

Toward a global picture of the economic contributions by women in fisheries



Photo source: D. Belhabib

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Lack of recognition

- Limited sex-disaggregated data in fisheries;
- Lack of policy attention on gender & fisheries, with consequences for food & nutritional security, poverty alleviation, and wellbeing (Bennett, 2005, *Marine Policy*; Harper et al., 2013, *Marine Policy*);
- Missing important social-ecological linkages in fisheries systems when women's fishing activities are overlooked (Kleiber et al., 2014, *Fish and Fisheries*);
- Continued marginalization of women in fisheries sector (Pauly, 2006, *MAST*).

Counting women

“The lack of acknowledgement of women’s fishing participation or of the significant contribution to the livelihoods of coastal people is due, in part, to the non-remuneration of their fishing activities.

The lack of data and appropriate economic valuation of subsistence fisheries result in women’s fishing activities not being included in most official statistics. Women’s small-scale economic activities are also not seen as independent economic ventures, for in most cases, their marketing participation is viewed as part of their daily chores of meeting family needs.”

(Vunisea, 2004, SPC Women in Fisheries Information Bulletin)

What counts as fishing?

- ✓ Large-scale industrial fisheries for commercially valuable species; boat-based operations; full-time, paid activities;
- × Informal, part-time activities for subsistence purposes often overlooked;
- × Collection of invertebrates and small fish from shore for a few hours per day often not considered fishing.



Survey says....

“National surveys that collect socio-economic data are not necessarily designed to capture those working informally and indirectly in the fisheries sector, where women tend to dominate.”

This failure to identify women as fishworkers limits the support they receive (legal, financial, or political) and further marginalizes them in fisheries management and decisions-making.”

(Gammage 2004, *SAMUDRA report*)

But....

- Recent estimates suggest women comprise half of the total fisheries workforce (World Bank, 2012, *Hidden Harvest*);
- A look at fishing countries around the world suggests women participate throughout the fish value chain (Monfort, 2015, *Globefish*);
- Considerable variation in participation by women and in the availability of data between countries and regions.

Building a global sex-disaggregated fisheries participation database

- National-level estimates for all maritime countries of the world;
- Synthesis of existing data from a variety of sources, acquired through literature searches and expert consultation:
 - FAO country profiles, Sea Around Us reports (Pauly & Zeller, 2016, *Nature Communications*), peer-reviewed literature, expert consultation, SPC database, Yemaya, OECD employment data, EU reports, etc.
- Compile information on:
 - Participation in direct and indirect fishing activities;
 - # of women & # of men (% female participation);
 - nation-wide estimates and/or partial estimates (i.e., case studies).

Preliminary results

- Evidence for participation by women in fisheries activities (direct and indirect) 80 countries so far;
 - FAO fisheries country profiles: 53 out of 160 mention women;
 - Sea Around Us catch reports: 20% highlight women, some estimate catch by women;
- Estimates of % female participation in fisheries (either direct, indirect or both) for approx. 50 countries;
- Overall averages for participation by women in:
 - Direct fishing activities = 12 %
 - Indirect fishing (e.g., processing, marketing) = 54 %

Estimates of female participation by region

Region	Direct participation (%)	Range	No. of countries	Indirect participation (%)	Range	No. of countries
Africa	18	1 – 51	7	68	46 – 90	5
N. America	3	<1 – 8	4	44	4 – 63	4
South America	24	19 – 47	3	49	25 – 80	4
Asia	15	1 – 47	8	52	8 – 80	9
Europe	3	0 – 14	19	53	30 – 75	23
Oceania	24	11 - 38	8	66	53 – 78	3

Data challenges

- Limited quantitative data;
- Inconsistent data, some estimates more comprehensive than others;
- Aggregated data, e.g., fisheries with forestry & agriculture or marine capture fisheries with aquaculture & inland fisheries;
- Some regions and countries more data than others (e.g., research effort or government programs to collect data).

Filling the gaps

A) Understanding factors that influence participation by women in fisheries;

B) Use of econometrics to predict participation by women in fisheries.



Source: D. Kleiber

A) What factors influence participation by women in fisheries?

- Direct and indirect participation likely have different drivers;
- Socio-economic considerations;
- Cultural and religious influences & constraints;
- Dependence on fishing as a livelihood;
- Level of food/nutritional security;



Lindalva, fisherwomen, participating in Human Ecology Research on clam fisheries in the Northeast of Brazil. Source: L. Rocha.

B) Predicting participation by women using multiple regression:

Dependent variable:

% female participation in fisheries, direct and indirect (FP)

Independent variables:

- Human Development Index (HDI)
- Gender Inequality Index (GII)
- Dominant religion, Islam (RI)
- Female Labour Force Participation (FLFP)
- Small Scale Fisheries Landings/Total Landings (SSF)
- Fisheries contribution to GDP (FGDP)

Equation:

$$FP_{\text{direct}} = \beta_0 + \beta_1 \text{HDI} + \beta_2 \text{GII} + \beta_3 \text{RI} + \beta_4 \text{FLFP} + \beta_5 \text{SSF} + \beta_6 \text{FGDP}$$

A priori speculations of effect of indices on dependent variable

Independent variables	Effect
Human Development Index	$\partial FP / \partial HDI < 0$
Gender Inequality Index	$\partial FP / \partial GII < 0$
Dominant religion (Islam)	$\partial FP / \partial RI < 0$
Female Labour Force Participation	$\partial FP / \partial FLFP > 0$
Small Scale Fisheries catch/Total catch	$\partial FP / \partial SSF > 0$
Fisheries contribution to GDP	$\partial FP / \partial FGDP > 0$

Initial results of regression

- Poor relationship between dependent and independent variables:
 - too much noise in participation estimates?
 - need a larger sample?
 - missing important variables/predictors?

Next steps

- What other variables to consider?
 - relevant predictor of women's participation in fisheries but indicator must have global coverage.
- What other methods could be used to predict participation for data deficient countries?
 - Robust regression technique?
- Validation:
 - Solicit feedback from country/regional experts on whether estimates are reasonable.

Invitation to participate

- ✓ Does your work focus on women in fisheries?
- ✓ Do you want to contribute to building a global database on women in fisheries?
- ✓ Are you willing to estimate participation by women in fisheries at a national level?

Please contact me with your insights:

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Thank you!

Questions, comments & acknowledgements.



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