

# Mapping Natural Capital and Climate Change Scenarios in Myanmar to inform development planning

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# Advancing the vision of a Green Economy for Myanmar



# Natural Capital

- Stock of resources within natural ecosystems (land, air, water, living organisms...), from which people derive benefits

# Ecosystem Services

- benefits that ecosystems provide to people (*Millennium Ecosystem Assessment, 2005*)





Food, fuel,  
fiber



Pollination

Climate regulation



Coastal  
protection



Clean  
water



Spiritual  
Fulfilment



# Maintreaming natural capital in Myanmar's national development

## Natural capital assessments

- Stocks and ecosystem services
- Serviceshed analyses
- Climate change

## Capacity building and consultations

- Trainings
- Consultation meetings

## Mainstreaming – policy, planning

Including:

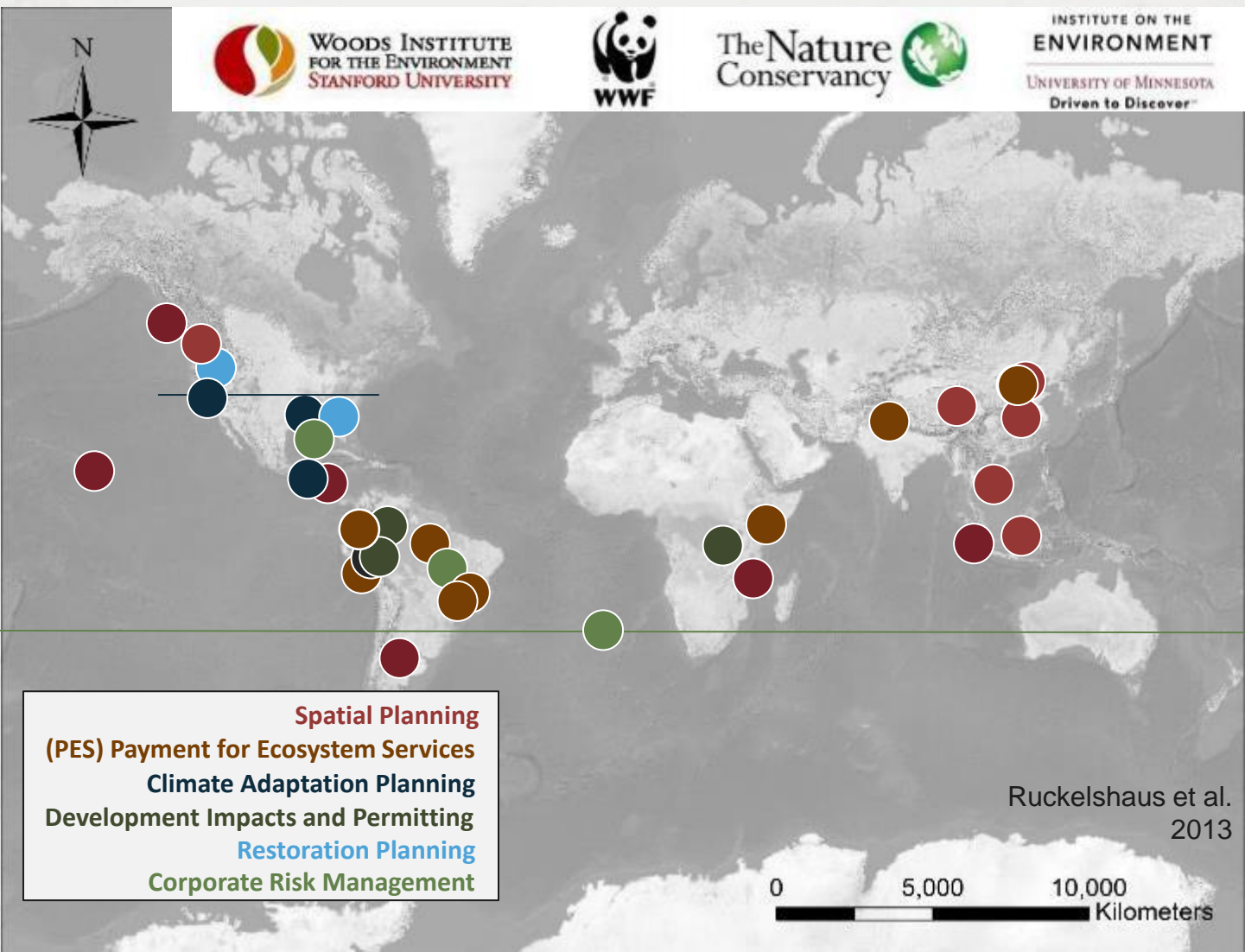
- Green economy strategy
- Climate change strategy
- Infrastructure planning and design
- Regional and national land use planning
- Forest Management plans
- OneMap and other data sharing platforms

# InVEST

integrated valuation of  
ecosystem services  
and tradeoffs

Free & open source  
Developed in Python  
Can be used with any GIS

Download from [www.naturalcapitalproject.org](http://www.naturalcapitalproject.org)



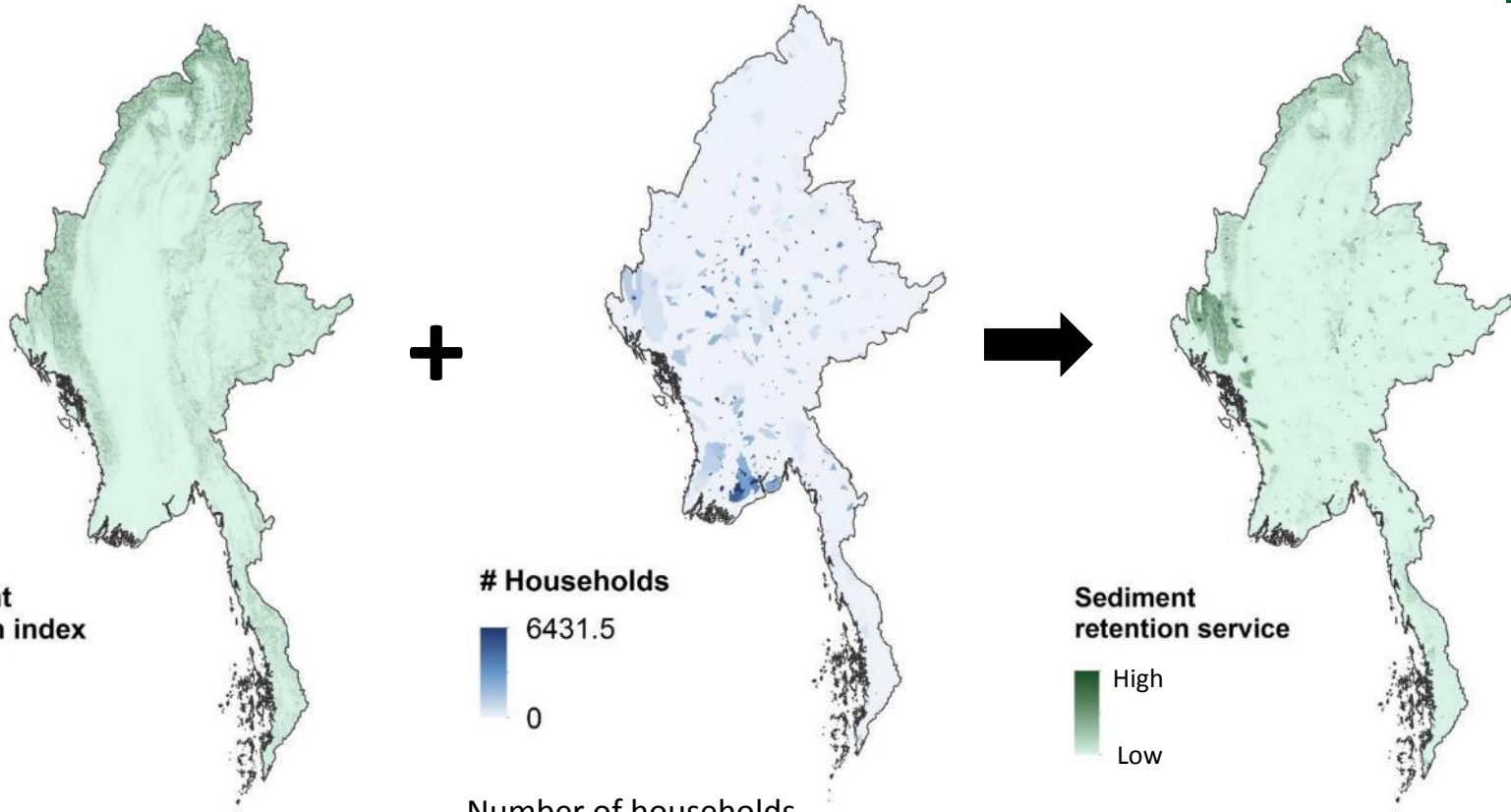
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Understanding where and how  
natural capital benefits people  
and infrastructure



# Where does natural vegetation keep drinking water clean for people relying on streams and surface water?

\*DRAFT results\*

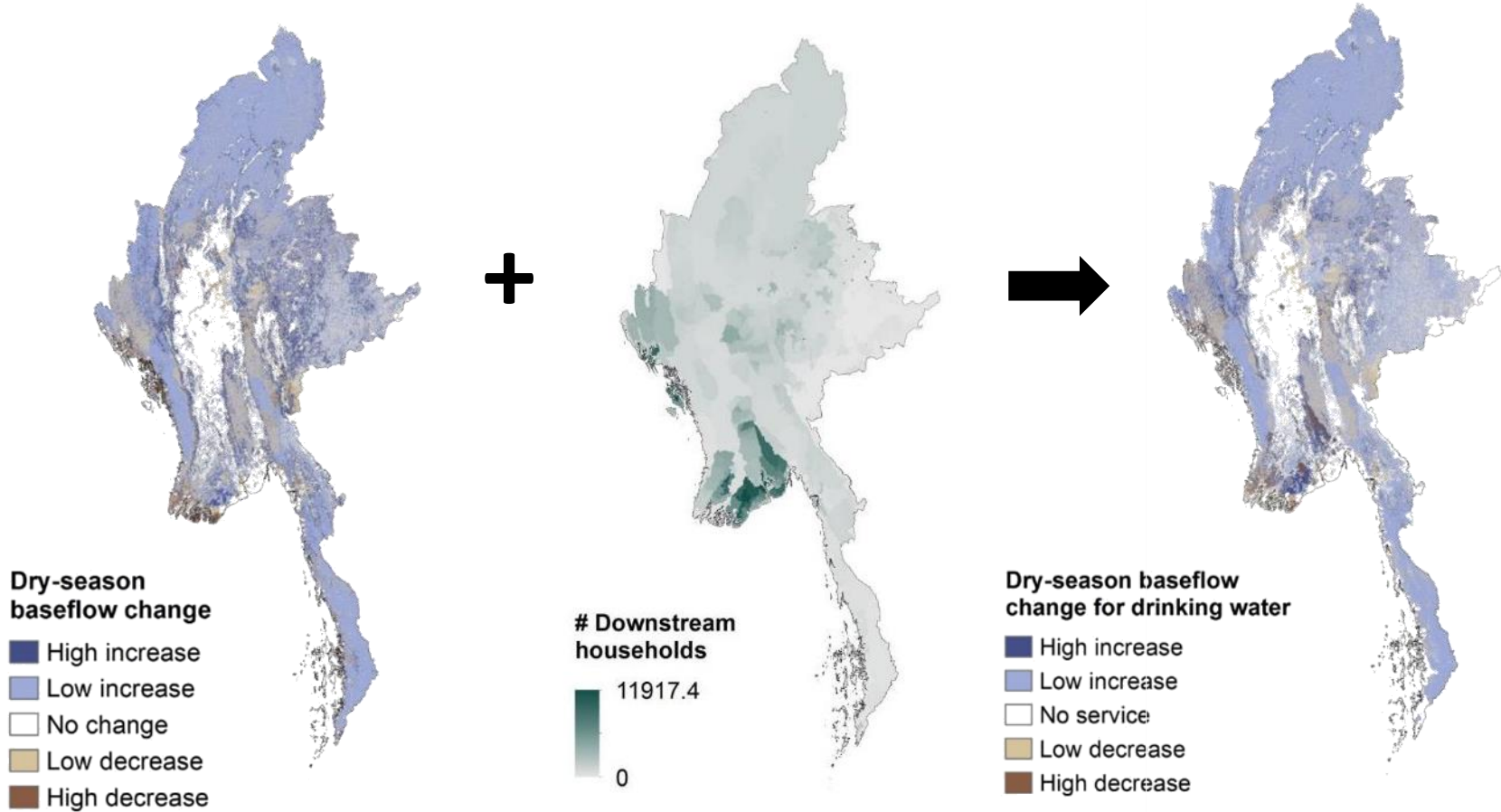


Where forests retain sediment

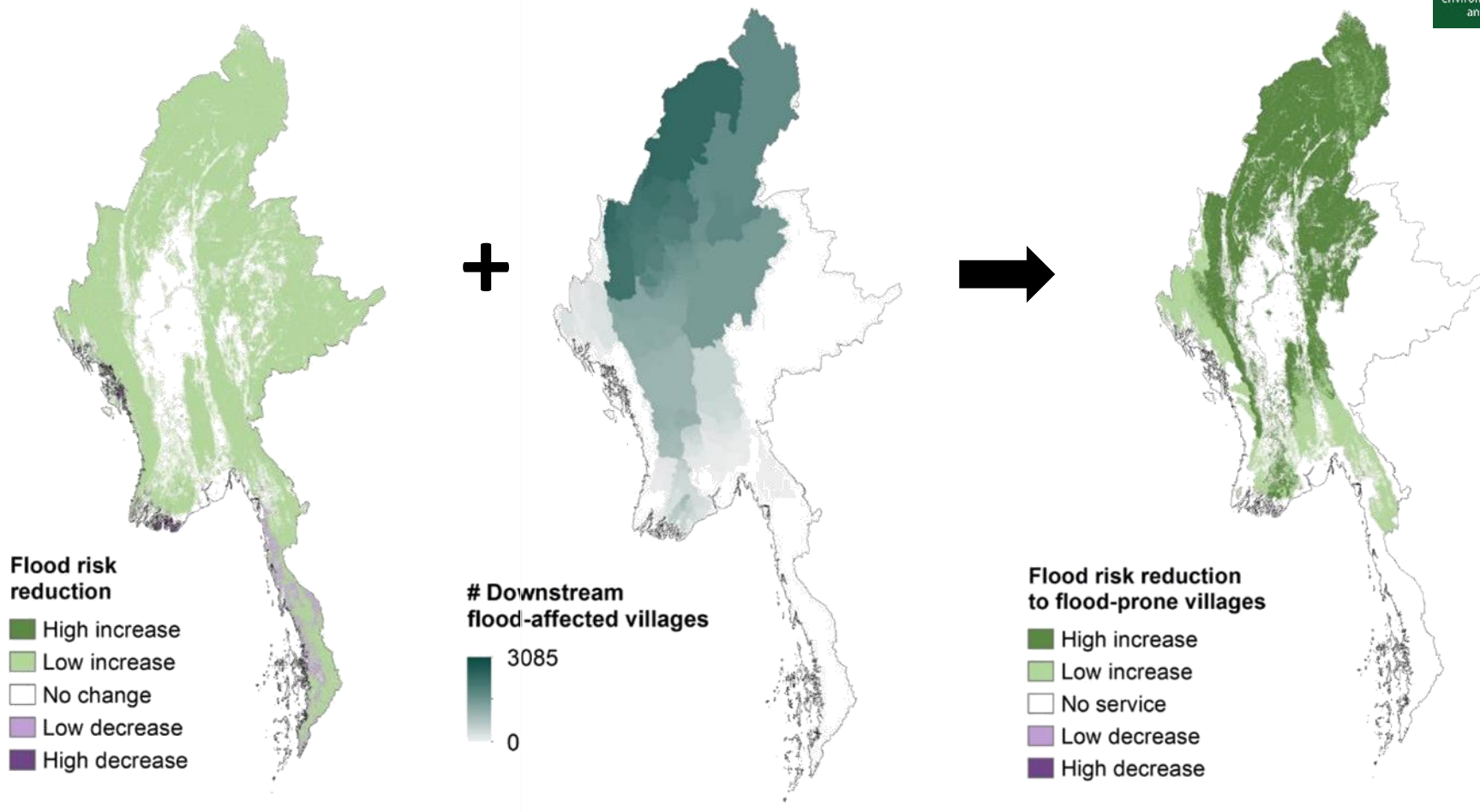
Number of households downstream relying on surface drinking water (from census data)

Where forests are most critical for providing clean surface drinking water

# Natural habitat provides water in the dry season

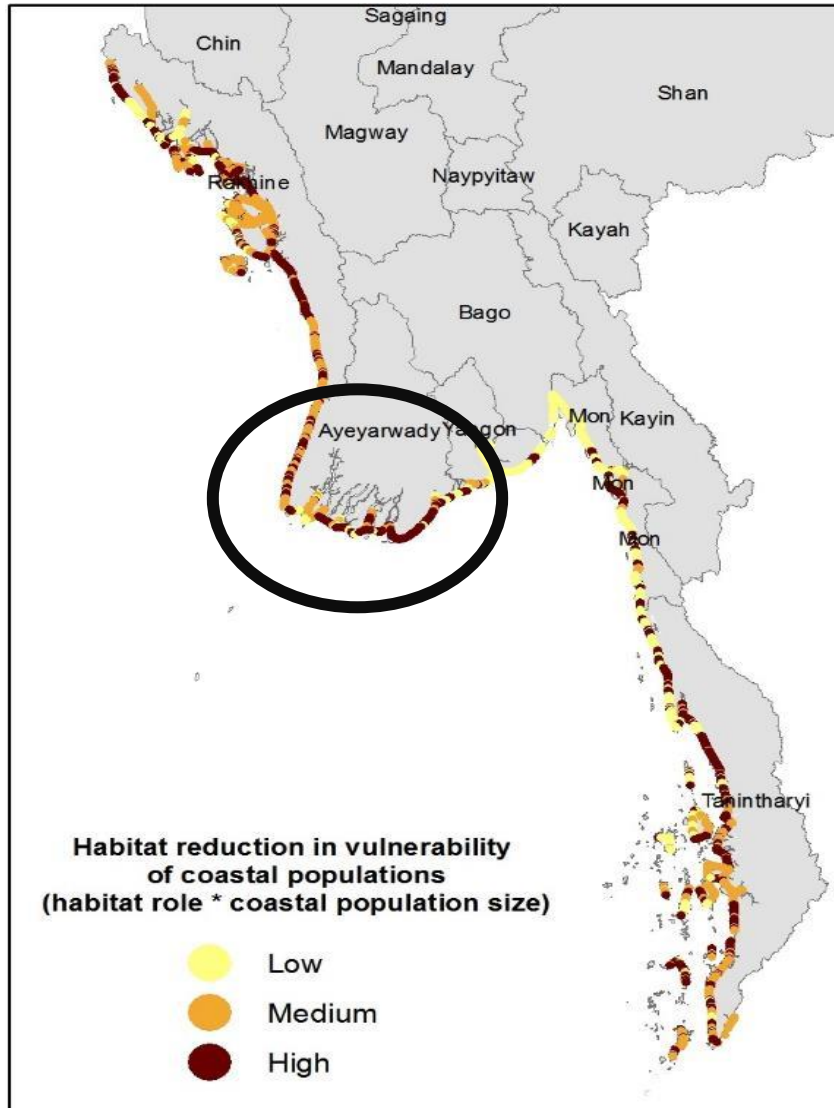


# Natural habitat helps reduce risk of flood

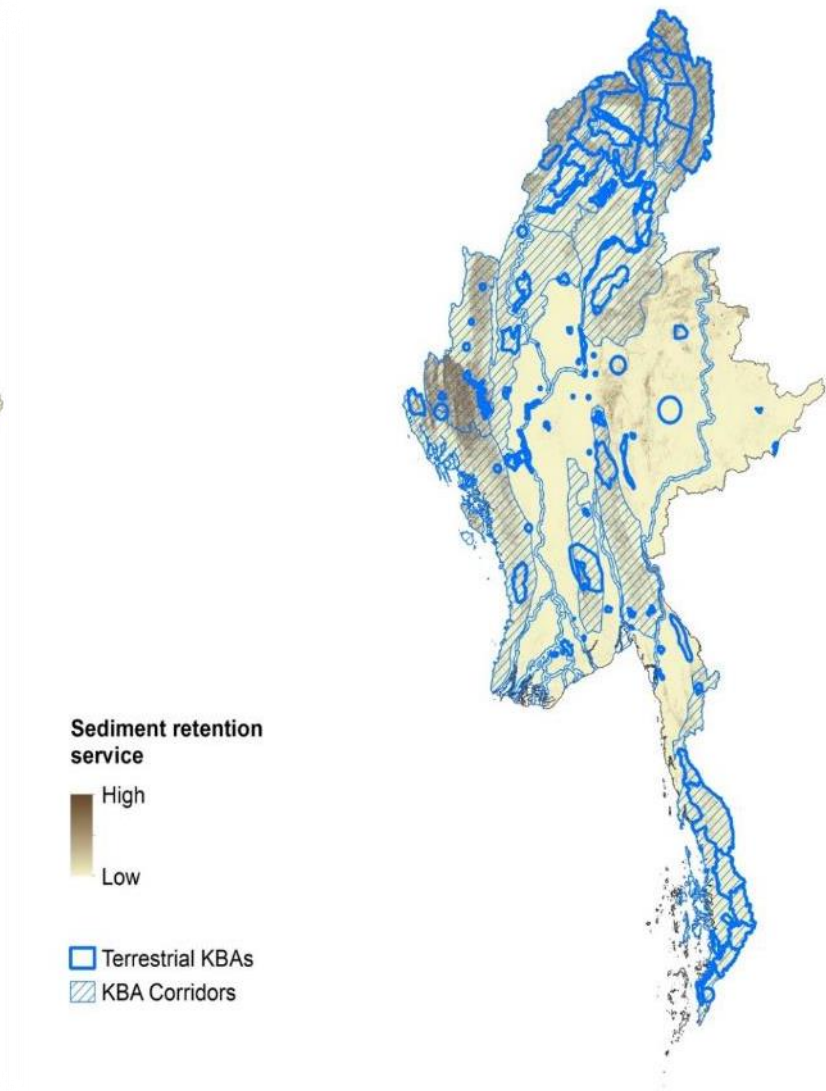
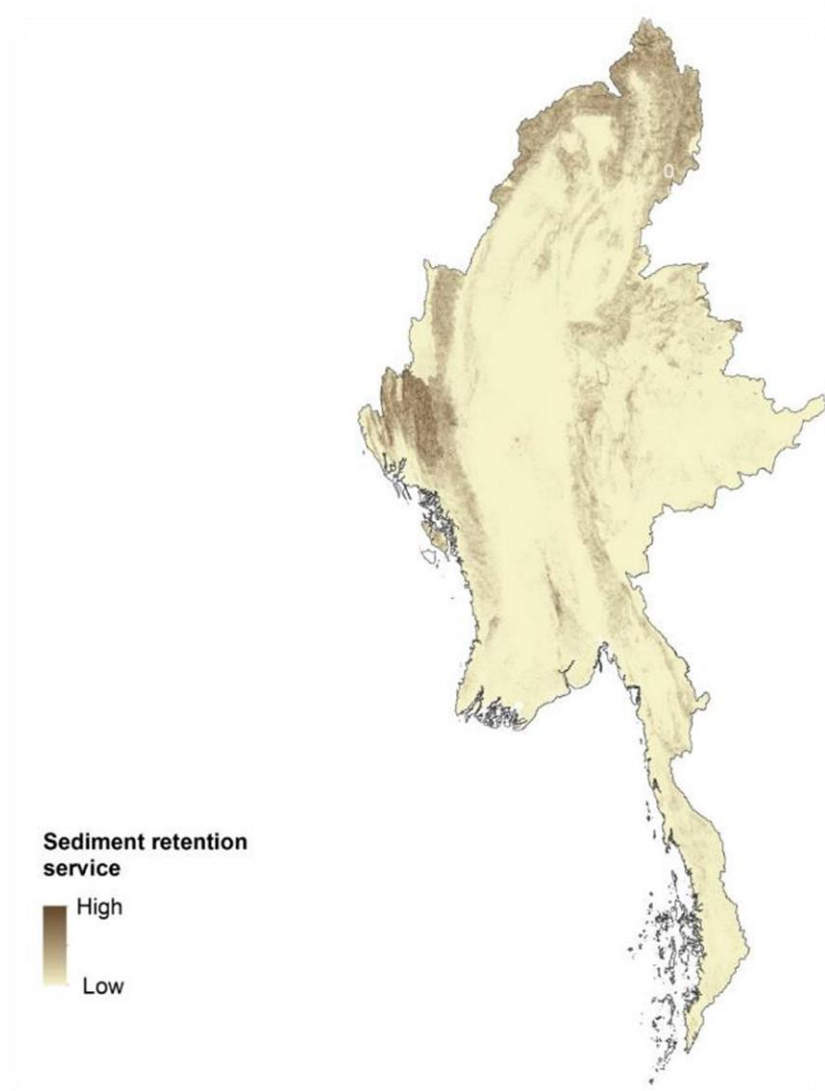


# Where does natural capital protect people?

Coastal Areas where coastal habitats protect people from typhoons and other intense storms



# How does important biodiversity habitat reduce erosion?



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# Integrating climate information into natural capital modeling



Center for Climate Systems Research  
EARTH INSTITUTE | COLUMBIA UNIVERSITY

# Climate change impacts in Myanmar

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## Sea level rise

- Increased coastal erosion, inundation

## Increasing temperatures

- Forest fire incidence, drought, heat waves

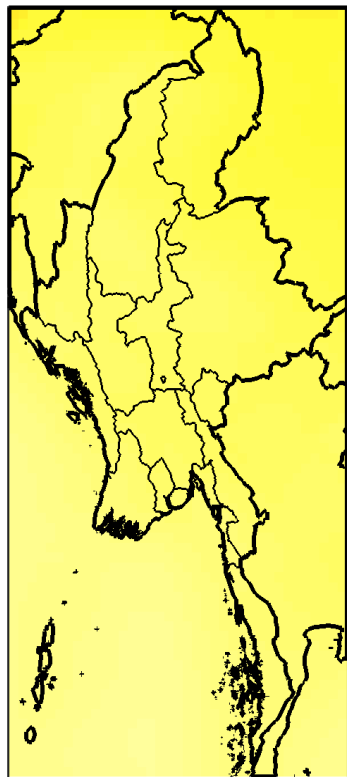
## Changing precipitation patterns

- Increasing extremes: drought, flood, erosion and landslides
- Decreased water availability for humans and wildlife

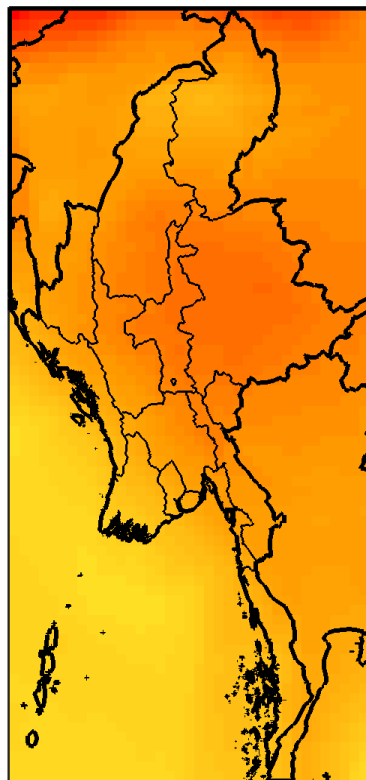


# Myanmar's future climate risk

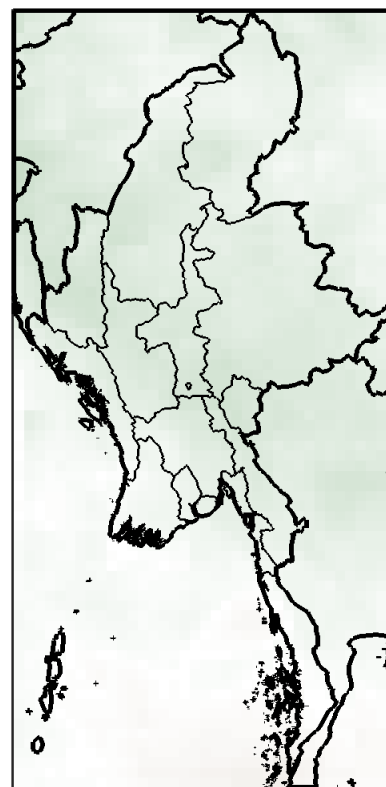
Low



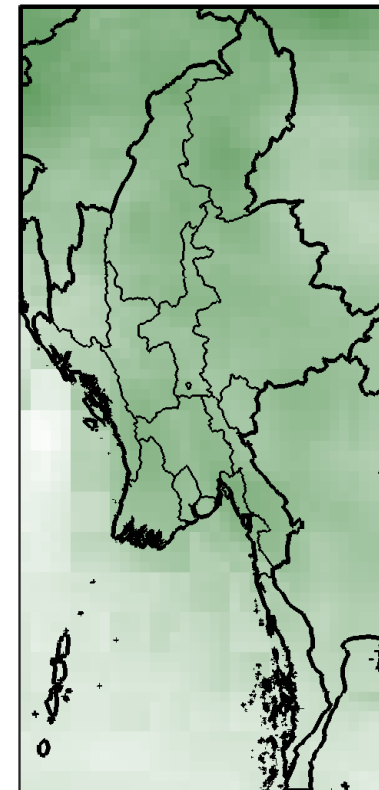
High



Low



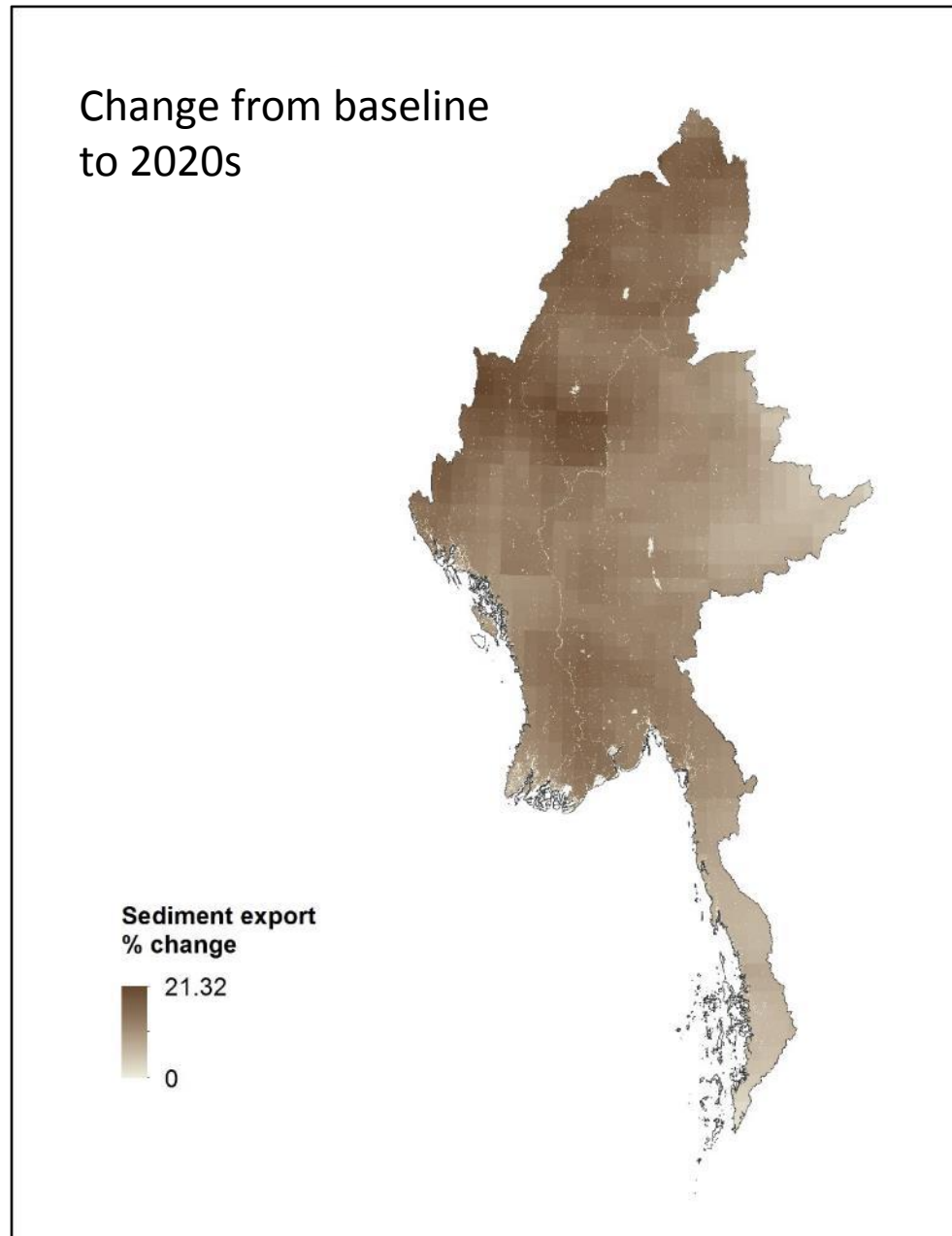
High



Change in Avg. Temp. ( $^{\circ}$ C) Change in Avg. Temp. ( $^{\circ}$ C) Precipitation change (%) Precipitation change (%)



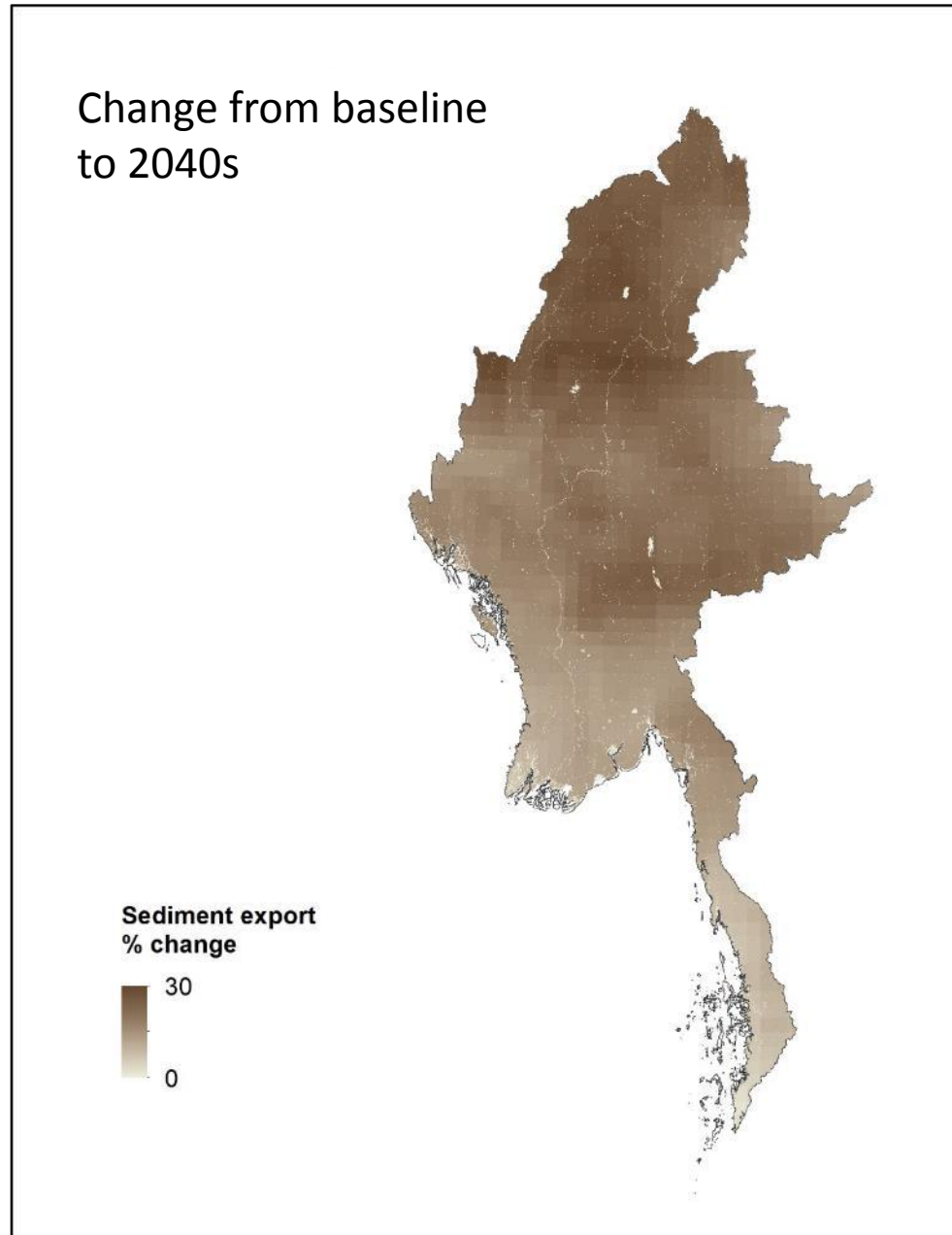
# So how does climate change affect natural capital?



Baseline period:  
1980-2005

High  
emissions  
scenario

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Baseline period:  
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# Next Steps

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- **Meetings and exhibition** to communicate findings, obtain feedback
- **Website** to share data and results
- **Possible additional analyses:** avoided ground water contamination, connection to human health
- **Improved, local data:** dam locations, soils, aquifers, village-level census data, local weather stations
- Linking with **OneMap Myanmar, MIMU, other spatial data initiatives**
- Capacity building
- Informing land use planning, civil society dialogues.
  - Making results relevant to different audiences
- Informing national policy: **synergies between national Green Economy, Climate Strategies**



WWF

REPORT



2016



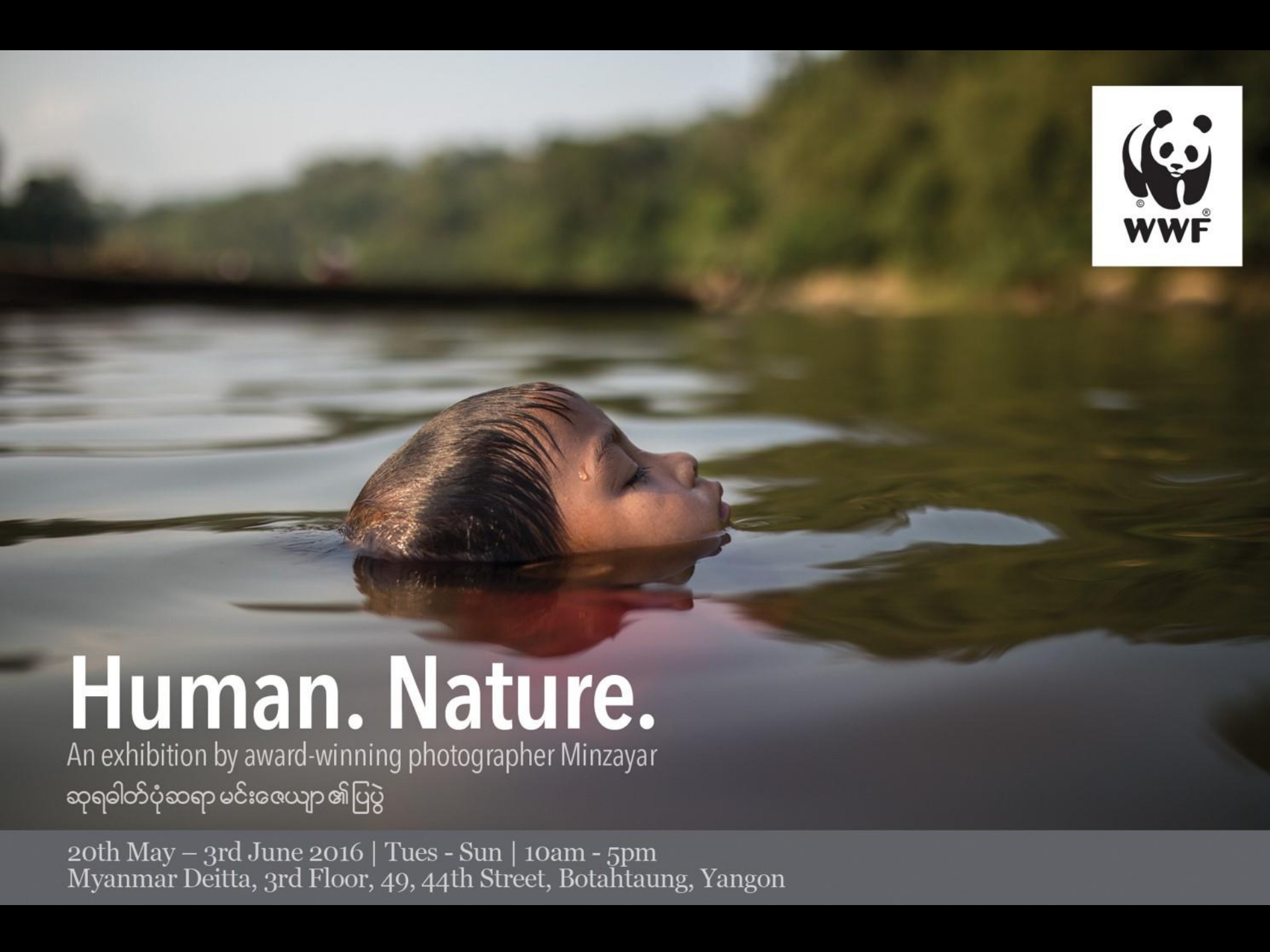
natural  
capital  
PROJECT

# Natural connections:

How natural capital supports  
Myanmar's people and economy

# Launching a new website





# Human. Nature.

An exhibition by award-winning photographer Minzayar

ဆုရခါတ်ပုံဆရာ မင်းဇေယျာ ၏ပြပွဲ

20th May – 3rd June 2016 | Tues - Sun | 10am - 5pm  
Myanmar Deitta, 3rd Floor, 49, 44th Street, Botahtaung, Yangon

















THANK YOU

