



# **Arakan Forest Corridor Development Program**

empowering communities for biodiversity  
conservation and climate change adaptation  
and mitigation

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Philippine Eagle Center  
Malagos, Davao City

# The Philippine Eagle



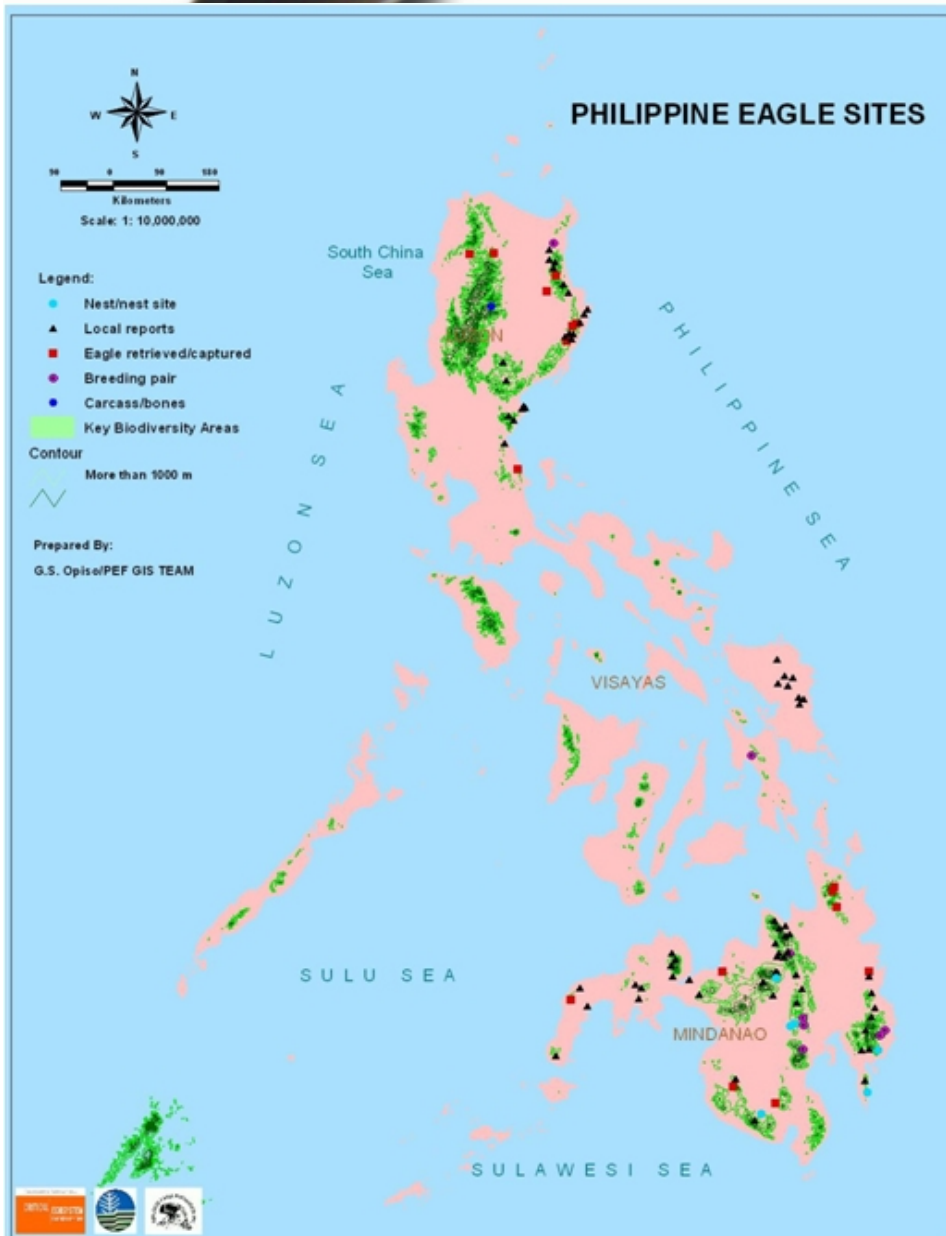
- Flagship species of the Philippines
- symbol of conservation
- indicator of environmental health

The Philippine Eagle is found only in the remaining forests in the islands of Luzon, Leyte, Samar, and Mindanao.

**ABOUT 200 EAGLE PAIRS IN MINDANAO**

**340 PAIRS BELIEVED TO BE DISTRIBUTED IN SAMAR, LEYTE AND LUZON**

**ESTIMATED TOTAL POPULATION OF 500 PAIRS FOR THE ENTIRE COUNTRY**



# MAJOR CAUSES OF THE DECLINE OF PHILIPPINE EAGLES



**DEFORESTATION AND HABITAT LOSS**



**HUNTING AND TRAPPING**



# Conservation & Protection Strategies

- ***in situ* measures**

- Field Research
- Community-based Initiatives

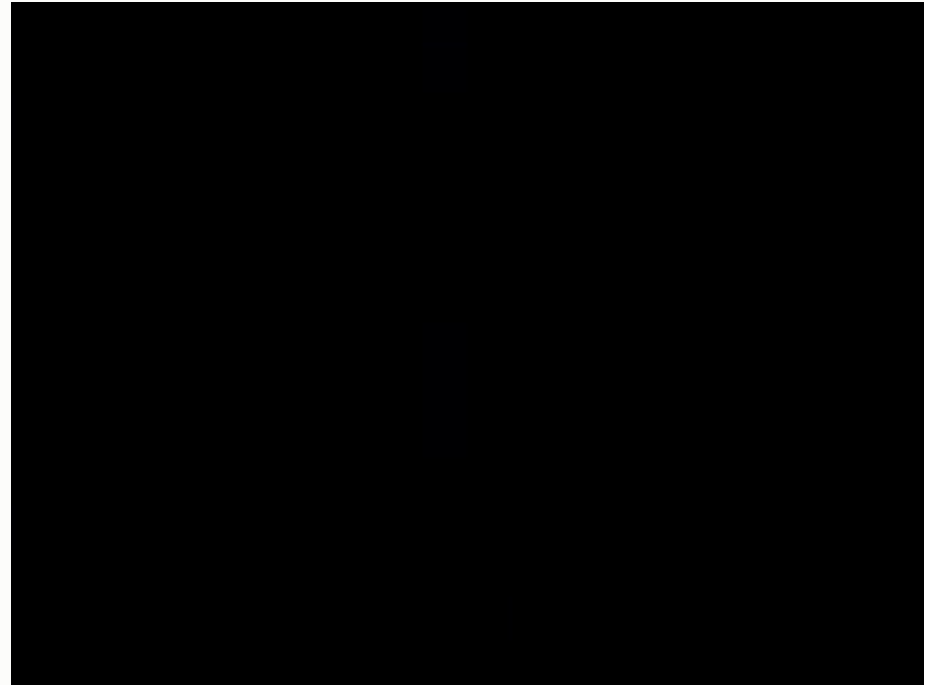
- ***ex situ* measures**

- Conservation Breeding
- Conservation Education

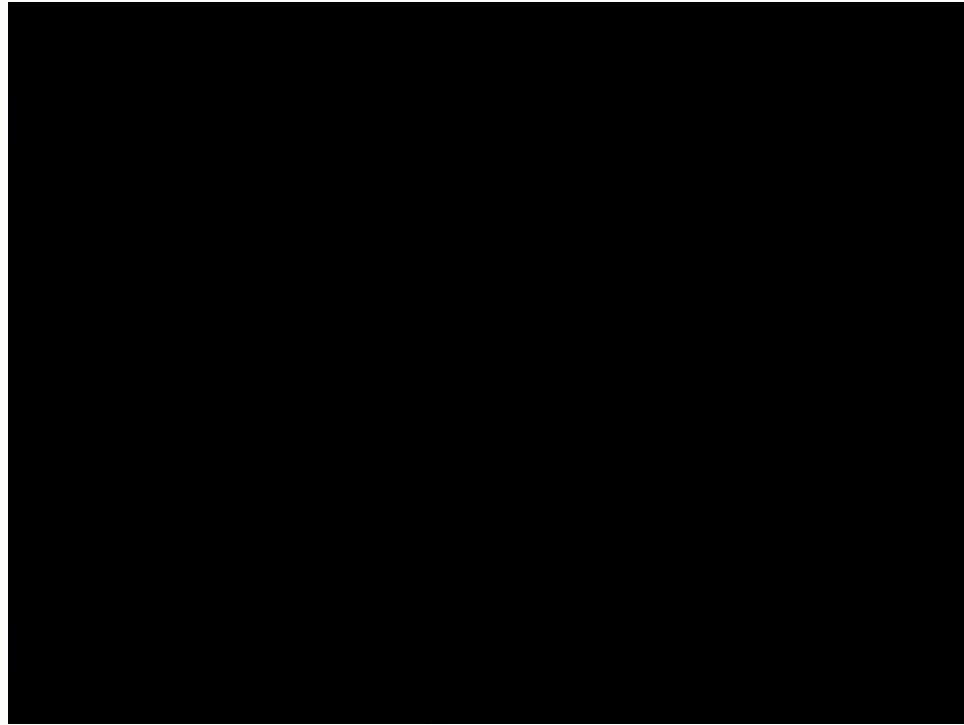
# Conservation Breeding



# Conservation Education



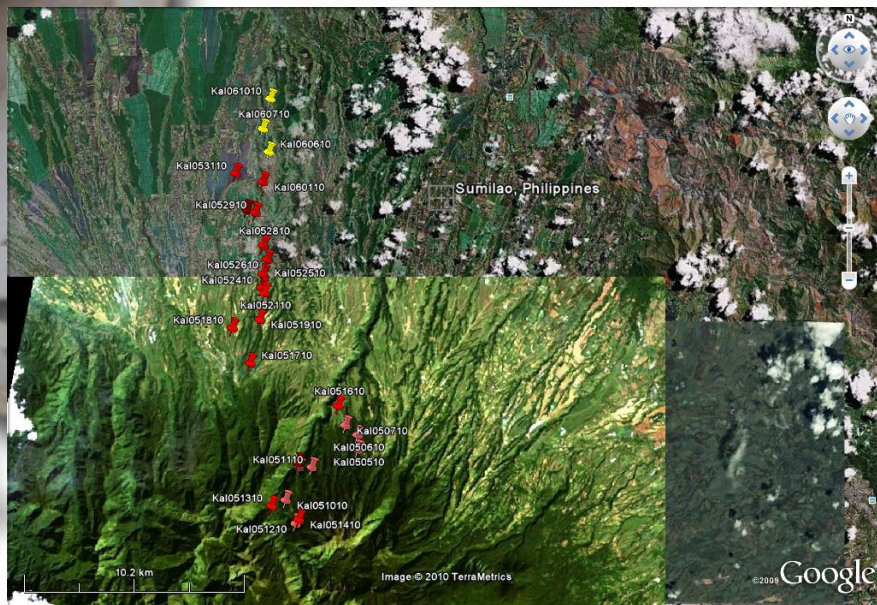
# Field Research





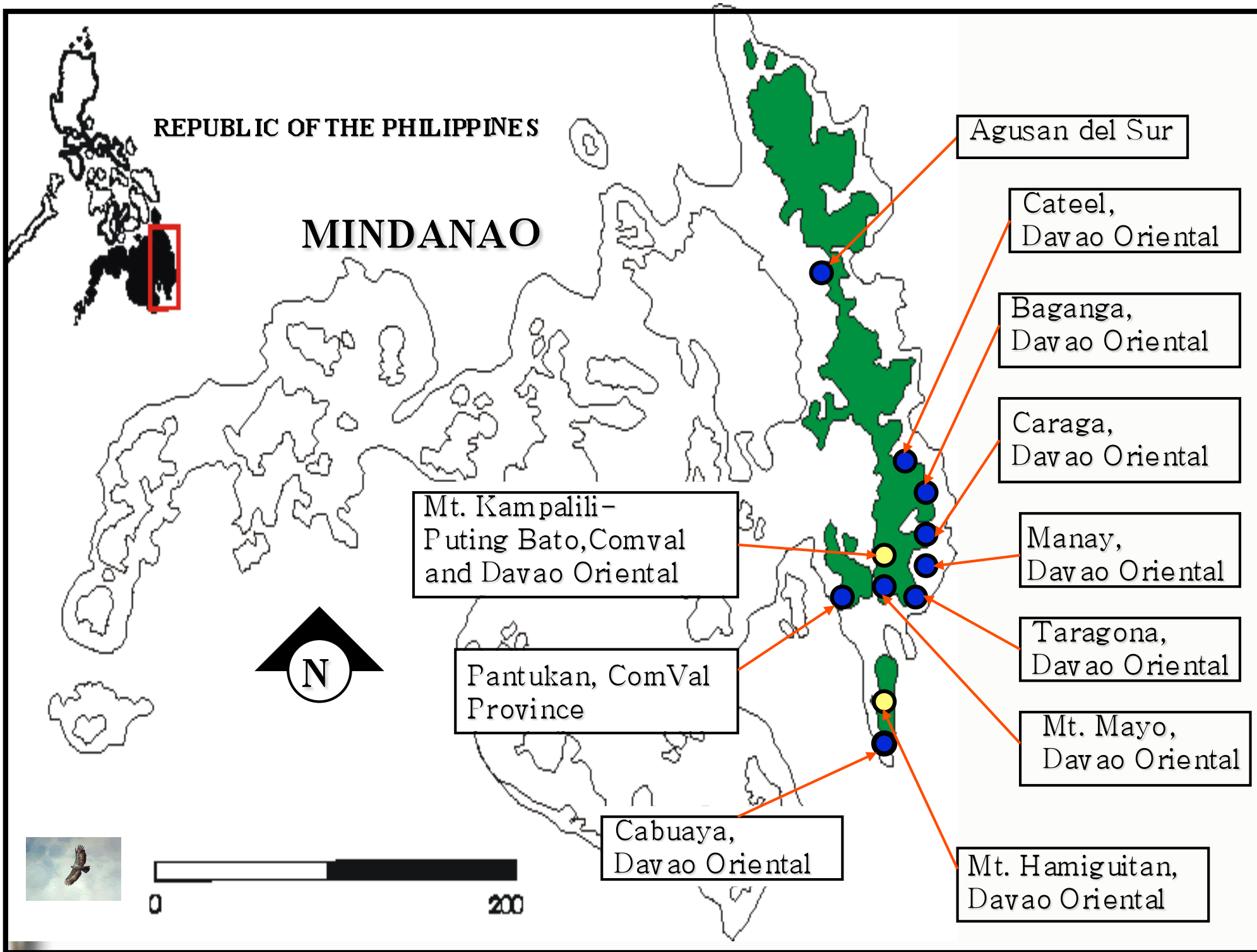
# Experimental Release

## Satellite tracking



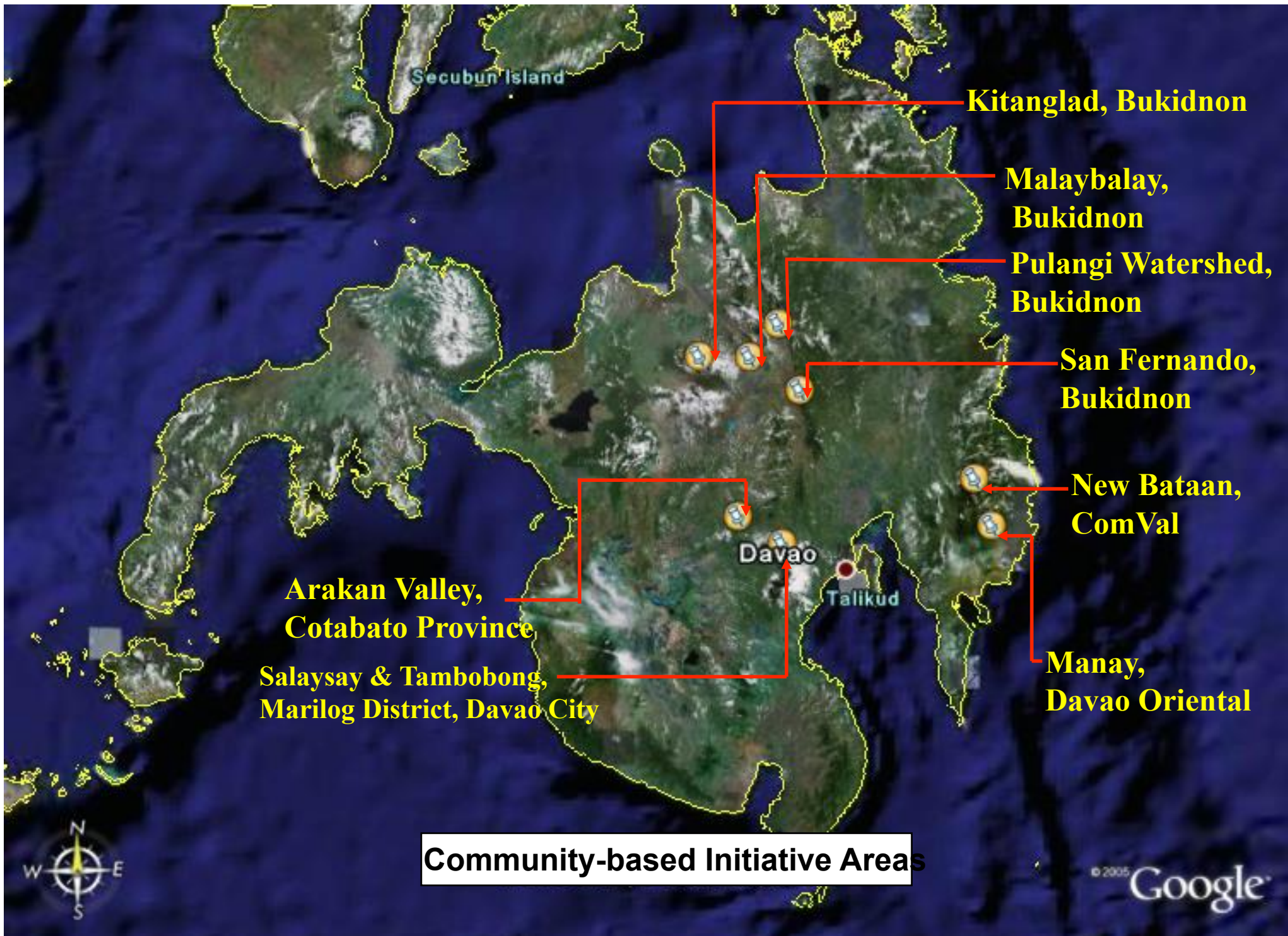
## Radio tracking / visual





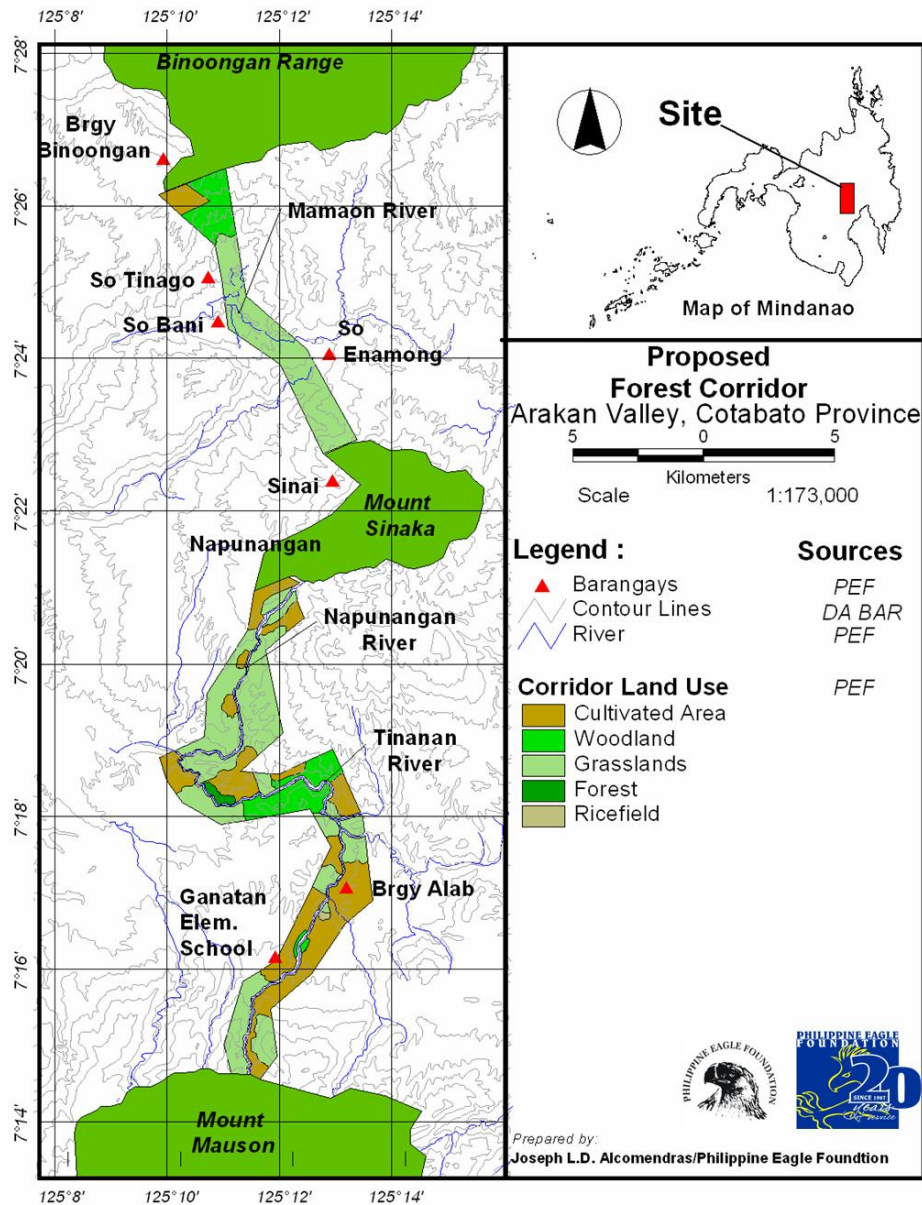
# Community-based Initiatives





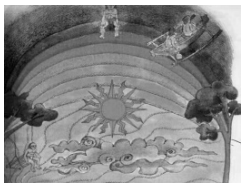
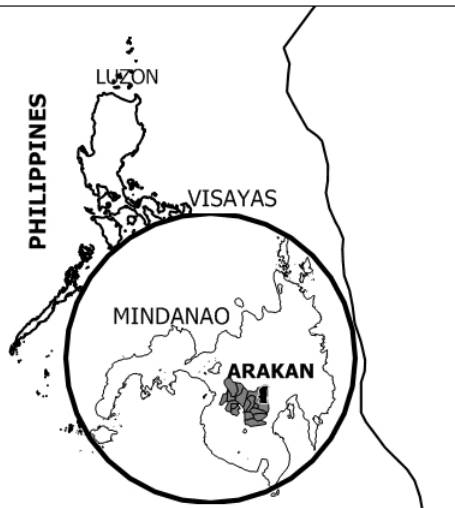
**Community-based Initiative Areas**

# Arakan Valley Forest Corridor



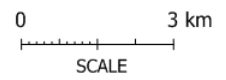
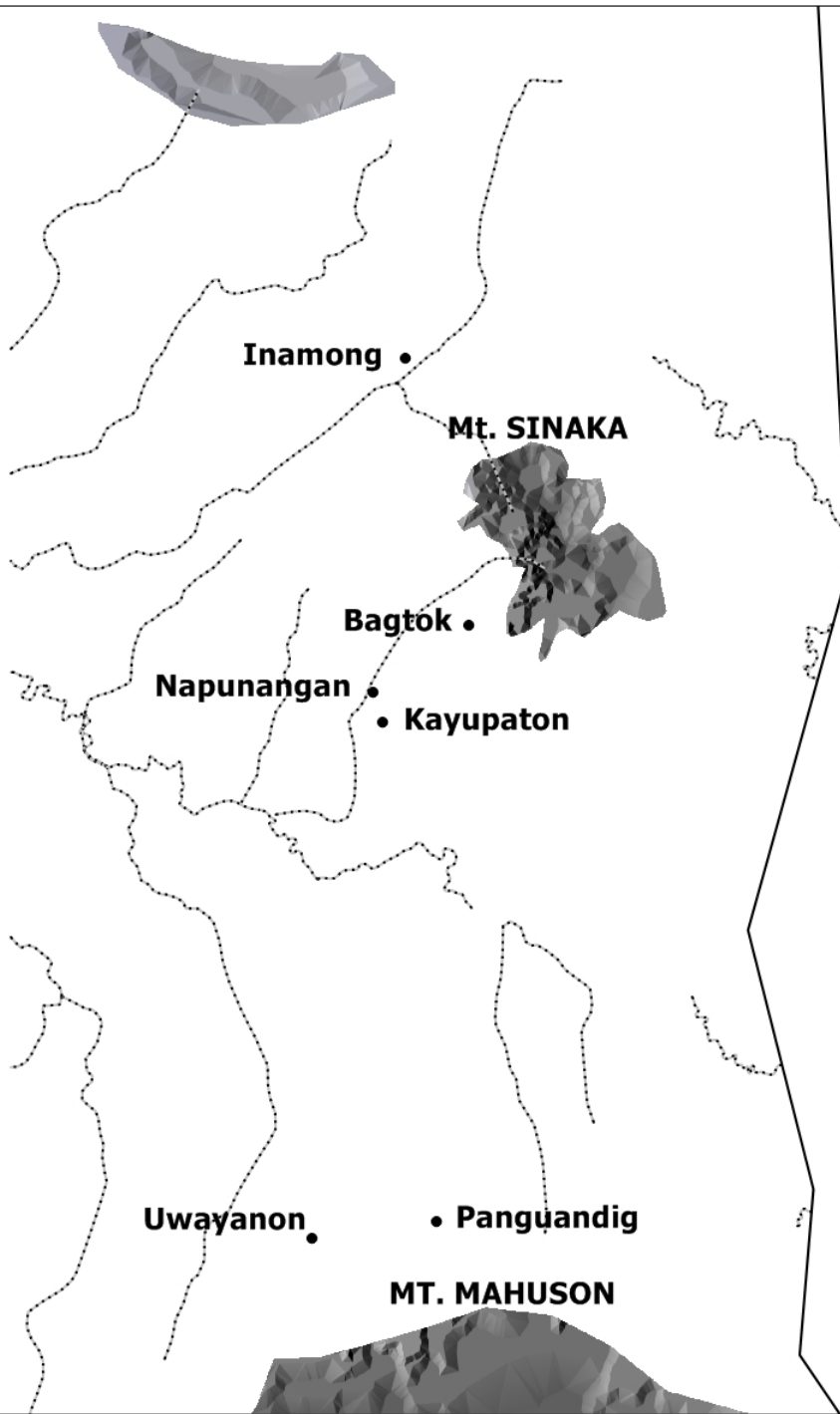
- Arakan CBRM
- Eco-Gov Project
- Gaynawaan Project
- CADT application
- Education and medical assistance to communities
- CDM certification





Legend:

- Landmarks
- River
- Forest
- Arakan boundary





View from Mt. Sinaka (KABIKU in background)

## **MOUNT SINAKA**

800 ha of isolated forest

Habitat for 16 species of birds on the brink of extinction

Nesting site for the IUCN “critically endangered” Philippine Eagle and Philippine Hawk Eagle

Declared Municipal Watershed and a Global Key Biodiversity Area (KBA)





# **KABALANTIAN – BINOONGAN – KULAMAN (KABIKU) WATERSHED**

Watershed of Arakan

Still contains a diversity of  
wildlife (e.g. Writhed  
hornbill)

Former nesting site and  
hunting ground of the  
endangered Philippine  
Eagle





## MOUNT MAHUSON

3 species of birds, more than 30 percent of nesting birds in Mindanao

6 birds threatened with extinction

19 mammal species, 5 threatened with extinction

Ancestral domain of the Manobos of Barangay Ganatan

Habitat for a new bat species (Philippine large-headed fruit bat

*Dyacopterus rickarti*)

# The Arakan Valley is a conservation hotspot

**Habitat of Philippine Eagles**

**Site of important watersheds**

**Area of unique biodiversity**

**Threatened  
by**

**Deforestation,  
habitat loss and  
degradation**

**Forest-dependent Indigenous  
Peoples and**

**Non-indigenous migrants**

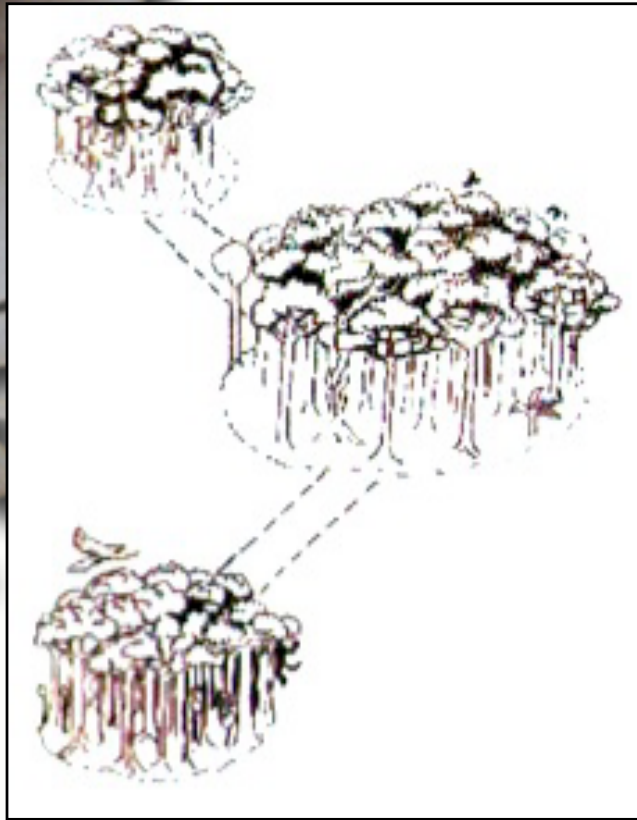
**Threatened  
by**

**Socio-economic  
pressures and  
impacts of  
deforestation**



At the root of this problem are poverty, the exploding human population and the increasing demand for food and space.

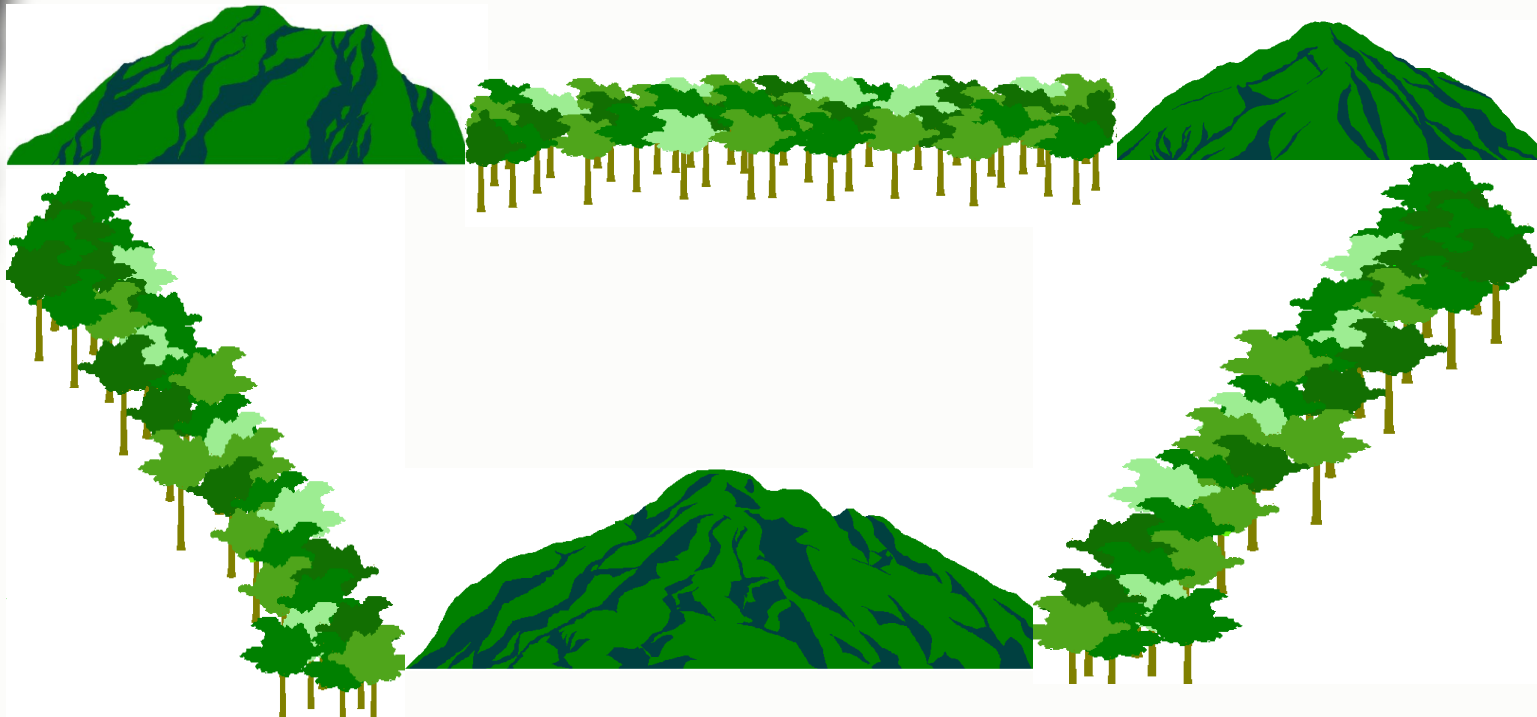
# Arakan Forest Corridor Development Program



- A holistic approach to biodiversity and watershed conservation, improving human well being and climate change adaptation and mitigation

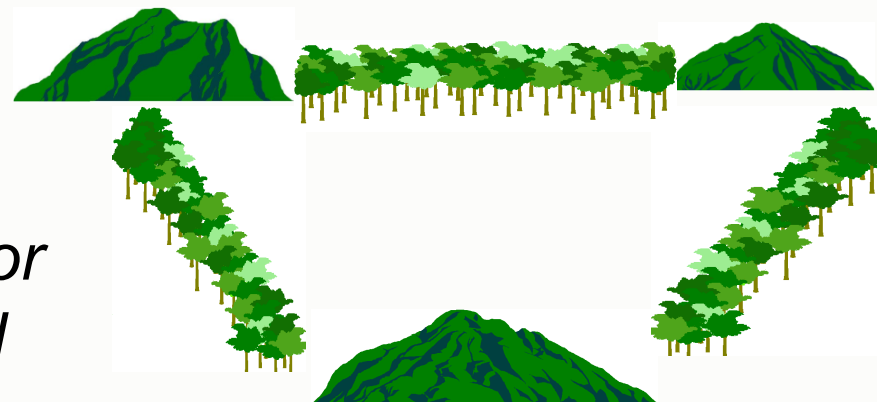
# WHAT ARE FOREST CORRIDORS?

*Linear patches of trees that connect forest islands....*



# What the AFCDP can do

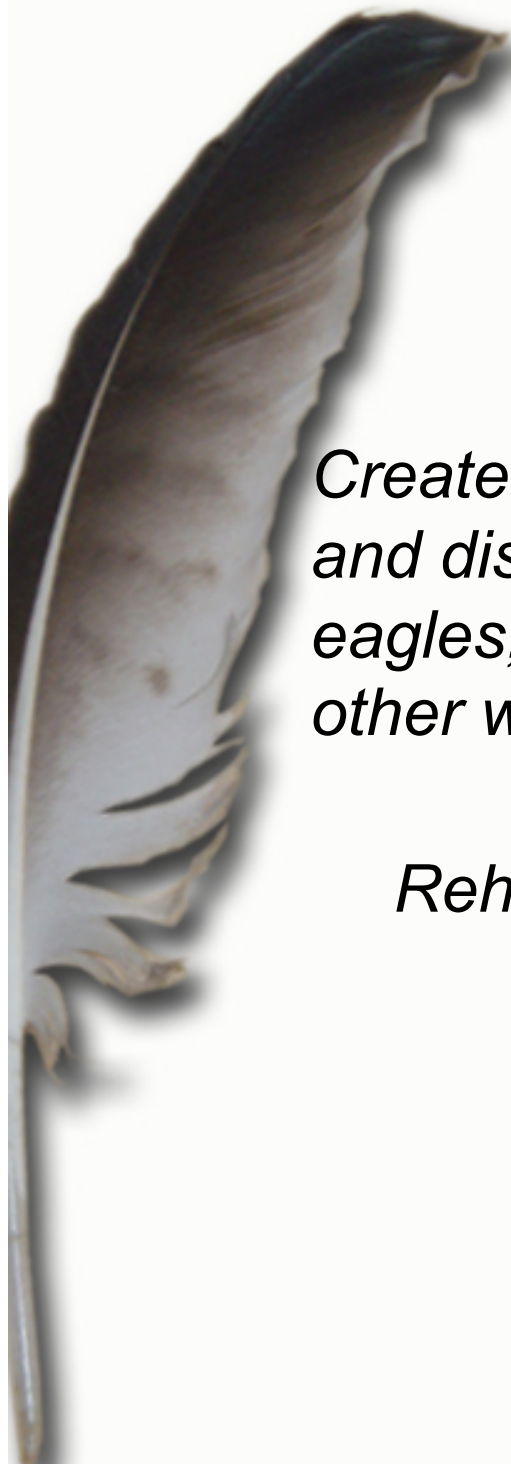
*Create additional habitat and dispersal pathways for eagles, its food items and other wildlife*



*Rehabilitate watersheds*

*Mitigate and adapt against the ill-effects of climate change*

*Help alleviate poverty through sustainable livelihood*



A black and white photograph of a bird of prey, possibly an eagle or hawk, in flight. The bird is shown from a side profile, with its wings spread and talons extended. The background is a dark, textured, out-of-focus surface.

## AFCDP: Aims and objectives

### **Goal:**

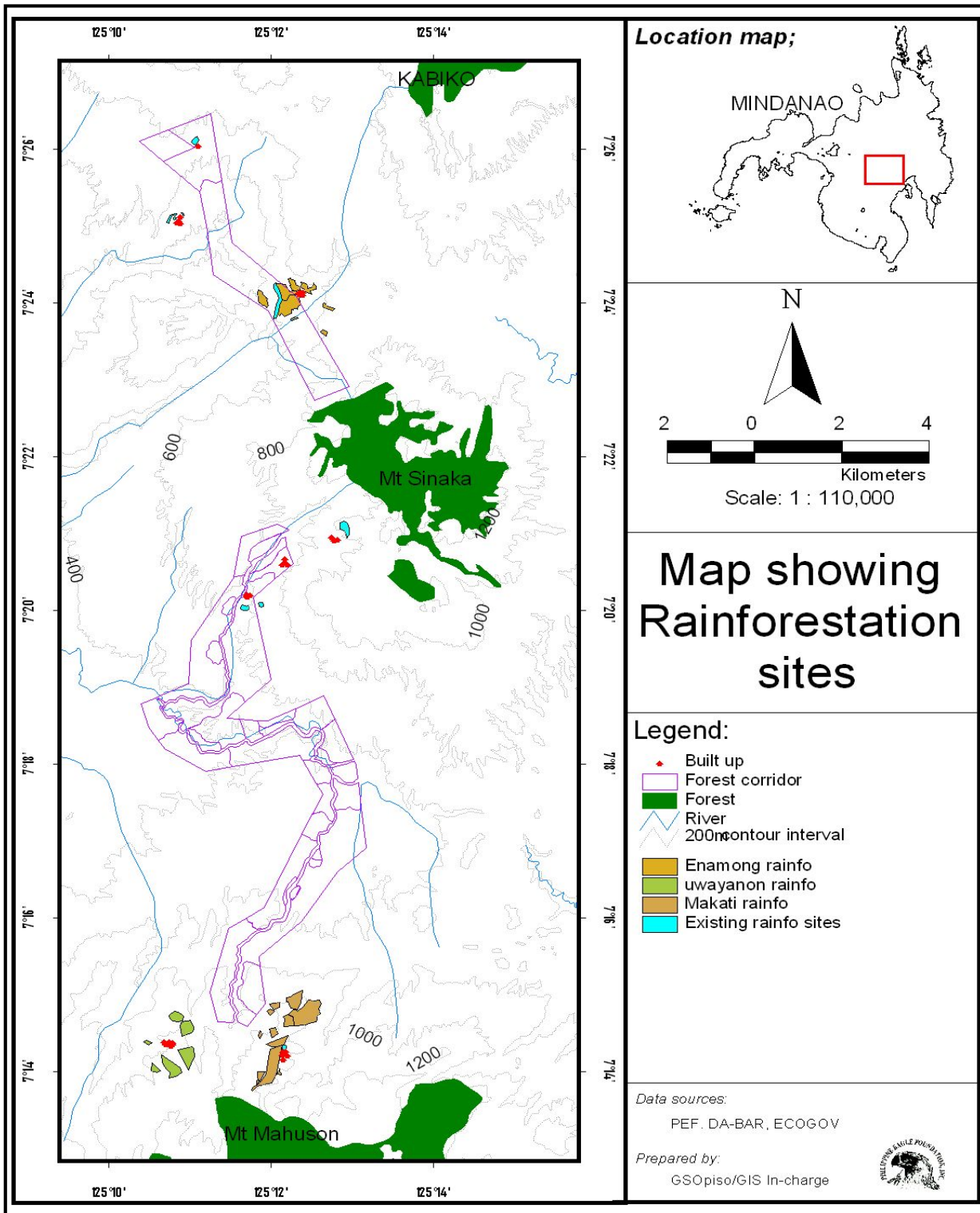
Contribute to the rehabilitation and conservation of biodiversity within the Arakan Valley

### **Objectives:**

- Conserve three isolated forest islands and restore forests between them
- Provide livelihood and support for basic services
- Develop capacities of partner communities
- Create a wider network of community partners and supporters.



# Proposed Forest Corridor Route in Arakan, North Cotabato, Mindanao, Philippines



- Ca. 30 km of riparian habitats, grasslands and agricultural landscapes
- Covers about 30,000 hectares in 10 barangays and 3 CADCs



Theoretical foundations

**Sustainable livelihoods framework**

address communities' needs to increase/build on forms of their "capitals". (i) Human (ii) Economic/Financial, (iii) Social, and (iv) Natural (see Scoones, 1998).

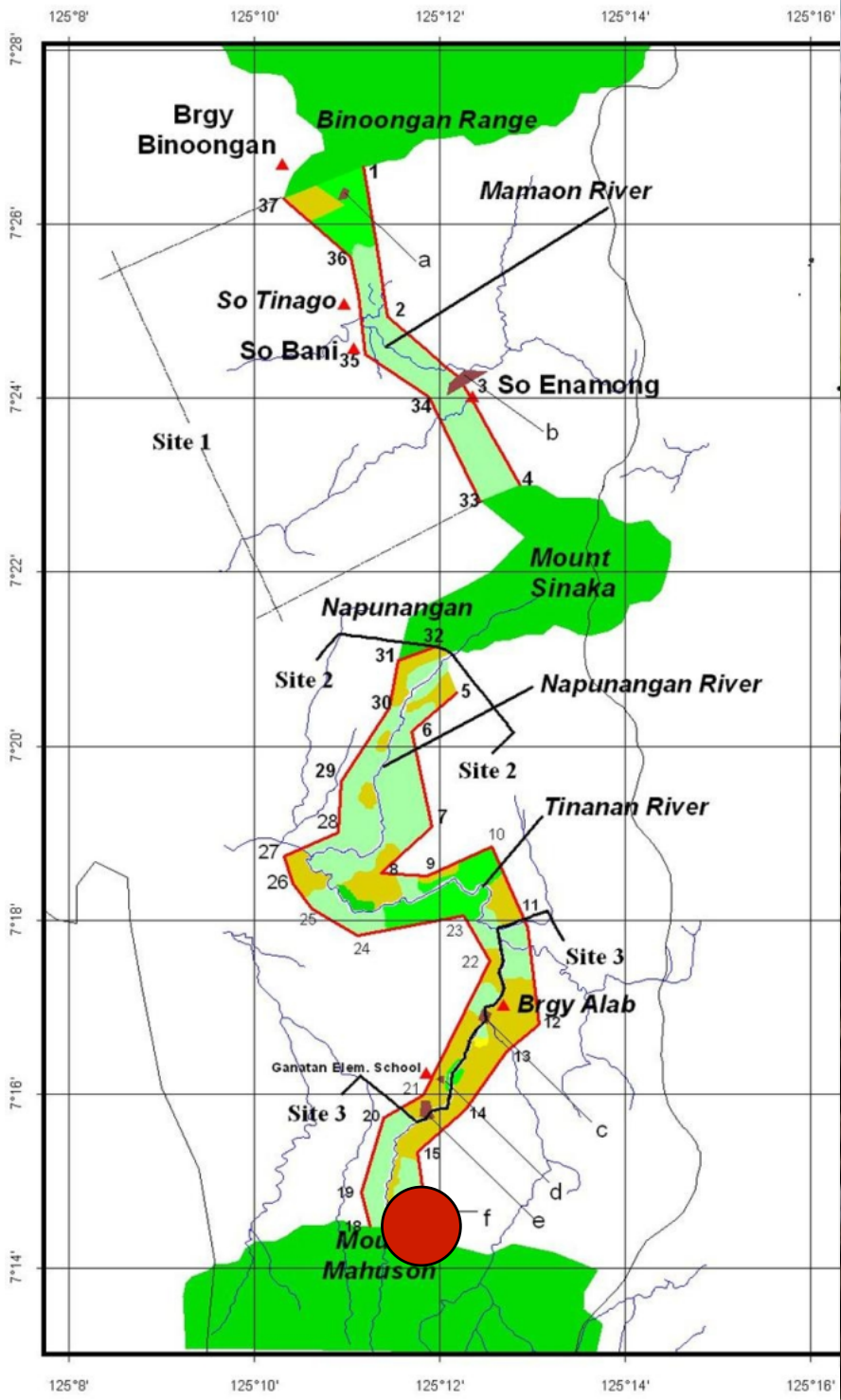
"livelihoods - the capabilities, assets (stores, resources, claims and access) and activities required for a means of living;

a livelihood is sustainable when it can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide...opportunities for the next generation..." Chambers and Conway (1992:7)



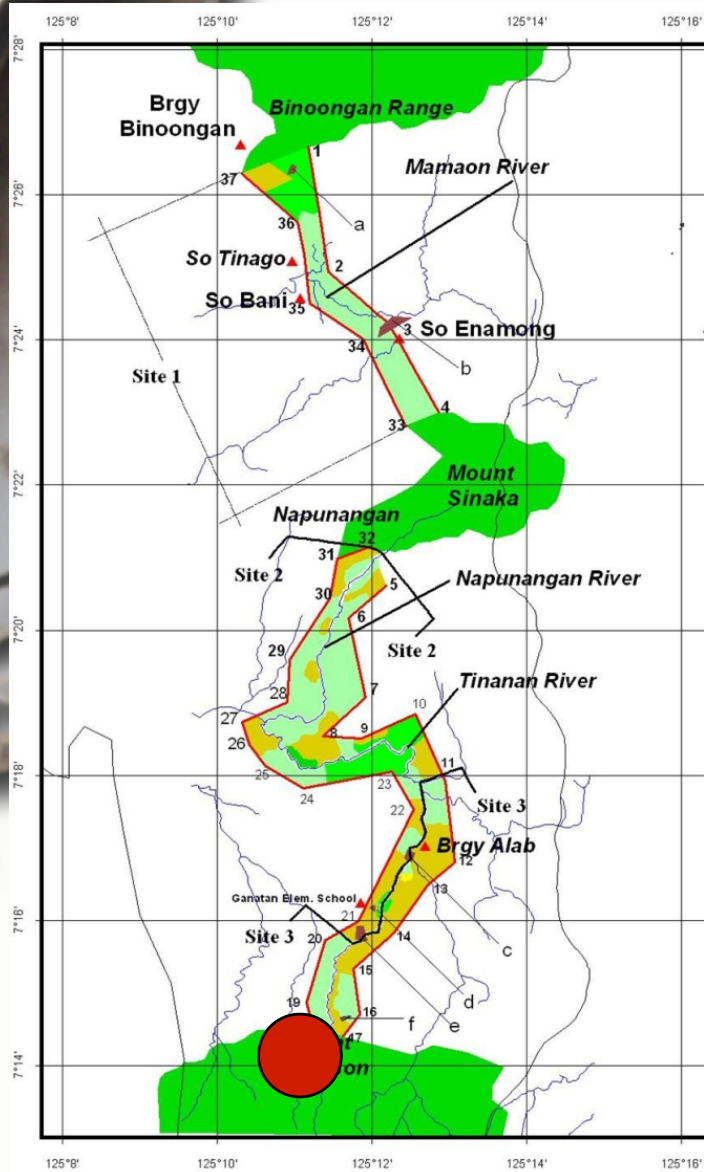
# Program Components

- Environmental Management (NATURAL)
  - Forest and Eagle conservation
  - Reforestation
- Economic Development (FINANCIAL/ECONOMIC)
  - Direct financial incentives
  - Enterprise Development
- Institution and Capacity-Building (HUMAN/CULTURAL)
  - Organization development and strengthening
  - Ancestral domain management and IKSP rejuvenation
- Networking and Partnership (SOCIAL)
  - Partnership Development and Resource mobilization

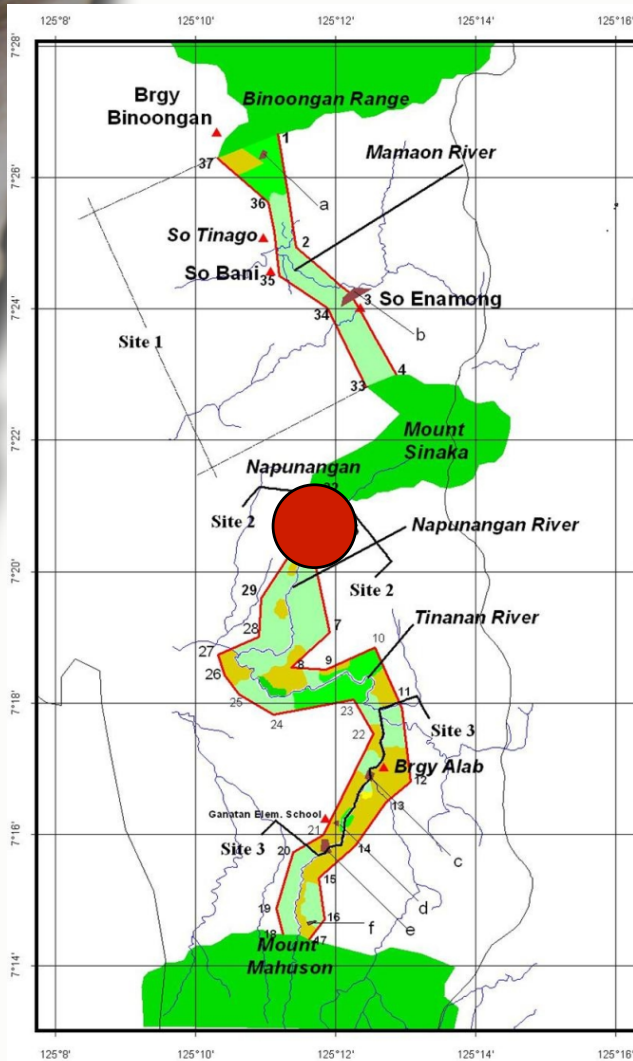


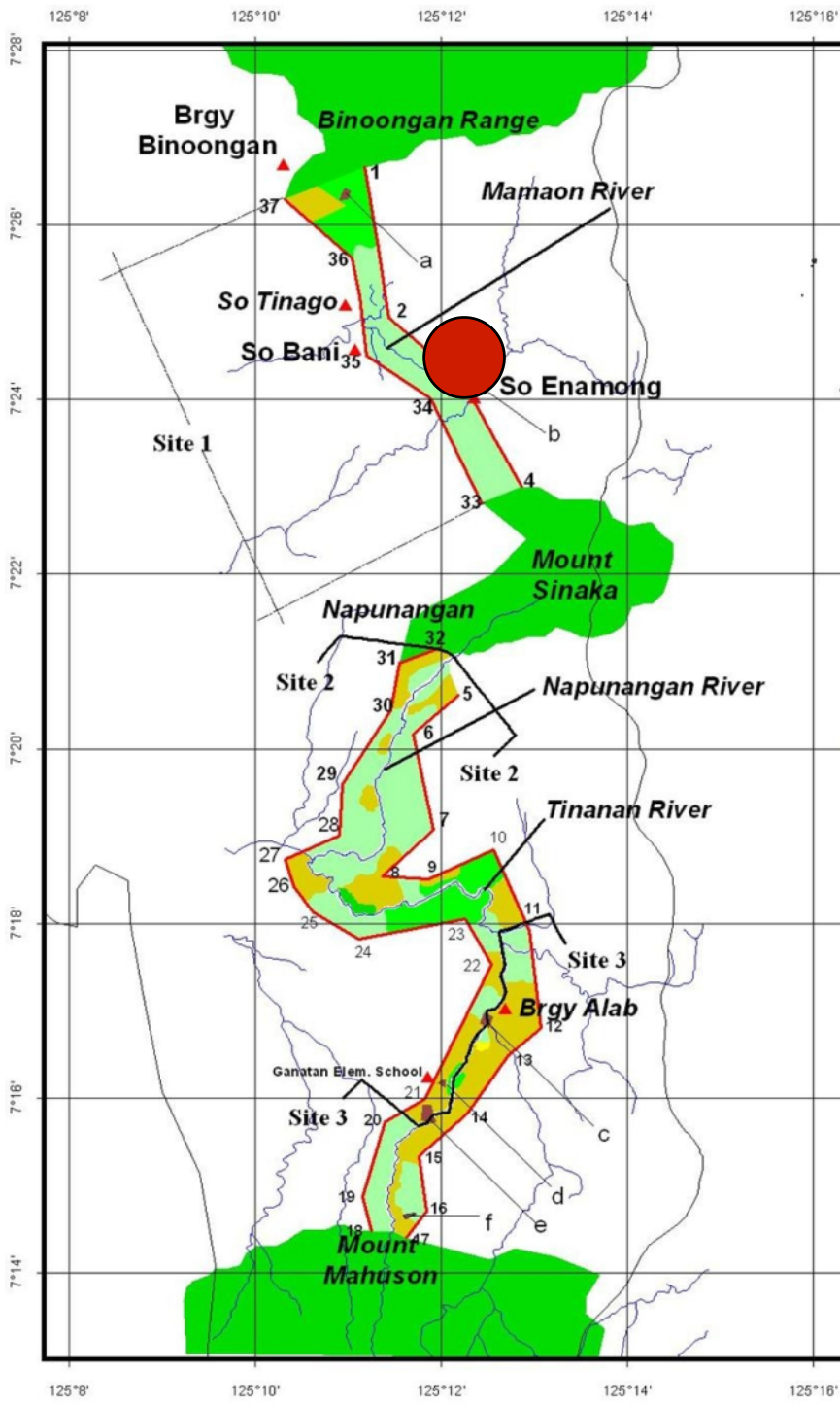
Panuandig Lumadnong  
Panaghiusa (PALUPA)-  
Sitio Panuandig,  
Ganatan

# Kiandang Farmers' Association (KFA)-Sitio Uwayanon, Ganatan



# Tumanding Lumadnong Panaghiusa (TULPA)-Sitio Bagtok, Tumanding





Nagkahiusang  
Maguuma sa Datu  
Ladayon (NAMADLA)-  
Sitio Inamong, Datu  
Ladayon

A condor is shown in flight, its wings spread, against a dark, smoky background. The condor is positioned in the upper left quadrant of the slide. The background of the entire slide is a vibrant, high-angle photograph of a green valley with rolling hills and a river winding through it.

## METHODS

## “Rainforestation”

“Rainforestation” farming technique by Milan and Margraf (1994)

- utilizes only native or indigenous trees
- incorporates IK/LK in reforestation decisions
- Plant sun-loving trees first then later reintroduce shade-loving species
- Native commercial fruit trees, agroforestry crops, and livestock can be integrated later



# Rainforestation



- Duguan (*Bischofia javanica*)
- kapayawe (*Pangium edule*)
- dap dap (*Erythrina orientalis*)
- Nato (*Planhonella* sp)
- Pangi (*Pangium edule*)
- Barobo (*Diplodiscus paniculatus*)
  
- Use of *Ficus* spp

# RESULTS

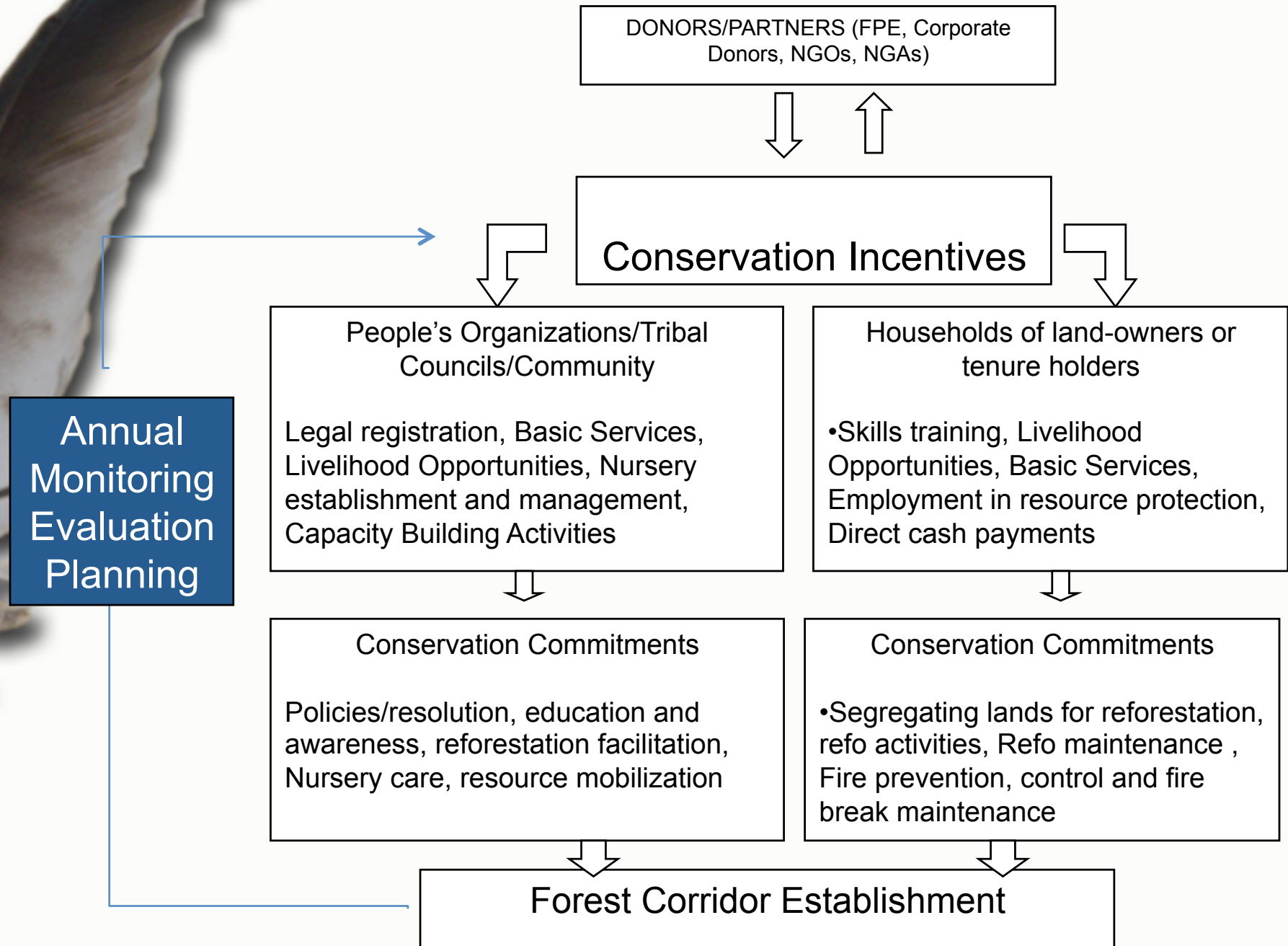
## “Rainforestation” Technical Arrangement

Conservation  
Agreement or CAs  
([www.conservation.org](http://www.conservation.org))

- People’s  
Organization
- Land-owners



# CONSERVATION AGREEMENT FRAMEWORK



## Costing of incentive payment to each PO for nursery establishment and maintenance

| <b>NATURE/ACTIVITIES</b>           | <b>Each bag (Php)</b> | <b>E.g. 7200 seedlings (6 ha reforestation site+ 20 % mortality, Php)</b> |
|------------------------------------|-----------------------|---|
| <b>Polybag with soil</b>           | 0.25                  | 1,800.00  |
| <b>Polybag with wildling</b>       | 1.00                  | 7,200.00  |
| <b>Each wildling that survives</b> | 1.75                  | 12,600.00   |
| <b>TOTAL</b>                       | <b>3.00</b>           | <b>21,600.00</b>  |

## Costing of incentive payment to each landholder for every 0.25 ha area allotted for reforestation

| NATURE/ACTIVITIES  | AMOUNT PER 0.25 HA PER LANDHOLDER (PHP) |
|--|---|
| Land preparation (strip brushing, hole digging and staking) and planting (250 seedlings) | 1,750.00                                |
| Planting area maintenance (round weeding and strip brushing planted area)                | 2,400.00                                |
| Basic assistance, to support any small project of the household (if available)           | 1,500.00                                |
| <b>TOTAL (per year)</b>  | <b>5,150.00</b>                         |

# 2009-10 Results: afforestation



- 74 % nursery survival
- 58,204 seedlings planted in 58 ha
- 15 ha (15,397 seedlings burned)
- 42 ha with live seedlings



## RESULTS

### **Threat Reduction Analyses (2010)**

- **Threats of timber poaching and kaingin controlled**
- **Mt Sinaka - local awareness and voluntary forest patrolling**
- **Mt Mahuson - Kaingin as a continuing threat**
- **Emerging threats - commercial plantations, wild grassfires**



# RESULTS

- Voluntary Carbon Standards (VCS)





## Innovative funding sources in 2009-10

| Donor/Partner  | Nature of grant/support  | Amount (Php) |
|--|--|--------------|
| Philippine Tropical Forest Conservation Fund                           | Support for community nurseries  | 292,000.00   |
| Philippine Long Distance Telephone Company                             | Support for community and land-owner incentives for PALUPA and NAMADLA | 500,000.00   |
| The World Agroforestry Centre  | Research grant   | 47,000.00    |
| Philippine Long Distance Telephone Company                             | Support for water system at NAMADLA                                    | ~60,000.00   |
| Commission on Higher Education and University of Immaculate Conception | Eagle habitat research at Pan-uandig, Ganatan                          | 100,000.00   |
| Allied Botanical Corporation   | Organic farming support at Sitio Bagtok, Tumanding                     | ~80,000.00   |
| AnthroWatch  | Training for Indigenous Leaders from PALUPA, NAMADLA and TULPA         | ~10,000.00   |



## Lessons learned

1. Continuing community organizing, coaching and monitoring work remain critical
  - Reforestation is not cheap
  - Incentives must be adequate
  - Community-based restoration projects as forms of “Adaptive Management”

**Thanks  
for your  
attention!**

