



# Building Resilient Marine Protected Areas

## Pioneering climate change adapted MPA management in Madagascar

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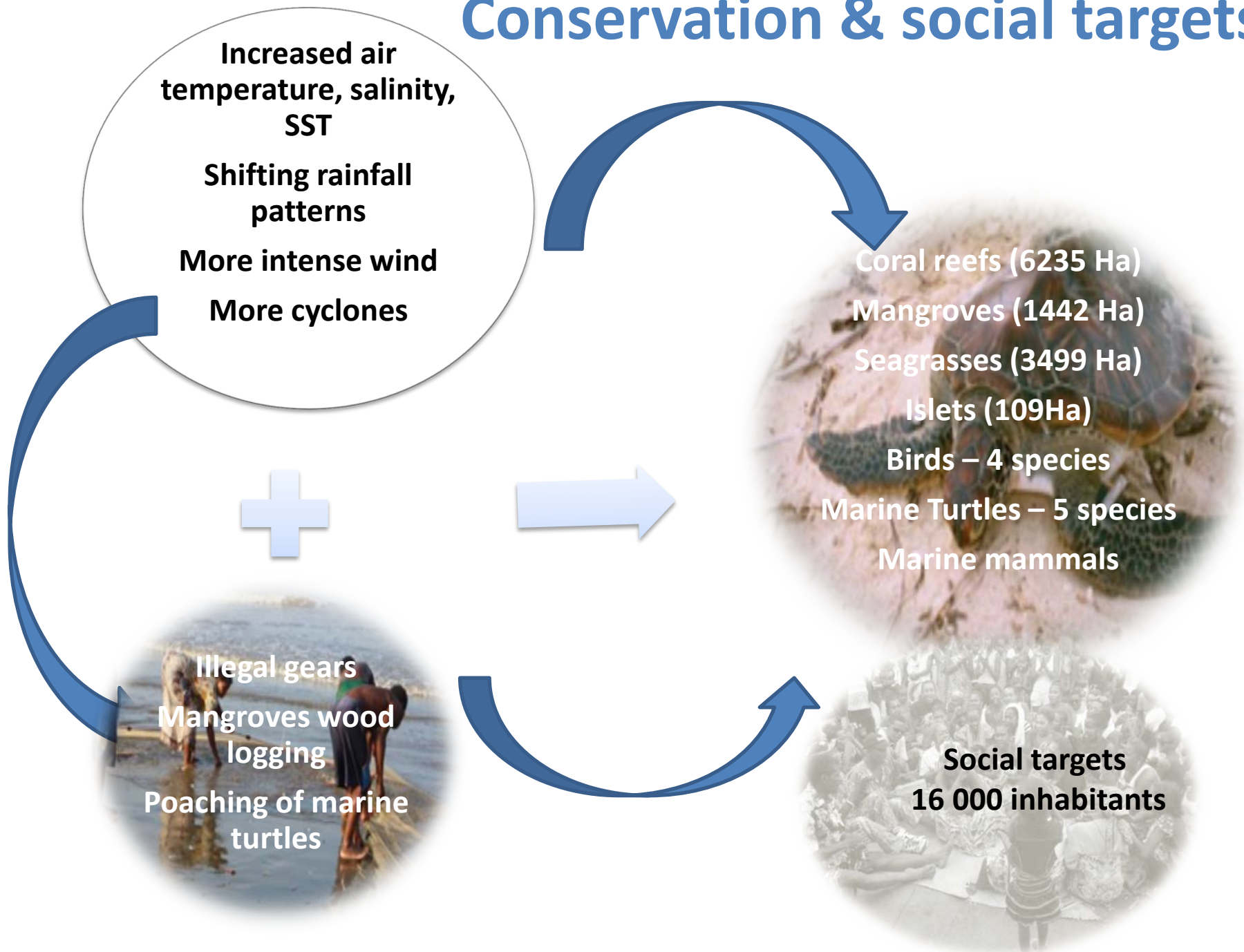
UICN  
CONGRÈS  
MONDIAL DES PARCS  
SYDNEY 2014



[illegible]

- 
- A collage of three images. The top image shows three people in shallow water pulling a fishing net. The bottom-left image shows a green and yellow striped fish swimming near coral. The bottom-right image shows a brown bird of prey perched on a branch.

# Conservation & social targets





Madagascar  
National Parks



PLAN D'AMENAGEMENT ET DE GESTION DU PARC NATIONAL NOSY HARA  
REALISE EN 2010



How have we built  
resilient MPA in Nosy  
Hara?

# CC Capacity building.....



# VA methodology....



## A Framework for Categorizing the Relative Vulnerability of Threatened and Endangered Species to Climate Change

Hector Galbraith, Manomet Center for Conservation Sciences,  
Dummerston, Vermont

Jeff Price, World Wildlife Fund, Washington, DC

Global Change Research Program  
National Center for Environmental Assessment  
Office of Research and Development  
U.S. Environmental Protection Agency  
Washington, DC 20460

Exposure

Sensitivity

Impacts

Adaptive  
capacity

Vulnerability



Resilience

Rapid coral  
bleaching

David Obura



IUCN Resilience

GLOBAL ENVIRONMENT FACILITY  
INVESTING IN OUR PLANET

UNEP



MACARTHUR

CORDIO

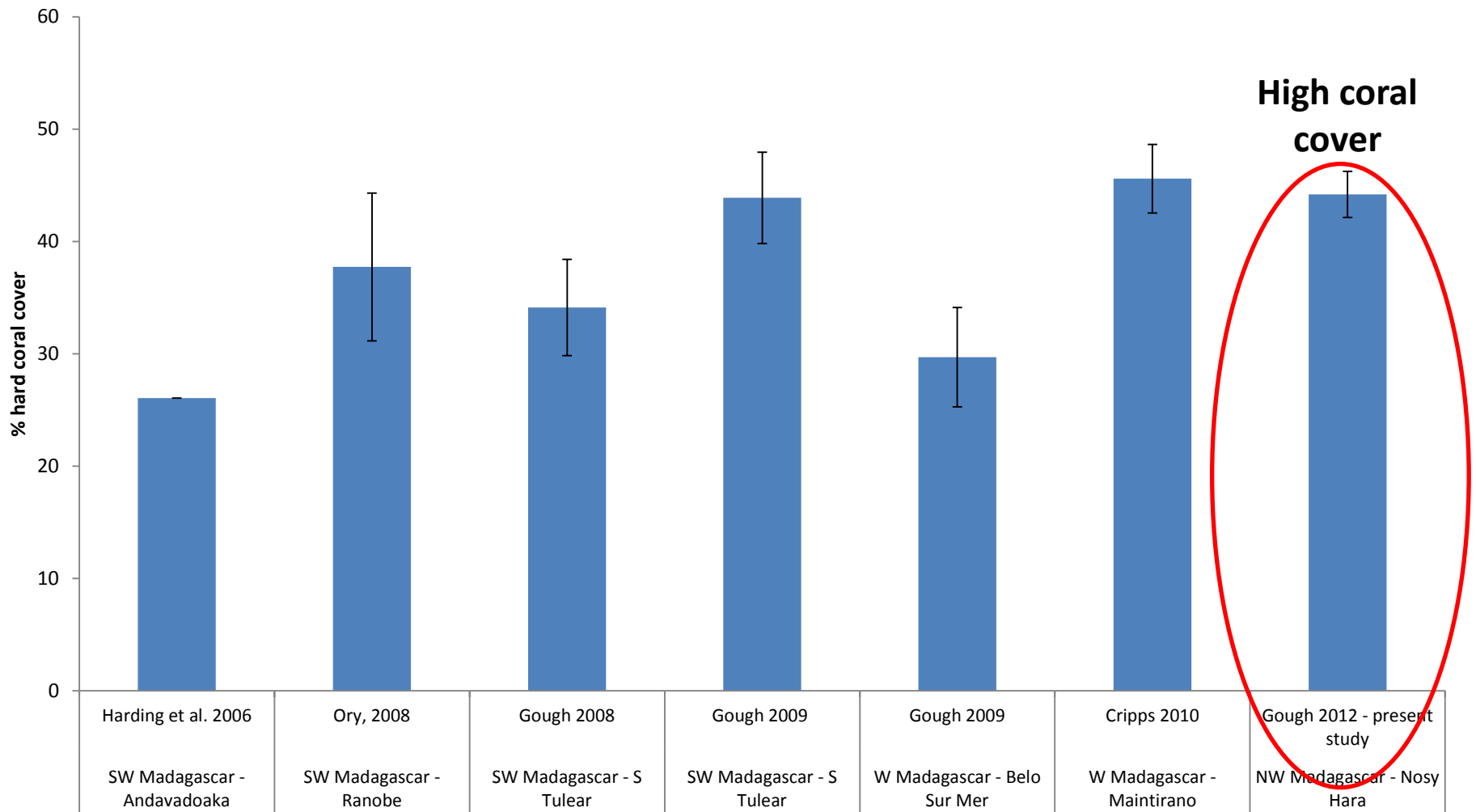
The Nature Conservancy



Australian Government  
Great Barrier Reef  
Marine Park Authority

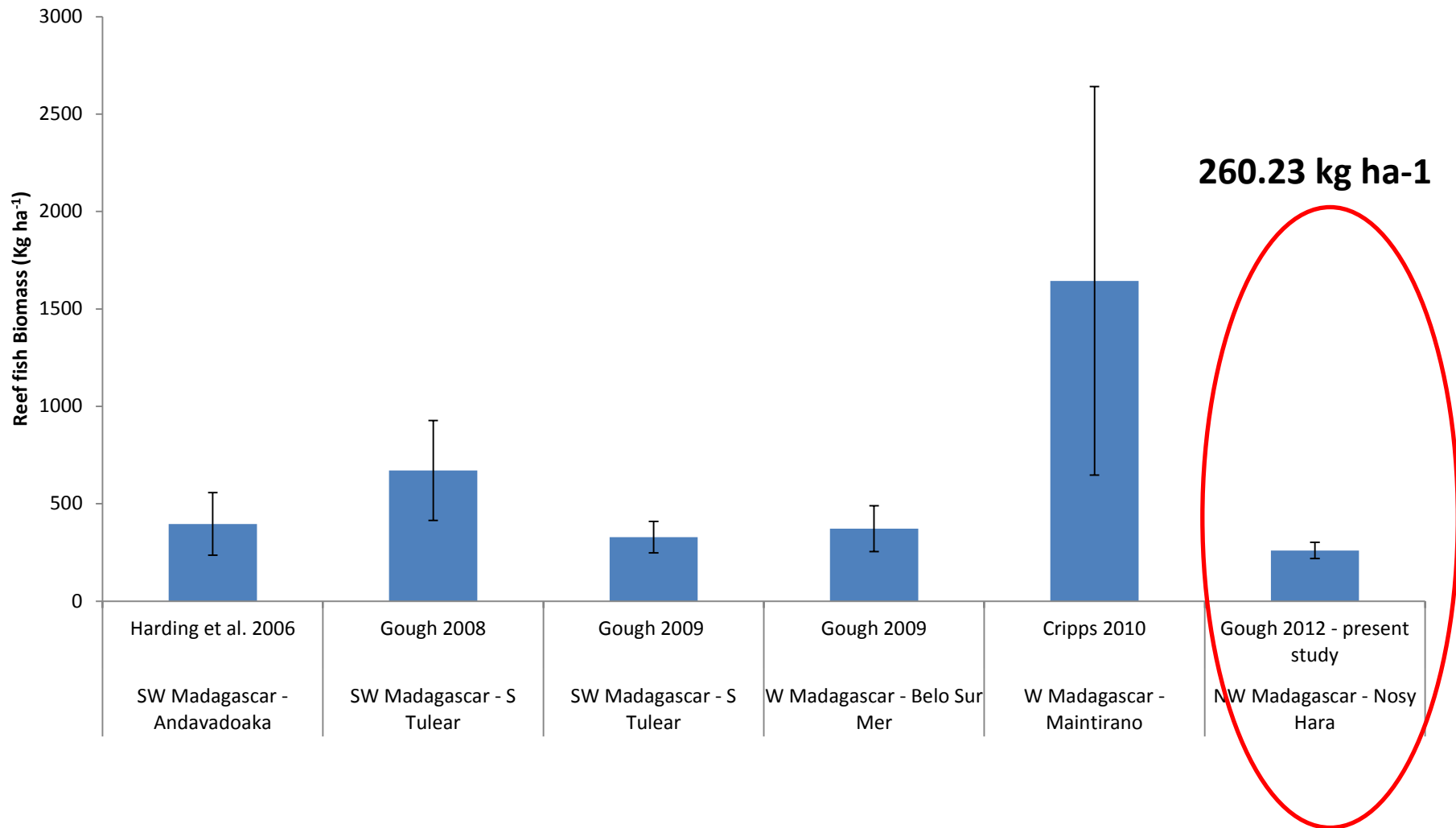
MINISTRY FOR FOREIGN  
AFFAIRS OF FINLAND

# Some key results.....



Hard coral in Nosy Hara MPA (Gough, 2012)

# Some key results.....

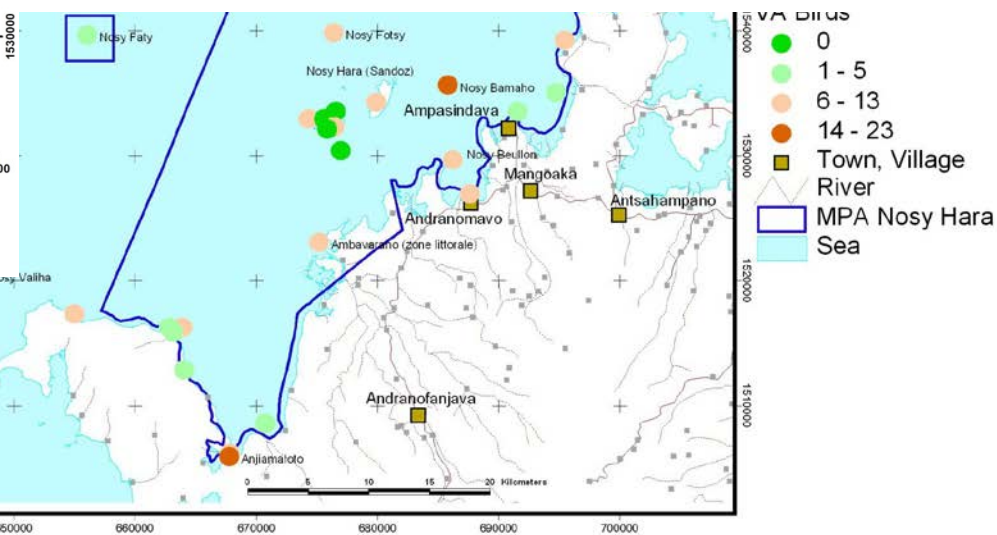
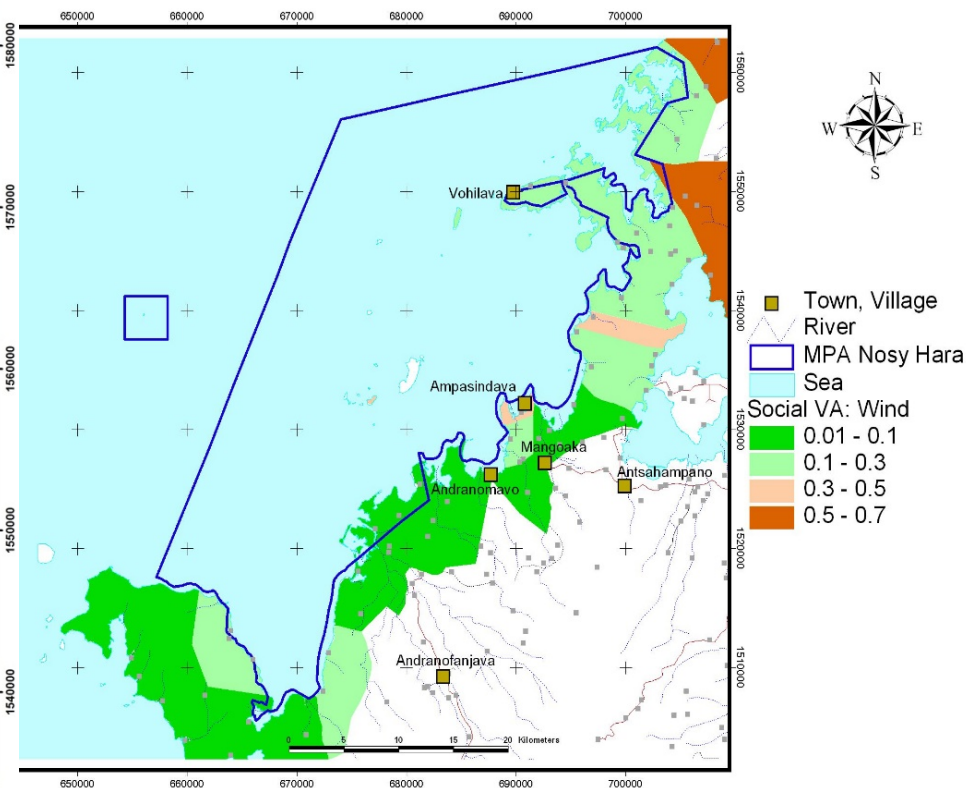
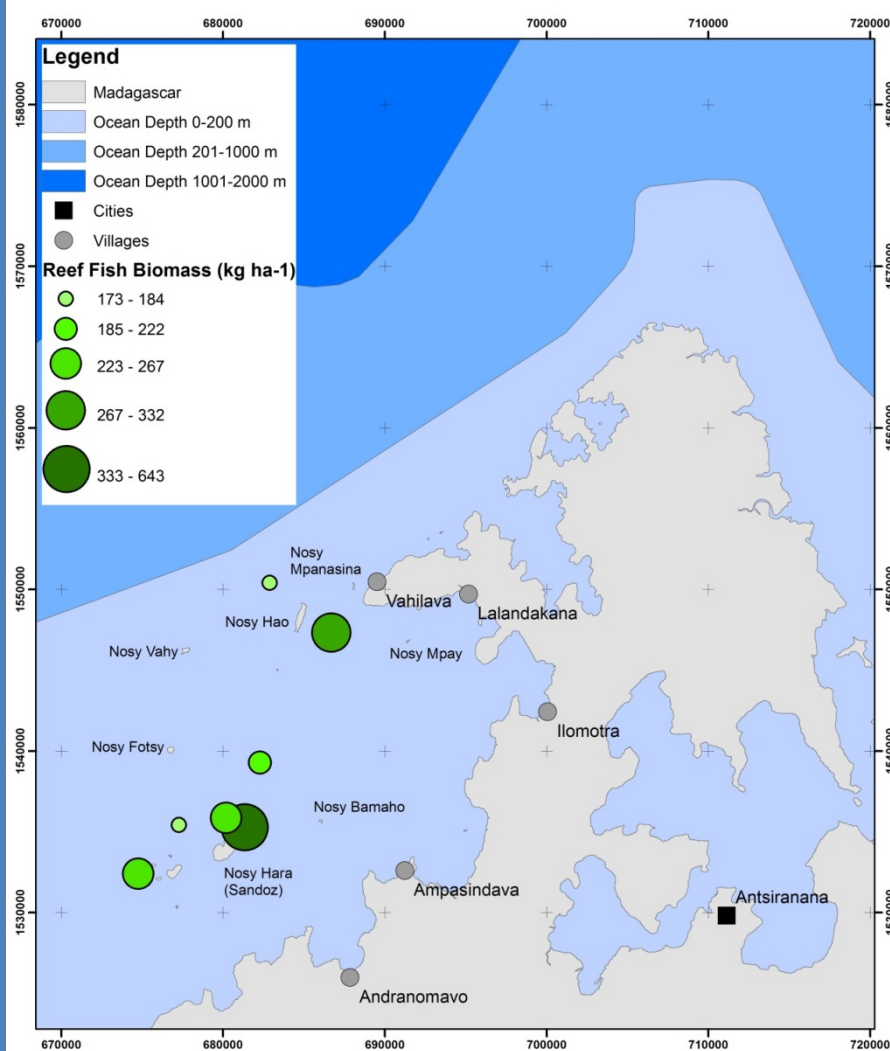


Fish biomass in Nosy Hara MPA(Gough, 2012)

# Some key results.....



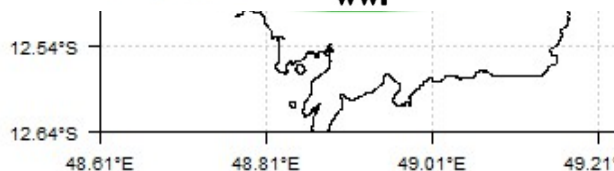
**Fishing and agriculture activities affected respectively  
by intense wind and prolonged drought**



**blue ventures**  
discovery through research



0 2.5 5 10 Kilometers



# Screening adaptation options

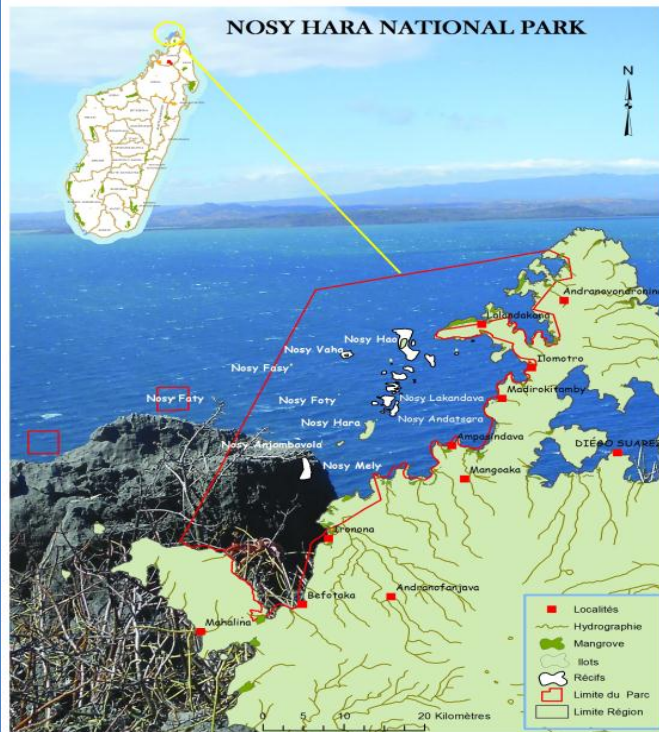
VULNERABILITY



1. Benefits
2. Opportunities
3. Risks
4. Cost

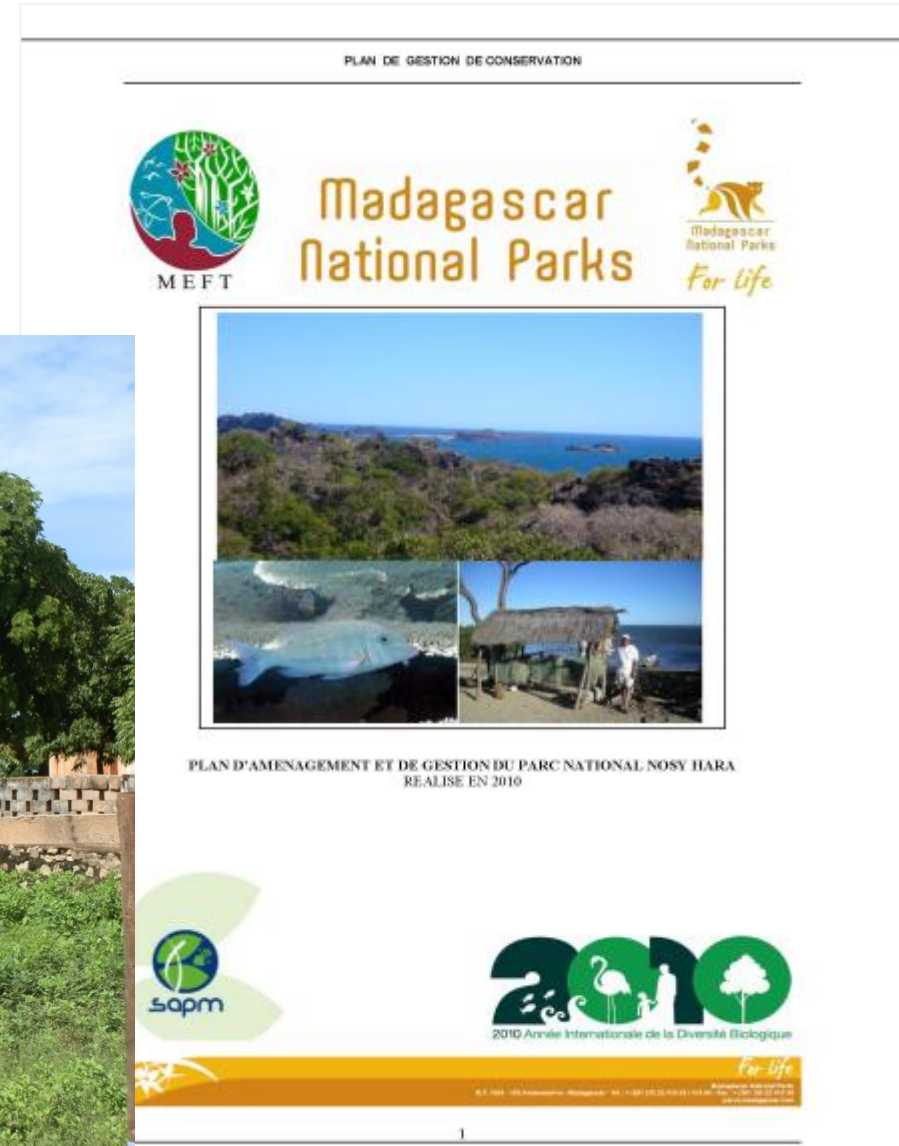


# Some key results.....

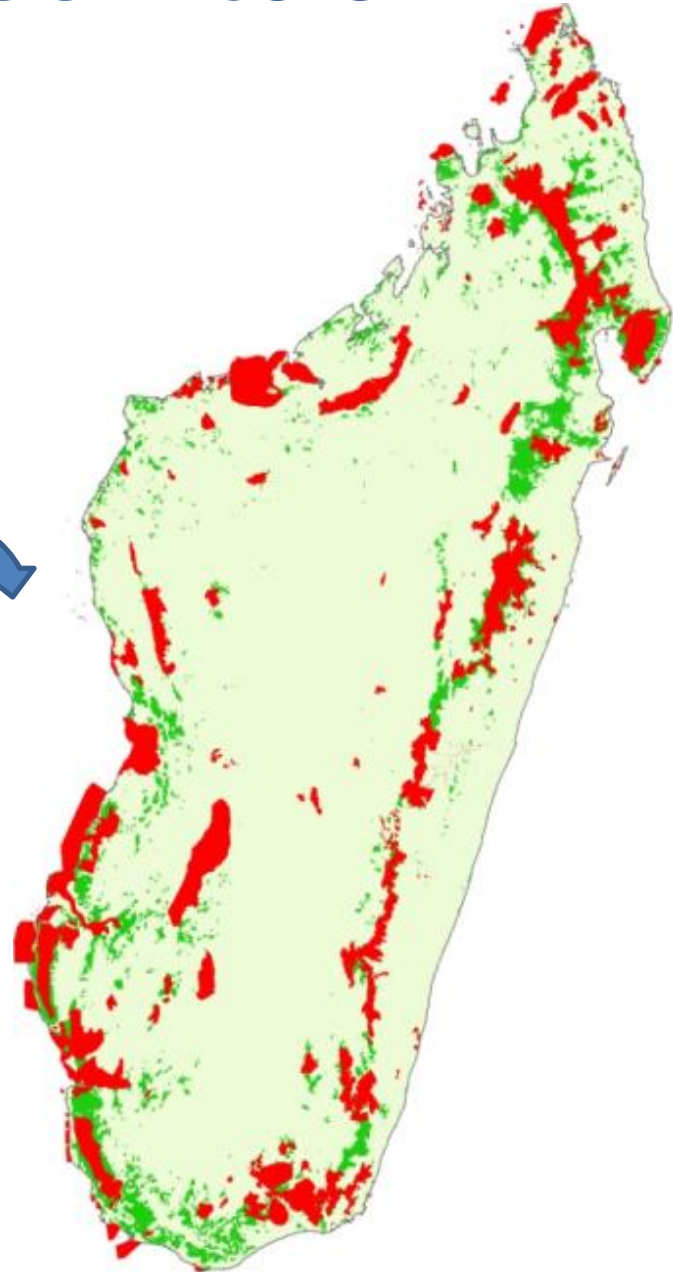
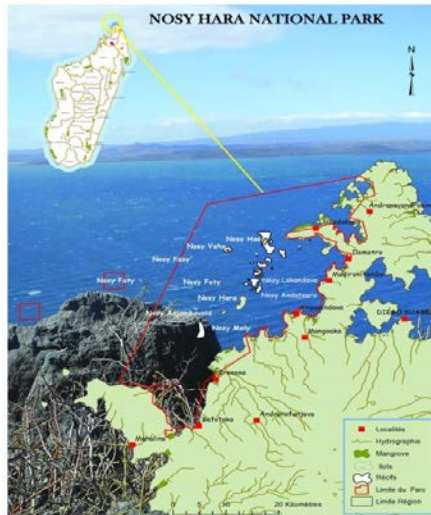


- ☐ Promoting community-led fisheries resource management / crab fisheries reserve
- ☐ Mangroves restoration
- ☐ Building water supplies
- ☐ Promoting climate resilient crops
- ☐ Putting in place marine Turtles nursery

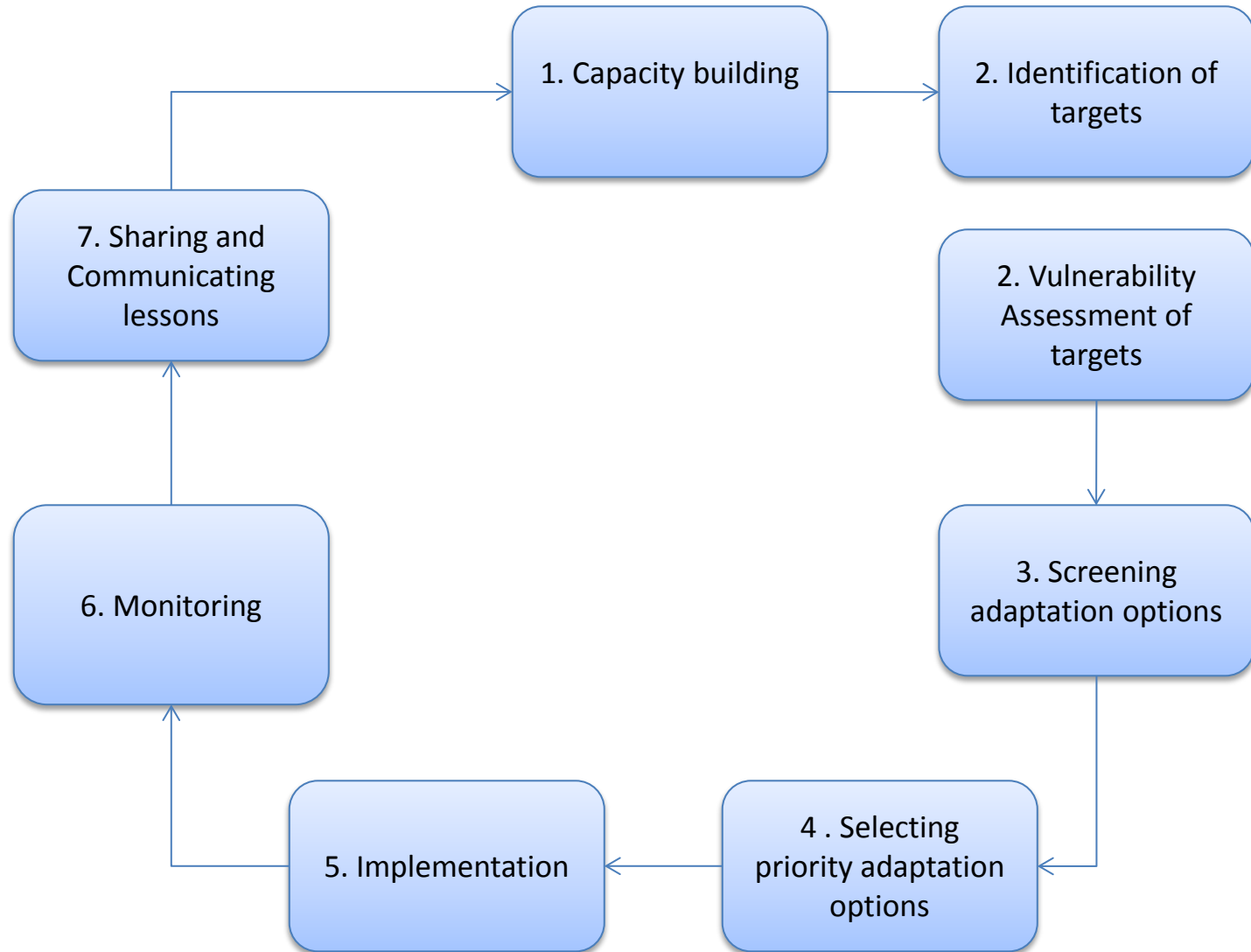
# Next steps.....



# Mainstreaming CC into SAPM



# Summary.....



# Summary.....

	Conceptual	Technical	Coordination
<b>Challenges</b>	<ul style="list-style-type: none"> <li>- Lack of understanding of CC impacts on MPA</li> <li>- Heavy reliance on marine resources and agriculture</li> <li>- Appropriate strategy to adress current and future human and climate related impacts</li> </ul>	<ul style="list-style-type: none"> <li>- Lack of data</li> <li>- VA tools to be used</li> <li>- Right approach for linkages MPA targets</li> <li>- Linkages between adaptation and business as usual work</li> <li>- Additional value of adaptation</li> </ul>	<ul style="list-style-type: none"> <li>- Stakeholders involvment</li> <li>- Financial requirements</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>- AP – tool for increasing resilience</li> <li>- Existence of the MPA managament plan and monitoring protocols</li> </ul>	<ul style="list-style-type: none"> <li>- Existing of various VA methodology</li> <li>- Traditional knowledge</li> <li>- Existing conservations and development initiatives</li> <li>- EbA</li> </ul>	<ul style="list-style-type: none"> <li>- Operational MPA managers</li> <li>- Multi-expert and participatory processes</li> <li>- Learning by doing process</li> </ul>



## **Climate Adaptation Methodology for Protected Areas - CAMPA**

<http://www.panda.org/naturalsolutions>



# Misaotra!



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