



Transforming Aquaculture And Fisheries For Gender Justice



9th Global Conference on Gender in Aquaculture & Fisheries (GAF9)

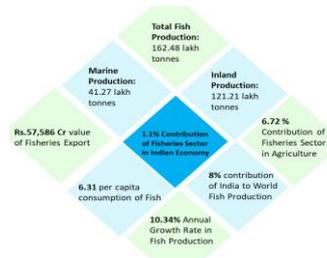
Occupational Hazards, Gender Roles, and Livelihood Challenges of Fishers in Dal Lake, Jammu & Kashmir, India

Theme: Women/gender in the blue economy



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- **Gender analysis** uncovers the distinct roles, workloads, and challenges of men and women in fisheries, ensuring that their contributions are recognized and valued.
- It provides evidence for designing inclusive policies and interventions that promote equity, sustainability, and livelihood security.
- The **World Economic Forum (2022)** ranked India **135th out of 146 countries** in its Global Gender Gap Index, reflecting persistent gender inequalities across sectors, including fisheries.
- While gender roles in fisheries have been widely studied in several countries and Indian states, **research focusing on time-use patterns and workload distribution of men and women in Dal Lake fisheries remains scarce.**
- In the context of Kashmir, only a **few studies on fisherwomen** exist—such as those by **Rather & Bhat (2017), Farooqi et al. (2018), and Regu (2019)**—but these are limited in scope.
- There is a **clear research gap** due to the **absence of a comprehensive gender analysis of the fisheries sector in Kashmir, particularly in Dal Lake**, where both men and women contribute significantly to livelihood.

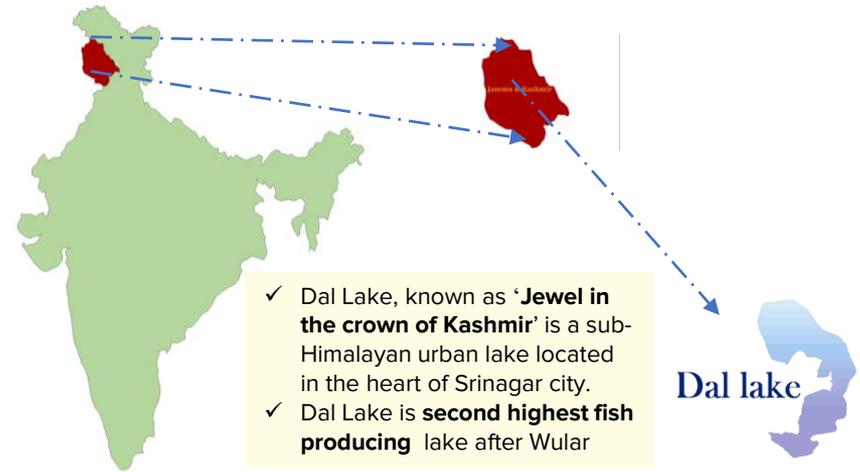
Objectives of the Study

Exploring Gender, Hazards, and Constraints

- To evaluate roles, time use pattern, workloads, gender needs and access/control to resources of men and women.
- To document occupational hazards faced by both men and women during fishing and related activities.
- To assess constraints faced by fishermen and fisherwomen in Dal Lake.



Locale of the Study



N (Households)= 60

Men= 60

Women= 60

Total= 120 respondents

Fishers= 850

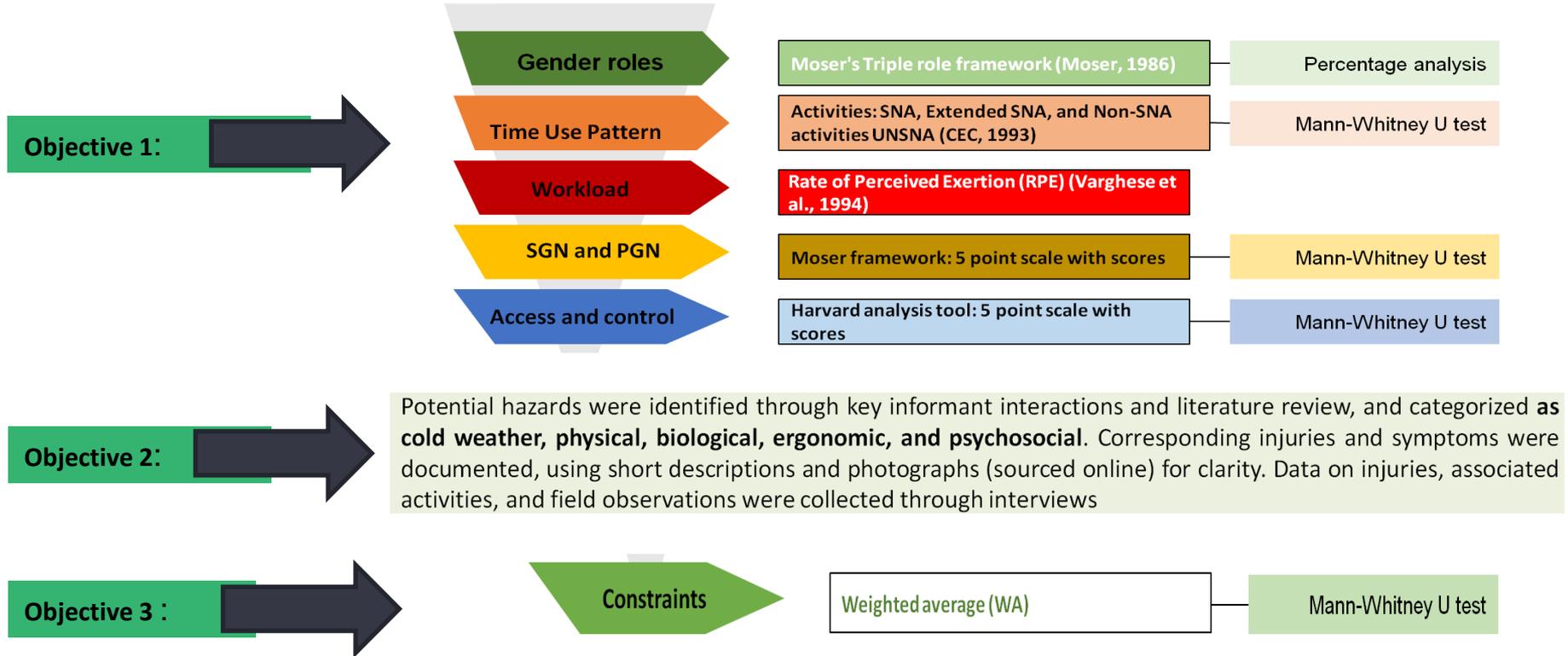
N=60

Sample Selection

Purposive sampling of 60 fishers, ensuring diversity in age and fishing experience.

Research Design and Frameworks

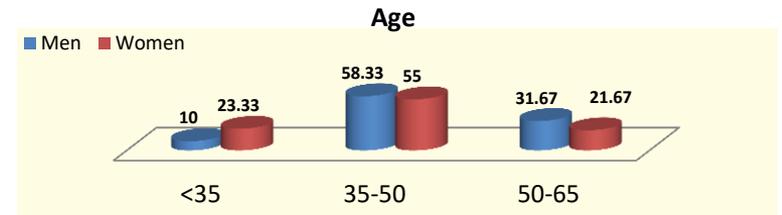
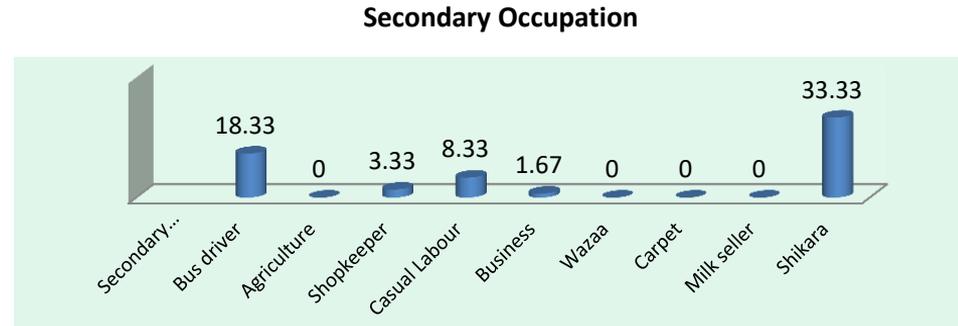
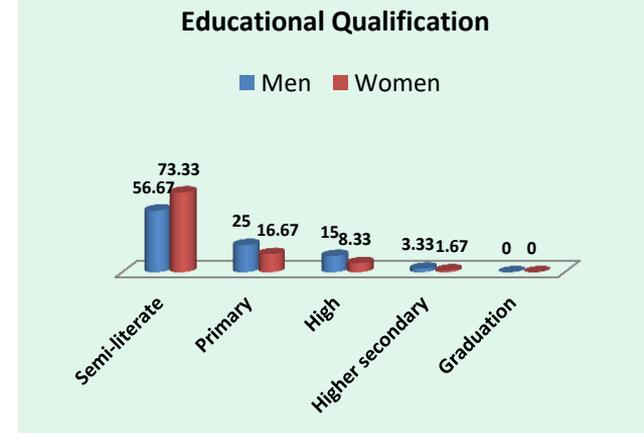
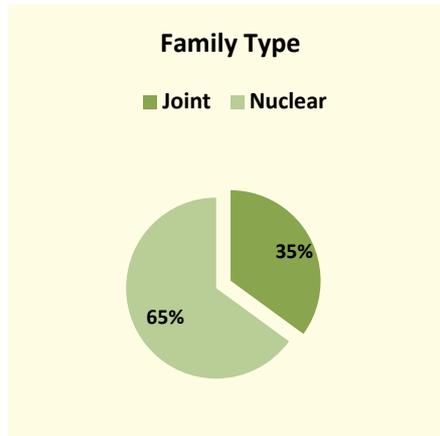
- **Descriptive research** design with qualitative approach to capture lived experiences of fishers.
- Data Collection Semi-structured interviews, direct observations, and triangulation with community elders



Demographics of Fishers

Education, Family, and Income

- **Age:** Majority of fishermen and women are in age group of **35-50 years**.
- **Education Levels:** Majority of the fishermen and fisherwomen are semi-literate.
- **Family Structures:** Most belonged to **nuclear families**, reflecting modern social shifts in the community.
- **Fishing Experience:** Longstanding (68%) fishing experience ranging from **20 to 50 years**, reflecting deep generational knowledge.
- **Marketing experience:** Majority (**52%**) of fisherwomen had fishing experience of **20-50 years**.
- **Income:** Fishing was primary livelihood, with earning **₹12,320/month** on average; **33.33%** supplemented income through boat tourism.



Gender Roles in Fisheries

Division of Labor and Recognition

- **Reproductive Tasks:** Fisherwomen primarily manage household and caregiving responsibilities, often unrecognized as economic contributions.
- **Productive Roles:** Both men and women participate in productive activities, but only 21.66% of fisherwomen directly accompany in fishing.
- **Undervalued Labor:** Women’s contributions in both fishing and household domains remain invisible in community and policy contexts.

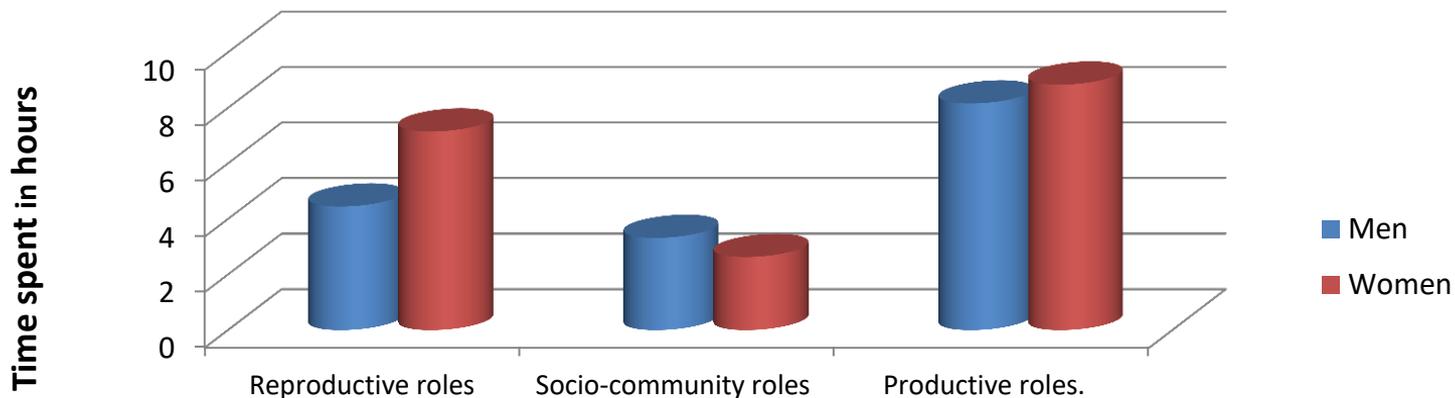
Dal Lake

Roles	Household (%)
Reproductive	Fisherwomen (99.9%)
Productive	Fishermen (62.49%)
Social and community	Fishermen (61%)
Fisherwomen: Mainly in marketing and related activities . Fishermen: Mainly in fishing and related activities In 21.66% of households fisherwomen involved in fishing .	

Time spent				
Dal Lake	.000	-9.458	.000*	Reject H ₀

Significant difference between the men and women in time spent in reproductive, socio-community and productive roles

Time use pattern



Roles

Men

4.45 hrs./day in reproductive
 3.32 hrs./day in community
 8.16 hrs./day in productive roles.

Women

7.15 hrs./day in reproductive
 1.50 hrs./day in community
 8.84 hrs./day in productive

Women spent more time in reproductive as well as productive roles

Rate of Perceived Exertion

Men

4 hrs. : Very light

1.26 hrs. : Light

1.73hrs. : Moderately heavy

0 hrs. : Heavy

5.62hrs. : **Very heavy activities**

Women

1.14 hrs : Very light

0.05 hrs : Light

6.13hrs : Moderately heavy

0 hrs : Heavy

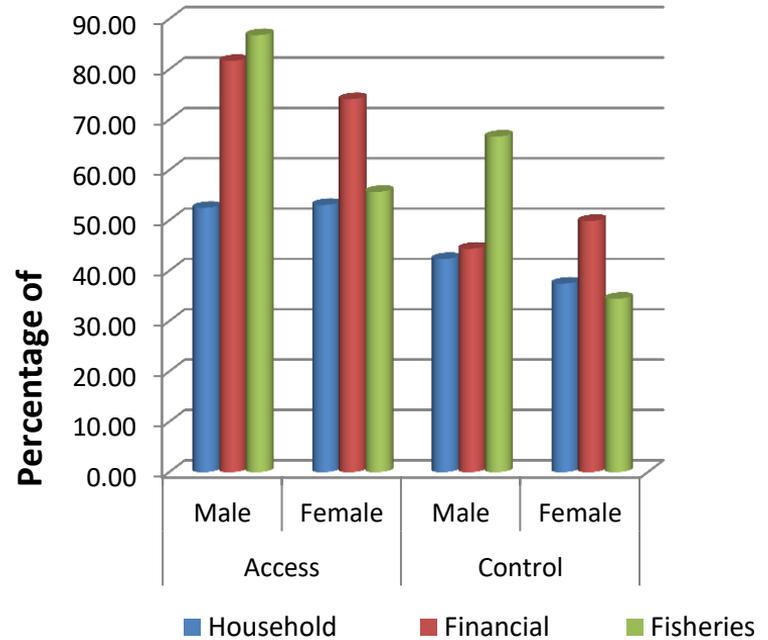
8.22 hrs. : **Very heavy**

Women spent more time in very heavy activities

Access & Control of Resources

Gendered Disparities in Dal Lake Fisheries

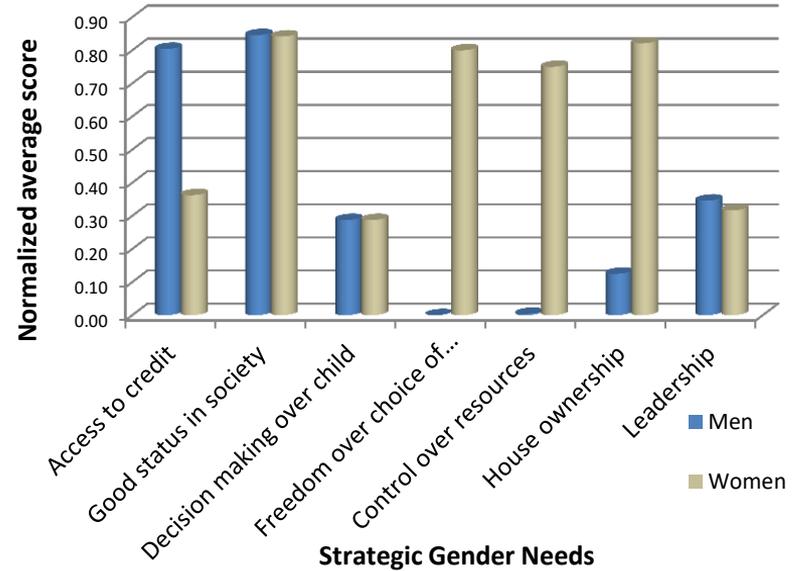
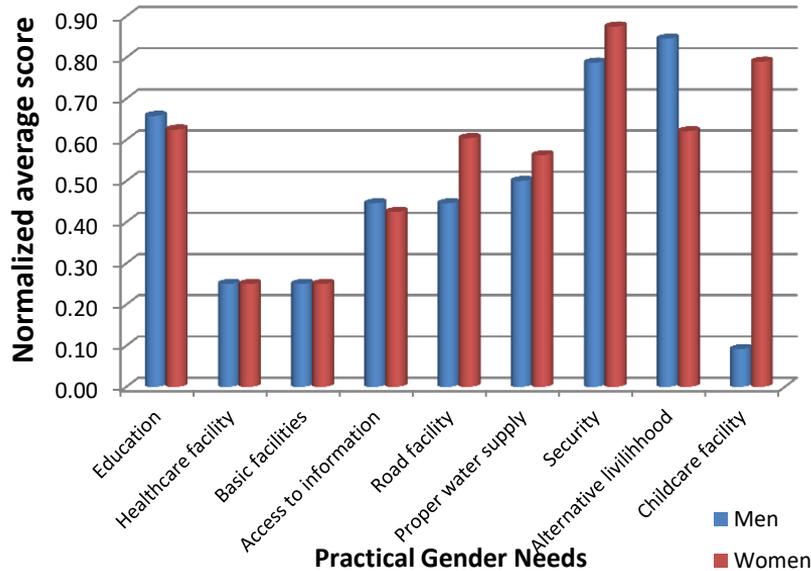
- **Fisherwomen** had more access to **household resources** while **fishermen** had more access to **financial and fishery-related resources**.
- **Fishermen** had more control over **household resources and fishery-related resources**
- **Fisherwomen** had more control over **financial resources**.



There was a significant difference in access and control between men and women over the household, financial and fisheries-related resources in Dal Lake.

Parameters	Mann Whitney U value	Z value	P-value	Decision
Access	640	-6.121	.000	H ₀ rejected
Control	698.000	-5.794	.000	H ₀ rejected

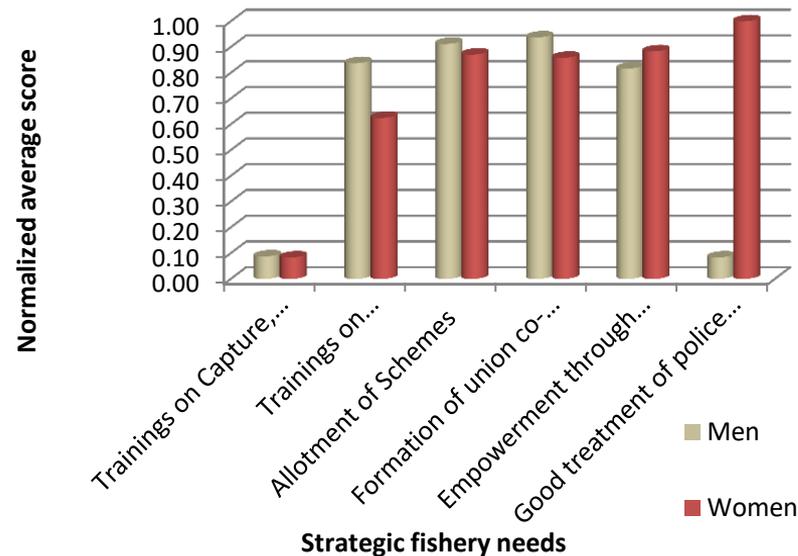
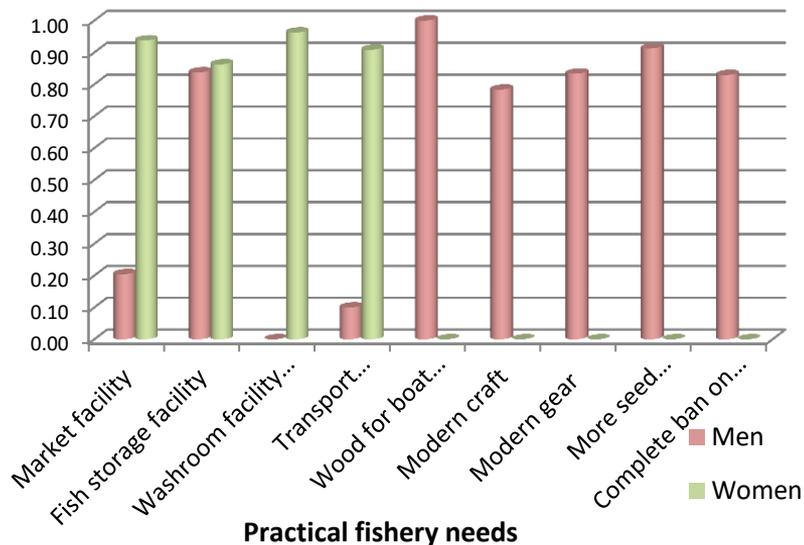
Gender Needs in Dal Lake



Needs	Mann-Whitney U value	Z value	P-value	Decision
PGNs (Dal)	680.000	-5.919	.000*	Reject H ₀
SGNs (Dal)	35.000	-9.290	.000*	Reject H ₀

There was significant difference between the fisherwomen and fishermen with regard to PGNs and SGNs in Dal Lake

Fishery Related Gender Needs in Dal Lake



Needs	Mann-Whitney U value	Z value	P-value	Decision
PFNs (Dal)	.000	-9.528	.000*	Reject H ₀
SFNs (Dal)	602.000	-6.528	.000*	Reject H ₀

There was significant difference between the fisherwomen and fishermen with regard to PFNs and SFNs in Dal Lake

Fishing in Dal Lake

- About **850 licenced fishers** are dependent on Dal for livelihood (DoF,2019).
- A variety of fish species are found in this lake but mostly **common carp and snowtrouts** are of commercial importance
- Fishing is carried out by traditional methods using gears like ***Gol zal or Naushath zal or Bahshath zal (Cast net), Walraz (a type of long line), Bislai (Hook and Pole) and Panzar (Harpoon type)***
- Gillnet is also used by some fishers. The craft used is ***Naav*** (Boat) made up of wood planks (Syed et al., 2018)
- Both **men and women** are involved in **fishing**.
- On one boat there are **one/two persons** during fishing
- Bait is prepared by women and is composed of **wheat and water** boiled together for one to two hours
- Bait is made into small balls by **men** and **sprinkled** at few places and fish is caught.



Fishing in Summer Season

- In summer (June-August), mean temperature ranges between **25 to 27 degree Celsius** (IMD,2014)
- Fishing is usually done in the early morning hours
- Some go for night fishing
- During the summer season, most of women accompany in the fishing trip **to drag the fish loaded nets**
- Catch in summers is **high**
- Marketing of fish is usually done by **women**



Fishing in Winter Season

- In Kashmir, winter season begins in **December** and ends in **February**
- Winter in Kashmir is traditionally divided into **three periods** which lasts up to roughly **70 days**
- **Chillai kalan**, which lasts from 21 December to 31 January, is the coldest period followed by **Chillai khurud** and **Chillai bacha** which lasts **20 and 10 days** respectively
- In winters, surroundings are **duskier** and **cold is bone chilling**
- Annual temperature varies from about **minus 10°C to plus 35°C** (Zaz et. al., 2019).
- The top crust of the lake freezes in winter when the mercury falls to **-10°C** which happens every year during winter months.
- This is combined with **dense fog, reduced visibility, accumulation of snow and slippery roads leading to disruption** and closure of all kinds of traffic movements.
- Sometimes, **light rains or snowfall** also occur for a few days.

- Fishing during winters start at **9 a.m. in chilly mornings** when fishers grapple in **cold wave** and **parts of lake are frozen.**
- They are engaged in fishing till evening in winter conditions and for full day they experience **wind chill.**
- Women are involved in marketing of fish during winters.



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ar, Jan 18: As the
surface is

Kashmir, Ladakh shiver at sub-zero temperatures

Srinagar, Jan 18: The cold wave conditions persisted in Kashmir and Ladakh regions witnessing sub-zero minimum temperatures that led to frost formation on roads...

An official of the Meteorological Department said that the famous ski resort of Gulmarg was the coldest place in Kashmir with a minimum...

Srinagar freezes at minus 6.2

Coldest night of season so far | One-way traffic on highway today

SAQIB MALIK

Srinagar, Dec 29: As the cold wave across Kashmir has intensified, summer capital Srinagar witnessed coldest night of the season so far with minimum temperature plummeting to minus 6.2 degrees Celsius last night.

This was several notches down from minus 5.8 degree recorded a night earlier. The sub-zero temperature has led to freezing of water pipelines and water bottles in many areas. Parts of the Dal Lake have also frozen because of the low temperatures.

The night temperature in...



...located with owner of Real Kashmir Football Club Sandeep Chattoo. See 15 envoys...on Pg-10

Kashmir sees further dip in temperature

Pahalgam coldest at minus 13.7

Srinagar, Jan 9: Cold wave condi-

Srinagar to Jammu traffic on highway

MeT predicts light to moderate snowfall on Jan 2, 3 | Moderate to heavy snowfall on Jan 6, 7

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of Art 370
'At Home'

...of Kashmir...

Kashmir reels under cold phase

Traffic to ply from Srinagar to Jammu today

SAGIB MALIK

Srinagar, Jan 18: The cold wave across Kashmir has intensified, summer capital Srinagar witnessed coldest night of the season so far with minimum temperature plummeting to minus 6.2 degrees Celsius last night.

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The night temperature in...

...of Kashmir...

...of Kashmir...

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...of Kashmir...

Haseeb gets President's Medal

Srinagar, Jan 18: The President of India has conferred the Padma Shri award on Haseeb Raza Shah for his services to the state of Jammu and Kashmir.

Haseeb Raza Shah is a prominent leader of the National Conference party and has been active in the field of social and economic development in the state.

...of Kashmir...

LoC: Land in PaK, revenue documents in Poonch Muhafiz Khana

...of Kashmir...

Multiple landslides block highway, 3000 vehicles stranded

...of Kashmir...

MeT predicts light snowfall today

...of Kashmir...

215 KAS officers transferred

...of Kashmir...

reater Kashmir

Published from Srinagar | Jammu | RNI No: 48956/88 | Vol: 32 | No: 357 | Pages: 16 | Rs: 5.00

Coldest night of decade in Jammu

Minus 6.5 in Srinagar

MeT predicts light to moderate snowfall on Jan 2, 3 | Moderate to heavy snowfall on Jan 6, 7

SAGIB MALIK

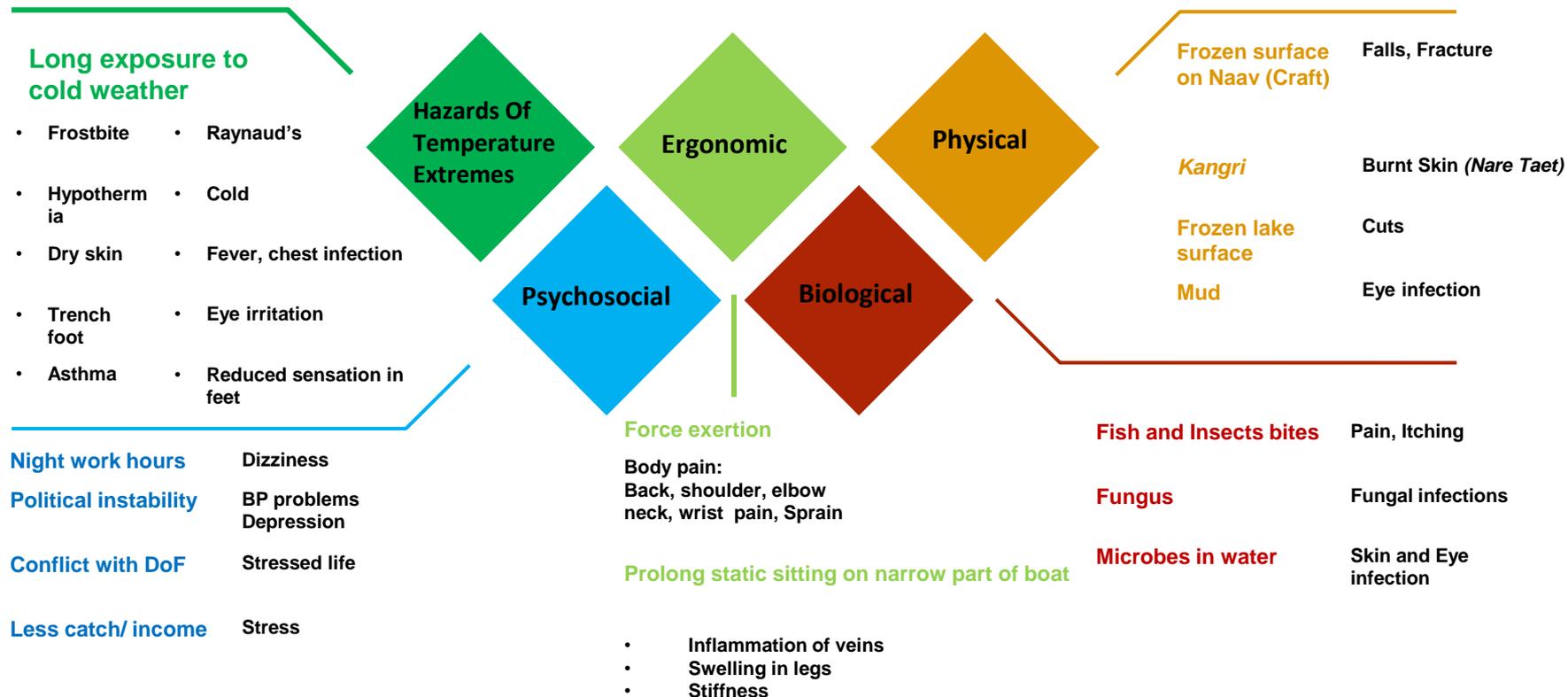
Gun-licence scam

CBI raids residence of former District Magistrate

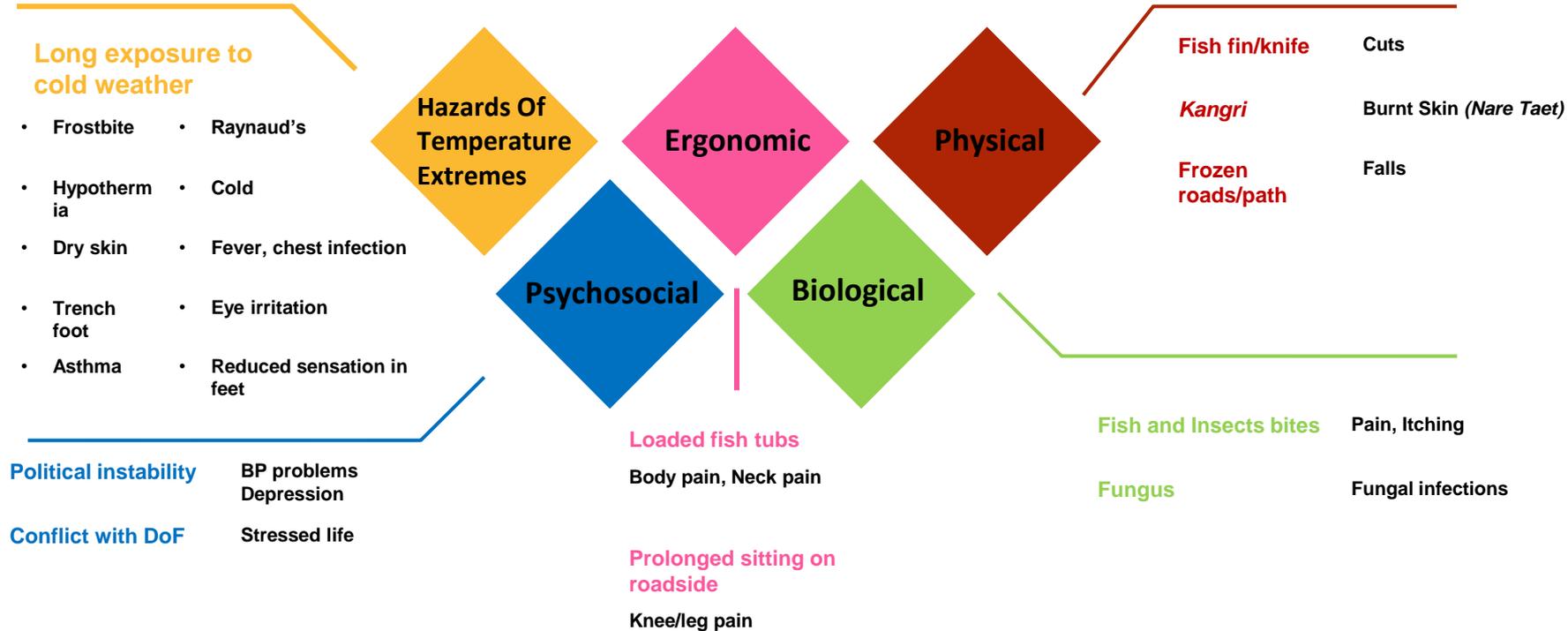
13 locations searched in Srinagar, Jammu

ABID BASHIR

Occupational Hazards faced by fishermen



Occupational Hazards faced by fisherwomen



Occupational Hazards – Men

Hazards Faced by Fishermen in Dal Lake

- **Cold Exposure:** 85% reported reduced sensation in feet and fever due to prolonged exposure to cold waters.
- **Physical Injuries:** Cuts were reported by 87.5% of fishermen, reflecting daily risks from handling gear and fish. 90% reported burns from *Kangri* use.
- **Ergonomic Hazards:** Heavy labor during fishing operations led to musculoskeletal issues and chronic pain.
- **Psychosocial Stress:** Political instability and economic uncertainty disrupted livelihoods and added to psychological burdens.
- **Biological injuries:** Insect bites were reported.



Occupational Hazards – Women

Risks Faced by Fisherwomen in Dal Lake

- **Cold-Related Issues:** 90% of fisherwomen reported frostbite due to harsh weather conditions and prolonged water exposure.
- **Physical Hazards:** 96.6% experienced cuts and injuries during fish handling, reflecting inadequate safety measures.
- **Biological Risks:** 86.6% faced biological hazards from exposure to contaminated water and fish-borne pathogens.
- **Ergonomic :** Frequent back pain, heavy workload.
- **Psychosocial Strain** 96.6% reported psychosocial stress linked to instability and the COVID-19 pandemic.



Constraints faced by men and women in fisheries of Dal Lake



S. No.	Fisheries-related Constraints	Mean Rank (M)	Mean Rank (W)	P value
1	Lack of fish storage facilities	6	6	.000*
2	No training on fishing, handling and storage	8	8	.000*
3	Stoppage of subsidy for craft wood	1	-	.000*
4	No supply of modern gear	4	-	.000*
5	No supply of modern craft	7	-	.000*
6	Less availability of ice for fish storage	3	7	.000*
7	Less seed stocking by Department of Fisheries (DoF)	5		.000*
8	Conflict with sand excavators leading to destruction of fish breeding grounds	-	-	.000*
9	Conflict with other fishers over use of gill net at night illegally	2	-	.000*
10	Breaking the season ban	9		.000*
11	Lack of official market with basic facilities	-	4	.000*
12	Lack of disposal of waste of fish after dressing	-	5	.000*
13	Lack of washroom facility for fish sellers	-	1	.000*
14	Ill treatment of police with fish vendors for roadside selling	-	2	.000*
15	Selling fish on footpaths and roadsides in vulnerable and conflict-ridden areas	-	3	.000*

Women Constraints

Women ranked **lack of official market with basic facilities** and **selling fish on footpaths and roadsides in vulnerable/conflict-ridden areas** higher compared to men, reflecting their stronger dependence on roadside/market-based fish vending.

Ill-treatment by police (rank 2) and **lack of washroom facilities (rank 1)** were critical concerns for women, highlighting gendered vulnerabilities in public spaces.

Men Constraints

Men emphasized **stoppage of subsidy for craft wood (rank 1)**, **conflict with sand excavators** (destroying breeding grounds), and **conflict with illegal gill net use**, which directly affect fishing operations and sustainability of fish resources.

Breaking the seasonal ban was also more relevant for men as they are more engaged in active fishing.

Gender Differences in Prioritization

Women faced more **social and infrastructure-related challenges** (markets, sanitation, harassment, roadside selling).

Men faced more **operational and ecological constraints** (gear, craft, subsidies, conflicts in fishing grounds).

Both groups agreed on the **lack of storage and modern facilities**, but their **rankings reflect gender-specific roles**—men in harvesting and women in vending/marketing.

Policy Implications & Recommendations



❑ Towards Inclusive Fisheries in Dal Lake

- **Gender-Sensitive Policies:** Policies must recognize the invisible labor of fisherwomen and ensure to and inclusive fisheries development in Kashmir.
- **Safety & Infrastructure:** Provision of sanitation, storage, and protective gear tailored to women's and men's occupational needs.
- **Skill Development:** Training programs in modern fishing, processing, and marketing for both men and women to enhance livelihood security.
- **Institutional Support:** Strengthening government schemes and subsidies to address both production and post-harvest challenges in a gender-inclusive way.
- **Strengthen fishers' collective voice** by establishing fisheries cooperatives and Farmer Producer Organizations (FPOs) in the region.
- **Constitute a State-level Coordination Committee** to address cross-sectoral challenges affecting fisheries.
- **Conduct a comprehensive Fisheries Census** for informed planning and policy-making.
- **Develop well-organized markets** equipped with essential infrastructure and facilities through the Department of Fisheries.
- **Integrate occupational health and safety issues** of fishers into fisheries development planning.

Acknowledgements

- *GAF Committee*
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