ADAPTASI BENCANA DARI PERUBAHAN IKLIM DI KAWASAN PESISIR DAN LAUT (FAKTOR KENAIKAN SUHU DAN KENAIKAN PERMUKAAN AIR LAUT)

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PENDAHULUAN

PERUBAHAN IKLIM (Murdiyarso, 2009)
Perubahan unsur-unsur iklim dalam jangka Waktu panjang (50-100 thn) yang dipengaruhi oleh kegiatan manusia yang menghasilkan GRK (uap air dan CO_2- metana, nitrat oksida & ozon,- gas buatan CFC)

Dicirikan oleh berubahnya median dan keragaman dari unsur iklim

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Adaptasi, mitigasi dsb

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Dampak untuk Bumi?

Kenaikan muka air laut
•Pemanasan global menyebabkan kenaikan SPL yang kemudian
•mengakibatkan terjadinya pemuaian air laut.
30% disumbangkan dari mencairnya es abadi di pegunungan, serta di daerah Artik dan Antartik.

Tergenangnya kota, lahan budidaya, mperburuk kondisi ekonomi, Ekosistem pantai, perubahan profil pantai, berkurangnya air bersih dsb

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Kenaikan suhu berapa derajat

Intergavermental Panel on Climate Change (IPCC), mengindikasikan bahwa kenaikan muka air laut secara global telah mencapai 20-25 cm dalam kurun waktu 100 tahun terakhir.

Proyeksi kedepan skenario global terburuk adalah pada tahun 210(kenaikan muka air laut rata-rata mencapai 95 cm (IPCC, 1992).

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Metode
Alat
lokasi

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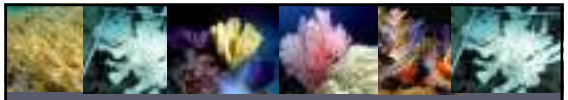

Fakta :
Hasil penelitian Purba (2010)
pengukuran tahun utuh (2006, 2007, 2008, dan 2009), suhu di Raja Ampat menunjukan kenaikan setiap tahunnya berkisar antara **0.02-0.28°C.**

Kedalaman 1 meter: 29.25, 29.53, 29.59, dan 29.62 °C
Kedalaman 3 meter: 28.96, 28.99, 29.24, dan 29.18 °C.
Kedalaman 20 meter : 28.83, 28.94, 29.11, dan 29.13 °C.

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5 Tujuan dari ADAPTASI

- PENINGKATAN PERENCANAAN DAN PENGUASAAN
- MENGURANGI EKSPOSE MEMBEBANI LINGKUNGAN
- EKOSISTEM PANTAI YANG BERFUNGSI DAN SEHAT
- DIVERSITY MATAPENCARIAN
- MENINGKATKAN KESEHATAN DAN KESELAMATAN MANUSIA

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1. Perencanaan & Penguasaan
as a primary goal

Tindakan Adaptasi:

- ❖Management sumberdaya air di pantai
- ❖Manajemen pantai terintegrasi
- ❖Rencana manajemen areal khusus

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Adaptation Measure

Integrated Water Resources Management

- ▶Pertalian yang erat (benefits and impacts) antara upstream & downstream
- ▶Pendekatan partisipasi & Multi-sectoral action
- ▶Kesadaran sumberdaya air

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Mengurangi Ekspose Membebani Lingkungan
as a primary goal

Tindakan Adaptasi:

- ❖Beach and dune nourishment
- ❖Building standards
- ❖Coastal development setbacks
- ❖Living shorelines
- ❖Structural shoreline stabilization

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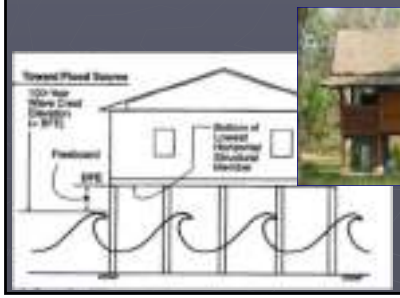
Adaptation Measure

Building Standards



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Adaptation Measure: Building Standards

Standards ↑ with risk

Structure Classification[1]	Freeboard Height (feet)	Design Flood Elevation
II – all residential	3	BFE + 3 feet
III – high occupancy building	4	BFE + 4 feet
IV – essential facilities	5	BFE + 5 feet
Public Infrastructure	5	BFE + 5 feet

[1] Based on American Society of Civil Engineers (ASCE) Standard 24-05

BFE = Base Flood Elevation

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Communicating the need for building standards

Waterplace Park, Providence, RI
High Tide (6.2 ft)

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Communicating the need for building standards

Waterplace Park, Providence, RI
High Tide (6.2 ft) plus 3 ft SLR

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Communicating the need for building standards

Waterplace Park, Providence RI
Average Spring Tide 1997- 2007 (9.89ft)
plus 3 ft of SLR

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Adaptation Measure: Building Standards

Alternative Options

Floating structures

Elevate structures over water

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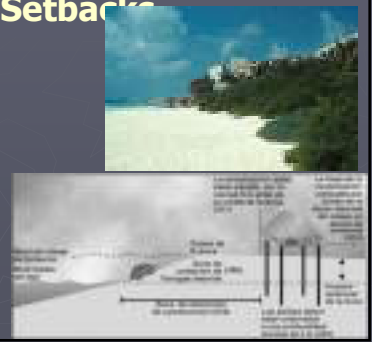
Adaptation Measure

Coastal Development Setbacks

- Consider accelerated erosion and SLR
- ID lifetime of shoreline development protection
- ID multiple benefits



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Functioning & Healthy Ecosystems

as a primary goal

Adaptation Measures:

- ❖Coastal wetland protection and restoration
- ❖Marine conservation agreements
- ❖Payment for environmental services
- ❖Marine protected areas

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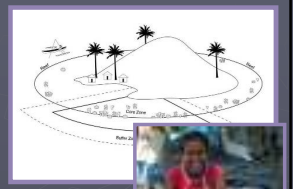
Adaptation Measure:

Marine Protected Areas

Identify areas that are:

- ▸ less prone to stressors
- ▸ representative habitat and refugia
- ▸ replicate sites as insurance for vulnerable species
- ▸ protect resilient species
- ▸ links with livelihood potential



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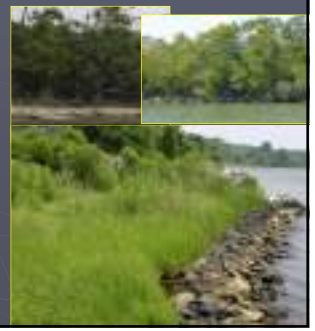
Adaptation Measure:

Living shorelines

Site selection critical. Good for low-med energy environ

- • Supports habitat
- • Identify indigenous plants & techniques
- • Soft or hybrid solutions



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Diversified Livelihoods

as a primary goal

Adaptation Measures:

- ❖ **Fisheries sector good practices**
- ❖ **Mariculture best management practices**
- ❖ **Tourism best management practices**

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Adaptation Measure

Mariculture Best Practices

- ▸ Diversify food source and livelihoods
- ▸ Evaluate siting options (temp, storms)
- ▸ Consider future conditions (species, siting)
- ▸ Mitigation and Adaptation

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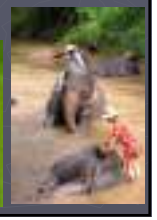
Adaptation Measure

Tourism Best Practices

- ▸ Expand corporate responsibility = triple bottom line...incorporate climate as a value
- ▸ Certify good practices
- ▸ Incorporate climate awareness



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Human Health and Safety

as a primary goal

***Adaptation Measures*:**

- **Community-based disaster risk reduction**
- **Flood hazard mapping**

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Adaptation Measure

Flood Hazard Mapping

- Consider historic, current and future scenarios
- Community education and outreach strategy
- Link traditional and high tech

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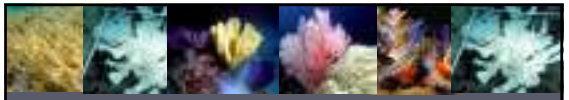

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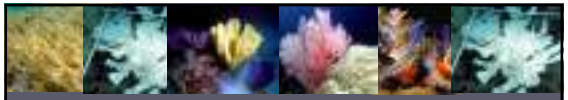

ALTENATIF-ALTERNATIF ADAPTASI TERHADAP KENAIKAN MUKA AIR LAUT

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TERIMA KASIH

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