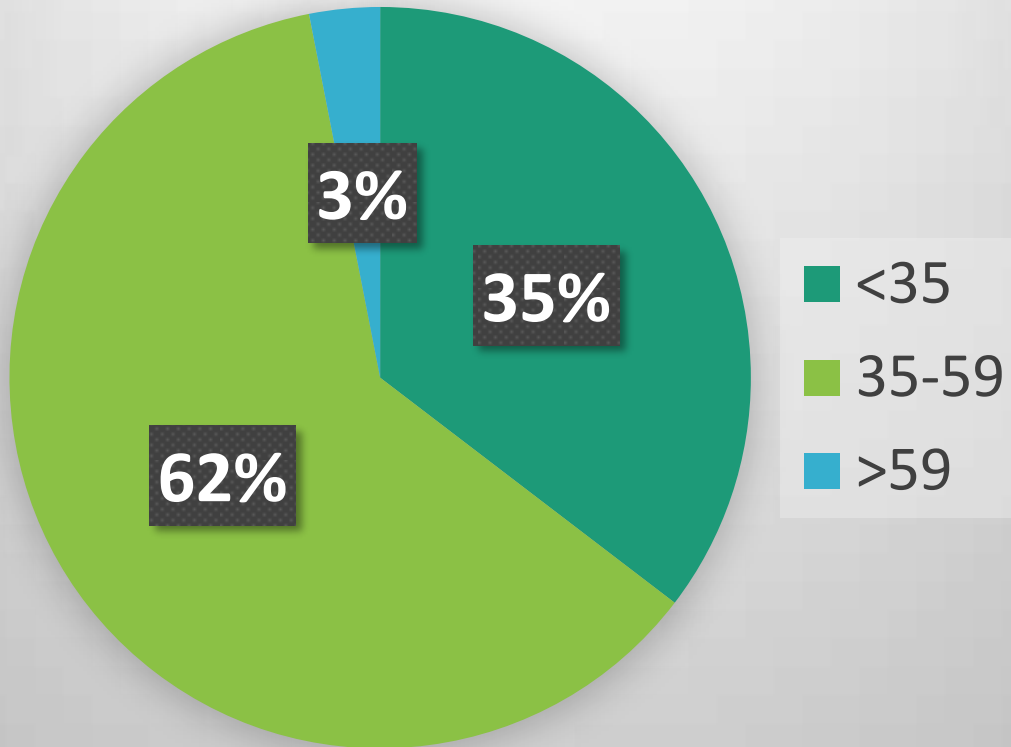


North bank fishers all come under the SC category, were Sembadavars are (OBC) distributed both Meenakshipura and Hampapura fishing villages.

Age (years)

Men Fisher

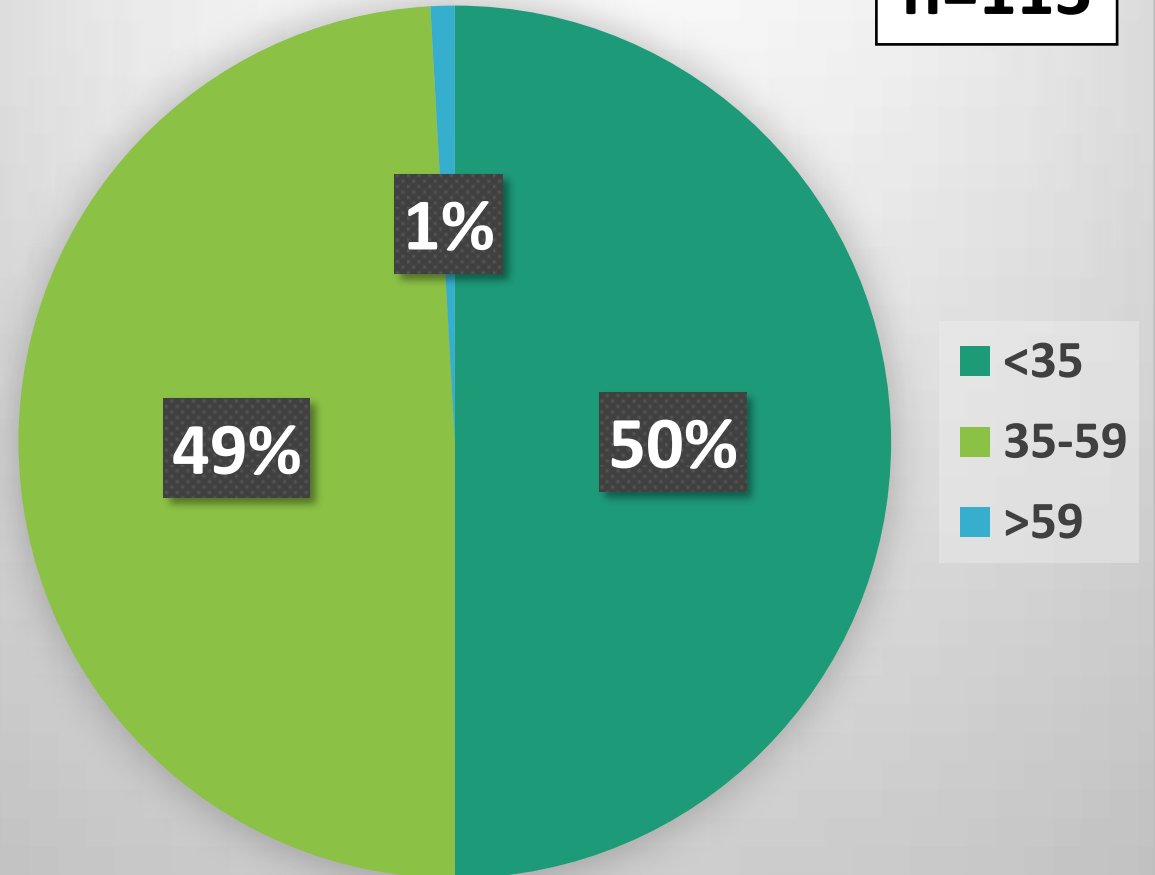
n=130



Mean age of men fisher = 37.86

Women Fisher

n=113



Mean age of women fisher = 33.75



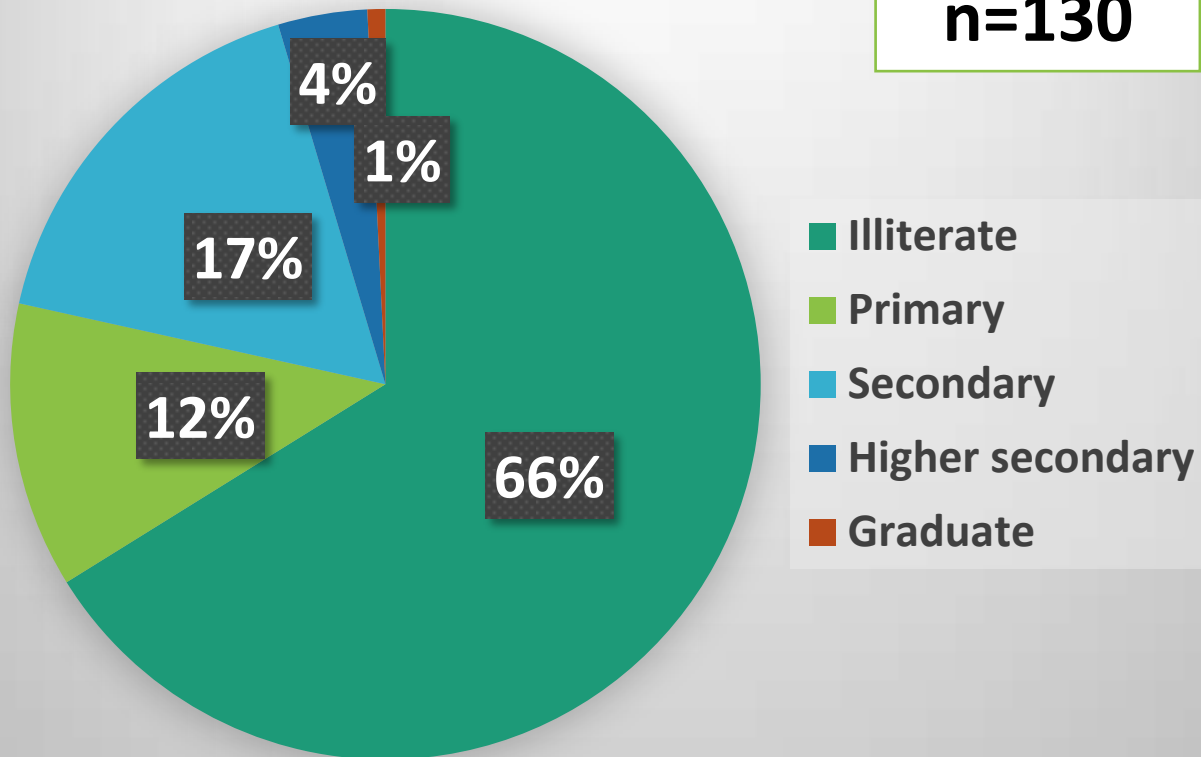
சமூக சேவை
புதுச்சேரி
தமிழ்நாடு



Education

Men Fisher

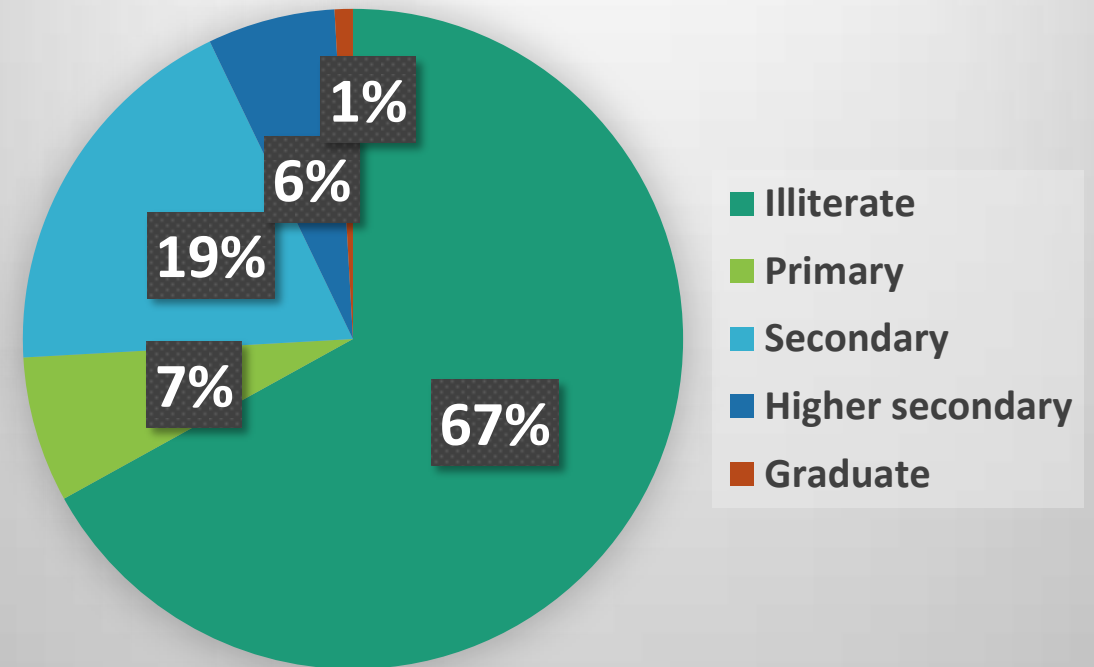
n=130



Mean year of schooling of women fisher is 2.8

Women Fisher

n=113



Mean year of schooling of men fisher is 2.5



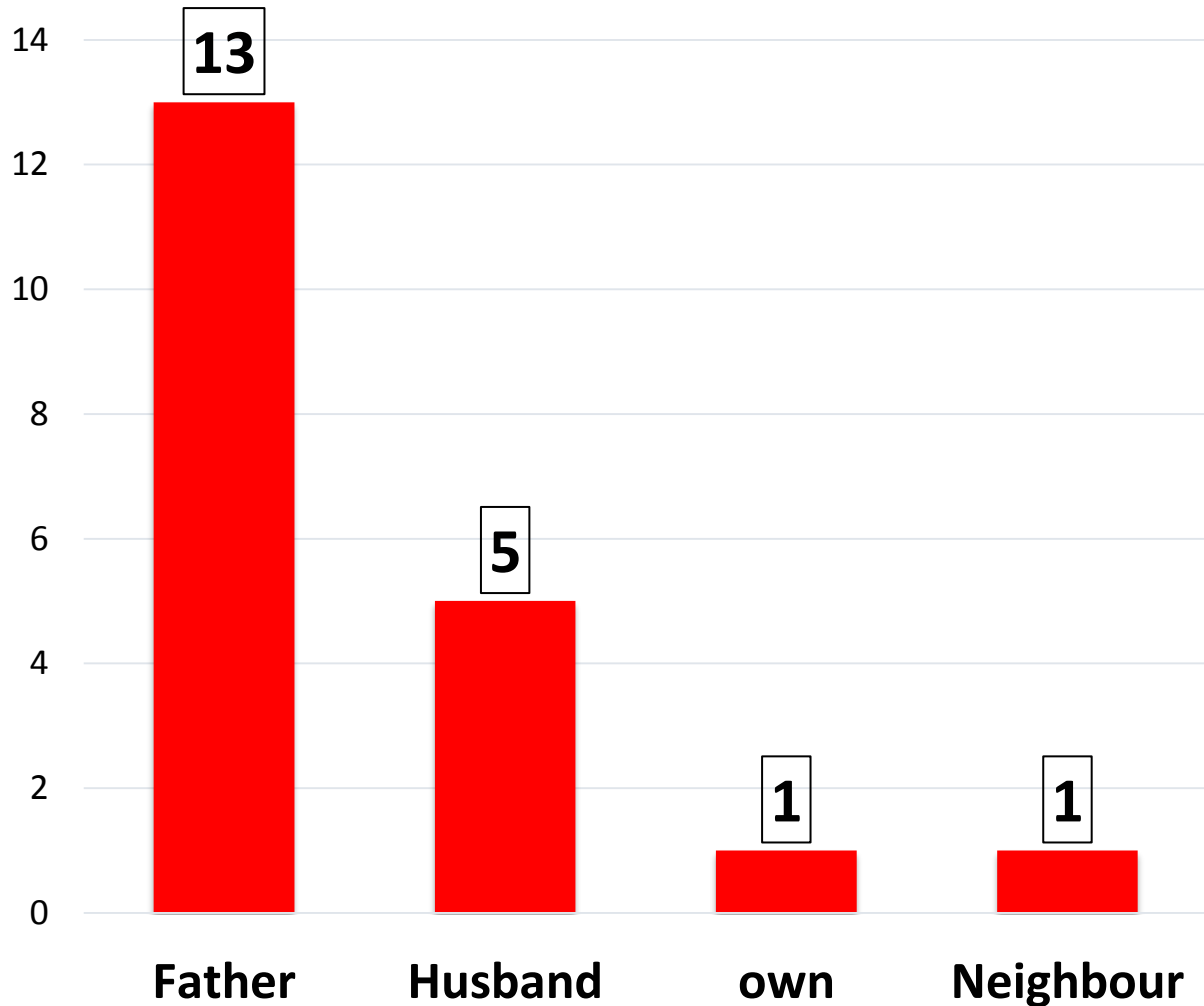
Occupation

- All respondents were full time fishers; fish throughout year and repair their own nets; No secondary occupation
- **Type of fishing Occupation:** Only capture fisheries. Seed stocking on reservoir carried out by cooperative society / DoF.
- About **80% of household income come from fishing**; Rest contributed by other household members engaged in other occupation



n=20

Source of Learning to Fish

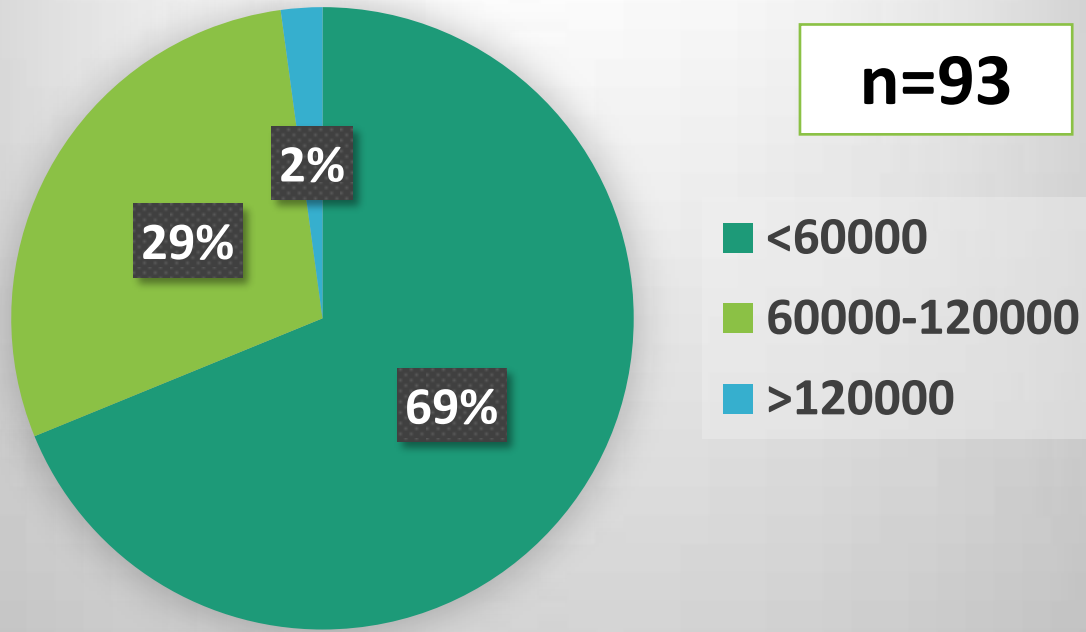


Average year of Experience in Fishing = 25 years

Fishing Generation = 3

Annual Fishing Income - Fishing Together

n=93



Average Annual fishing income of together fishing **₹ 55,294**

Average Annual fishing income of Independent women fisher **₹ 51,525**

Average Annual fishing income of Independent men fisher **₹ 46,701**



Conclusion/Broader Inference

1. Reservoir has high productivity (110 kg/ha) but stocking is must (low productivity- 22 kg/ha when not stocked).
2. The study evident that women as equal partner in KRS reservoir fisheries either Independent or together fishing.
3. Additional income of women fisher (some instances it become primary source of household income) helps to improve the overall development of household.

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Thank you