## **BIODIVERSITY CONSERVATION ECOSYSTEM RESILIENCE & ADAPTATION**

LESSON LEARNED FROM INDONESIA BY MUCHRIZAL HARRIS



ASIA PACIFIC ADAPTATION NETWORK FORUM 2014 KUALA LUMPUR, OCTOBER 1st – 3rd, 2014

### PARTNERS FOR RESILIENCE





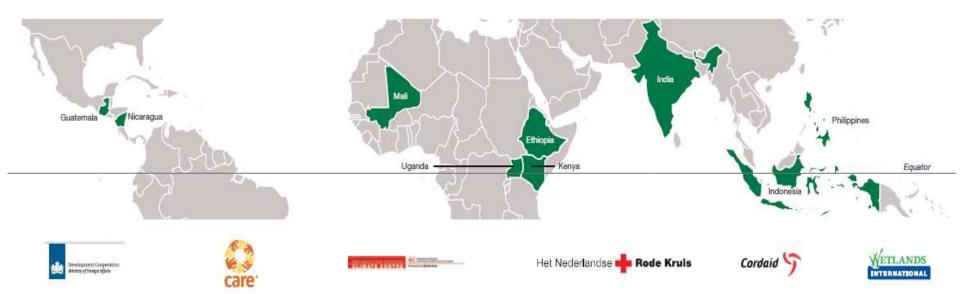




**5 partners:** Netherlands Red Cross, Red Cross Climate Centre, CARE NL, Cordaid, Wetlands International

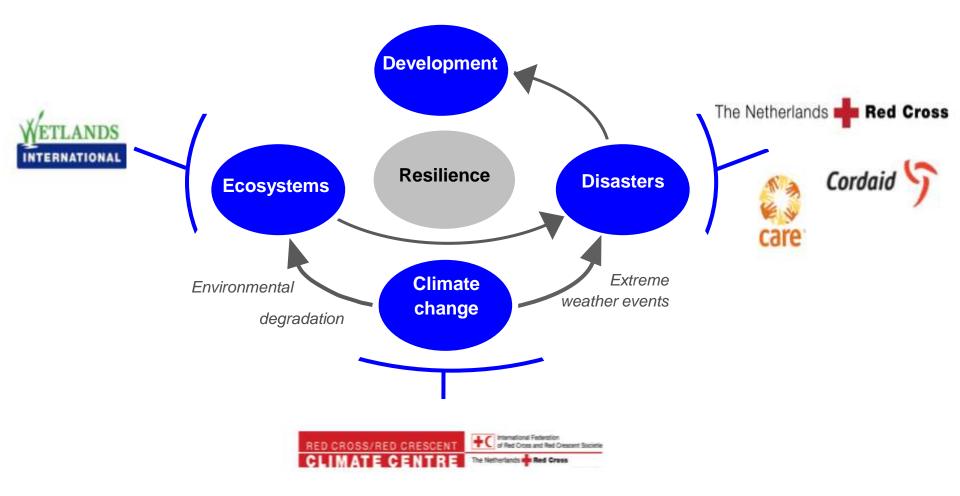
**9 countries:** Philippines, Indonesia, India, Mali, Uganda, Ethiopia, Kenya, Nicaragua and Guatemala.

**5 years:** 2011 – 2015

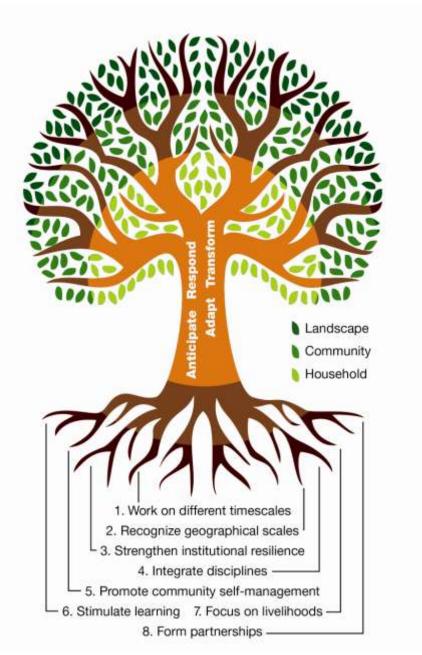


# **Overall aim**

Reducing the impact of natural hazards on the livelihoods of vulnerable communities



## Growing a vision for Resilience



Levels

Building blocks/ Intervention areas

**Key principles** 

## Eco(system)-DRR







## Why ecosystem under-valued??

- traditionally, economists have focused primarily on the value of extractive land and resource uses
- ecosystem costs and benefits are typically not factored into the calculations used to inform decisions
- unsurprisingly, ecosystem-based approaches have not been treated as economically equitable, sustainable and cost-effective options for DRR/CCA

Source: Emerton, L. 2014



### Properly managed ecosystem



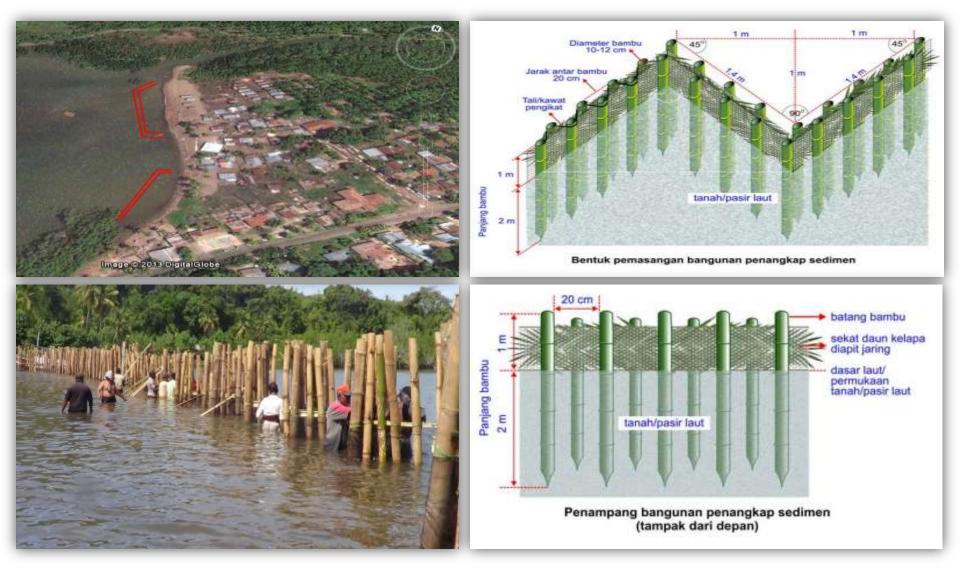
**Reduce physical exposure on hazards** 







### **PFR Ecosystem Management Restoration Actions** I. Conservation and Protection



### **PFR Ecosystem Management Restoration Actions**

### II. Restoration and Rehabilitation





# **PFR Ecosystem Management Restoration Actions** II. SUSTAINABLE MANAGEMENT





#### Adaptive and improvement of Agricultural

- 1. Selection of seed plants
- 2. Process of nursery
- 3. Agricultural land management
- 4. The process of planting and maintenance
- 5. Control of pests and plant diseases
- 6. Harvest and post-harvest
- 7. The use of liquid organic fertilizer

### **PFR Ecosystem Management Restoration Actions**

Policy and legislation at all level (village, district, province and national)



## The important role of ecosystems in resiliencebuilding is already understood and applied

**ACTIONS** using landscape approach with multi-stakeholder cooperation

Climate Information

#### ADAPTIVE AGRICULTURAL PRACTICES TO PROTECT

1-12

PROTECT ECOSYSTEM SERVICE THAT SUPPORT WATER AVAILABILITY & ACCESS

DEVELOP PREPAREDNESS SYSTEM TO BETTER ANTICIPATE & PREPARE FOR FLOOD

1ULTI-STAKEHOLDER ENGAGEMENT FOCUSING ON WATER-CATCHMENT MANAGEMENT, /ILLAGE DEVELOPMENT PLANNING & REGULATION Water-related hazard from upstream to downstream (draught, flood that led to landslide, abrasion due to hightide)

# Thank you

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Bajo's floating house Torosiaje Laut, Gorontalo © Yus Rusila Noor