

Irrigation meets Feminist Political Ecology:

Exploring Nature-Society Relations in the context of climate change and the global environmental crisis

Gitta Shrestha, Independent Researcher

Dr. Stephanie Leder, Swedish University of

Agricultural Sciences Department of Urban and Rural
Development,

Dr. Floriane Clément, University of Toulouse, INRAE,
UMR Dynafor



Our positionality and motivation

- Feminist Researchers, Geography, IWMI- CGIAR, Nepal
- R4D Projects – South Asia and globally on Gender and Water/ Irrigation.
- Feminist Political Ecologists
- Similar methodological orientation
- Strong Social Science feminist group within a technologically, development business-as-usual context
- Location – Sweden, Nepal, France
- Connected through common interests
- WIREs Water Journal



IASC CONFERENCE PERU, 2019.

Outline

- Irrigation and FPE
- Research question
- Methodology and coding categories
- Results of systematized literature review
- Conclusion



Irrigation research and practice

- How are water resources managed and governed for food production?
- Irrigation efficiency and sustainability through the use of technology
- Often technocratic, male dominated, masculine, economic growth visions, ignore intersection of environmental issues with gender and social power relations (Shrestha and Clement, 2019)

Irrigation research and practice could benefit from greater engagement with **theoretically** informed linkages to FPE



Feminist political ecology (FPE)

- Explores questions of **social and environmental justice** in resource management
- **Local knowledges linked to global change processes**
- **Everyday struggles** over resources (land, water forest) (Harris 2006, Sultana 2011, Clement et al. 2019, Leder et al. 2019, Leder 2022, Gonda 2019)
- **Intersectionality** (Nightingale 2006, 2011, Harris 2008) of gender, class, age...
- **Intra-household and intra-community relations** (Leder et al. 2017, Leder et al. 2019)
- **Emotions, care, bodies, attachment, ambivalences** (Sultana 2011, Leder et al. 2019)



Research question

What can an FPE perspective offer to irrigation research and practice?



Literature Review Methodology:

Systematized literature review

- Attempts to **include elements of the systematic review process** without meeting all of the standards for a systematic review
- Uses methods from a systematic review, including the use of a review protocol in which **the search strategy, inclusion/exclusion criteria and extraction methods** are determined in advance.

Review protocol of the search strategy

Inclusion criteria:

- Peer-reviewed publications published in Web of Science and Scopus
- English language
- No time limit

Search	Database	Search Words	Results: number of articles
1	Web of Science	Irrigation + feminist political ecology	10
2	Web of Science	Irrigation + gender + feminist	18
3	Web of Science	Irrigation + political ecology + gender	13
4	SCOPUS	Irrigation + feminist political ecology	7
5	SCOPUS	Irrigation + gender + feminist	16
6	SCOPUS	Irrigation + political ecology + gender	9
TOTAL without double entries		33 papers to review without doubles 17 papers to review after initial reading as PE/FPE/irrigation not mentioned	

Limitations:

- A few articles on Irrigation and gender which we consider as key literature remained outside the research results as they did not clearly label their work as FPE or irrigation was not mentioned.



Coding Categories

Key categories

1 - Descriptive Elements

2 - How is irrigation defined?

3 - How are the challenges in irrigation framed?

4 - How is FPE defined in the article?

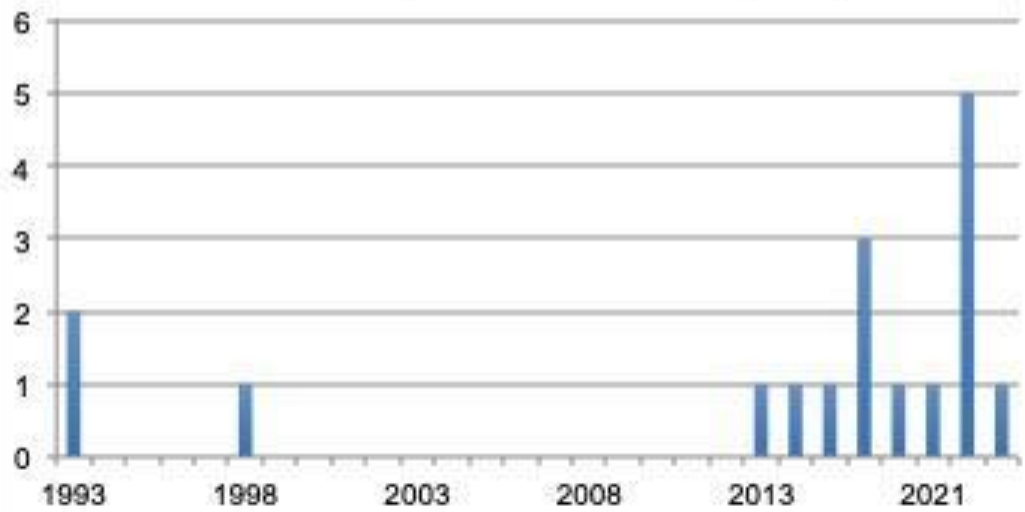
5 - At which scale has FPE been applied to irrigation research and practice?

6 - What research methodologies have been used to apply FPE in irrigation?

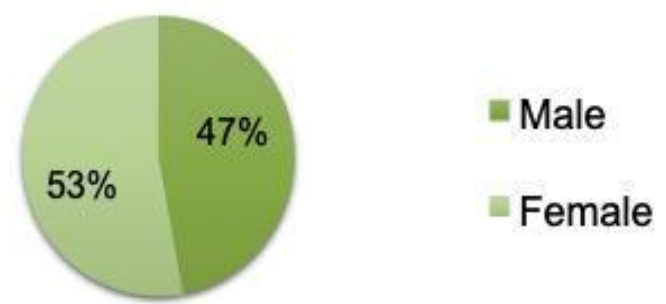
7 - Is FPE articulated with other bodies of knowledge?

8 - What is the relevance of FPE on irrigation research and practice in the article?

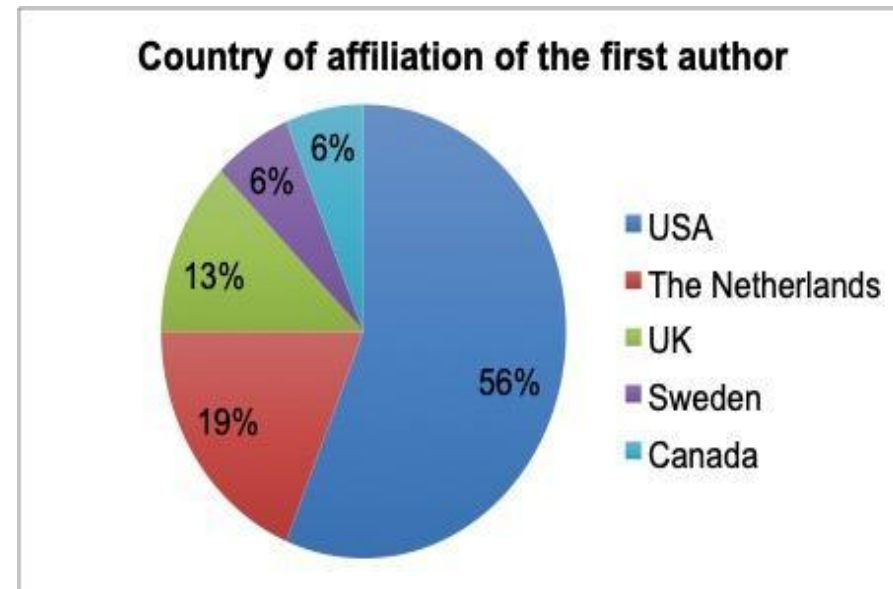
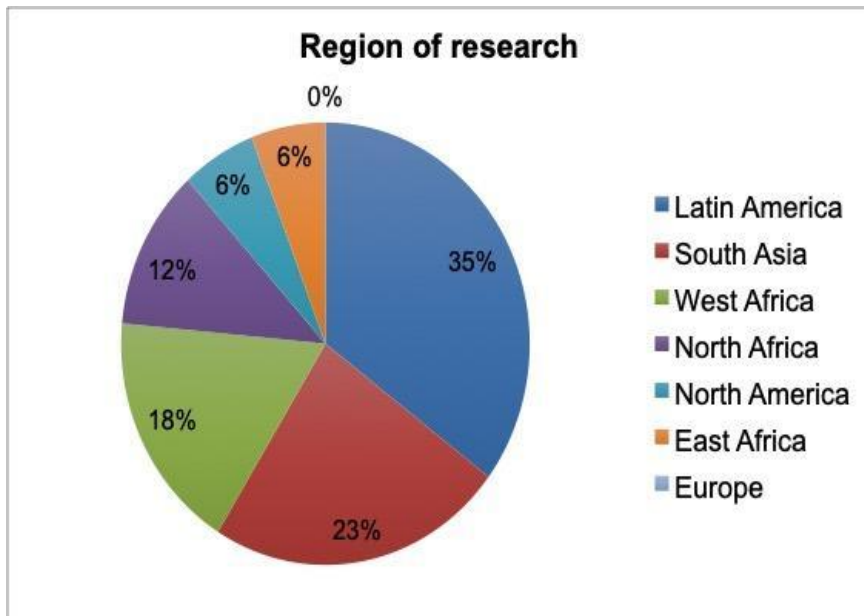
Number of publications per year



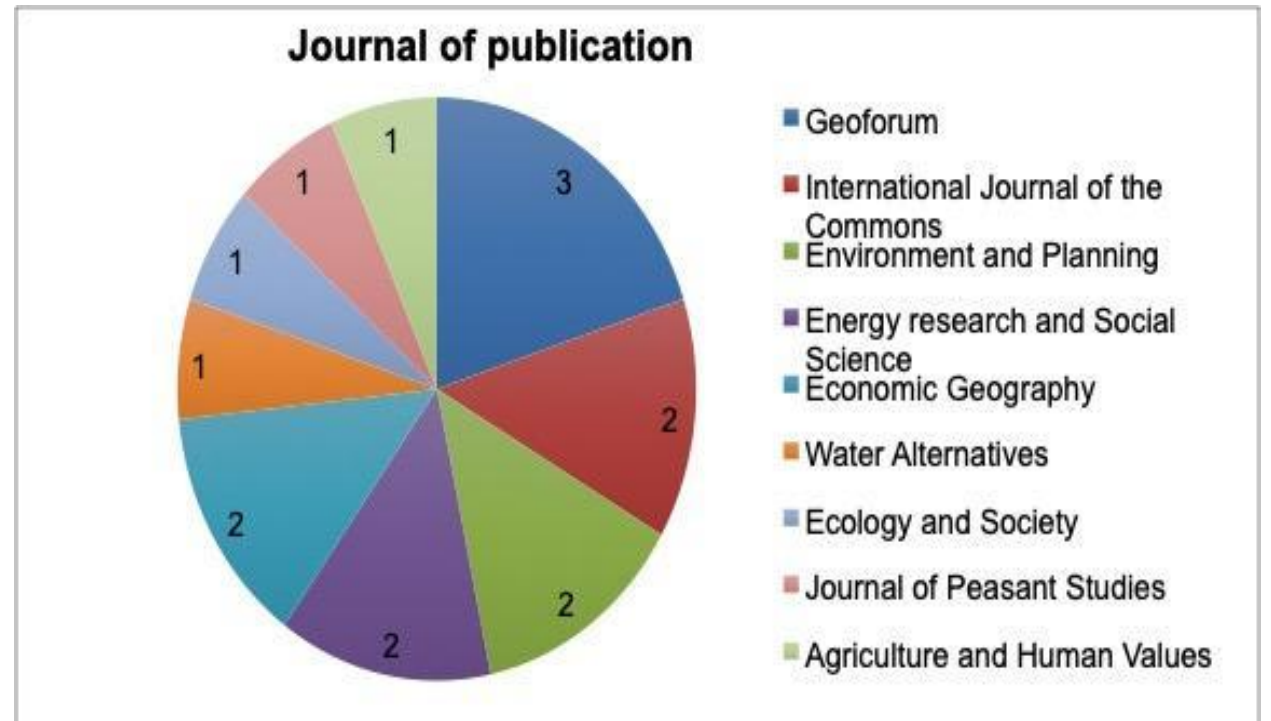
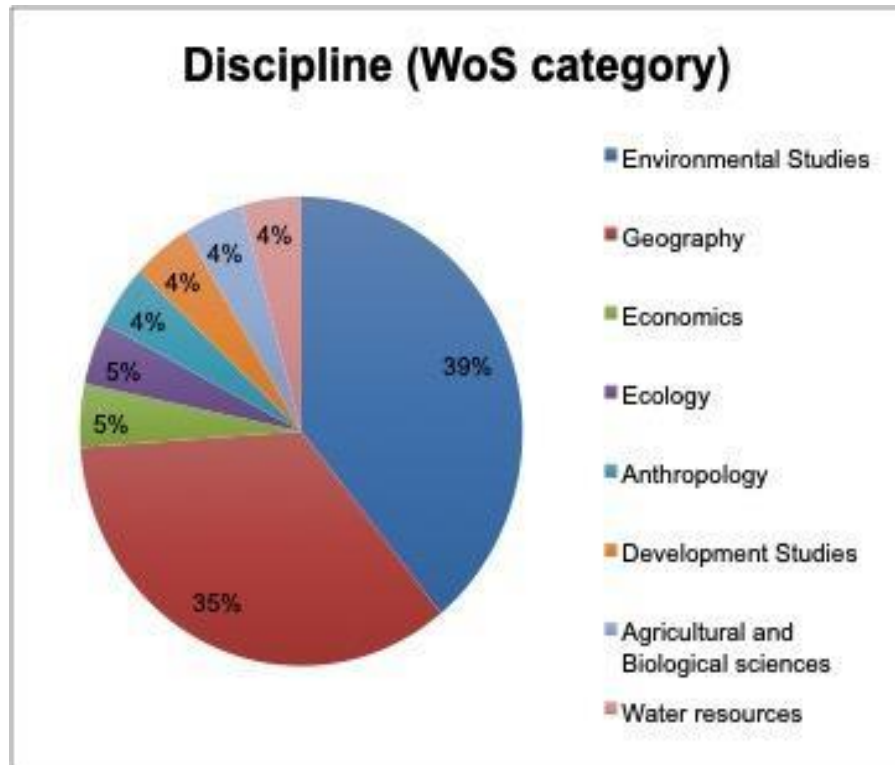
Sex of the first author



Country of research & affiliation



Research community



How is irrigation defined?

Usually not defined but either framed as:

an **infrastructure**, entangled with society/nature relations

a **water use**, potentially conflicting with other (domestic) uses and/or reflecting male-dominated activities embedded in neoliberal agendas.

Less often, irrigation is analysed as a **discourse** reflecting specific worldviews.

Irrigation often results from a **development project**.

Irrigation as a non-human network with a specific agency:

"a spatialised water, transport, energy and resources network that remaps geographical possibilities and redirects and provides differentiated access to resource flows". (Rap and Jakolski, 2019)



How are the challenges in irrigation framed?

Irrigation is either the **outcome** studied:
differentiated access to irrigation water
for men/women

more often is **a major driver** reshaping :
- social-ecological relations, with
unequal gendered impacts, in particular
on land tenure, on labor allocation and
women's health

- **gendered subjectivities** : groundwater
irrigation opens up new ways to perform
farming identities and constructing social
relations.

*"Irrigation schemes play a central role
in government policies aimed at
diversifying agricultural exports while
improving self-sufficiency in food
grains. **But the intensification of
household labor regimes to
year-round cultivation is inducing
unparalleled gender conflict as
communities reorient the common
property regime to the new economic
emphasis on irrigated production**"
(Carney, 1993)*

How is FPE defined?

There is a diverse range from:

- no definition or explicit reference to FPE (in 6 articles), to
- using FPE as a **proxy** for other concepts (e.g. intersectionality, feminist care ethics...) and broader analysis of gendered relations (6 articles), to
- more in-depth engagement with the FPE literature (5 articles)

Example of in-depth engagement by Beacon et al (2022):

“an approach that allows researchers to examine **human-environmental change and conflict critically by asking questions about the uneven power relations mediating resource access, governance, and control across multiple scales** (Watts 2000, Elmhirst 2015). FPE studies also focus on how the **meanings and materialities of both gender and the environment are mutually constructed, changed, and co-produced over time** (Nightingale 2020)



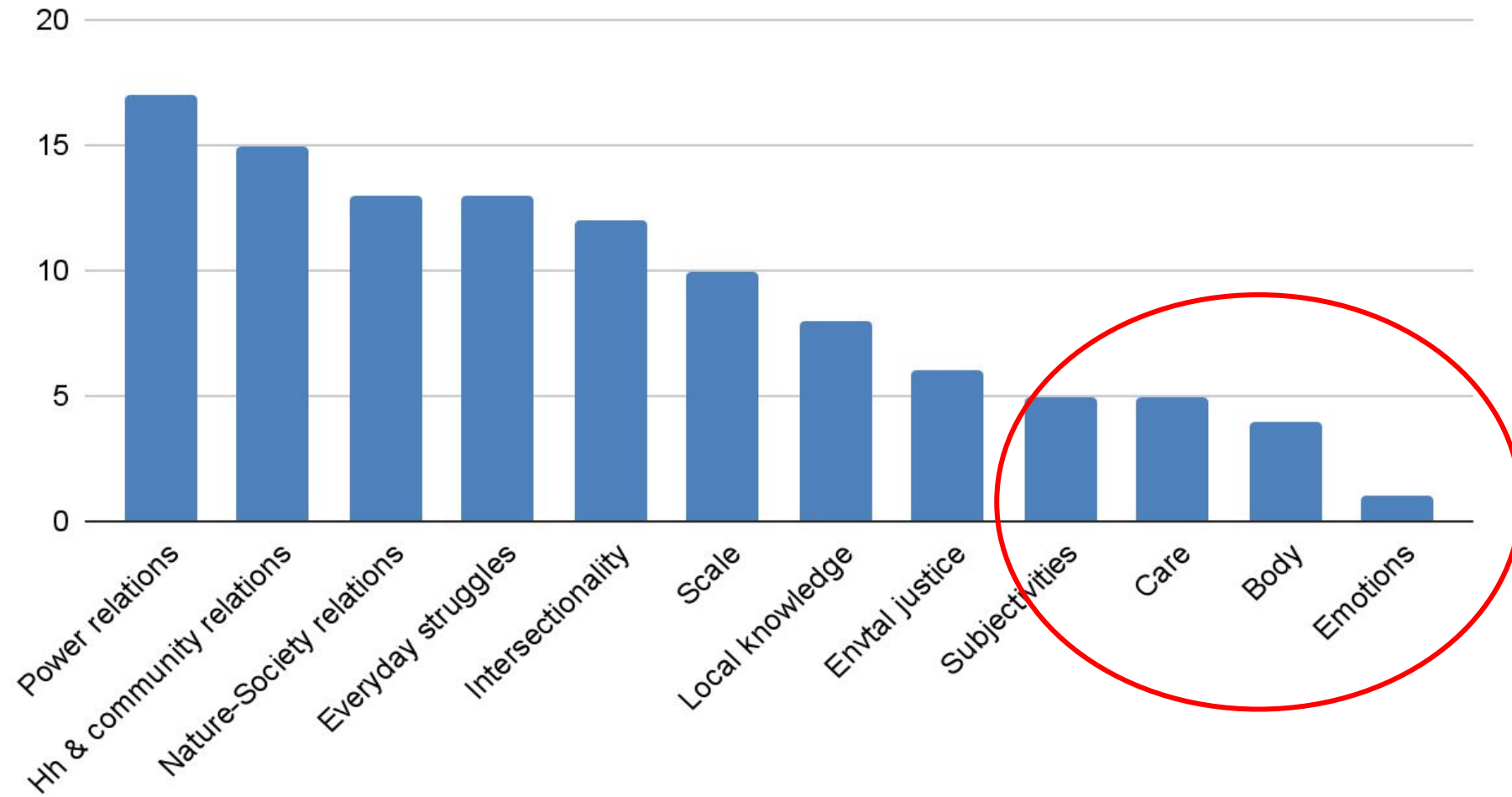
What is the rationale / objective of using an FPE approach in this article?

→ to complement existing concepts or fields of studies (e.g. commons studies, vulnerability, political ecology of health...) with a **"gender analysis approach"**

→ for a **politicized, multi-dimensional, multi-scalar analysis** of environmental governance, uneven resource access, and embodied, political, social, historical relations



Components of an FPE approach used



To which extent are different components of an FPE approach as outlined here used?

Power relations over resources (struggles, ambivalences) (17/17)

unequal water and land access and title/ownership; training, credit; less mobility, social networks and cultural constraints to practice irrigation; gendered division of labour/unaccounted female labor/low bargaining power within and outside hh

Household and community relations (15/17)

intra-household (bargaining) relations, inter-community and intra-community relations, tenure and labor relations

Everyday struggles (13/17)

everyday household/care work struggles, everyday water/tenure struggles and “negotiations”, conjugal/community struggles

Nature-Society Relations (13/17)

often not explicitly, but in the widest sense through water etc.

Local knowledge (8/17)

surprisingly little attention!

To which extent are different components of an FPE approach as outlined here used?

Intersectionality (12/17)	mostly on gender and class/land tenure, but also caste (South Asia), age/generation, less “ cultural ” difference
Social and environmental justice (6/17)	differential environmental/health impacts of agrochemicals, solar energy, water efficiency discourses
Care (5/17)	Child care, cooking, elderly care, household work, pregnancy as unaccounted labor
Emergence of gendered subjectivities (5/17)	“cash economy”, neoliberal structures, “human and non-human entities”, “unequal resource access”, “intersectionalities”, ... shape (embodied) subjectivities
Emotions (1/17)	only one paper with explicit reference to emotional attachment (to collective farming group members) as analytical entry point to explain why crop failures were overcome and risks were taken again

At which scale has FPE been applied to irrigation research and practice?

SCALE (10/17)

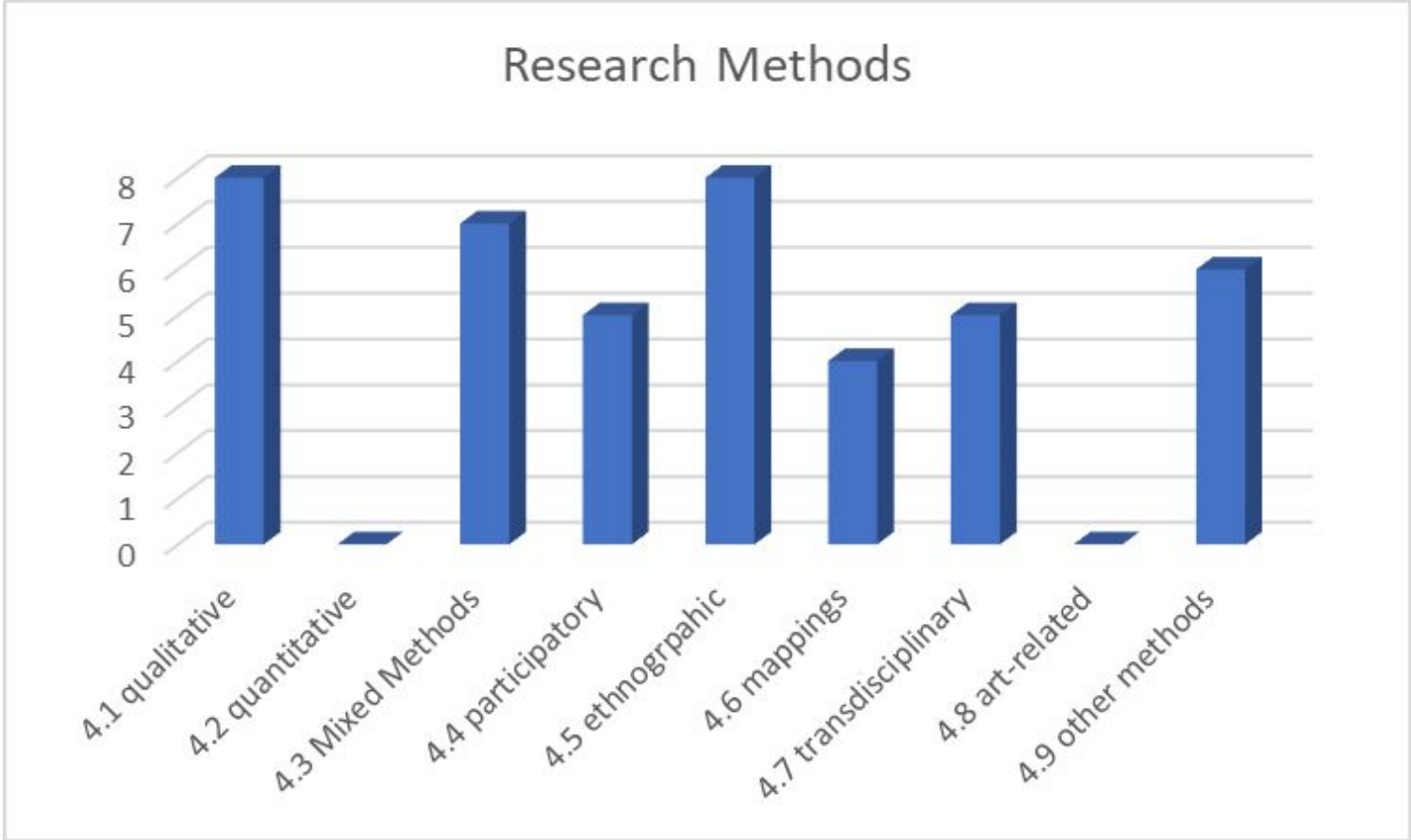
- 8/17 link household relations/responsibilities and community/village relations
- 9/17 also link beyond the “local” to national/global/structural level/“political economies” of water/ agriculture/ development/ (global)food supply systems/ rice production/ agribusinesses/ export economy/ rental markets (involving national and international stakeholders)

BODY/EMBODIMENT (4/17)

- embodied experiences of “lean water/food months” (Bacon et al. 2022)
- health effects of wastewater irrigation as embodiment (Nyontakyi-Frimpong et al. 2016)
- misusing women’s bodies for ‘free’ irrigation labor (Schroeder 1993)
- Embodied experience of labor (Jackson 1998)



What research methodologies have been used to apply FPE in irrigation?



Other methods:

1. Historical analysis of social and environmental change
2. Community-based water monitoring
3. Literature Review

Is FPE articulated with other bodies of knowledge?

Water/Environmental Justice - 4 (e.g. Schroeder 1993 links environmental justice/ political economy of development through a critique of the unequal benefits of "gardening projects for women")

Emotional Geographies -1

Waterscapes -1

Hydrosocial cycles -0

Territories -0

- **Political Ecology of Health – 1**
(e.g. Nyantaki-Frimpong link PEH with gender and embodiment literature)
- **Actor Network Theory -1**
- **Socio-Ecological Systems -1**
- **Feminist Care Ethics -1**
- **Post-Structural Analysis -1**

What is the relevance of FPE on irrigation research and practice in the article?

Methodological

- multi-scalar analysis
- “grounded”/local /ethnographic/ engaged approaches
- disaggregated survey data

Empirical

- FPE bring in multi-dimensional, politicized and historical perspectives:
- importance of land/tenure struggles linked to irrigation,
 - intra-household bargaining, informal negotiations, everyday struggles,
 - intersectionality



What is the theoretical relevance of FPE on irrigation research and practice in the article?

- Questions anthropocentrism (Leonardelli, et al., 2022) .
- Bring to the fore – water infrastructure violence, infrastructural vulnerability and gender and social inequalities in water access (Stock, 2021).
- Use social relations as determinant variables, which explain local- global ecological, economic and development processes (Imburgia 2019)
- Critically review other concepts/ theories (commons studies) through a feminist theory lens and framing of social relationships (Leder et al. 2019)
- Assess the “co-production of social difference, environments, and food and water insecurities” (Bacon et al. 2022)
- FPE is a “stronger framework for understanding water issues than ecofeminism” (Jackson 1998)

What can an FPE perspective offer to irrigation research and practice?

- Many articles relied on PE/gender nexus to bring more attention to social differentiation in irrigation practice.
- FPE was not central or explicitly referenced and many of its core concepts were missing.
- Feminist theory and concepts (body, emotions, subjectivities, care...) could more explicitly be used to deepen feminist analysis of irrigation.



Thank you!