

**Enhancing local capacity for marine protected areas in the Coral Triangle region  
by establishing learning sites.**

**Case-study Nusa Penida Marine Protected Area (MPA) in Bali, Indonesia**

***Turning knowledge and skills into on-the-ground action***



**RILI DJOHANI, Executive Director CORAL TRIANGLE CENTER (CTC)**

**1st Asia Parks Congress, Japan**

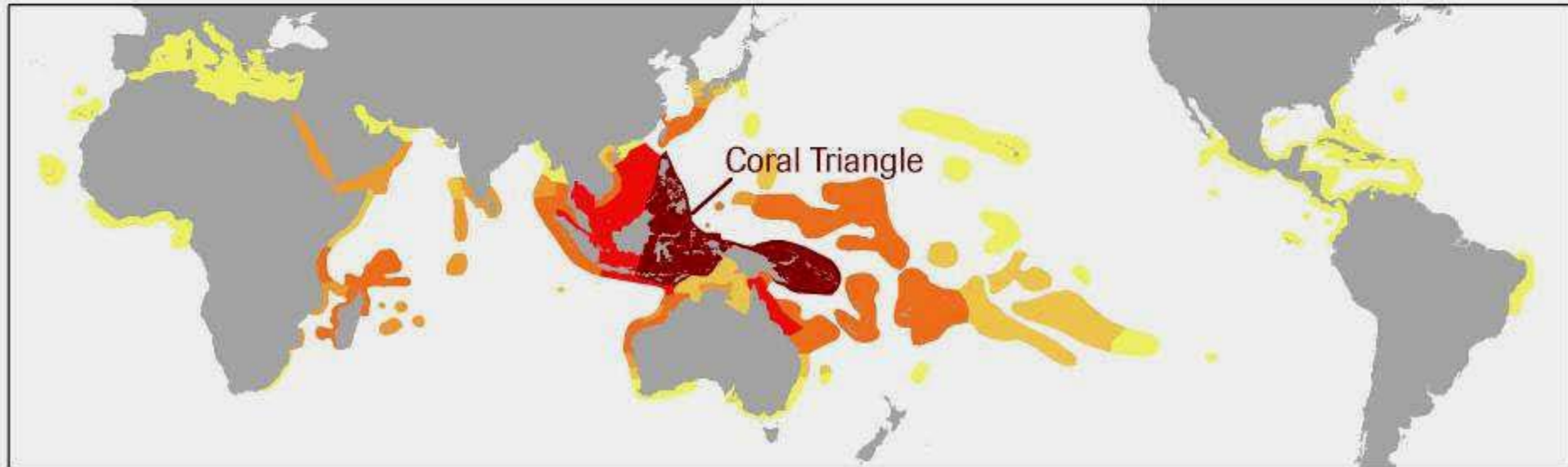
**Sendai, 13-17 November 2013**



# Coral Reefs critical fish nurseries



# CORAL DIVERSITY OF THE WORLD



Compiled from global distribution data of all coral species by Charlie Veron, Lyndon DeVantier and Emre Turak.  
Production by Stuart Kininmonth. A product of Coral Geographic, November, 2007.



# Background: Threats

- Destructive Fishing
- Overfishing
- Dredging, Mining
- Land-based Pollution
- Sea-based Pollution
- Climate change

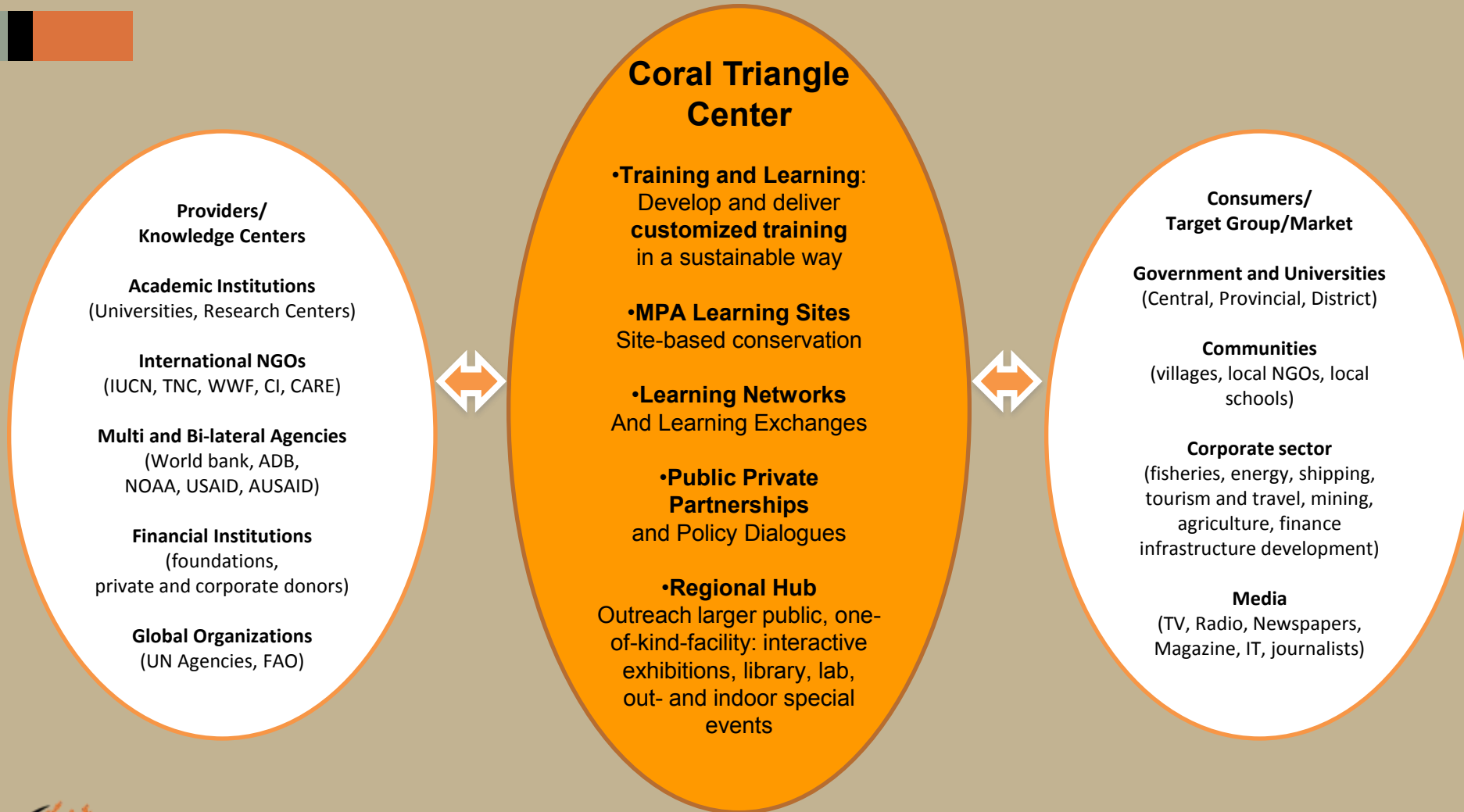




PHOTO: REEFBASE / T. HEEBER



# CTC Niche



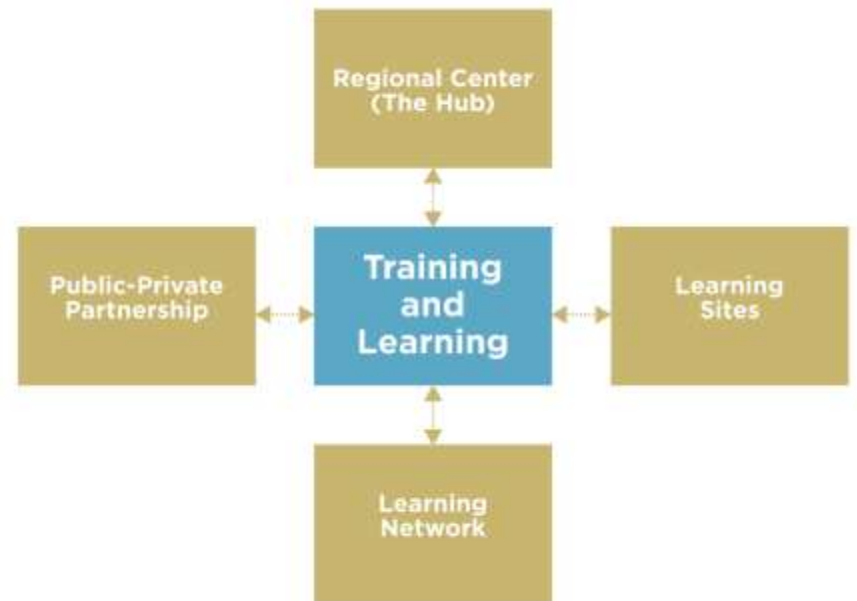
## 4. Program Overview

CTC Plan: Strategic Overview and Path Towards Sustainability



CTC consists of 5 programs:

- Training and Learning
- Learning Sites
- Learning Network
- Public-Private Partnerships
- Regional Center



# 1) Training and Learning

## Modules

- 1.Principles of Marine Protected Area
- 2.Management Training for Teachers on Marine Conservation
- 3.Marine Conservation Action Planning
- 4.Marine Protected Area Design
- 5.Marine Protected Area Management Effectiveness
- 6.Perception Monitoring
- 7.Dive Training and Introduction to Marine Biological Monitoring
- 8.Reef Health Monitoring
- 9.Marine Resource Use Monitoring
- 10.Spawning Aggregation Sites Monitoring
- 11.Training on Marine Biological Survey/ Observation
- 12.Facilitation Techniques for Marine Protected Area Public Consultation





# 1 - Training and Learning

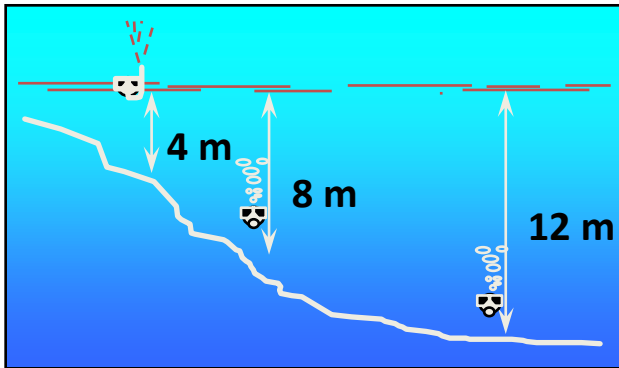
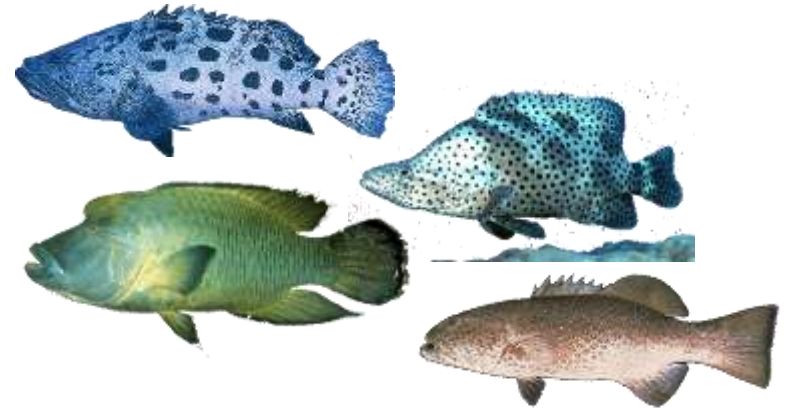
- CTC aspires to train leaders and communities to strengthen their professional competence and institutional capacity to care for marine resources and coastal ecosystems.
- Portfolio
  1. Site-based trainings
  2. Trainings for MPA managers
  3. Training of Trainers
  4. School for Marine Resources Conservation and Management (SMRCM)





# MARINE MONITORING

- Reef Health
- Spawning Aggregation
- Resource Use



# “Lifeforms and Substrate”

Acropora Branching



Coral Mushroom



Macro Algae



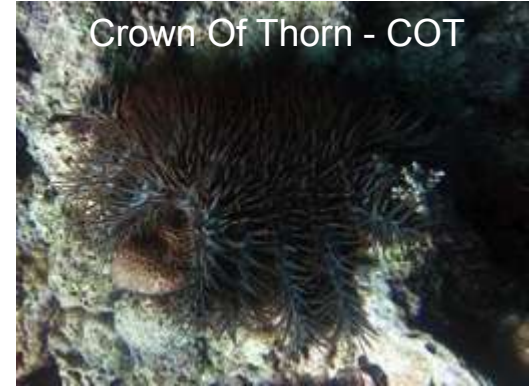
Coral Foliose



Gorgonian



Crown Of Thorn - COT



Soft Coral



Giant Clam - Other

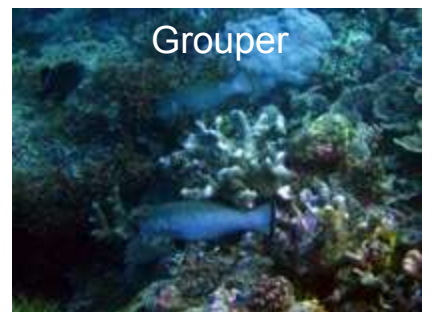
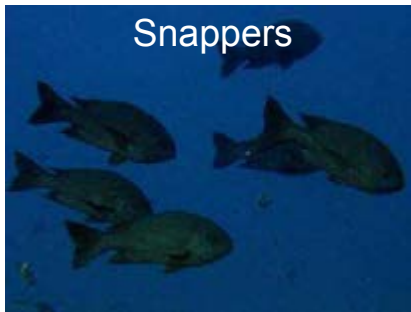


Coral Rubble



# Fish Community

1. Visual census
2. Commercial Fish Target
3. Length Estimation



# 2) Learning Sites

## Learning by doing; platforms for learning



### NUSA PENIDA

- Design
- Management
- Governance and financing
- Evaluation
- Facilitation for field training and learning exchanges



- public consultations
- Zoning plans
- Long term- Management Plan



# Nusa Penida Islands



## Nusa Penida

- Southeast of Bali Island
- Nusa Penida Islands: Penida, Lembongan and Ceningan Islands
- Klungkung District – 16 administrative villages, 40 traditional villages (mostly Balinese)- 45.000 inhabitants
- Fishers, tourism workers, seaweed farmers, farmers, cattle ranchers
- Coral reefs (300 species), mola-mola, manta rays, cetaceans, sharks, mangroves (13 species), seagrass (8 species)
- Devotion to tradition, rituals and culture, preserving sacred temples: Pura Penataran Ped, Pura Batu Medauh, Pura Giri Putri and Pura Puncak Mundi.







Copyright © Robert Delfs 2009

**Manta ray (*Manta birostris*)**



Copyright © Robert Delfs 2008 a

***Oceanic Sunfish (Mola mola)***

## Marine Resource Use

- Overlapping uses of small coastal areas – fishers, seaweed farmers and marine tourism sector
- Fishing activities vs diving sites
- Beaches and adjacent reefs: coastal resorts, marine tour operators vs. Seaweed farming
- Mangrove cutting: firewood for salt production



# Marine Recreational Operations







**Ecoourism and Seaweed Farming**

## Participatory measures and actions

- Series of public consultations with key stakeholders groups

Consensus:

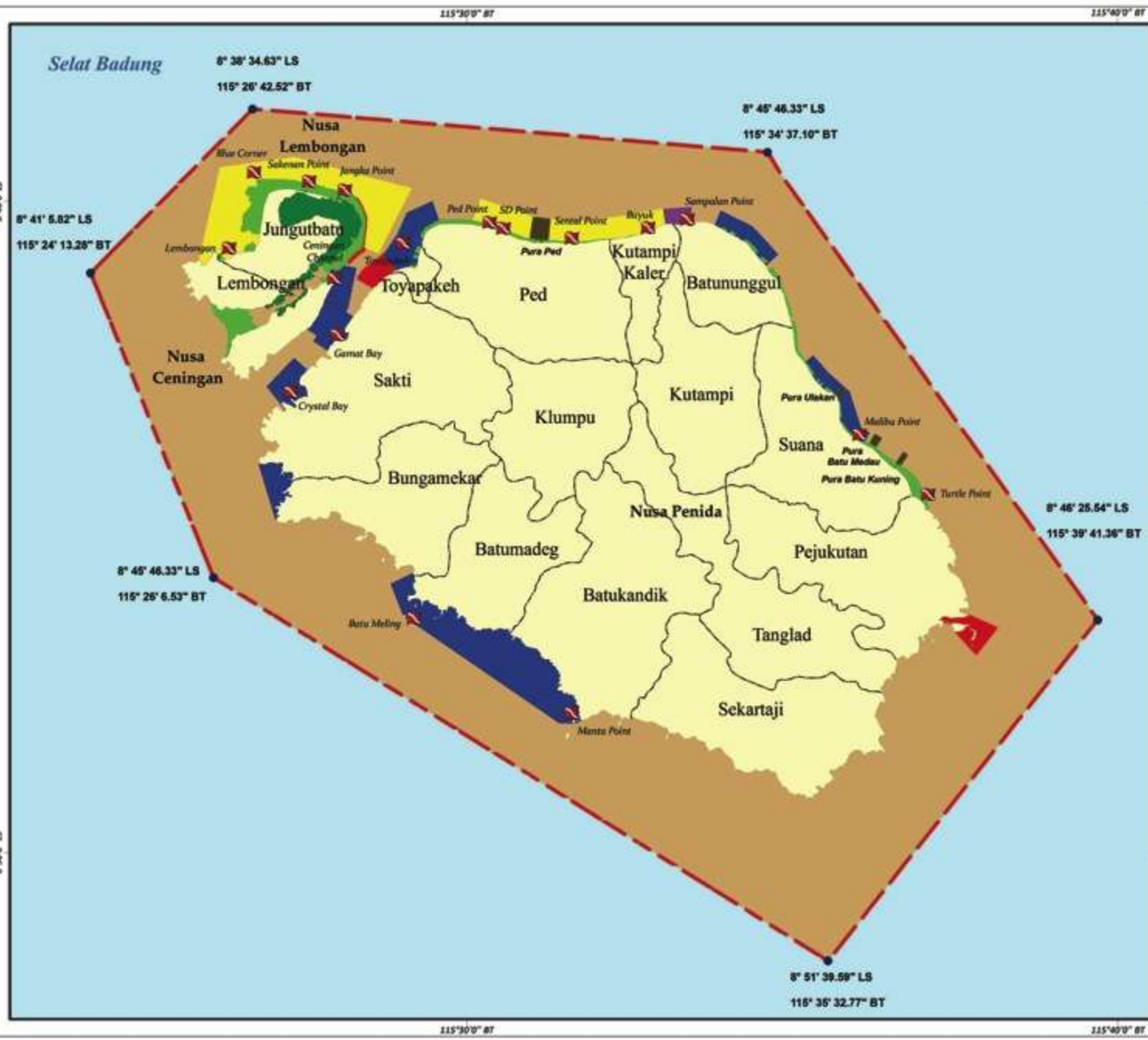
- Establishment of MPA
- Zoning system
- Open-closed areas
- Halt on mangrove cutting practices
- Mangrove rehabilitation



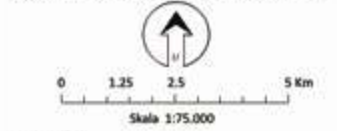
# Mangrove Rehabilitation







**Zonasi Kawasan Konservasi Perairan (KKP) Nusa Penida**  
Kecamatan Nusa Penida, Kabupaten Klungkung, Propinsi Bali



- Legenda**
- Titik Koordinat Batas Luar
  - ⚓ Lokasi Penyelaman
  - Batas Desa
  - - - Batas KKP Nusa Penida (Luas 20.057,2 Hektar)
  - Hutan Bakau
- Zona**
- Inti
  - Perikanan Tradisional
  - Pariwisata Bahari Khusus
  - Budidaya Rumput Laut
  - Pariwisata Bahari
  - Pelabuhan
  - Suci



**Deskripsi Peta**

Proyeksi : Geographic  
 Datum : WGS 1984  
 Sumber Data : Nusa Penida Geodatabase  
 Draft 1 : 17 Juni 2011  
 Draft 2 : 25 Juli 2011  
 Draft 2.2 : 27 Juli 2011  
 Final : 26 Oktober 2011  
 Layout peta oleh : Andreas Muljadi & Arief Darmawan

**Fakta:**

Luas area KKP 20.057,2 Hektar  
 Zona Inti 120,29 Hektar  
 Zona Perikanan Tradisional 17.264,27 Hektar  
 Zona Pariwisata Bahari Khusus 905,24 Hektar  
 Zona Budidaya Rumput Laut 464,25 Hektar  
 Zona Pariwisata Bahari 1.221,28 Hektar  
 Zona Pelabuhan 35,15 Hektar  
 Zona Suci 46,71 Hektar



# Nusa Penida

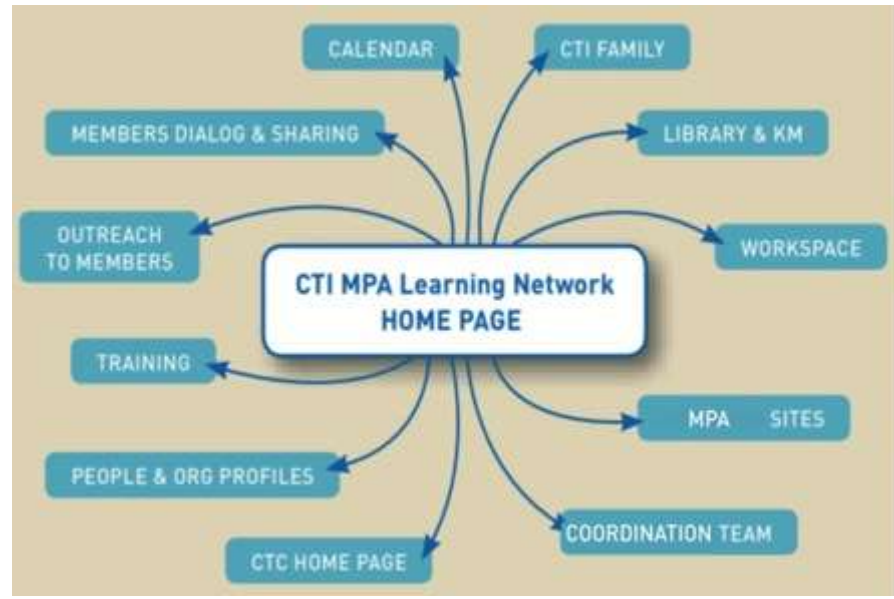
## Platform for Learning

- Zoning and management plan development
- Management body and sustainable financing mechanism development
- 12 training modules on MPA design and management
- Cross visit programs to other learning sites in CT
- Community empowerment and alternative livelihoods
- Nature laboratory for researchers, universities, and practitioners.



# 3) Learning Networks

Learning network reaching out to **MPA Managers and Practitioners** in more than **1500 MPAs** in the Coral Triangle.





### 3) Learning Networks



# A triple bottom line for marine protected areas

environmentally sound



economically viable



socially responsible



**CORAL  
TRIANGLE  
CENTER**

*Ensuring Coral Reefs for Life*

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