



- **Introduction**
- **Women's empowerment in science**
- **Climate Change and Gender**
- **Gender Equality and Water**
- **Gender in agriculture and Food Security**

Prof. Nguyen Thi Lang
(photo credit: G Smith CIAT)

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- water quality modeling towards integrated assessment of global water resources and the associated solution options
- Background in environmental science and ecohydrology



With contribution from
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- One of the main developers of the partial-equilibrium land use model Global Biosphere Management Model (GLOBIOM)
- Water-energy-land nexus and participatory approaches to link qualitative and quantitative scenarios and modelling tools
- President of IIASA's Women in Science Club
- Background in resource and consumer economics

Empowering women in science



Representation matters at all levels

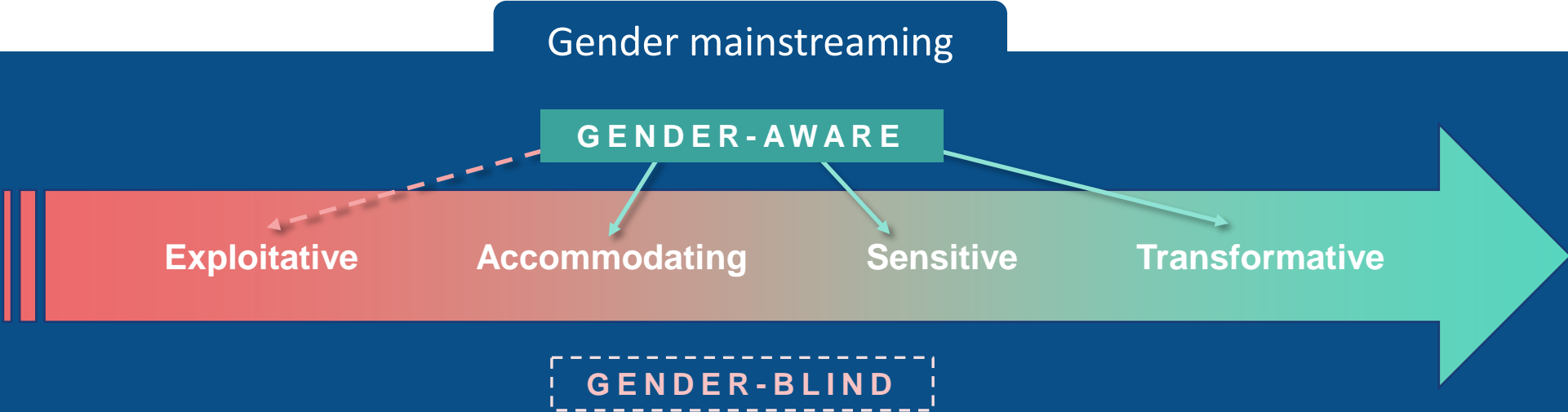


Gender bias

Credit: Leon Walls

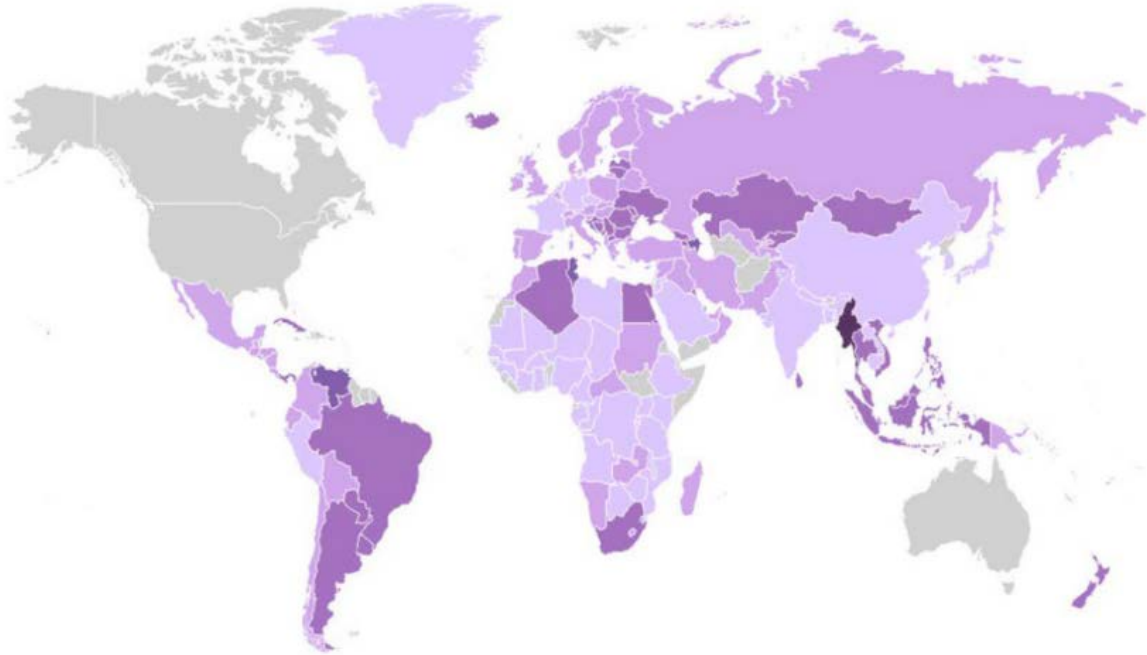


Safe space for discussing issues



Representation in science

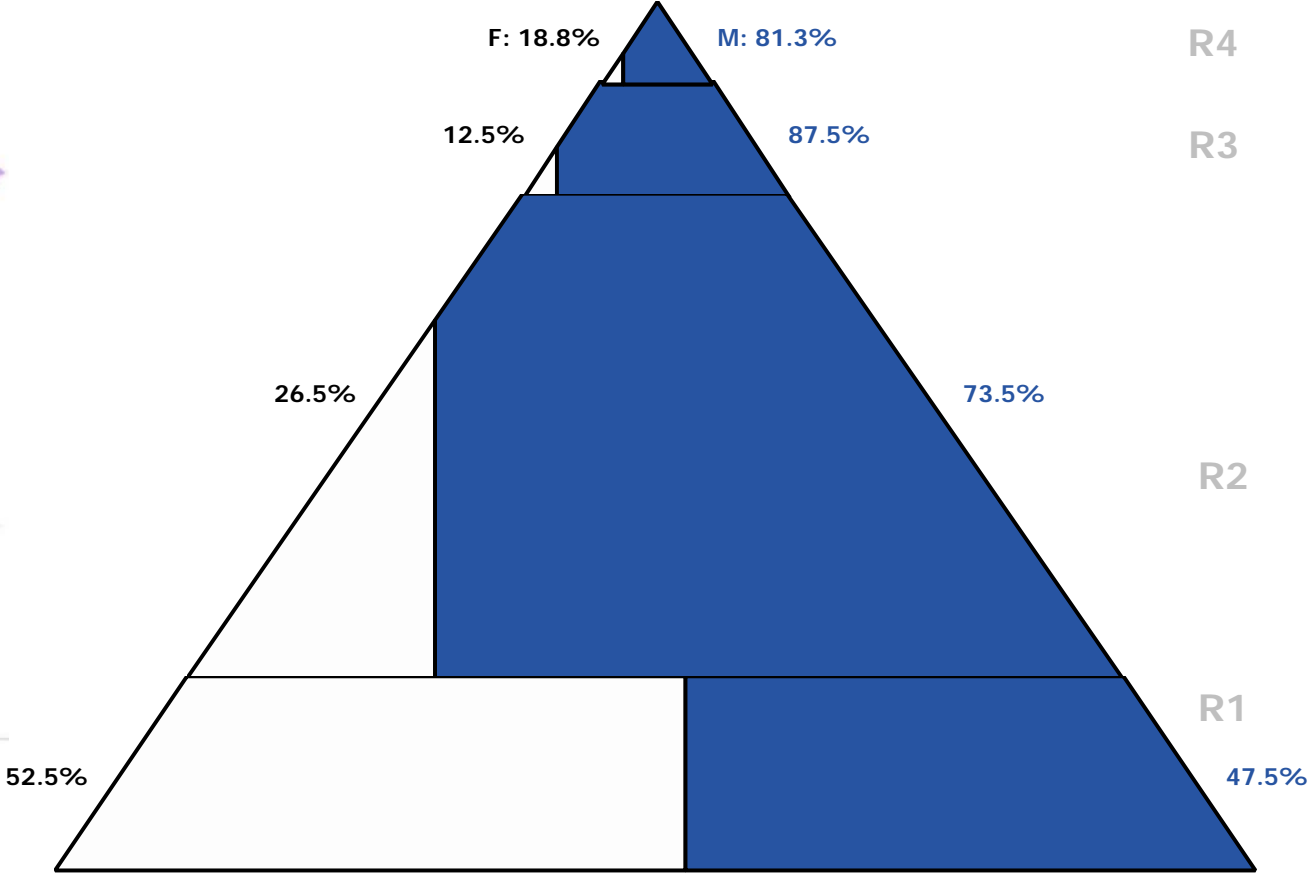
Share of women in science



70.1%-100% 55.1%-70% 45.1%-55% 30.1%-45% 0%-30% No data

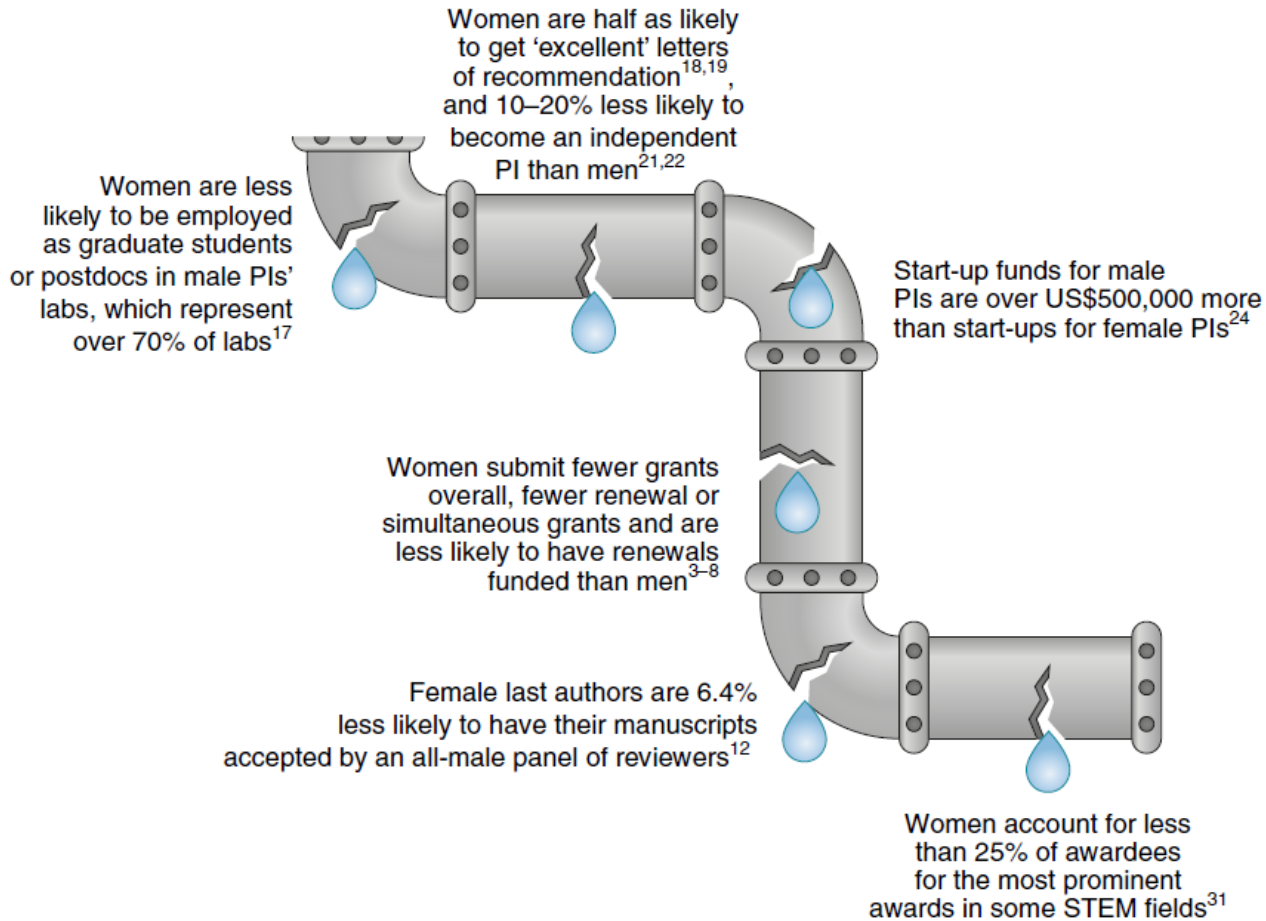
Source: UIS (2020) Women in Science Fact Sheet

Share of IIASA researchers by gender and research level



Source IIASA/Islaam

Gender bias



What can the community or an institution do to address the issue?

Develop a gender diversity and inclusion plan which includes:

- Data on gender representation
- Goals and guidelines for gender and minority representation
- Effective training
- Effective hiring and retention strategies
- Improve the workplace environment for families
- Invite more women and minority speakers

What can the can an individual do to address the issue?

- Support early career researchers
- Avoid participating on all-male panels or projects
- Call out gender bias or discrimination in yourself and your colleagues
- Actively expand your network

Fig 1 from Grogan 2019. *Nature Ecology and Evolution*

Background on WISC

- Bottom-up club of scientific and professional people connected to science

WISC goals:

- Learn from each other experiences
- Speak openly about the challenges
- Develop and cultivate a supportive network for sharing news, development and career opportunities, and
- Amplify the scientific contributions of women



Activities to build a supportive network



- Meet greet and eat lunchtime discussions with visitors, guests and IIASA staff
- Trainings: social media, communication with media, mentoring
- Mentoring Program

- Blog posts
- Social media
- IIASA Connect
- Email distribution list
- Internal Intranet page

- Club organized Scientific Lectures open for all staff
 - Diana Üрге Vorsatz, Helga Kromp-Kolb, Leena Srivastata, Julia Slingo
- Participation as a stakeholder in Institutional activities

- Staying within scope of club goals and objectives
- Independence vs support
 - Effective participation as a stakeholder

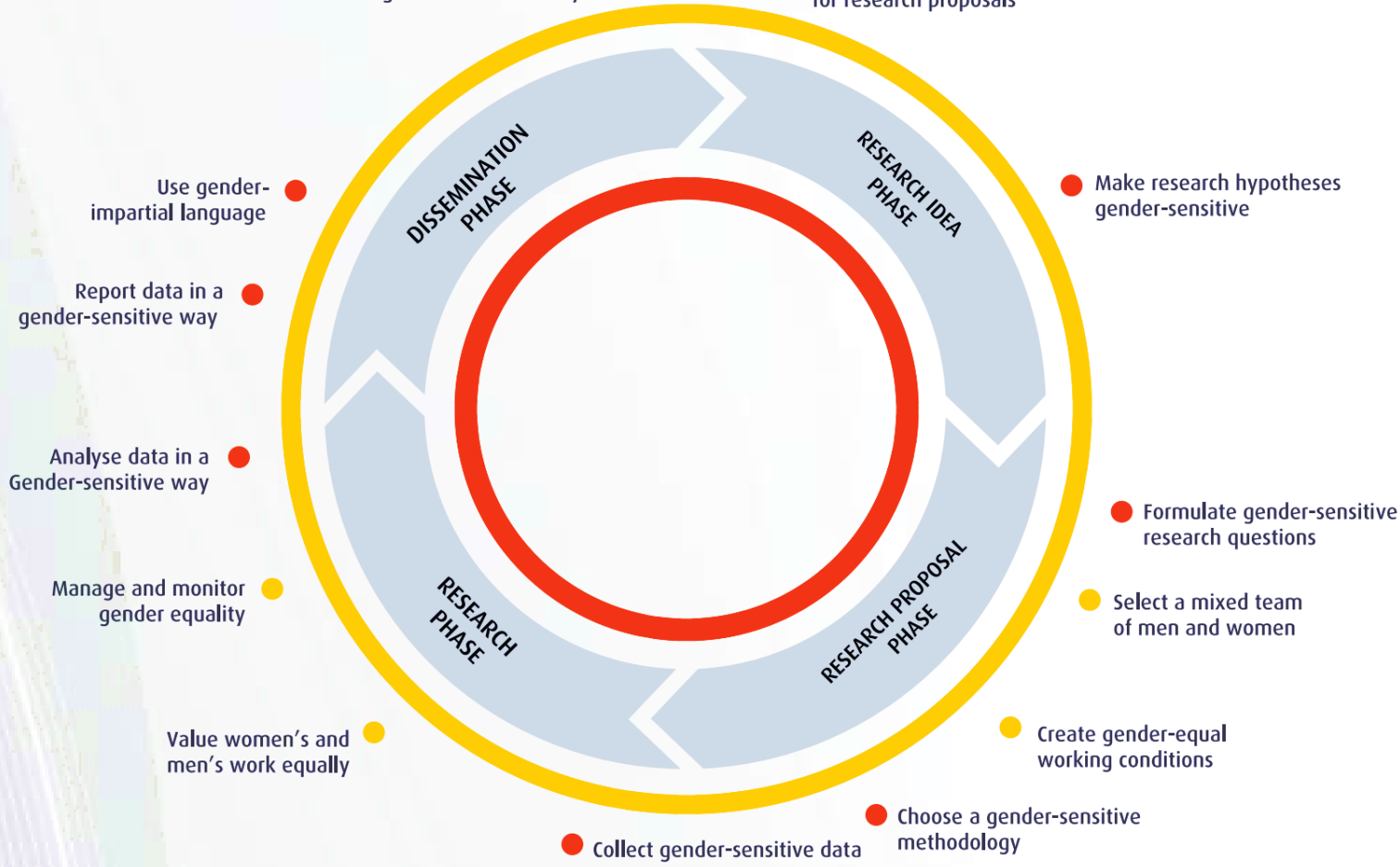
Equal opportunities for men and women in research

Gender in research content

Disseminate results in a gender-sensitive way

Generate gender-sensitive ideas for research proposals

What do we mean by gender mainstreaming?



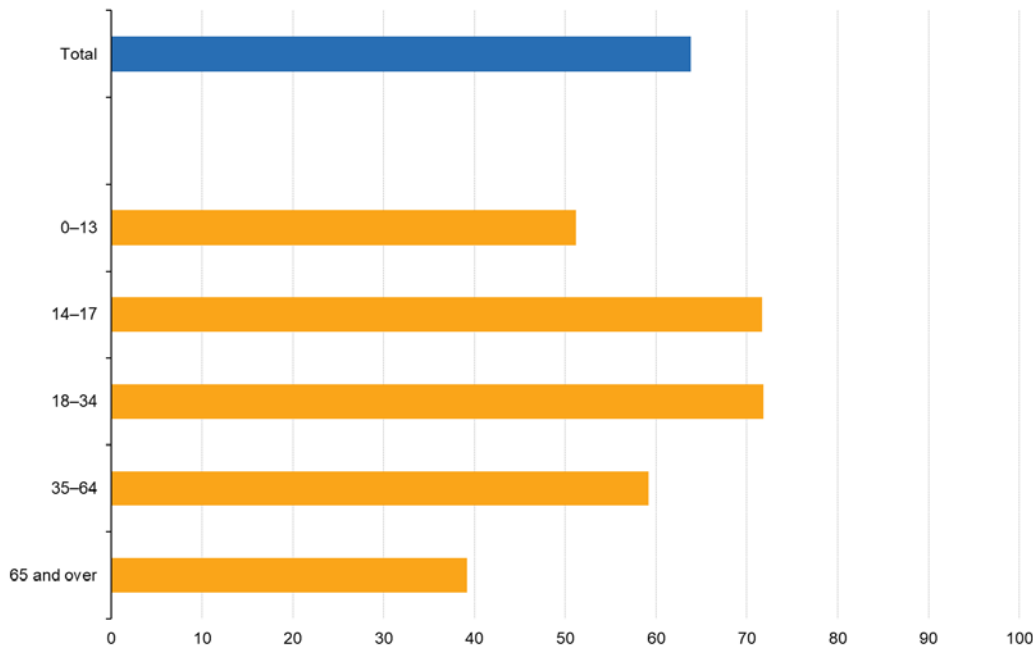
Why do we care about gender mainstreaming?

Why gender mainstreaming is fundamental for climate actions?



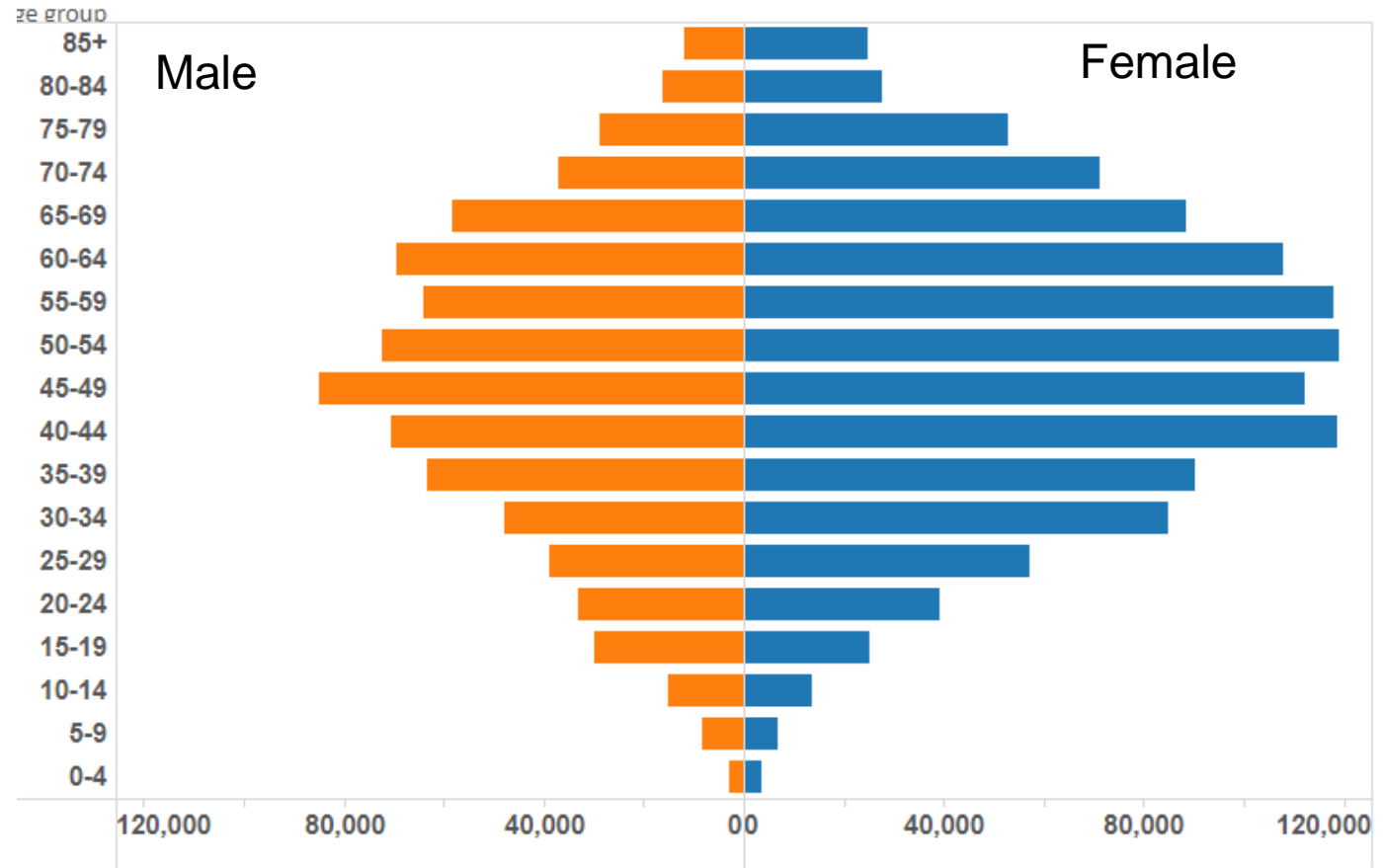
Demographic heterogeneity is key for policy planning and interventions

Share of male first-time asylum applicants (non-EU citizens) by age groups, EU, 2020 (%)



Source: [Eurostat](#).

Age and sex distribution of migrants from the Philippines in the US, 2016



Immigrant population in the United States: 1,915,500

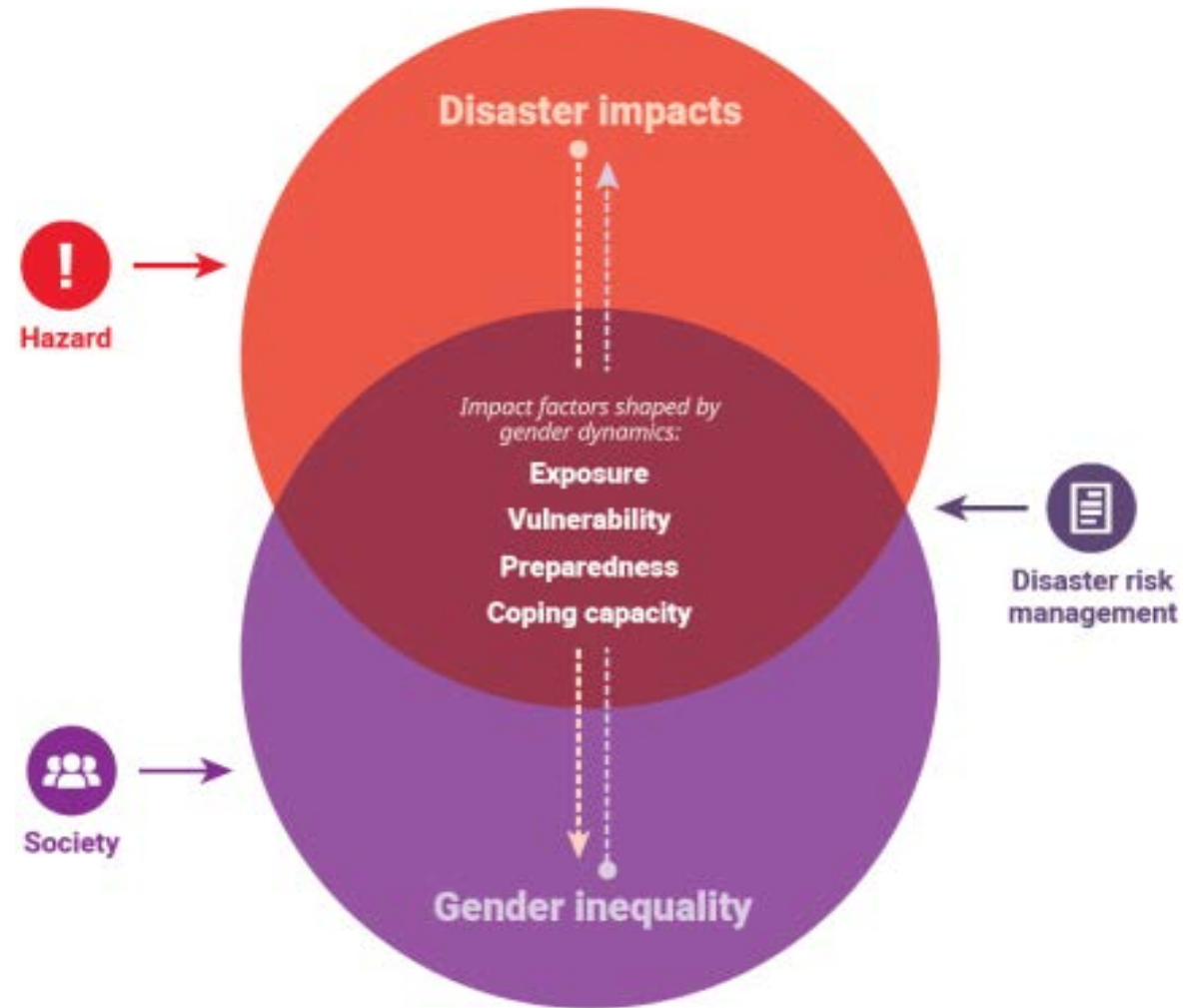
Source: [Migration Policy Institute](#).



Sources of gender differentials

A conceptual framework for considering gender dynamics and disaster impacts

Source: [The World Bank](#).



Gender differentials in hazards exposure



Source: [The Chronicle](#).



Source: [Globalgiving](#).



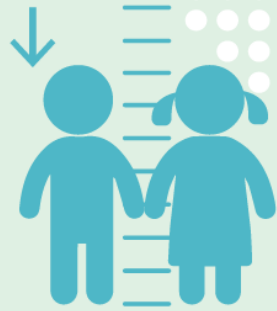
Source: [Humanosphere](#).

Gender differentials in vulnerability and coping capacity

Physiological and biological differences

THREE FACES OF MALNUTRITION

STUNTING



144 million

children under 5 are **stunted**
(too short for their age)

WASTING



47 million

children under 5 are **wasted**
(too thin for their height)

OVERWEIGHT



38 million

children under 5 are **overweight**

Interactions with socio-economic factors

Sex differences in thermoregulation



Source: [Quiropractica Rodermans](#).

Social vulnerability to heatwaves

During a **HEATWAVE**, help others who suffer from the **heat**

Check on family, friends, and neighbours who spend much of their time alone.

Elderly or sick people living alone should be visited at least daily.

Take a first-aid course to learn how to treat heat emergencies and other emergencies.

World Health Organization

Source: [World Health Organization](#).

Tackling gender (and other forms of) inequalities can promote climate action

Climate Women

The Nexus

As Mary Robinson, Ireland's former president and the former UN commissioner for human rights, said, "People who are marginalized or poor, women, and indigenous communities are being disproportionately affected by climate impacts."*

Women experience disproportionate impacts

due to underlying socioeconomic, political, and legal barriers that limit their choices in the face of climate change.

BARRIERS INCLUDE



Limited access to financial resources and often lower pay.



2.5 times more unpaid work and care than men.



Discriminatory laws that limit female workforce participation.



Lack of voice in decision-making at the household, local, national, and international levels.



Restrictions on land ownership.



Lack of technology and capacity-building resources.

Gender equality and water:

Water-related disasters (flooding) impact women and men differently due to their social, cultural and gender norms.

- Higher mortality risk for males in more developed settings
 - In US and Europe, 70% of flood-related deaths are males.
 - Mostly vehicle-related; behaviors of drivers

- Higher mortality risk for females in less developed countries
 - Women's restricted ability to avoid danger of flooding
 - The female dress code
 - Not knowing how to swim
 - The responsibilities in caring for small children

- Women to ensure household water supply
 - In case of contaminated boreholes & wells from flooding
 - In case family members getting sick from flooding-related diseases



Copyright: UN Women/
Mohammad Rakibul Hasan

Gender equality and water:

The primary responsibility of women/girls for daily water collection

Women/girls as primary water carriers due to water security issues

- Across 24 Sub-Saharan African countries
- Primary collectors of water spending more than 30 minutes per day



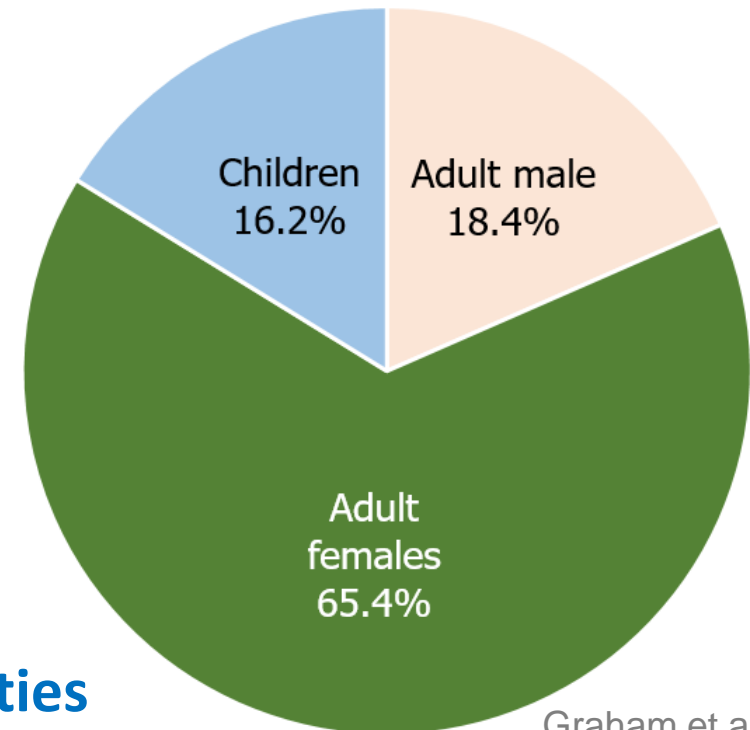
200 MILLION HOURS = THE TIME WOMEN & GIRLS SPEND FETCHING WATER EVERY DAY

UNICEF



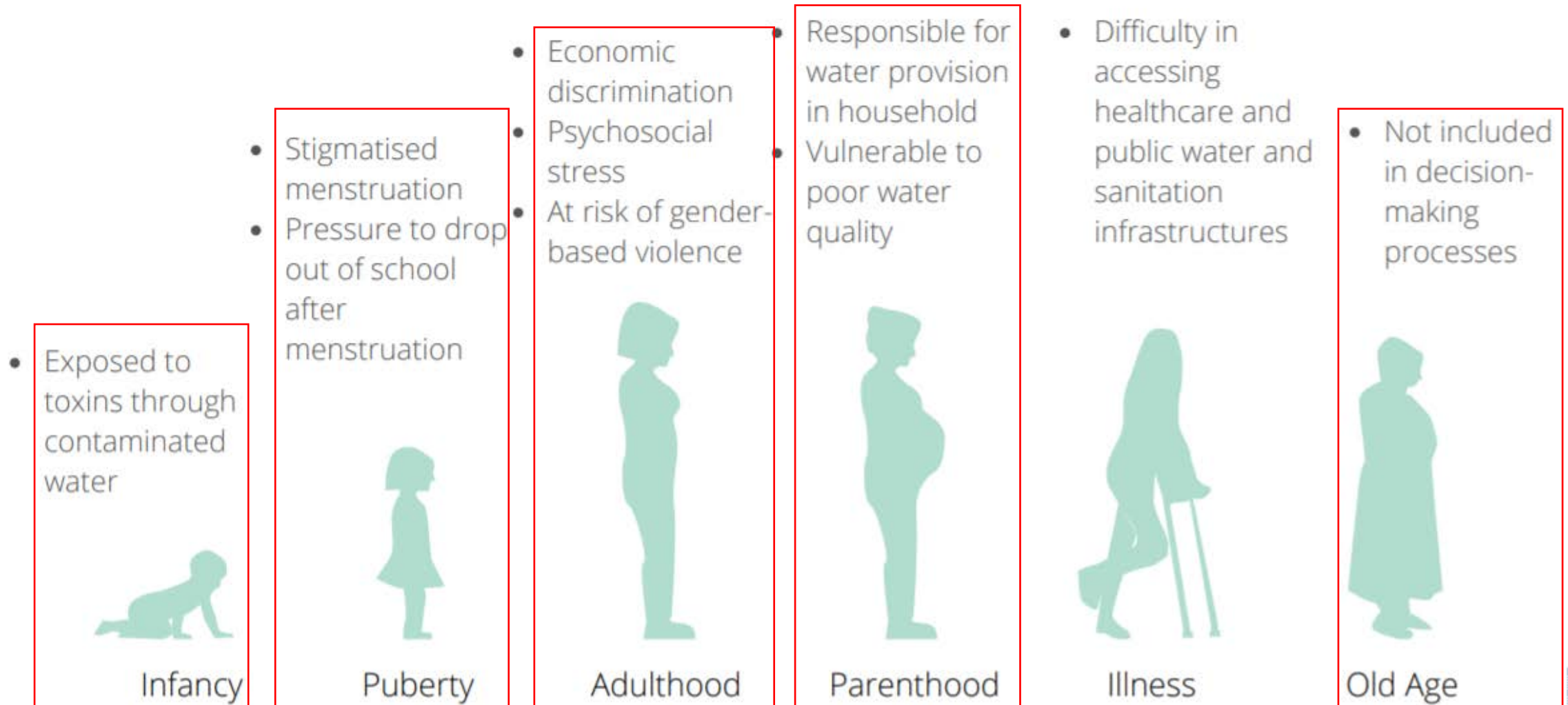
Limit access to

- **Education**
- **Income generating activities**



Gender equality and water:

Vulnerability to poor access to Water, Sanitation and Hygiene (WASH)



Discrimination occurs throughout the lifecycle of a woman (OHCHR)

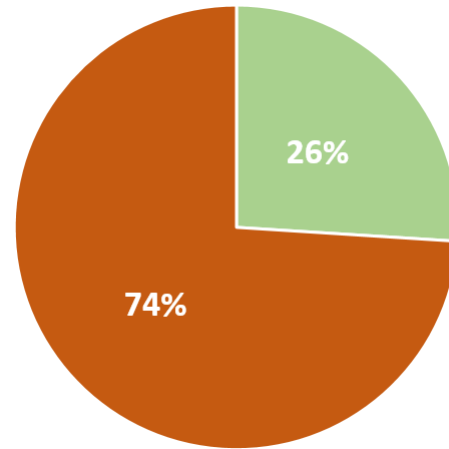
Gender equality and water:

Women are severely underrepresented in water management and decision-making and the progress has been slow.

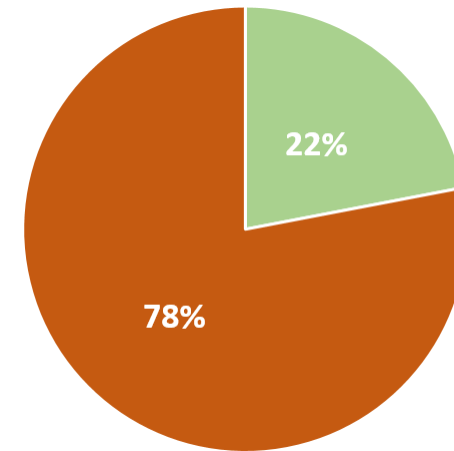
MINISRTY	NUMBER OF COUNTRIES WITH GENDER FOCAL POINT	PERCENTAGE OF COUNTRIES WITH GENDER FOCAL POINT
Agriculture	37	57%
Environment	30	46%
Energy	19	29%
Forestry	17	26%
Fisheries	16	25%
Water	14	22%
Sample Size	65 countries	Average = 35%

Source: IUCN Environmental Gender Index (EGI, 2013)

Actively pursuing **gender mainstreaming** in water resources management



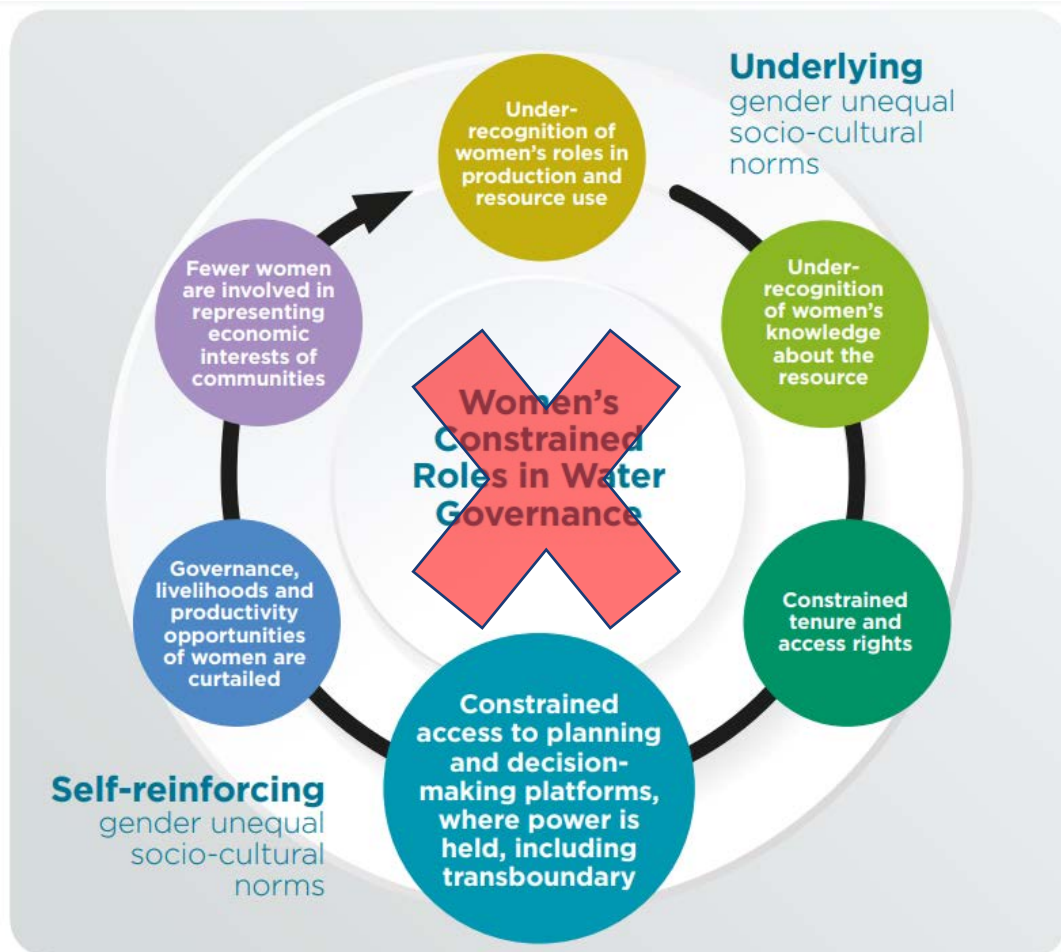
High levels of women's participation in water policy and management processes



UN Women 2021 (number as percentage of countries [170])

Gender equality and water:

Rebalancing the **constrained roles** and disproportional **vulnerabilities/responsibilities** of women in the water sector.



Source: Fauconnier, IUCN 2018

- At all levels
 - Household & community
 - Water management
 - Water policy-making
 - Socio-cultural norms

- Systematically
 - Water security
 - Climate
 - Environment & natural resources
 - Agriculture
 - Etc.

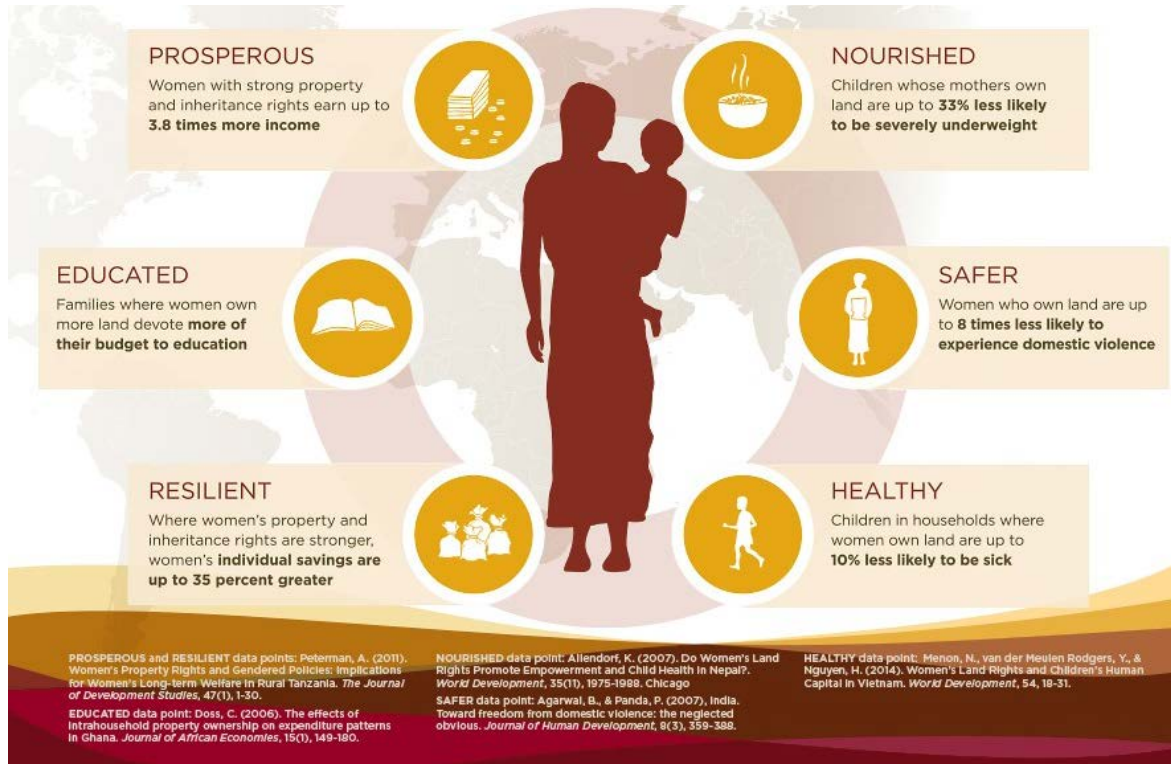
Gender equality and water: strong linkage to agriculture and food security

Land ownership is the precondition for water access and use.

Regions	pct female holders	# countries
Sub-Saharan Africa	15.4%	20
North America	15.4%	2
Latin America and the Caribbean	18.2%	20
Middle East/North Africa	4.9%	8
Central, East and South Asia	10.9%	14
Europe	27.8%	34
Oceania	9.6%	6
Global	12.8%	104
Developing regions only	12.1%	68

Source: FAO Gender and Land Rights Database.

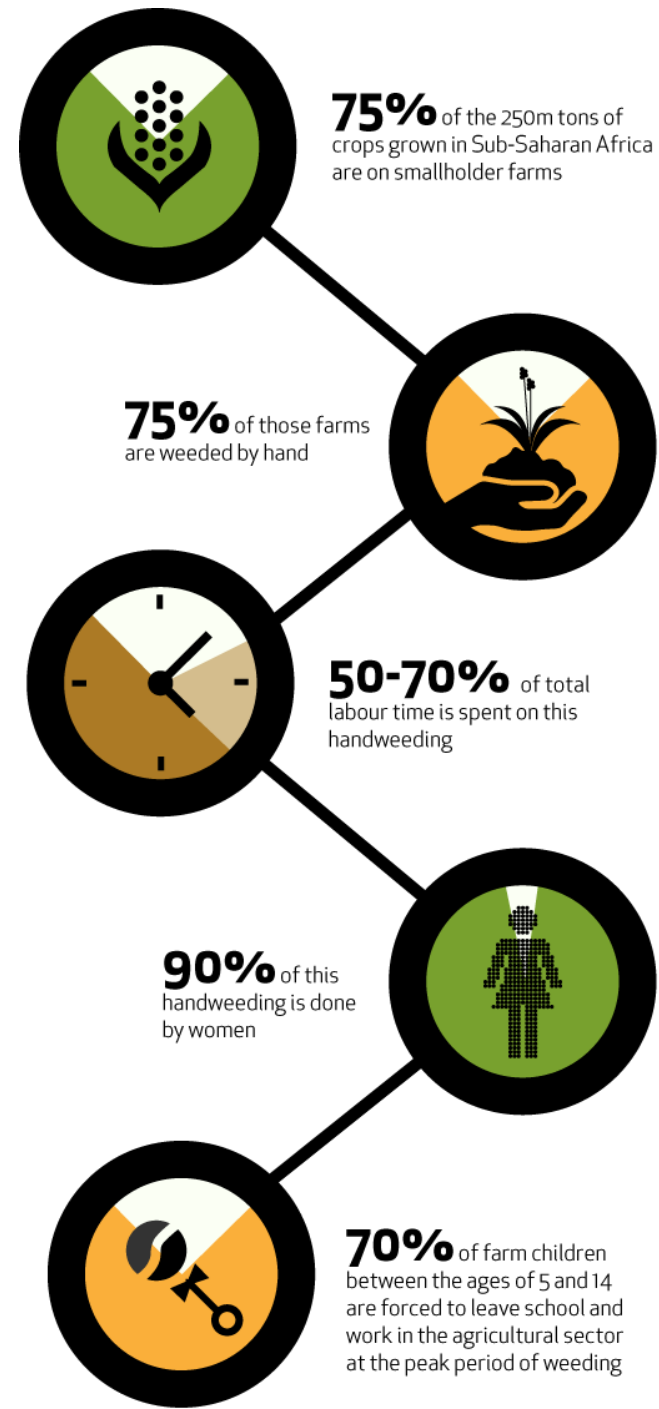
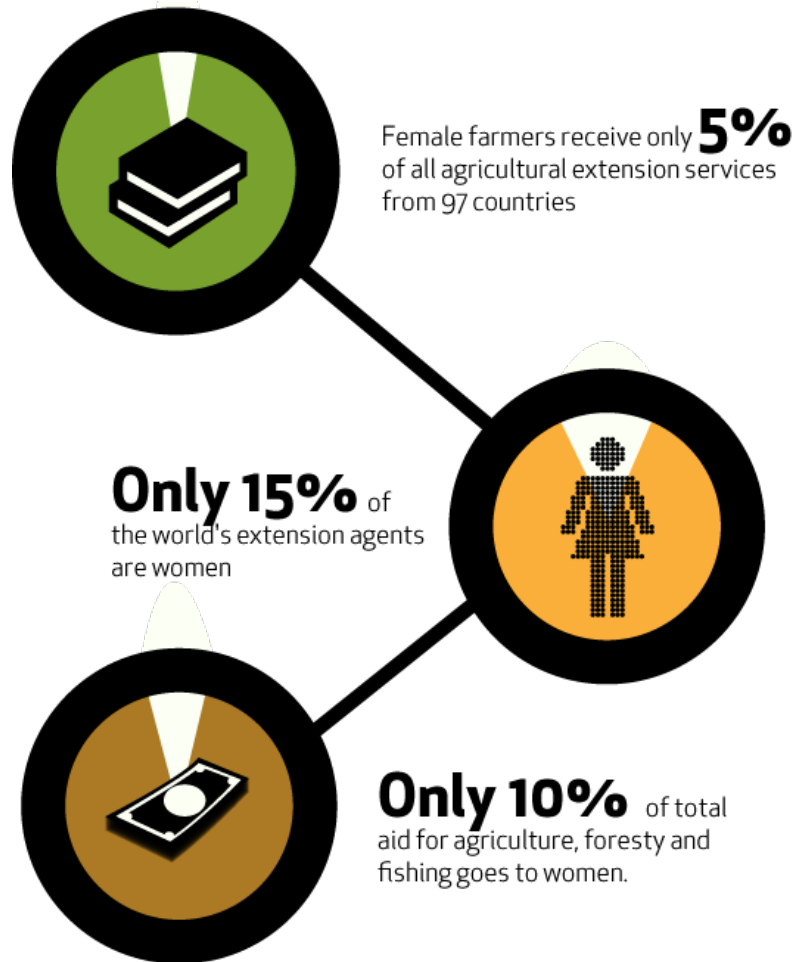
Gender dynamics of secure land tenure and access to resources



Source: Landsea

Source: CIMMYT

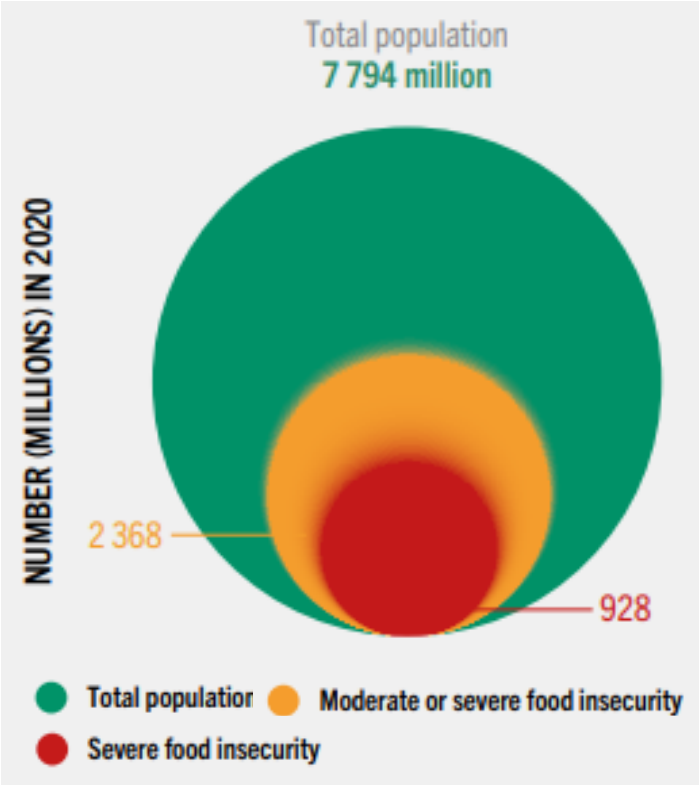
Agricultural livelihoods and disproportional burdens



Source: Farming First; Croplife Foundation, ILO, and FAO

Gender and food security

Women face food more food insecurity than men



Source: FAO (SOFI 2021)

Burden of care work falls overwhelmingly on women (2-10 times more than men), worldwide

Source: Ferrant et al. 2014; OECD (2014)



FAO/Vyacheslav Oseledko

Sanjit Das/FOOD4 La Stampa

C. de Bode/CGIAR

Empowering women improves food security for women and children

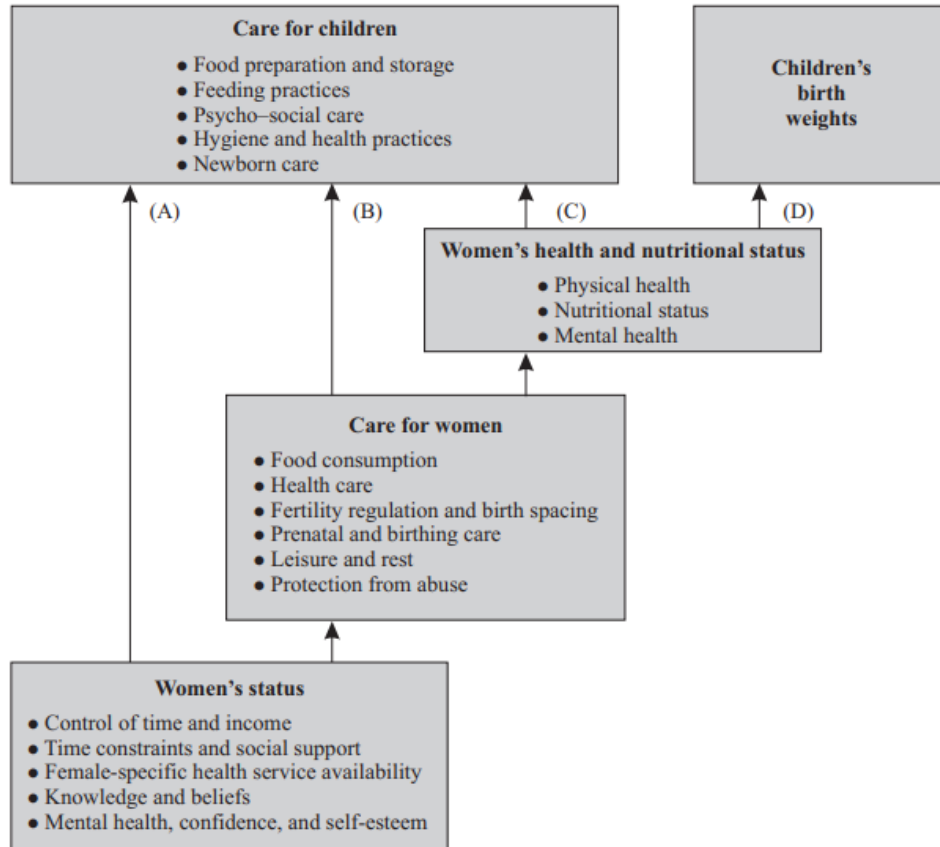


Photo: Russell Watkins/DFID



Photo: Yifei Liu / IFPRI

Source: Smith et al. (2003)

Gender and covid

Exposure and vulnerabilities

Photo: UN Women/
Estella Estella Turukoyo John



Lockdowns and Livelihoods

©FAO/Luis Tato



Source: ILO calculations based on ILOSTAT, ILO modelled estimates.

Food security and employment/income crisis

Source: ILO Policy Brief: Building Forward Fairer

Key Messages and Systems Analysis

Gender is securely within the nexus of food security, climate, and water (etc.)

- Gender equality requires eliminating stereotypes and prejudices about gender, and creating institutions and environments that enable all people to exercise agency to cope, change and adapt.
- The solutions to overcoming challenges requires gender transformative change

IIASA with a gender perspective

- Expanding systems thinking to include a conscious consideration of gender will fill an analysis gap in systemic thinking practice. (Stephans, 2013).
- Mainstreaming gender into research offers a solution to move from gender blind to gender aware/sensitive

Thank you for your time!

Follow us!



Resources



GENDER
Platform



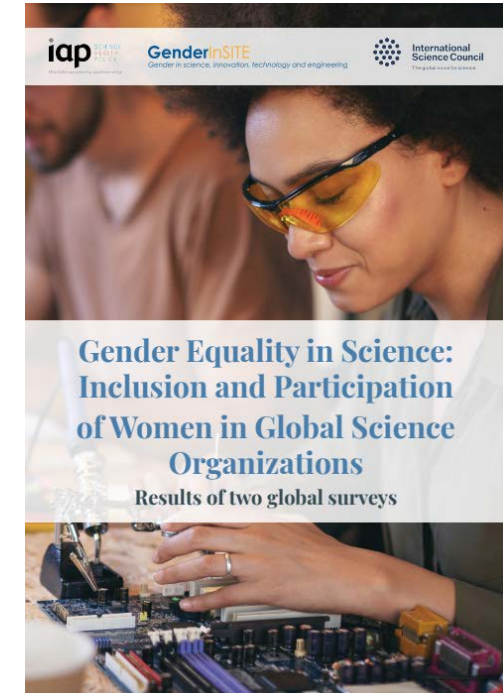
ACHIEVING SUSTAINABLE DEVELOPMENT GOALS 5 AND 6

The case for gender-transformative water programmes

www.oxfam.org



European Platform of Women Scientists



Resources

- United Nations Entity for Gender Equality and the Empowerment of Women ([UN Women](#))
- Gender and Water Alliance ([GWA](#))
- Water and Sanitation Program ([WSP](#))
- Global Water Security & Sanitation Partnership ([GWSP](#))
- Gender CC- Women for Climate Justice ([Gender CC](#))

What is gender mainstreaming?

