# Floating agriculture: A nature-based solution to adapt to changing climate

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Independent Consultant

**141** PUBLICATIONS **639** CITATIONS

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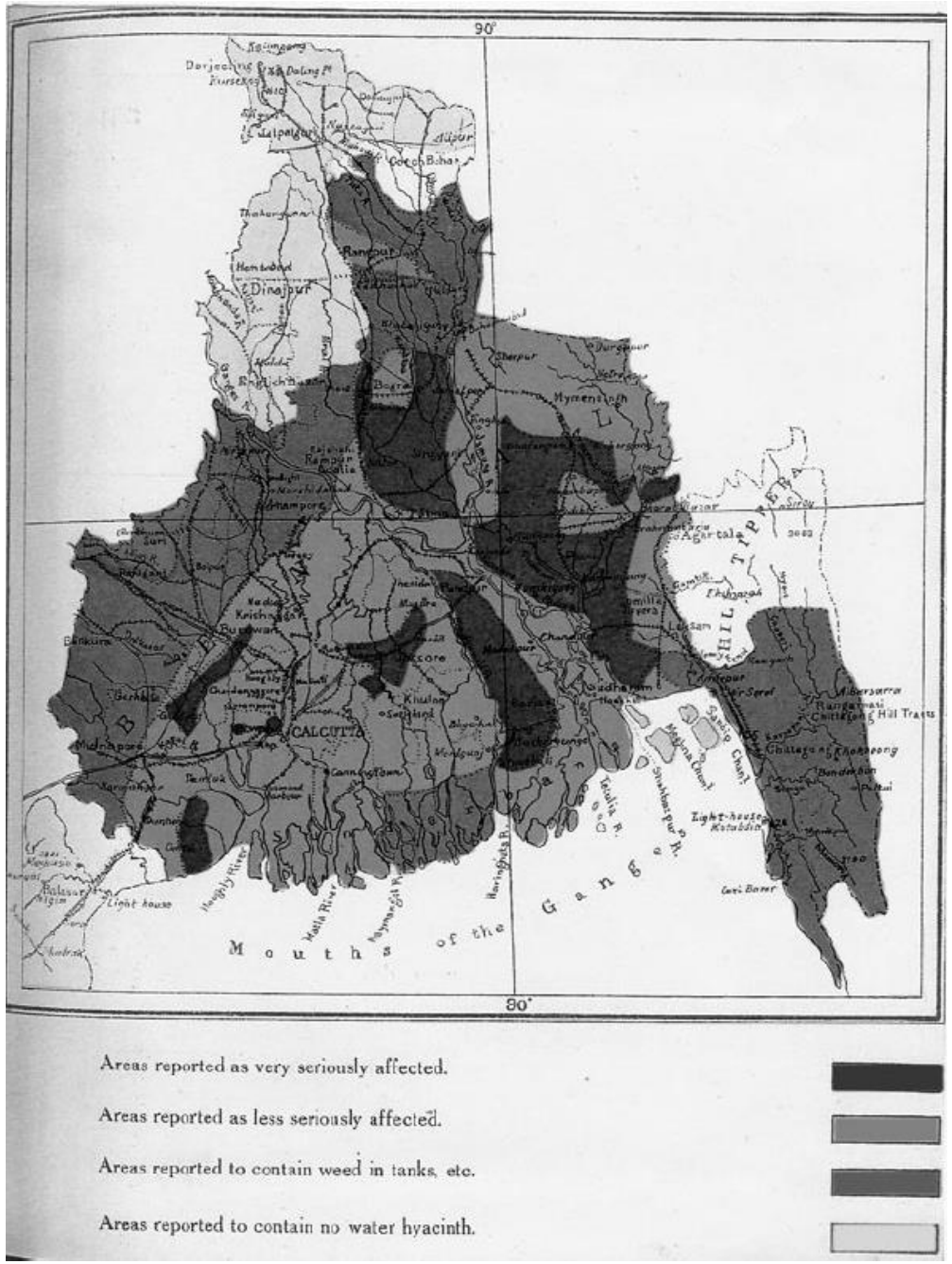
# Floating agriculture

*A nature-based solution to adapt to changing climate*

**Dr. Haseeb Md. Irfanullah**
*Independent Consultant – Environment, Climate Change, and Research System*
Exchange Meeting on Floating and Resilient Development | Virtual |29 September 2022

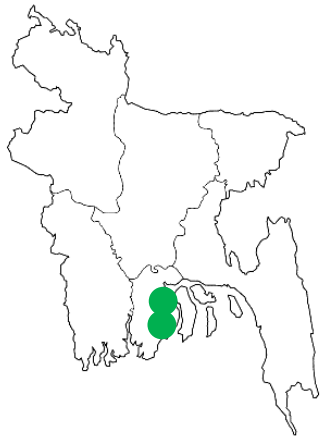



Kenneth McLean (1922) "'Water Hyacinth. A Serious Problem in Bengal', *Agricultural Journal of India* in Iftekhar Iqbal (2009)

**Phase 1** **Phase 2** **Phase 3** **Phase 4** **Phase 5**

**Traditional agro-practice** by local community

Paddy straw-based **Water hyacinth-based**



**Community-based natural resource management**

*NGOs (BCAS/IUCN-Central, Practical Action-North, CARE/IUCN, Helvetas-East), Development partners facilitated, Local government (Rangamati)*

*Livelihoods | Nutritional security | Poverty alleviation*

**Climate change adaptation / EbA**

*NGOs (CARE, RVCC project)*

*National CC Strategies & Plans; National Communications to UNFCCC (2005-)*

**Government-led CCA**

*2 projects (2012-17; 2017-22)*

*24 districts out of 64 districts*

*Water hyacinth was introduced to Indian Sub-continent in 1890s*

*High-yielding rice varieties with brittle straw*

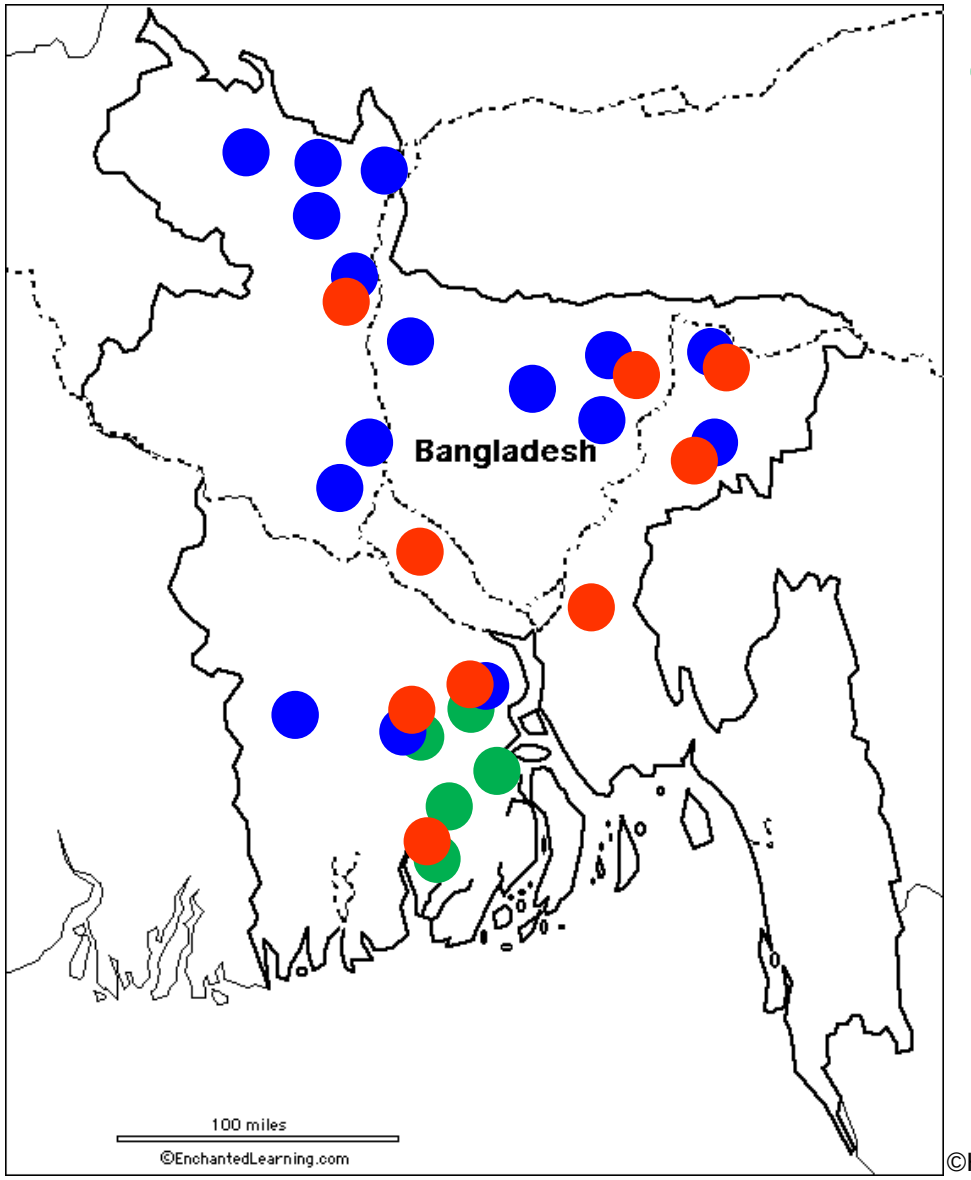
*Media attention*

1600s? 1800s? 1960s 1990 **2004 –** **2012 –**

# Indigenous Innovation

- A traditional practice showed potentials to tackle new challenges posed by climate change and climate variability
- Became an **adaptation sensation**

# Evolution of a Nature-based Solution (NbS)

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- Traditional (for ages): Livelihoods
- NGOs (2000-): Nutrition Livelihoods **Adaptation**
- Government (2011-): Livelihoods **Adaptation**

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## Original locations

a local, efficient, self-sustaining business model

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# Lost in transfer

Photo: Practical Action

## New areas

Nutritional security for the extreme poor sustained by external support

| Phase 1 | Phase 2 | Phase 3 | Phase 4 | Phase 5 | Phase 6 |
|---|---|---|---|---|---|

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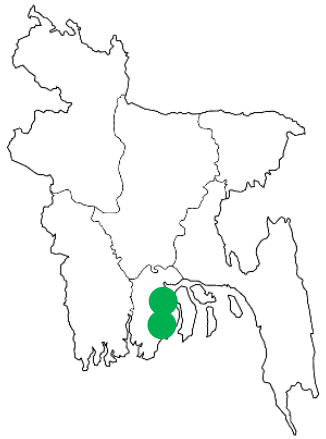

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**Innovations**

*Aquageoponics, Integrated farming (BAU, WorldFish, Practical Action, Shidhulai) (vegetables + fish + poultry)*

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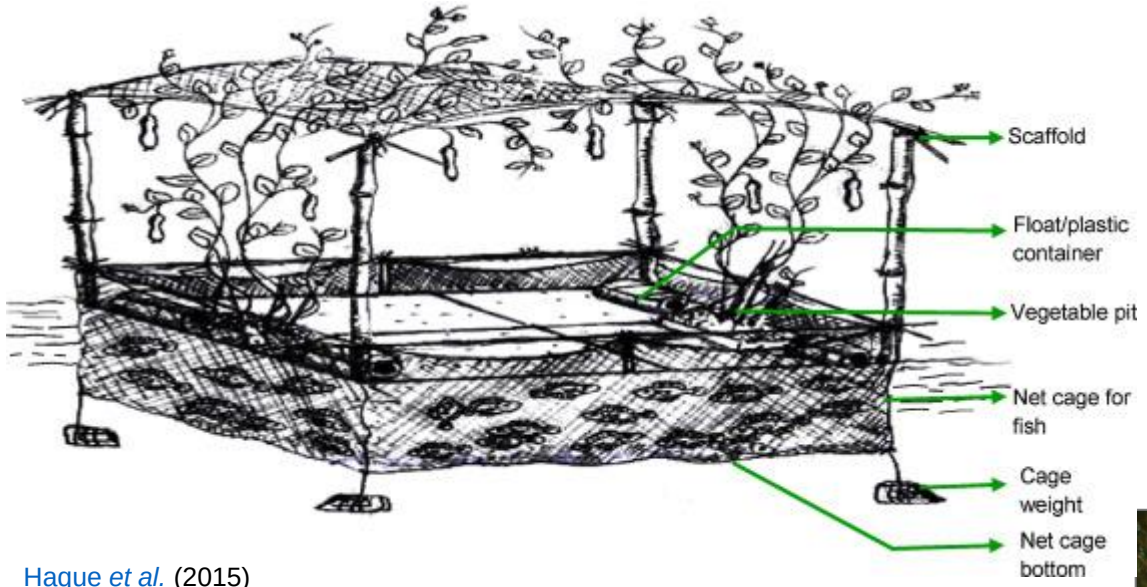
# Floating Gardening: Scope for Innovation

## Aqua-geoponics
in Satkhira

Practical Action (2017)




Haque *et al.* (2015)

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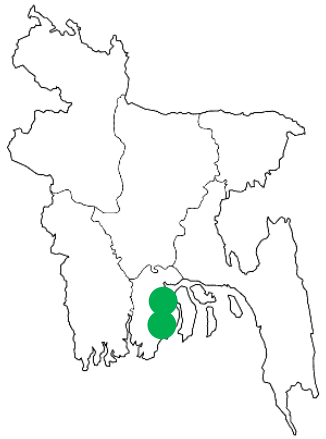

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- *IPCC AR5 (2014)*
- *TEC-UNFCCC (2014)*
- *Globally Important Agricultural Heritage Systems (GIAHS) of FAO (2015)*

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1600s? 1800s? 1960s 1990 **2004 –** **2012 –** **2013 –**

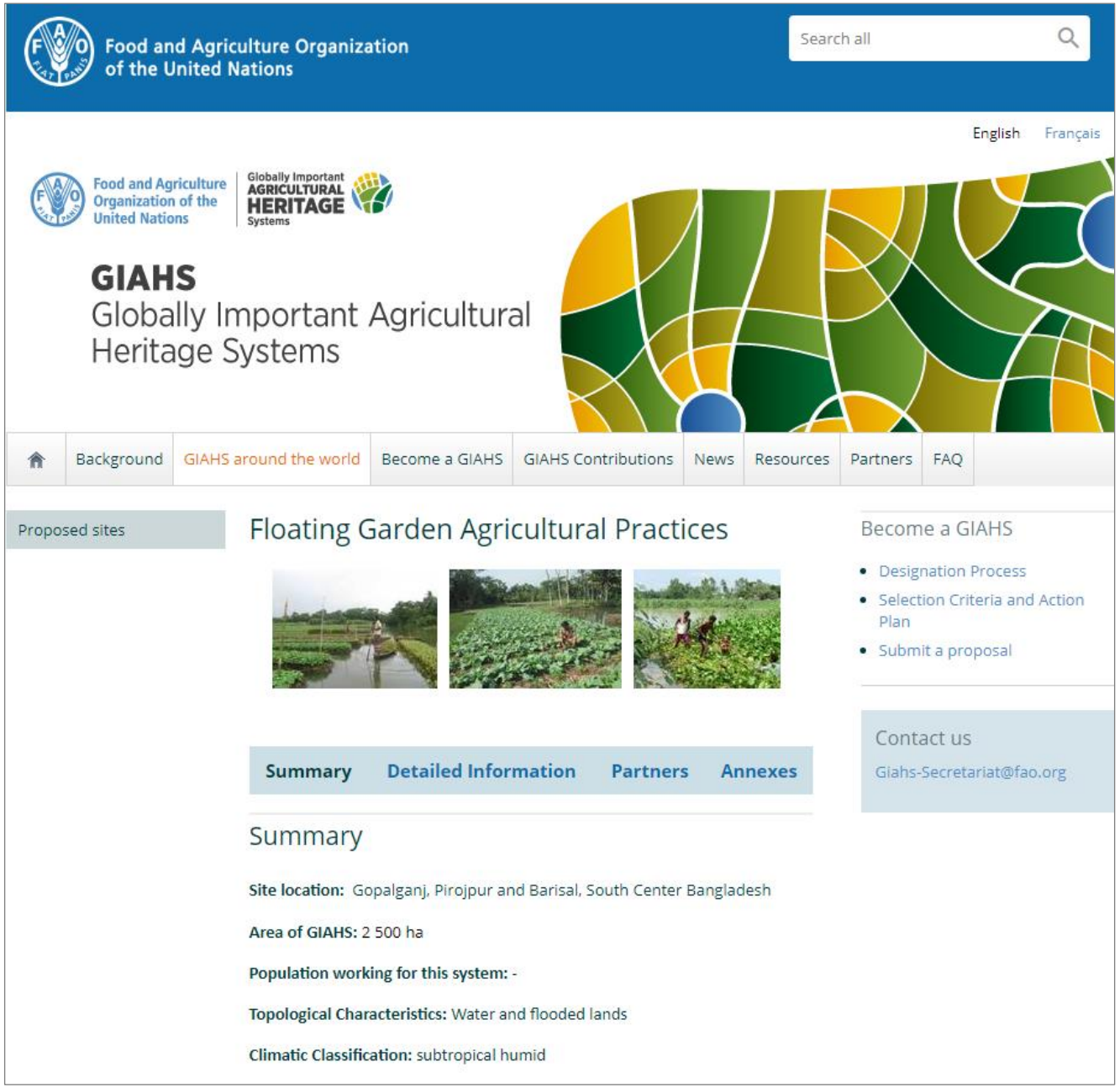

IPCC (2014)


UNFCCC (2014)

# Globally Important Agricultural Heritage Systems (GIAHS) by FAO (2015)

*“This system is an example of the adaptation to hard climatic conditions but also to climate change.”*

FAO (2022)



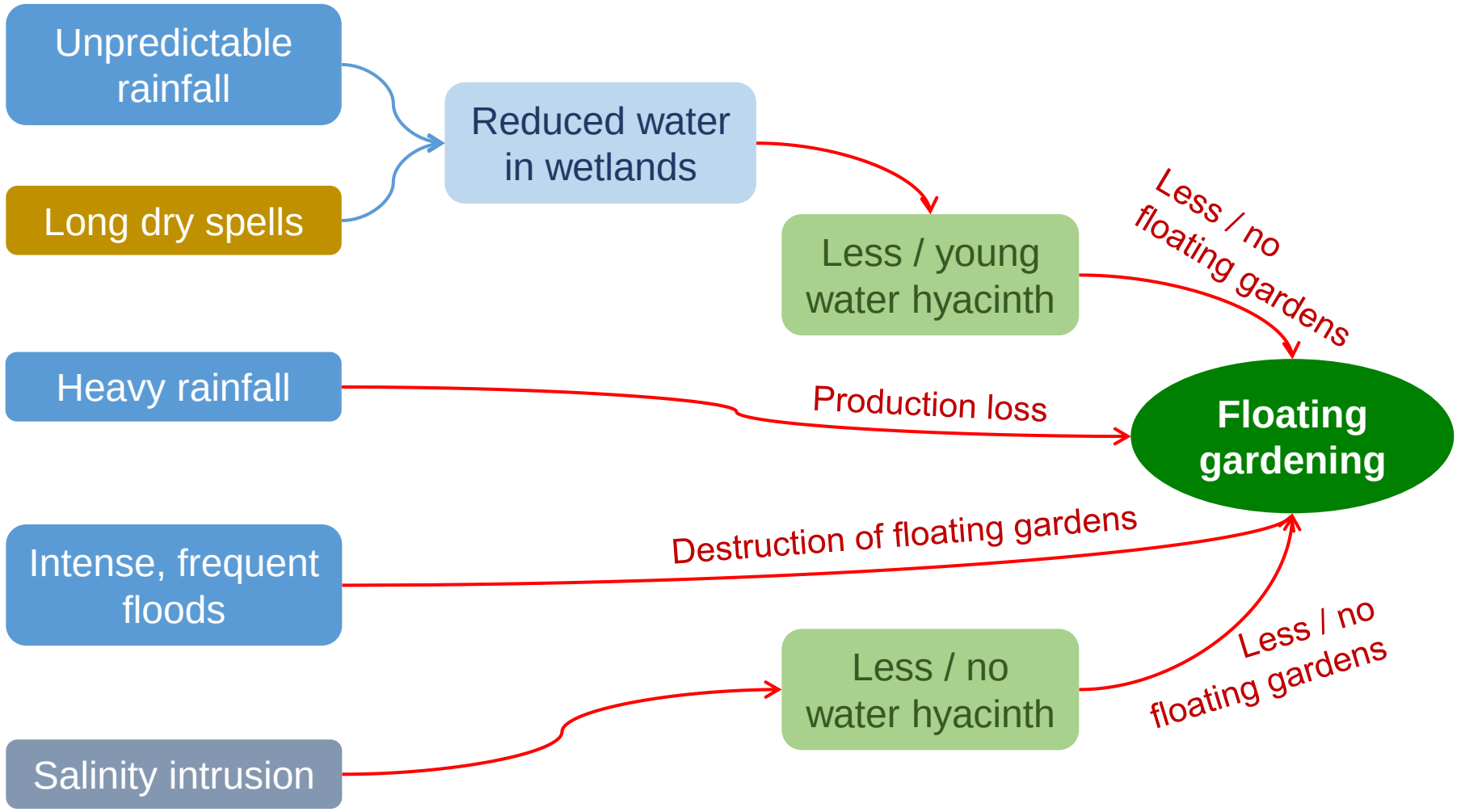
# What make floating gardens so attractive adaptation option?

- Simple
- Natural
- Traditional
- Control over water!

# Focus on research & knowledge generation as we scaling up

- Limited compare with the enthusiasm, promotion or scaling up
- Rarely going back to see, if the introduction is sustaining or not
- Hardly any research on if the technology would survive under changing climate

# Floating Agriculture: Adaptive or Sensitive to Climate Change?



| Phase 1 | Phase 2 | Phase 3 | Phase 4 | Phase 5 | Phase 6 | What's next? |
|---|---|---|---|---|---|---|

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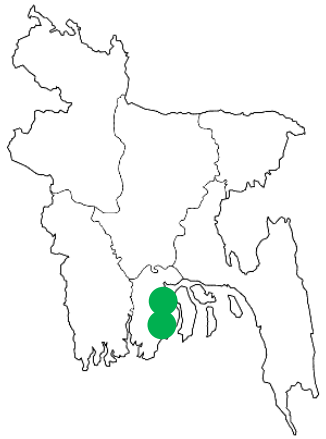

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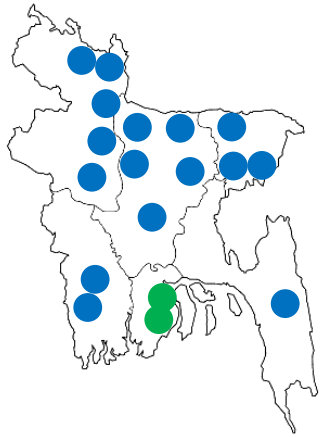

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# Thank You

**Ref.:**

- Exclusive publications on floating agriculture of Bangladesh
- What will the next phase of floating agriculture look like?

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