

# Nature Based Solutions For Water Security



Dr. Matthew McCartney, IWMI – SEA  
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# Threats to Water Security

Global water crises – 3<sup>rd</sup> in the top 10 list of risks in terms of impact (World Economic Forum, 2017).

- Increasing water scarcity – over abstraction, pollution
- Increasing water variability – floods and droughts.
- Increasing environmental degradation and loss of ecosystem services



- Increasingly difficult to plan and manage water resources
- Undermines livelihoods and economies



Sustainable water security will not be achieved through business as usual



# NBS Solutions: Managing Water Availability

Address water supply through managing precipitation, evaporation and water storage including soil infiltration and groundwater recharge



# Exclosures: Ethiopia





# NBS Solutions: Managing Water Variability

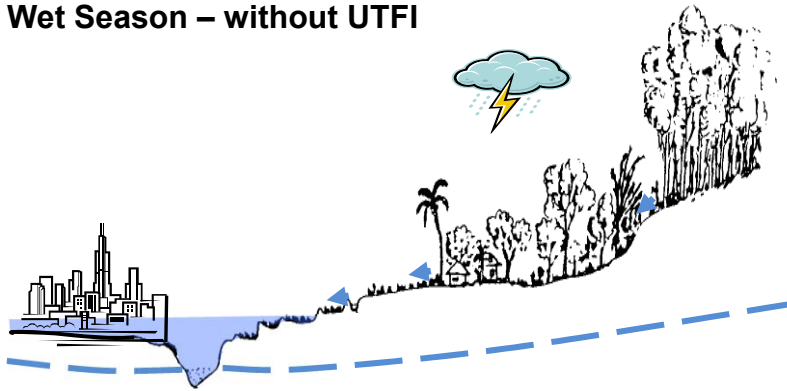
Address variability by  
delaying runoff,  
increasing infiltration,  
enhancing recharge and  
providing space for water



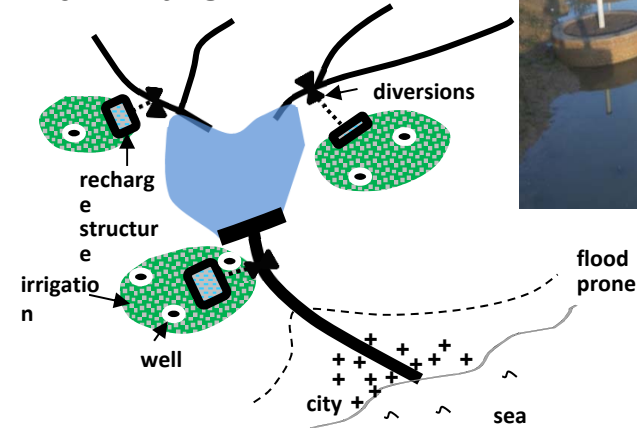
Green planning for Udon Thani

# Underground Taming of Floods

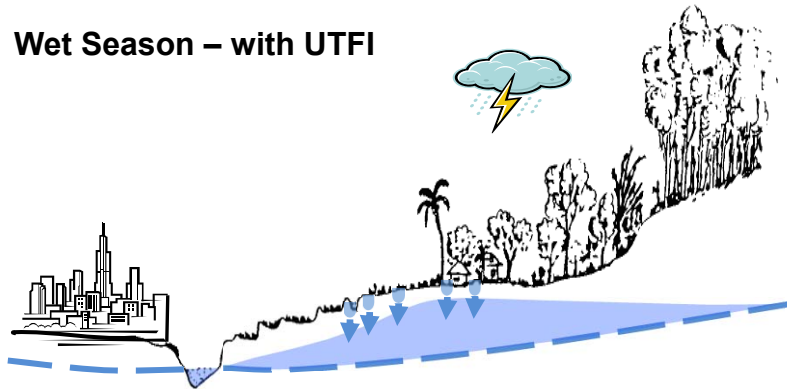
Wet Season – without UTFI



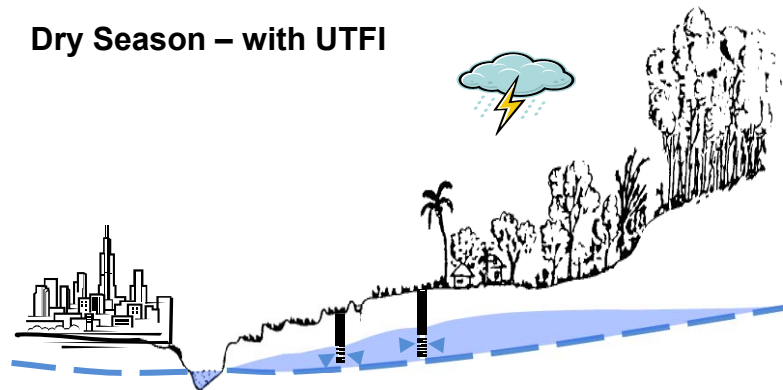
Plan View– with UTFI



Wet Season – with UTFI



Dry Season – with UTFI



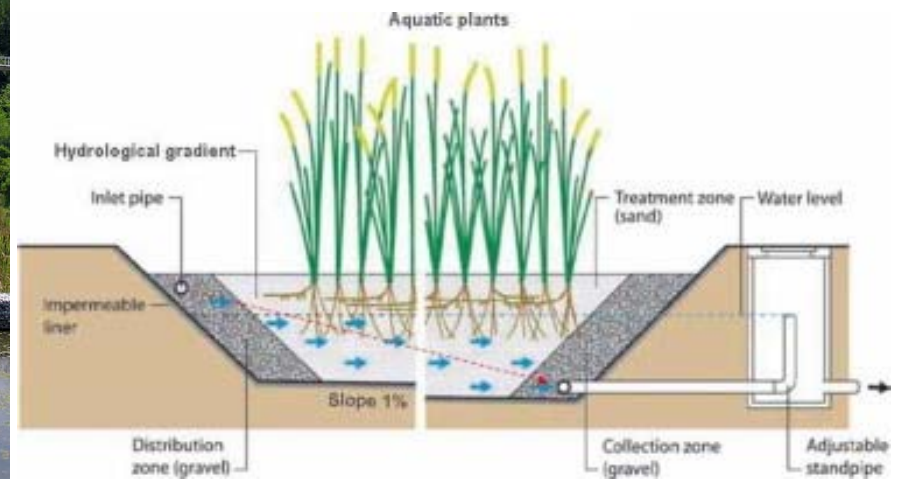
# NBS Solutions: Managing Water Quality

Address water quality from point and non-point sources through natural treatment processes (e.g. wetlands/riparian buffers)





# Constructed wetlands





# Conclusions

NBS improve water security by:

- Improving water availability
- Improving water quality
- Reducing risks associated with water variability

Often NBS generate benefits across all three domains

Often NBS generate additional social and economic co-benefits

NBS are not a panacea often optimal solutions will come from blended mixes of traditional grey infrastructure with NBS







# Water Storage Continuum

