



# Role of women in the mitigation of impact of climate change in aquaculture in Chitwan, Nepal

Pratikshya Neupane and Sunila Rai

Aquatic Resources Department, Fisheries Program  
Agriculture and Forestry University  
Nepal

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# Background

- Aquaculture is the fastest (15.6%) growing agriculture subsector in Nepal contributing 1.6% and 4.2% to GDP and AGDP (CFPCC, 2019).
- Carp polyculture in the pond is the major aquaculture practice.



# Current Status of Fish Production in Nepal

|                               |               |
|-------------------------------|---------------|
| • Total fish production       | 104,623 mt    |
| • Aquaculture                 | 83,623 mt     |
| • Fisheries                   | 21,000 mt     |
| • Fish farming in pond        | 73,693 mt     |
| • Average fish productivity   | 5.32 mt/ha    |
| • Per capita fish consumption | 3.43 Kg/caput |

CFPCC (2021)

# Women Involvement in Aquaculture

- About 150,000 people are directly engaged in aquaculture (Rijal and Jha, 2020).
- 32 % female participation.
- Mainly involved in processing and marketing.



- Nepal: one of the top ten countries most likely to be affected by global climate change (NAPA, 2010).
- Flood and drought: two main forms of climate change affecting aquaculture production.



# Objectives

- To assess the role of women in mitigating the impact of climate change in aquaculture in Chitwan district.
- The study covered :
  - Socio-demographic profile of farmers
  - Impacts of climate change in aquaculture
  - Mitigation practices adopted by farmers
  - Role of women in mitigating the impact of climate change in aquaculture

Study site:  
Chitwan district



समृद्धिपानिका, नमस्चोपानिका।



| Municipality | Respondent |
|--------------|------------|
| Rapti        | 16         |
| Bharatpur    | 9          |
| Khaireni     | 10         |
| Ratnanagar   | 5          |

Study period: March to July,  
2021

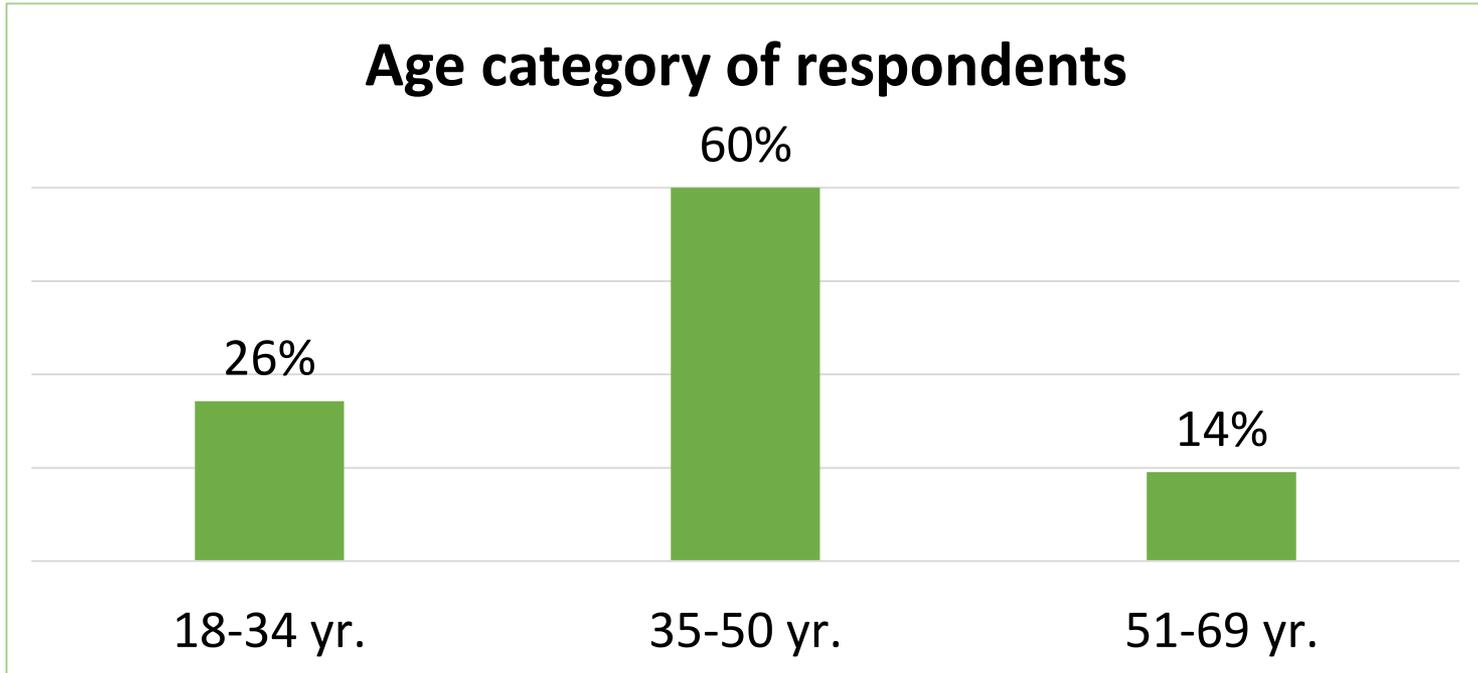


- Respondents: 40 Women fish farmers' (2 % of the total number of farmers in Chitwan district).
- Random selection of respondents
- Interview: Semi-structured questionnaire
- 50% farmers were interviewed in person and remaining 50% over telephone due to Covid-19 pandemic in the country.



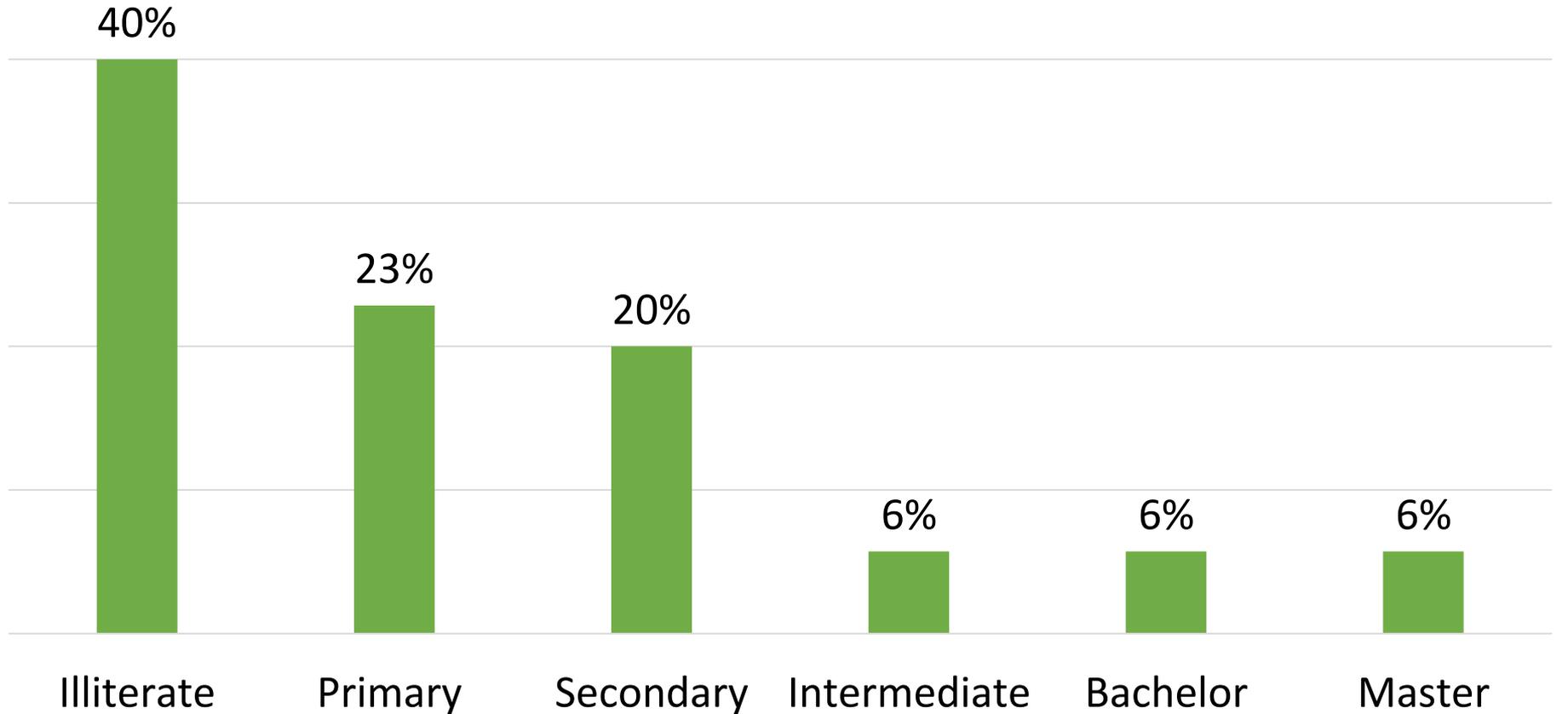


# Results and Discussion

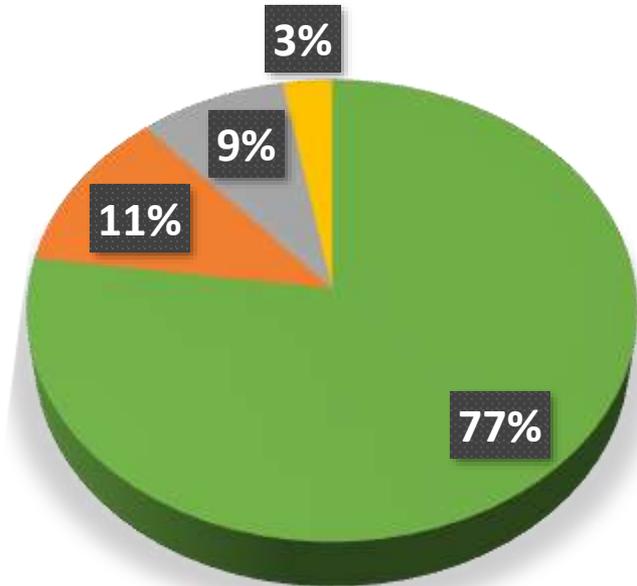


|                          | Minimum | Maximum | Mean $\pm$ SD |
|--------------------------|---------|---------|---------------|
| Age of respondents (yr.) | 28      | 57      | 41 $\pm$ 8    |

## Education status of respondents

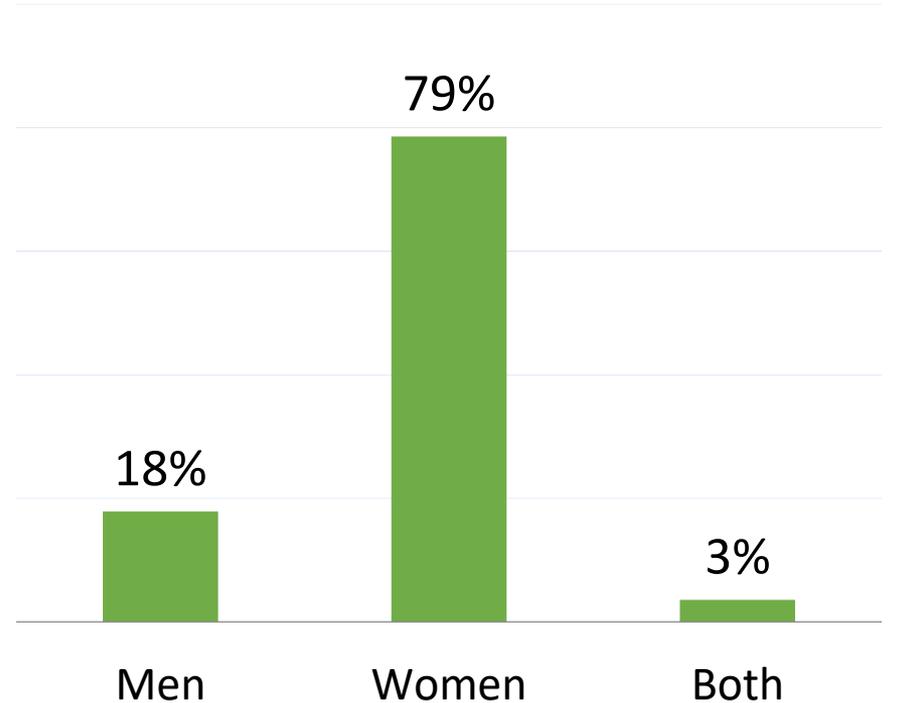


## Ethnicity of respondents



■ Tharu ■ Bhramin ■ Tamang ■ Gurung

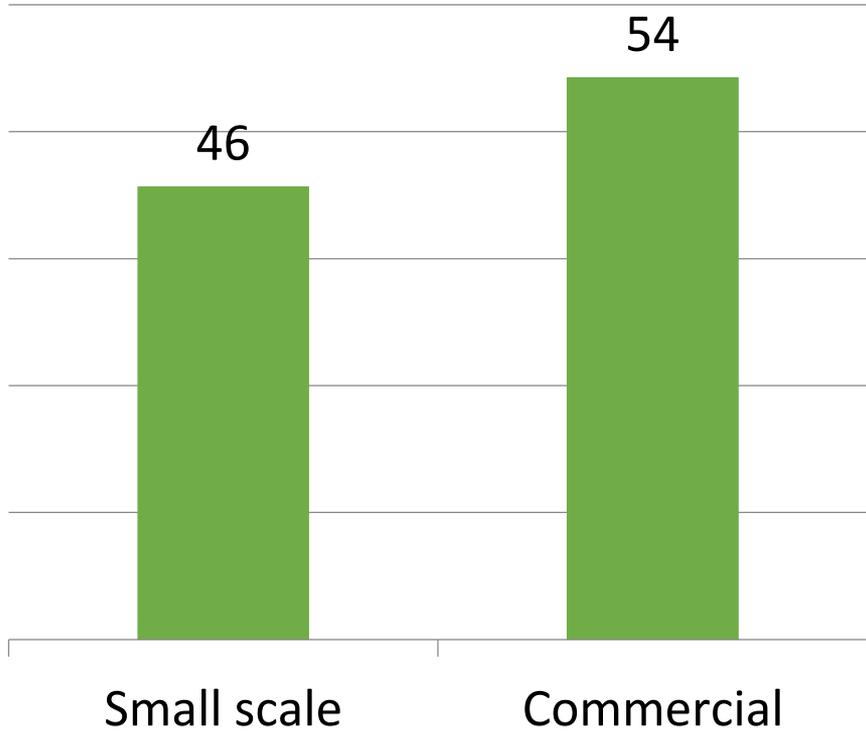
## Land ownership



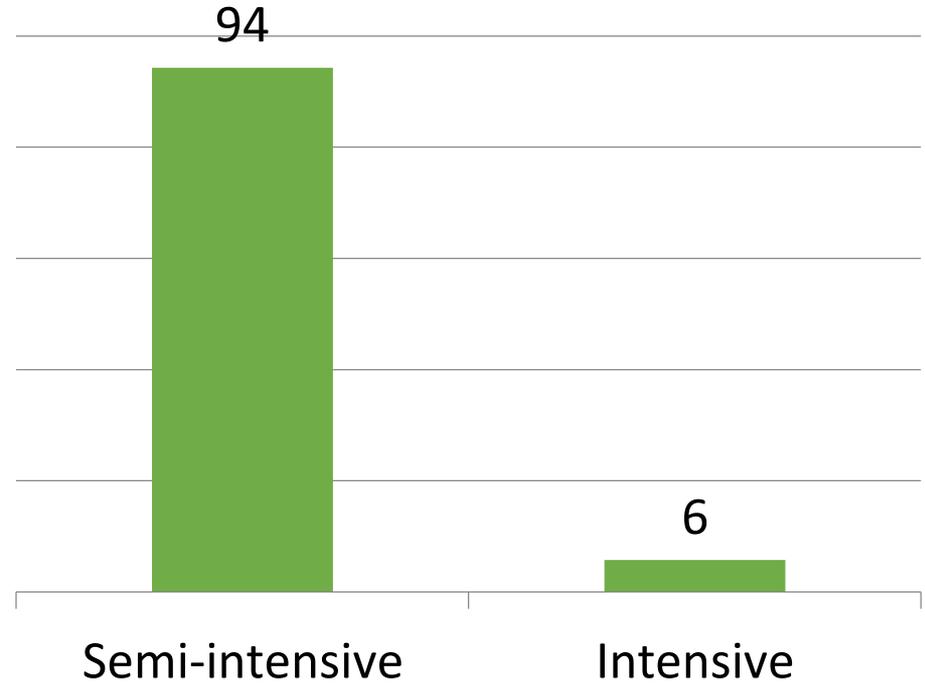
# Characteristics of farm

|                  | <b>Fish farming operation (yr.)</b> | <b>Total pond area (ha/household)</b> | <b>Number of pond (No./household)</b> |
|------------------|-------------------------------------|---------------------------------------|---------------------------------------|
| <b>Mean ± SD</b> | 10.7±4.5                            | 0.62±1.63                             | 3±2                                   |
| <b>Range</b>     | 2-20                                | 0.01-7                                | 1-13                                  |

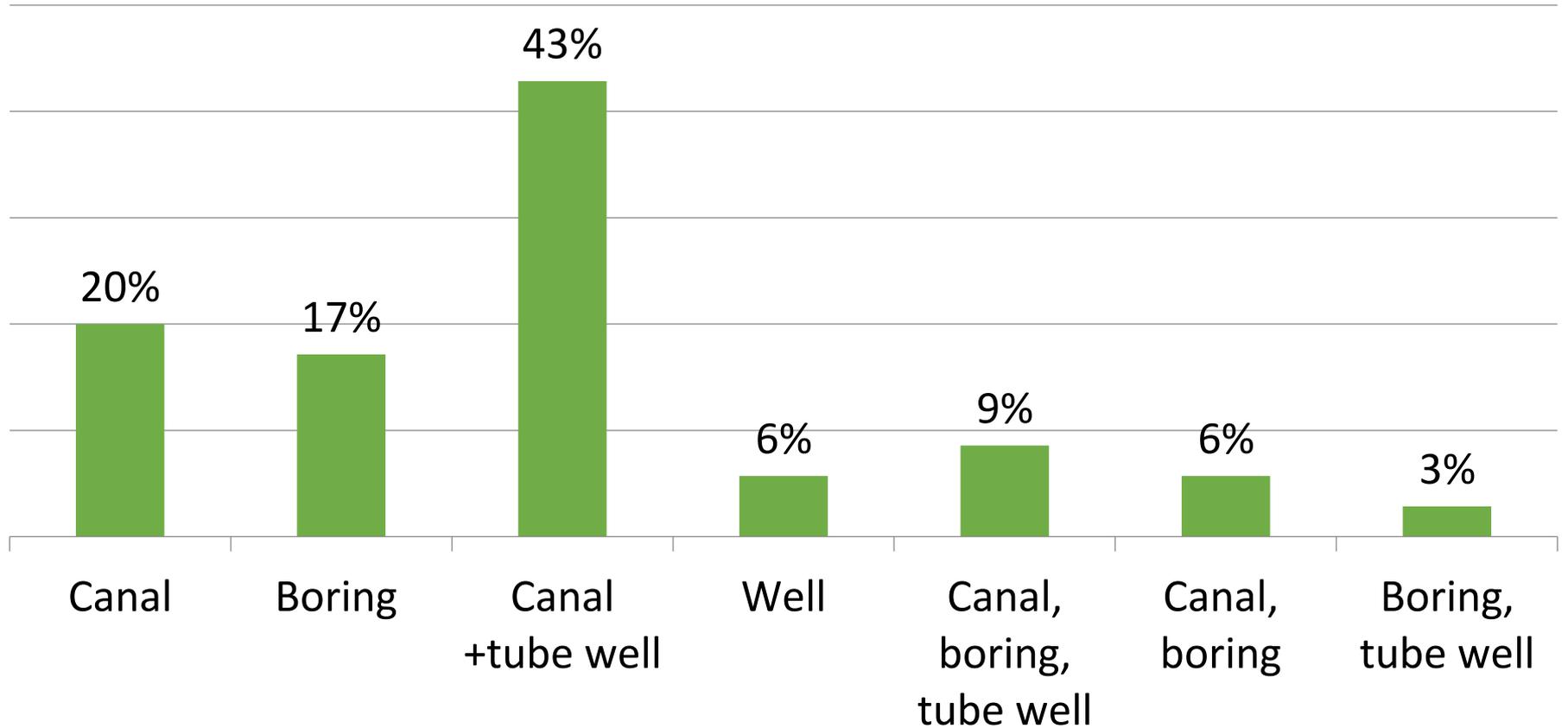
## Level of farming (%)



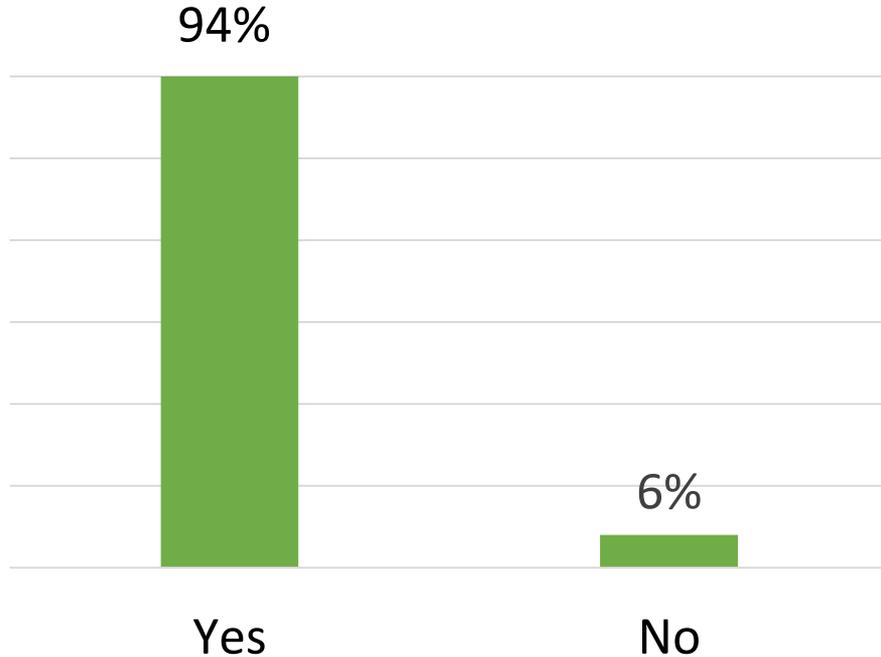
## Intensity of farming system (%)



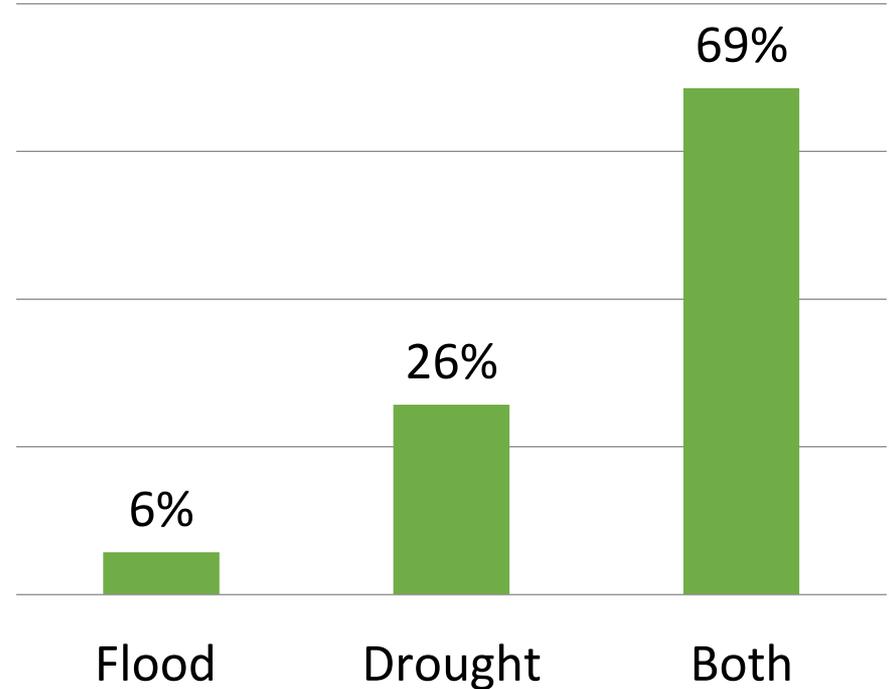
# Water sources for fish pond



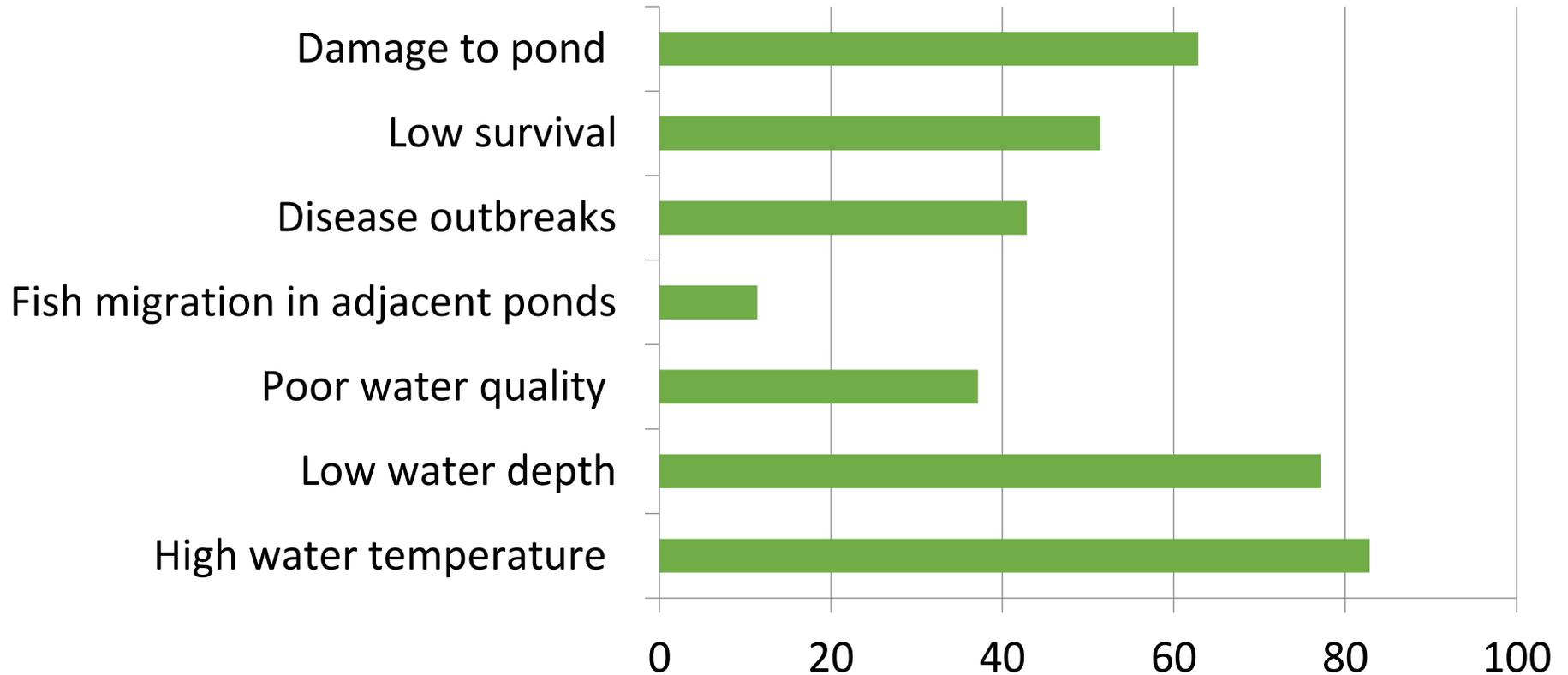
## Farmers' knowledge on climate change



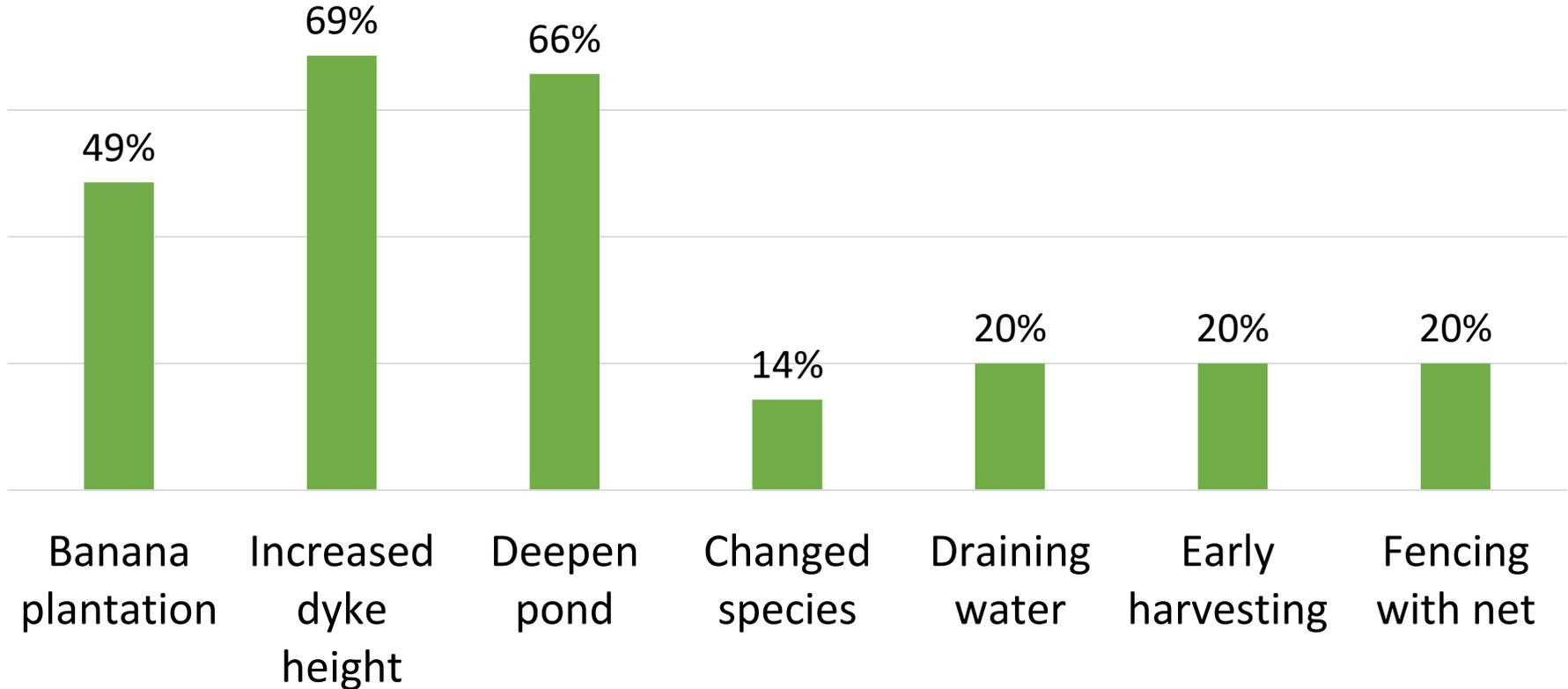
## Major climate change events



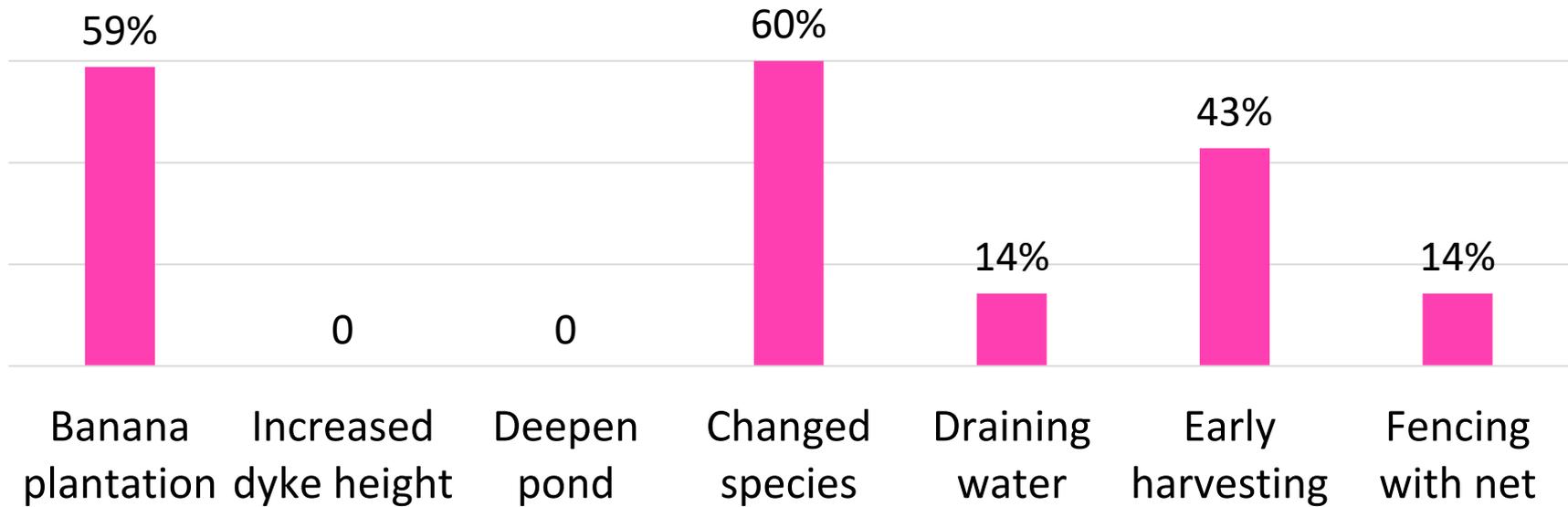
# Impacts of climate change on aquaculture



# Measures adopted by farmers for flood impact mitigation

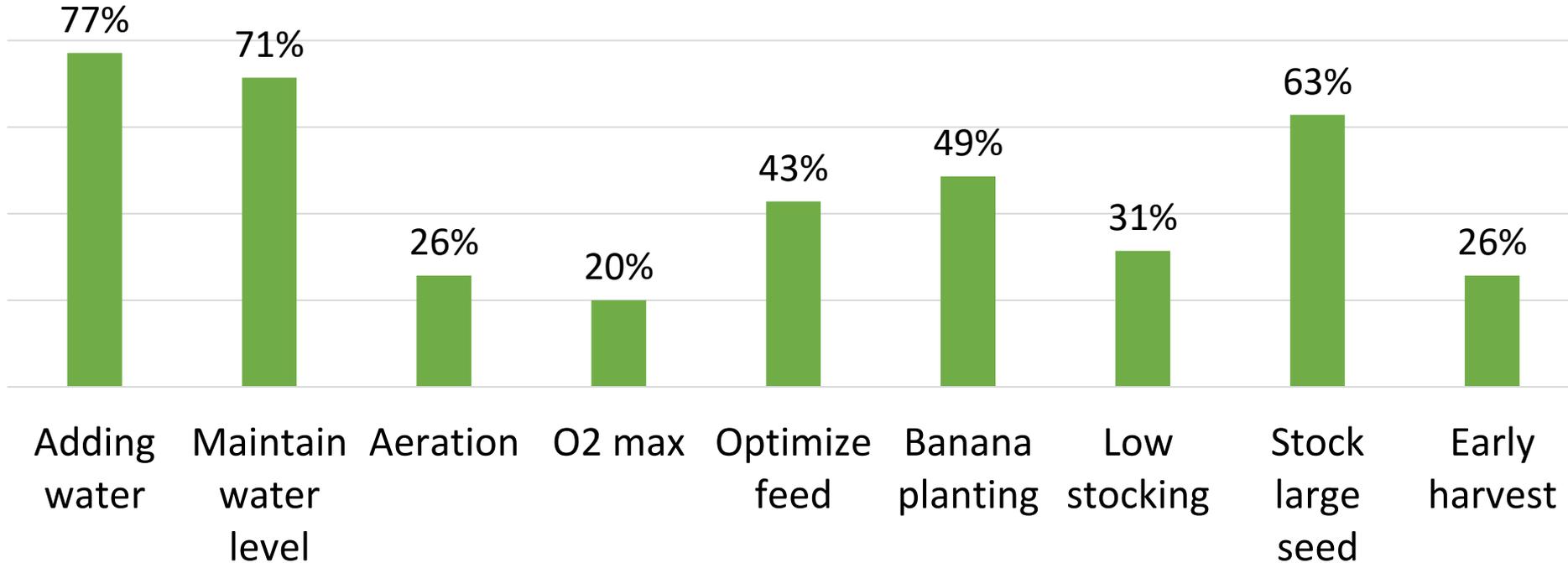


# Women's participation in flood impact mitigation

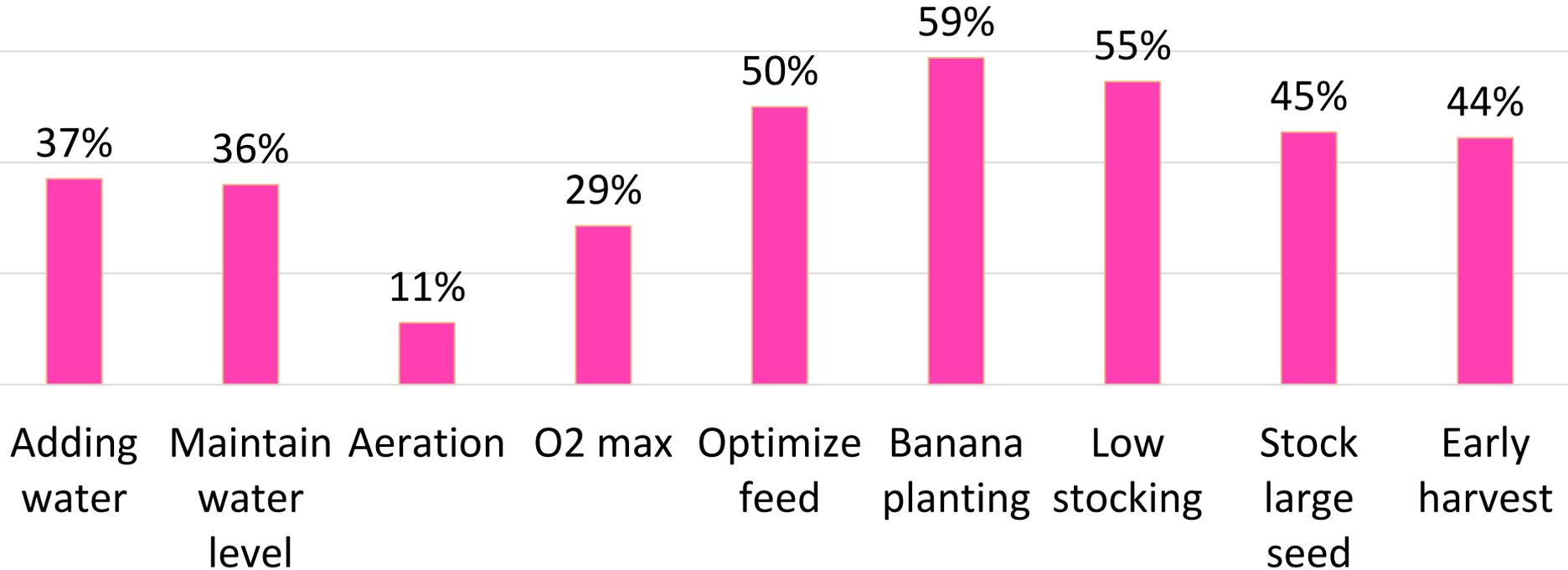


- Increasing dyke height, deepening pond are physical.
- Getting into deep water is difficult because can not swim. Needs women friendly harvesting techniques/fishing gears as they can not operate caste net for intermittent harvesting for household consumption. Needs water proof wader.

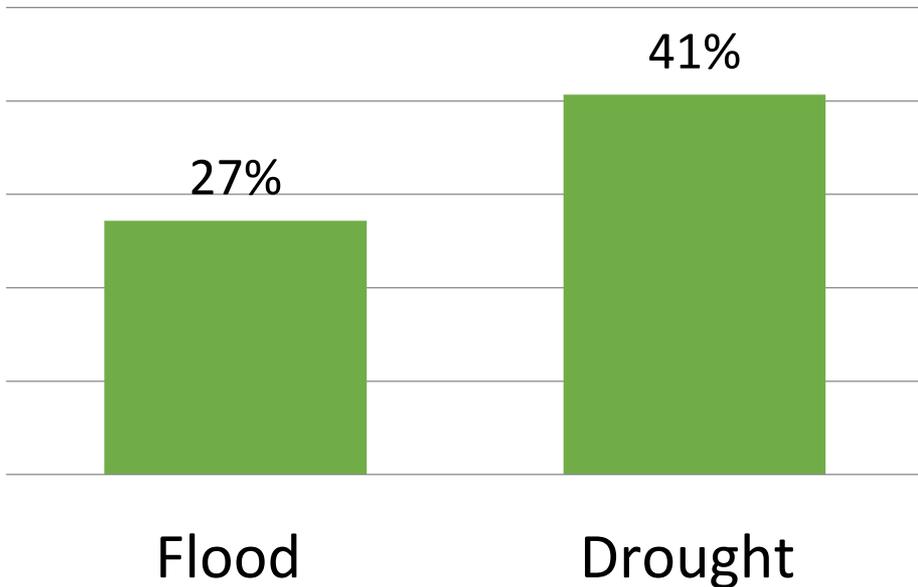
# Measures adopted by farmers for drought impact mitigation



# Women's participation in drought impact mitigation

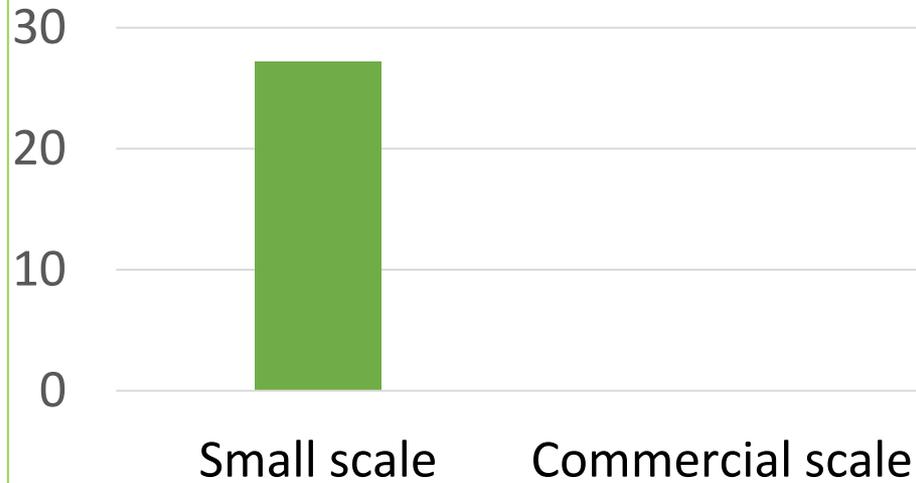


## Women participation in mitigating overall climate change impacts

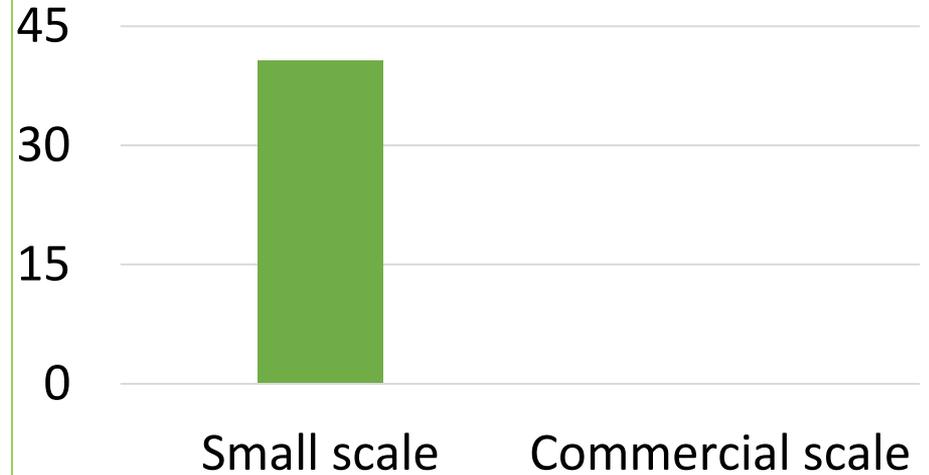


- Women are less involved in flood mitigation practices because they
  - i). need to get into the high level water pond
  - ii). requires physical activities as pond repair.
- More involved in drought mitigation practices due to shallow ponds and less physical activities such as stocking, feeding, etc.

## Flood



## Drought



- Women involvement is higher in small scale aquaculture due to:
  - ✓ small and shallow pond and easy to work
  - ✓ household ponds, so, easily accessible
  - ✓ have no choice due to migration of men for foreign employment

# Small scale vs commercial fish pond

- Small scale fish ponds
  - ✓ No outlet, only inlet.
  - ✓ Canal water as the major water source.
  - ✓ Thus they have high impact on aquaculture.
- Commercial fish ponds
  - ✓ Have proper water inlet and outlet.
  - ✓ Have reliable water sources eg. boring water.
  - ✓ They face the less problem of flood and drought .
  - ✓ Thus they do have less impact on aquaculture.
  - ✓ Had done insurance as adaptive capacity.

# Conclusion

- Women's participation in mitigation of climate change impacts in small scale fish farming is higher but they are more vulnerable.
- Since they are using conventional mitigation measures, they need advance technologies and related trainings to minimize fish loss from flood and drought.

**Thank  
You**