



National Research &  
Innovation Agency of  
Republic Indonesia



# Exploring Hidden Strengths: How Indonesian Women Drive Aquaculture and Fisheries

(Insights from the 2023 Agricultural Census)

Sri Hartini RACHMAD, Haning ROMDIATI, Devi ASIATI  
BRIN National Research and Innovation Agency of Rep. Indonesia

## TRANSFORMING AQUACULTURE FISHERIES FOR GENDER JUSTICE

9<sup>th</sup> Global Conference on Gender in Aquaculture & Fisheries (GAF9), AIT, Thailand

Session 5: Counting and discounting: men's and women's work in fisheries and aquaculture

2nd Oct 2025, Room Hall 5 (B225) @1500-1530 - TS- 525

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Sri Hartini Rachmad, [srih014@brin.go.id](mailto:srih014@brin.go.id)

National Research and Innovation Agency-BRIN

Indonesia

# Background

The agricultural sector contributes significantly to Indonesia's economy.

- Fisheries and aquaculture play a central role in food security and livelihoods.
- Women's roles remain underrecognized in cultivation, processing, and marketing.
- The 2023 Agricultural Census (ST2023) provides the first large-scale gender disaggregated data

# The Context & The Oversight

## The Aquaculture Sector: A National Cornerstone

- **Economic Pillar:** Aquaculture and fisheries are vital for Indonesia's food security and economic growth.
- **The Oversight:** Women's critical, multifaceted contributions are frequently overlooked.
  - Roles span cultivation, processing, marketing, and household support.
- **The Data Gap:** Traditional narratives focus on men as primary fishers, limiting data for targeted, effective gender-responsive policies.
- **Opportunity:** The 2023 Agricultural Census (ST2023) offers an unprecedented, large-scale empirical foundation to close this gap.

# Research Gap

- **Empirical gap:**

1. Empirical data capturing women's diverse roles across fisheries and aquaculture activities, including pre-production, processing, marketing, and governance, highlighting the multifaceted contributions of women in various Indonesian coastal contexts (Picaulima et al., 2017) (Qomariyah et al., 2024) (Fitriana & Coastal, 2017).
  2. Several studies focused on specific fisheries sectors such as blue swimming crab, seaweed, and tuna, offering sector-specific insights into women's participation and economic impact (Fitriana et al., 2025) (Fitriana & Coastal, 2017) (Barclay et al., n.d.).
- ❑ A notable gap exists in comprehensive quantitative data and longitudinal studies, with many relying on qualitative or mixed methods, limiting the generalizability of findings.

- **Methodological gap:**

1. Employed mixed methods or robust qualitative designs incorporating participatory approaches, thematic coding, and systematic literature reviews, enhancing depth and validity (Rice et al., 2024) (Harianto & Listyani, 2025) (Stacey et al., 2019).
  2. Some studies used advanced statistical techniques such as logistic regression and multidimensional scaling to analyze gender roles and sustainability (Picaulima et al., 2017) (Parsaulian et al., 2024).
- ❑ However, many studies lacked longitudinal data or triangulation across multiple data sources, and few applied intersectional methodological frameworks explicitly.

# Research Objective & Novelty

## Objective: Quantifying Gender Participation

- **Core Objective:** Systematically leverage ST2023 data to quantify and delineate gender participation patterns.
- **Key Questions:**
  - What is the overall distribution of male vs. female individual agricultural holders?
  - How does participation differ between **Aquaculture** and **Capture Fisheries**?
- **Novelty of Study:**
  - Pioneering use of newly available, **large-scale census data**.
  - Provides a **macro-level understanding** and robust generalizability across the archipelago.

# Research Objective & Novelty

## Methodology: Analyzing Census Data

**Data Source:** "Complete Enumeration Results of the 2023 Census of Agriculture – Edition 2 Fishery Individual Agricultural Holdings" (BPS).

### Focus Variables (UTP):

- Number of holders by Province.

- Number of holders by Business Type (Aquaculture vs. Capture Fishery).

- Number of holders by Gender (Male/Female).

**Methodology: Descriptive Statistical Analysis** to unveil national and provincial trends.

# Overall Gender Landscape

## Persistent Disparity: Formal Holders

Gender	Number of Fishery Individual Agricultural Holders (2023)	Percentage (Approx.)
Male	1,790,099	94.5%
Female	103,482	5.5%
Total	1,893,581	100%

**Key Finding:** Male individuals overwhelmingly hold formal technical, juridical, and economic responsibility for fishery holdings.

# Gender Distribution by Sub-Sector

## Differentiating Roles: Where Women are Stronger

Province	Female Aquaculture Holders	Female Capture Fishery Holders
Jawa Barat	21,629	468
Jawa Tengah	15,597	1,042
Jawa Timur	10,732	2,894
Maluku	518	648
NTT	1,786	732

• **Critical Insight:** Women's participation is notably **higher in Aquaculture** than in Capture Fisheries across most provinces.

# Deep Dive: The Strength in Aquaculture

## Why Aquaculture is More Accessible to Women

**Land-Based & Accessible:** Aquaculture, especially small-scale, is easier to integrate with home life and caregiving responsibilities.



**Lower Barriers:** Requires less capital-intensive equipment and smaller vessels compared to marine capture fisheries.

**Key Hubs:** Provinces with existing infrastructure and market opportunities facilitate women's involvement.

- Jawa Barat (21,629), Jawa Tengah (15,597), and Jawa Timur (10,732) show the highest absolute numbers.

# The Capture Fisheries Challenge

- ❑ **High Physical Demands:** Involves physically strenuous labor and prolonged periods away from home (high perceived risk).
- ❑ **Socio-Cultural Barriers:**
  - Dominated by inherited rights and male networks.
  - Socio-cultural norms limit women's sea-based roles.
  - **Asset Control:** Disproportionate male control over productive assets (large boats, specialized gear).
  - **Result: Extreme disparity, despite the sector's size (i.e., 21K female holders in Aquaculture vs. <500 in Capture in West Java).**

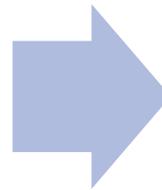


Barriers in Capture Fisheries

# Regional Variations

## The Importance of Local Context

**Variation is Key:** The magnitude of gender disparity is not uniform; it is shaped by **local contexts, specific practices, and market structures.**



### **The Maluku Anomaly:**

Unique case where Female Capture Holders (648) *outnumber* Female Aquaculture Holders (518).  
Highlights the need for **context-specific interventions.**



**Policy Takeaway:** National policies must be flexible enough to address these regional nuances.

# Unseen Contributions & Persistent Gaps

## Influence vs. Access

### Hidden Influence:

Women exert vital influence in operational activities, post-harvest processes, and household financial management.



**The Impediment:** This influence is limited by critical disparities in access to resources:

Capital & Credit

Training & Extension Services

Relevant Technology

- **Emphasis:** Addressing these gaps is essential for optimizing the sector's holistic growth potential

# Regional Variations

## The Importance of Local Context

- **The "Why" and "How":** Census data shows *who* and *how many*, but not the *quality* or *value* of participation.
- **Next Steps for Research:**
  - Determine if women are relegated to lower-value activities or hold entrepreneurial/leadership roles.
  - Apply an **Intersectional Lens** (age, education, socioeconomic status) to understand diverse experiences.
  - Conduct deeper **qualitative studies** to uncover the social, economic, and cultural factors at play.

# Conclusion & Challenges

**Fisheries and aquaculture are male-dominated, but women play crucial roles.**

## **A Prerequisite for Sustainable Growth**

**Key Takeaway:** Indonesian aquaculture and fisheries remain male-dominated, but the **Aquaculture sub-sector offers a strategic opportunity** for women's empowerment.

- Women's participation is higher in aquaculture, especially in Java and Sumatra.
- Inclusive policies are needed for sustainable growth.
- Empowering women strengthens food security and economic resilience.

Identified socio-cultural norms, patriarchal structures, and institutional constraints as major barriers limiting women's visibility, resource access, and leadership in fisheries (Nurwanti, 2024) (Rujiah et al., n.d.) (Handayani et al., 2023)

**The Bottom Line:** Achieving gender equality transcends social justice. It is an **absolute prerequisite** for:

Optimizing Productivity

Ensuring Sustainable Food Security

Driving Inclusive Economic Growth

# Strategic Policy Recommendations

## The Path to Gender-Inclusive Fisheries

Focus Area	Policy Action
Resource Access & Empowerment	Enhance access to capital, entrepreneurial training, and gender-relevant technology adoption (e.g., solar drying, modern processing).
Governance & Inclusion	Mandate greater participation in local and national decision-making processes. Integrate gender perspectives across all agricultural policies.
Addressing Structural Barriers	Support the formation of women's collectives. Investigate and address socio-cultural norms and promote safer environments in capture fisheries.
Data & Accountability	Ensure all monitoring relies on gender-disaggregated data and gender-sensitive extension services.

•**Goal:** To fully realize the potential of all actors in Indonesia's vital aquatic sectors.

# A Slogan story of our Indonesian Anchester

My ancestors were seafarers, the sea remains the source of my nutritional wealth, and my mother is the central agent ensuring the household's access to nutritious food



Thank you for your Attention !

Sri Hartini Rachmad, srih014@brin.go.id

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