



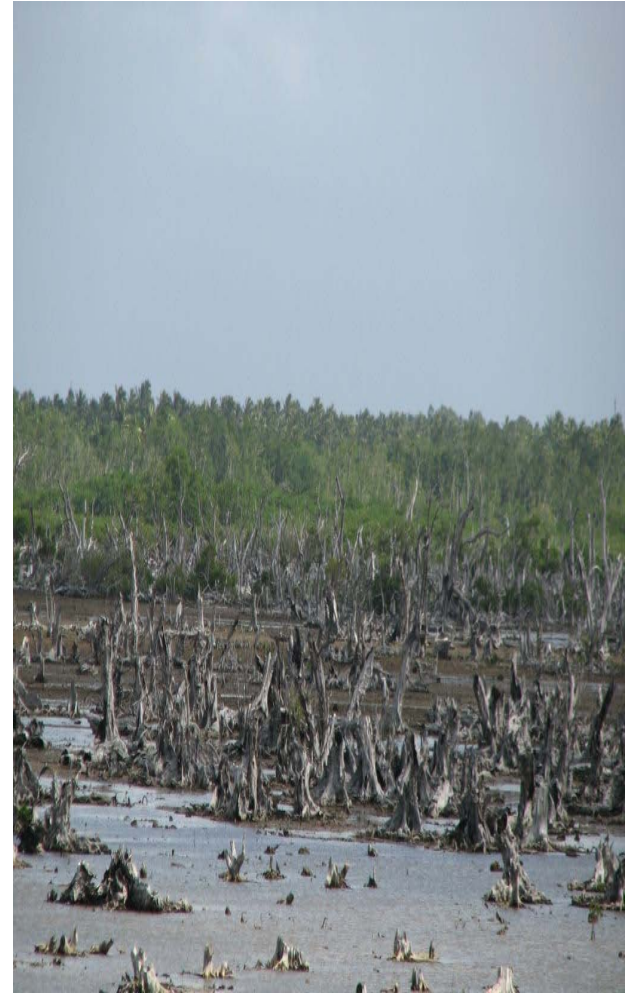
Role and relevance of economic analysis for climate change adaptation

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Challenges.....How to.....

- Convince politicians and communities of the importance of adapting today?
- Ensure economic development decisions consider costs of 'no actions'
- Select projects/ activities that provide triple win' outcomes
 - reduce risks, improve livelihoods and conserve ecosystems
- Generate sustainable financing



Our challenges...How to...Exante vs Expost.

- Convince politicians and communities about benefits of adapting today?
 - **VALUATION – benefits or costs of inaction**
 - **Costs of future disasters due to climate change**
- Encourage climate change are considered in economic development decisions **BCA of climate proofing, cost effectiveness**
- Insurance schemes to help communities and countries to cope
 - **projected costs of disasters taking into account the probabilities of the events**
- Evaluate decisions already been made



Take proactive steps now or wait and then address the problems when they happen

Examples

1. Planned climate proof projects or retrofit the project –
 - a. climate proofing road in **Kosrae**
 - b. climate proofing drains and drainage network in **Fiji**
2. Benefits & costs of risk reducing actions
 - a. water security measures in **Tuvalu, Nauru, RMI, Niue**
 - b. salt and flood tolerant crop improvements – **SI (Samoa & Vanuatu)**
 - c. Early warning system for Navua River (**Fiji**)
3. Costs of avoided disasters
 - a. Economic costs of 2009 floods in Fiji

Fiji

Without adaptation

Slow and catastrophic disaster costs of no action

- Flooding effects and the costs to people's livelihoods, assets, crops
- SLR and salinisation of agricultural fields
- Combined effects of SLR and flooding

With improved drains & drainage networks

Option A

- Reduced flooding – scale, scope and extent, frequency
- Decreased changes of salt water intrusion and their effects

Option B

- Reduced flooding – scale, scope and extent, frequency
- Decreased changes of salt water intrusion and their effects

An example: Kosrae

- Is it worth investing to climate proof the road

Or

- Build the road as per original design and then retrofit?

Kosrae

Without adaptation Costs of No action

- Regular Flooding
- Impact on the roads and increased regular maintenance

With improved Road construction standard to cope with projected climate conditions

- Reduce Flooding
- Decreased cost of maintenance

Options for Funding the Incremental Costs

Don't climate proof the road!

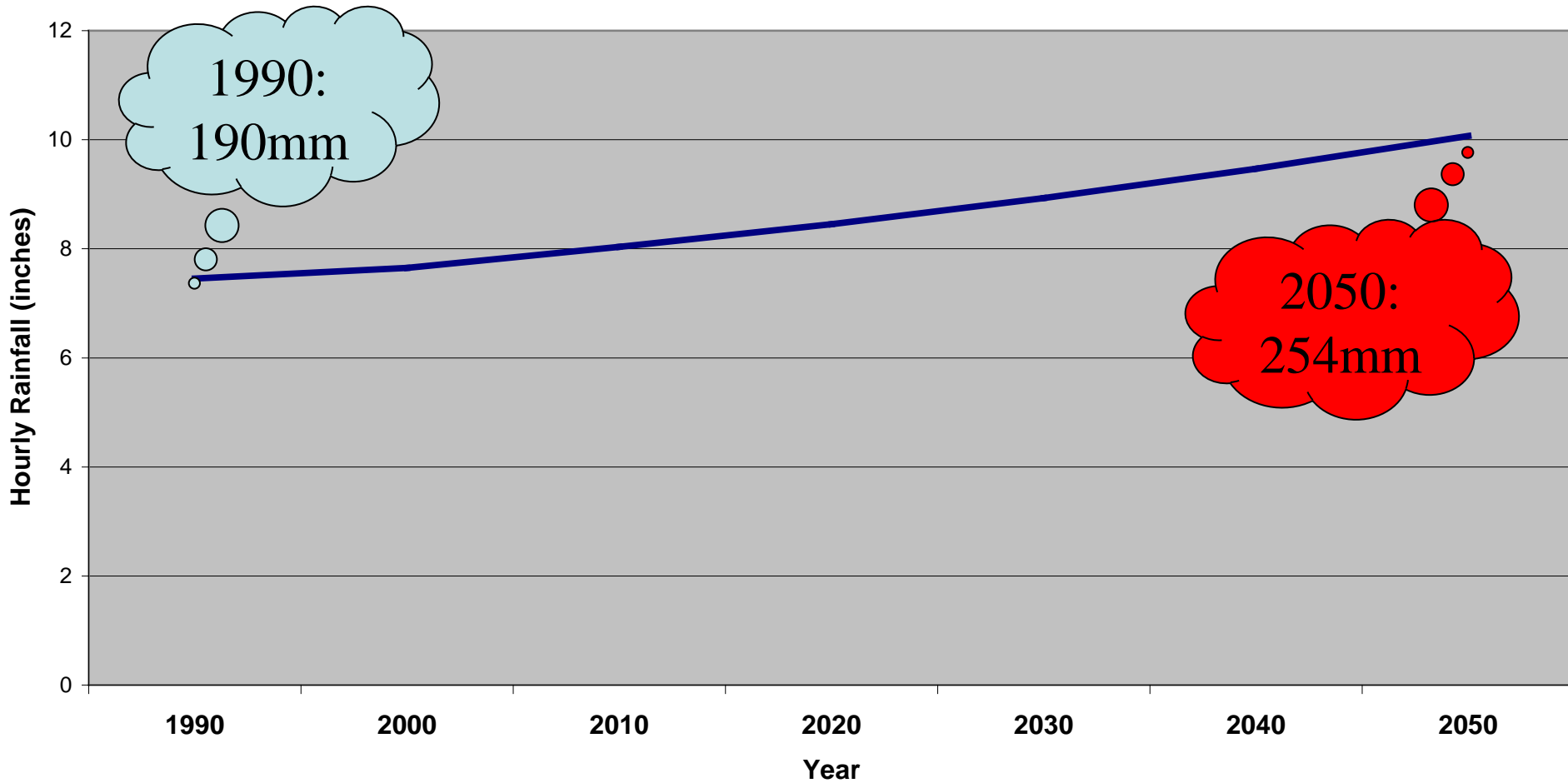
Why not?

- More important investments to be made
- Uncertainties
 - Climate change may not occur in the way we have assumed
 - An extreme event can happen at any time – we can consider only average recurrence intervals

CBA steps in Kosrae project

- With and without climate proofing of the road
 - Costs of original design
 - climate change projections & its implication on design
 - Effects of changes in weather and climate on road maintenance
- Costs of changing the road design
- Cost of addressing road maintenance problems keeping the original design

Hourly Rainfall for a Recurrence Interval of 25 Years Kosrae



Construction Costs: RS4 (6.6 km section to be built)

Costs (2004 \$US)

- ***Current Design***

Road Surface	\$1,254,414
Drainage Works	\$ 640,233
Total	\$1,894,647

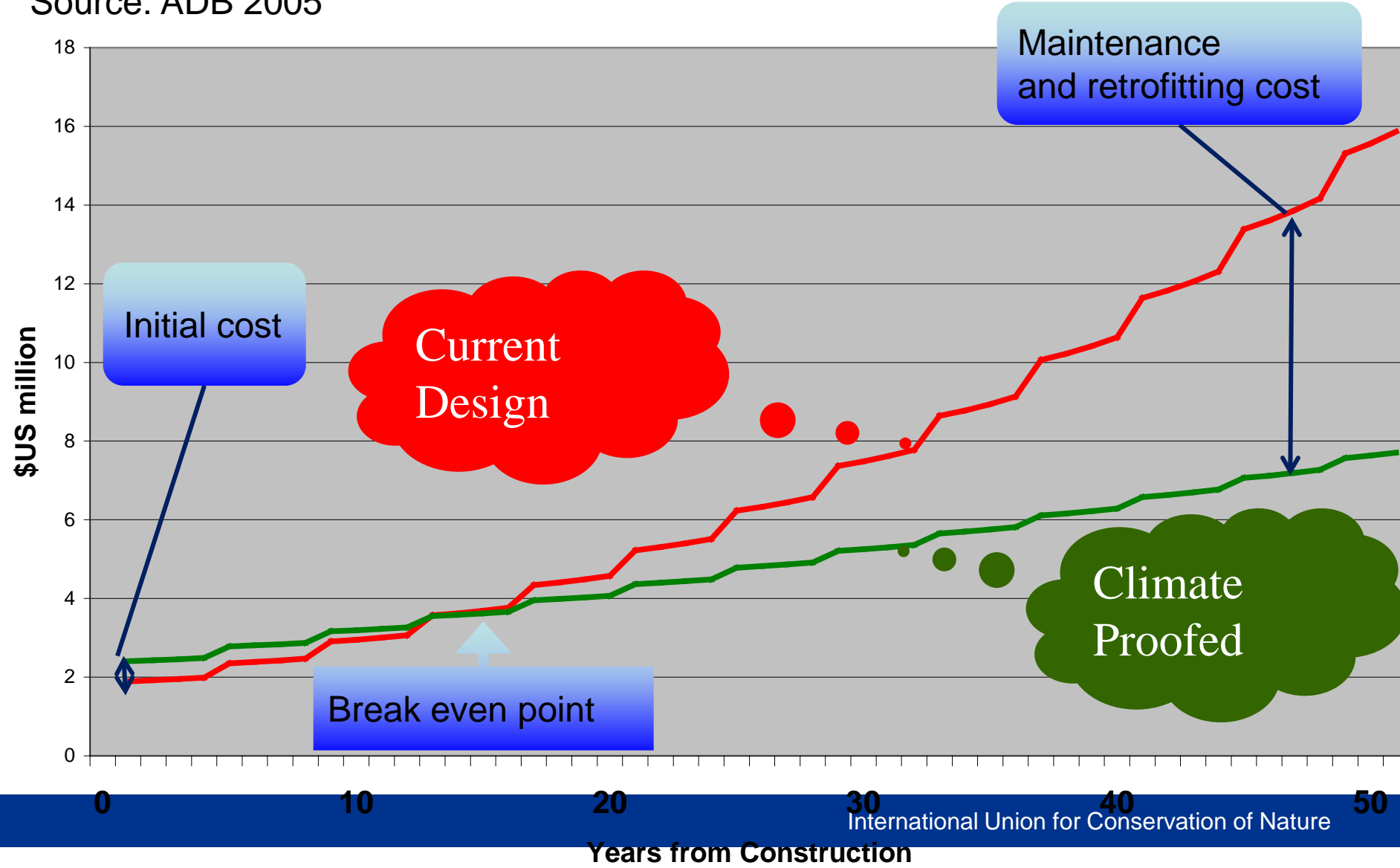
- ***Climate Proofed Design***

Road Surface	\$1,254,414
Drainage Works	\$1,151,397
Total	\$2,405,811

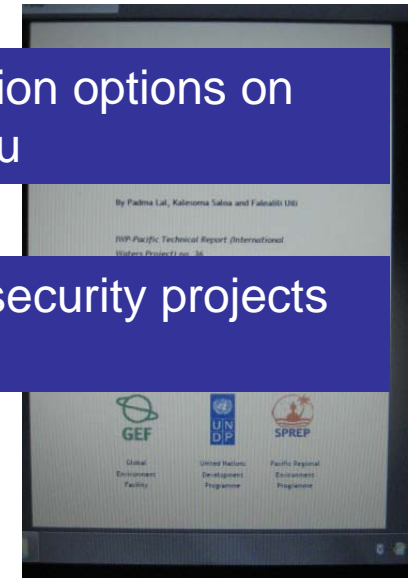
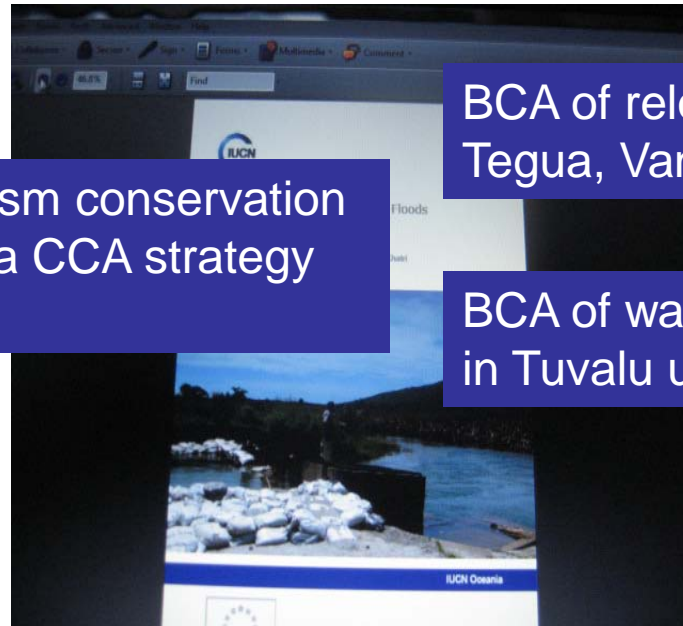
***Incremental Cost of new
design = \$511,164***

Kosrae Road Project Accumulated Costs – RS4 (to be built)

Source: ADB 2005



Economic cost of climatic risks



Value of economic analysis

- Help convince why prevention is better than cure
- Help decision-makers choose between different adaptation strategies
- Help choose between different activity designs
- Help identify the scale and scope of insurance instruments to cope with future disasters

