Climate Change and "REDD": How the Solomon Islands' forests fit in the global response to climate change

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Outline: Part 1

Introduction to climate change, forests and climate policy

- What is climate change?
- What will the impacts of climate change be in the Pacific?
- What role does deforestation play?
- Development of international climate change policy
- Growth of ‘REDD’ in international climate change policy

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Outline: Part 2

REDD - Status, options and issues

- Overview of REDD
- Advantages and Disadvantages of REDD
- Current status of REDD
- Voluntary vs compliance market
- Key Issues in REDD for Solomon Islands
- Case studies

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What is climate change?

- Greenhouse gases ('GHGs') trap the sun's radiation in earth's atmosphere
- Increases in concentrations of GHGs, caused by human activities
- Observed changes in surface temperature and sea level
- Predicted impacts:
  - Change in weather patterns: rainfall, temperature
  - Extreme weather events
  - Sea level rise

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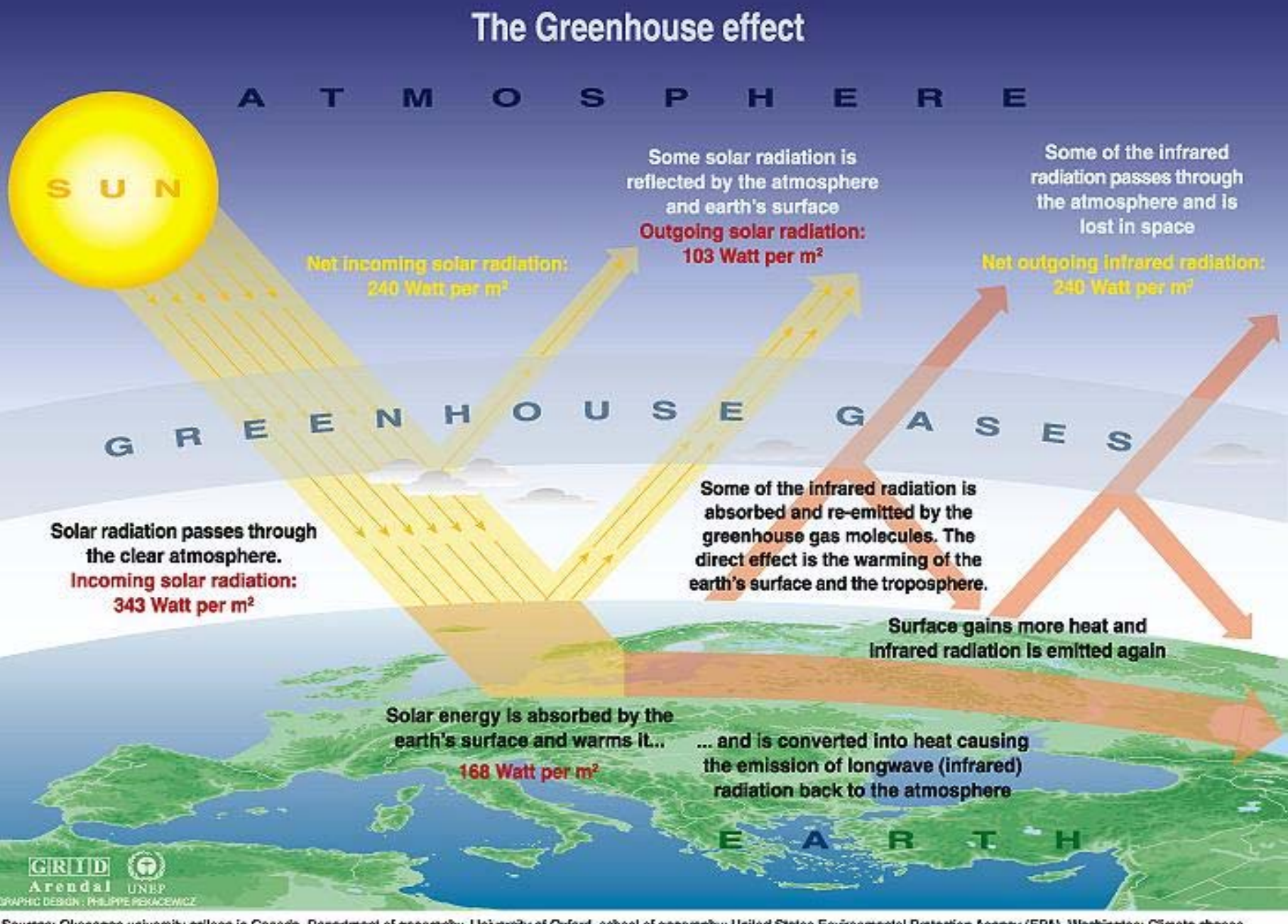
The Greenhouse effect



Sources: Okanagan university college in Canada, Department of geography, University of Oxford, school of geography; United States Environmental Protection Agency (EPA), Washington; Climate change 1995, The science of climate change, contribution of working group 1 to the second assessment report of the intergovernmental panel on climate change, UNEP and WMO, Cambridge university press, 1996.

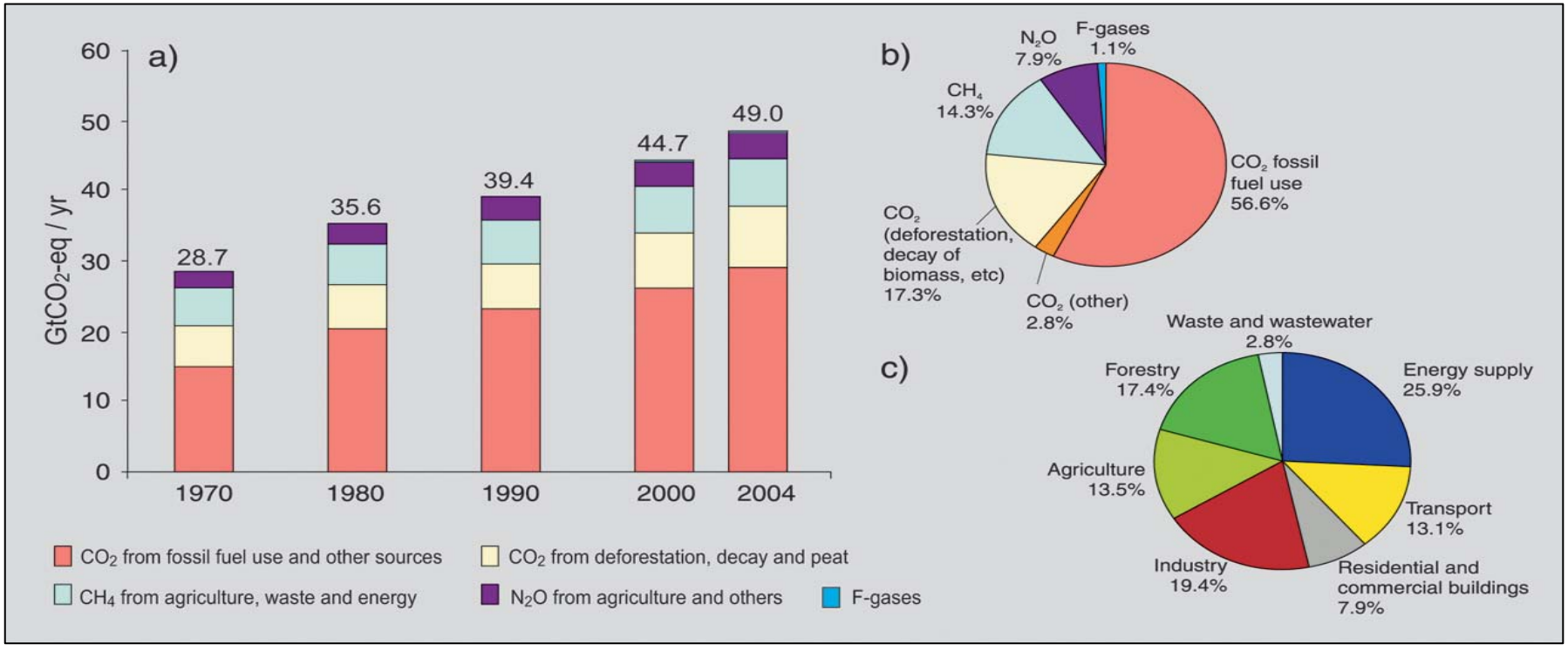
Types of Greenhouse Gases

Carbon dioxide (CO_2)

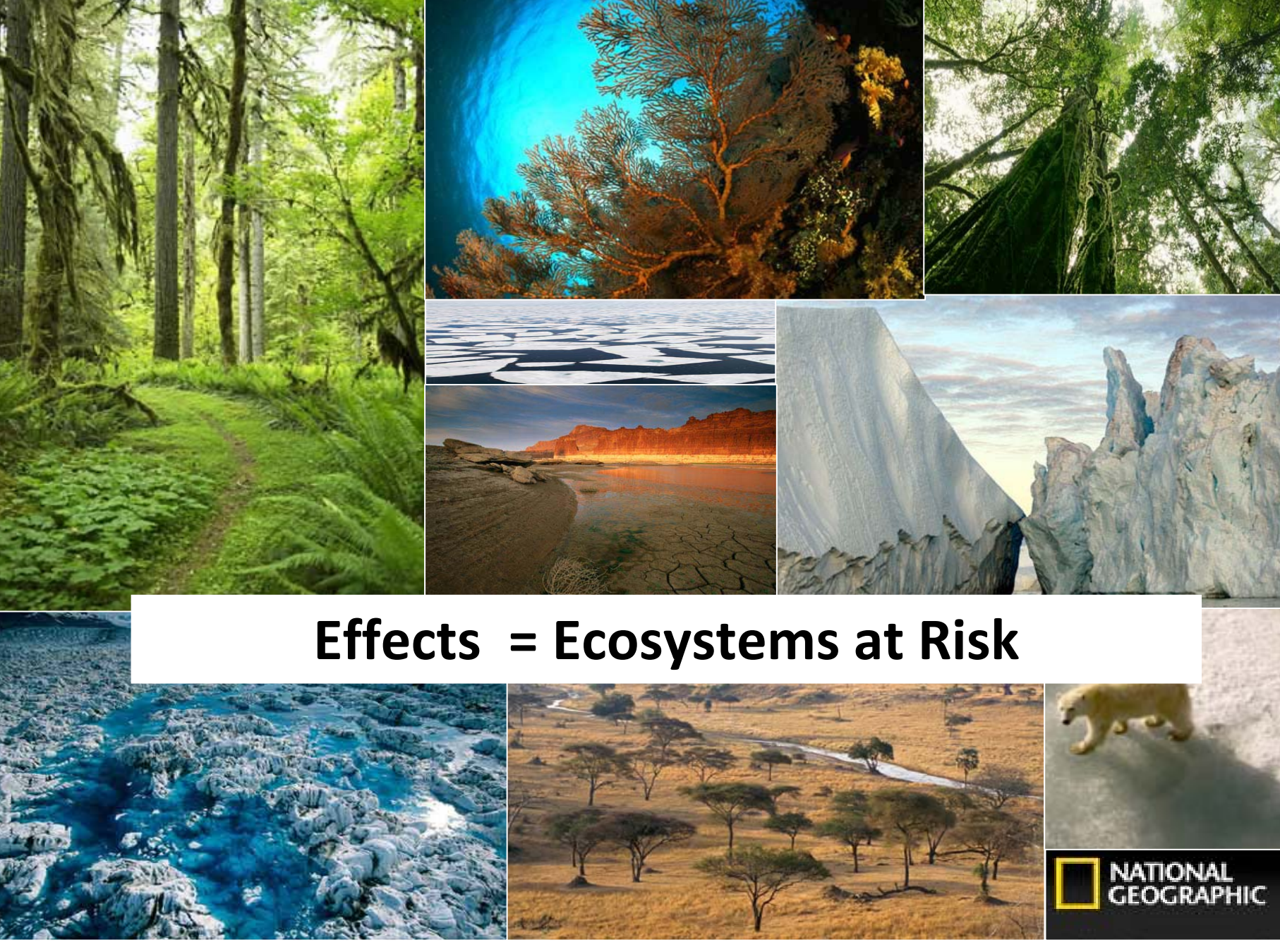
Methane (CH_4)

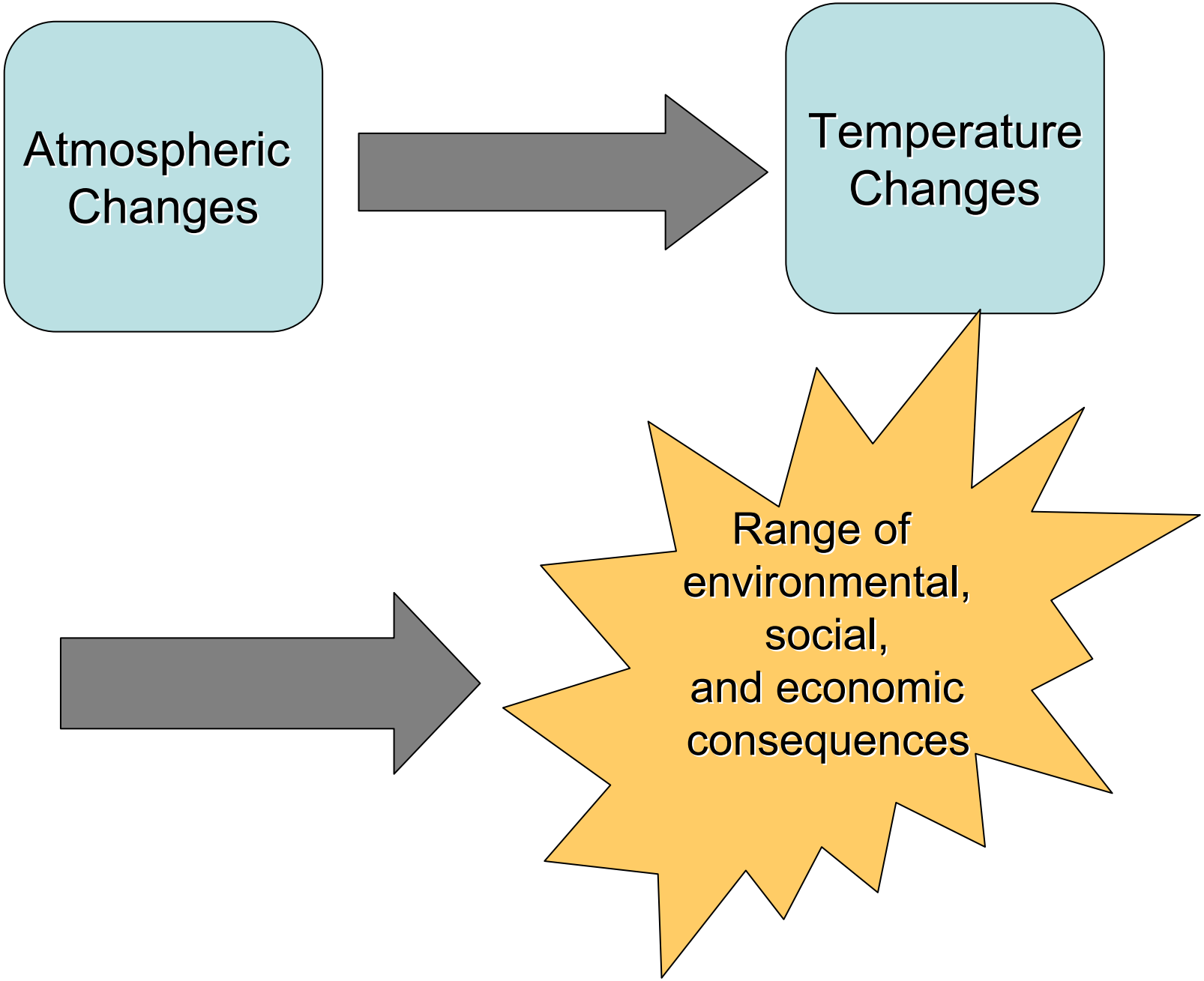
Courtesy of USEPA

Emissions of Greenhouse Gases



CO_2 = largest contributor to enhanced greenhouse effect


Effects = Ecosystems at Risk
NATIONAL GEOGRAPHIC


Atmospheric Changes
Temperature Changes
Range of environmental, social, and economic consequences

Impacts in the Pacific

- Primary climate change impacts:
  - Temperature rise
  - Sea level rise
  - Sea surface temperature rise
  - Altered precipitation
  - Increased intensity and frequency of storm events
- Secondary impacts:
  - Increased coastal erosion
  - Saltwater intrusion
  - Damage to coral reefs
  - Damage to coastal wetlands
  - Loss of biodiversity

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Vulnerability of Small Island States

- Small island states have been identified as most vulnerable to adverse impacts of climate change
- Additional vulnerability as most people live on the coast. In Pacific region, over 50% of people live within 1.5km of the shore.
- Impacts on human systems:
  - Health
  - Economies
  - Infrastructure
  - Food security

Why does deforestation matter?

- Forests are carbon sinks = they absorb and store carbon
- Deforestation releases that carbon (C02) into the atmosphere
- 17% of global GHG emissions, with the majority in developing countries
- Illegal logging accounts for 5% of carbon emissions worldwide (estimate)
- Therefore, reducing deforestation = reducing GHG emissions and maintaining carbon sinks

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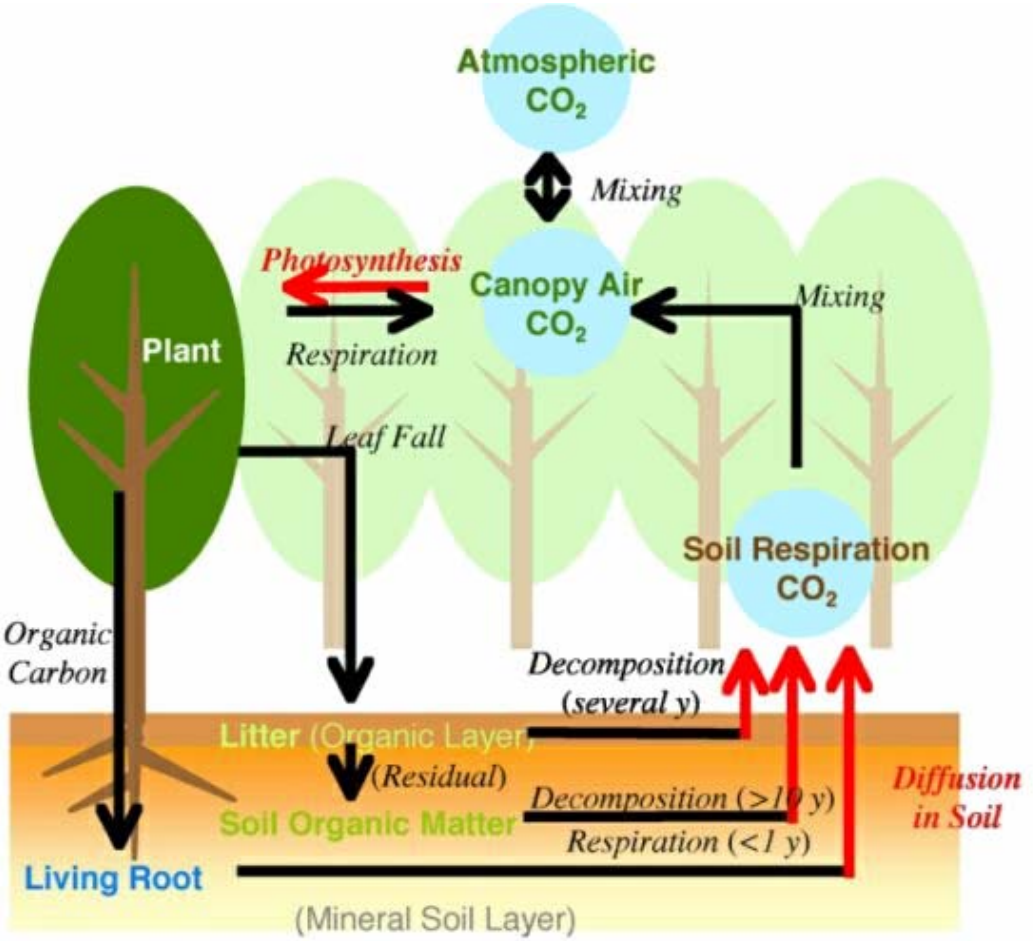
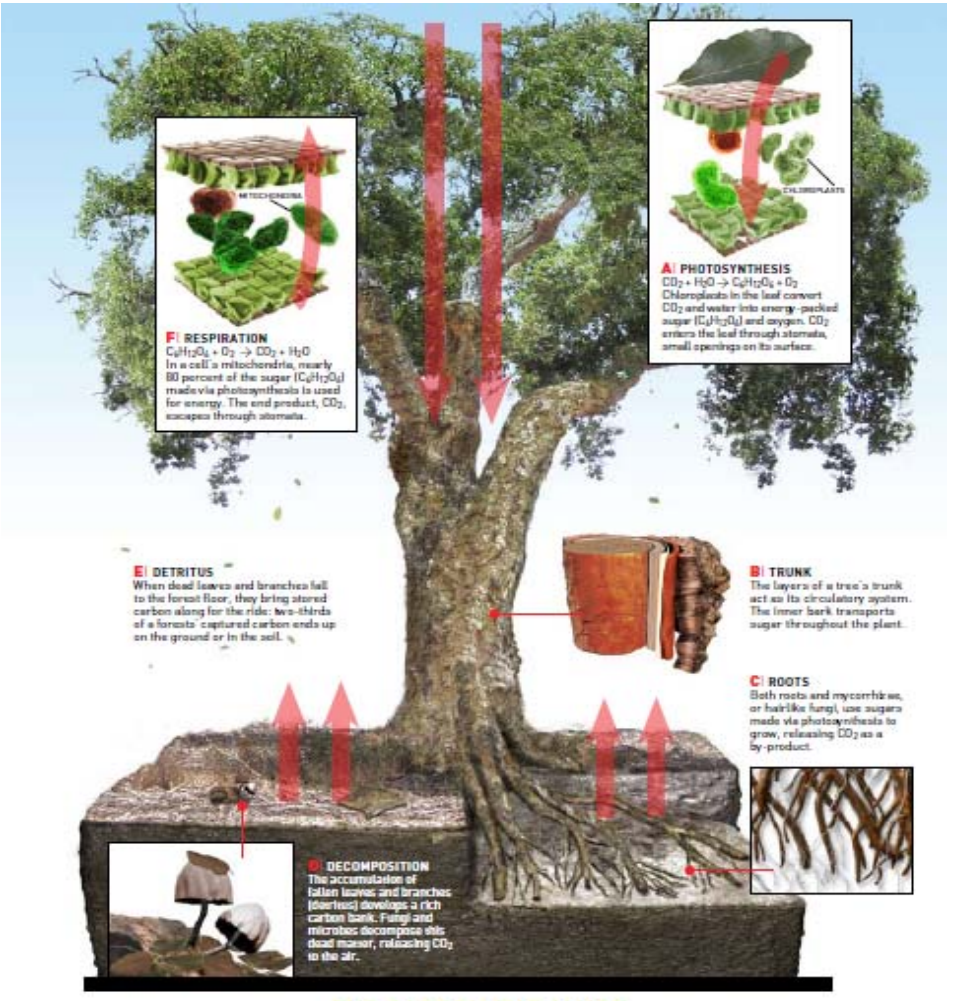
The Carbon Cycle



How forests store carbon



THE CARBON EXCHANGE

IN THE CARBON CYCLE, it's not just about the individual tree—the entire forest plays a role. Leaves take in carbon dioxide, converting it to sugar, which is carbon-based. Some of the sugar is used immediately for energy, converted back to CO_2, and released into the atmosphere. The rest is stored in living wood or dead matter, such as fallen leaves and branches. Old-growth forests, in particular, store vast amounts of carbon while continuing to absorb CO_2. —MOLLY WEBSTER

ILLUSTRATION BY MIEKE ROTH

Co-benefits of forests

- Forests provide ecosystem services:
  - water storage
  - natural buffers against extreme weather
  - protection of soil from erosion
- Protecting forests therefore has biodiversity, social and economic benefits, as well as GHG reductions

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Development of international climate change policy

- Development of UNFCCC and Kyoto Protocol
- Approaches to developed and developing countries:
  - UNFCCC
    - Parties, Principles
  - Kyoto Protocol
    - Targets, Flexibility Mechanisms (Emissions trading, CDM, JI)
- Post-Kyoto negotiations
- Growth of ‘REDD’ in this process

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UN Framework Convention on Climate Change (UNFCCC)

- Adopted 9 May 1992, in force 1994
- **Ultimate objective:**
  "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner."

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UNFCCC

- **Addresses:**
  - adaptation
  - mitigation
- **Process:**
  - Framework Convention
  - Protocol

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UNFCCC Principles

- **Global Equity** - developed countries have the largest share of emissions and therefore should take the lead
- **Global Efficiency** - cost effectiveness
- **The Precautionary Principle -** anticipate, prevent or minimise causes of climate change
- **Common but differentiated responsibilities and respective capabilities** - developed countries to take the most responsibility

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UNFCCC Parties

Three main groups, according to commitments:

- **Annex I:** industrialized countries that were members of the OECD (Organisation for Economic Co-operation and Development) in 1992, plus countries with economies in transition
- **Annex II:** OECD members of Annex I + EU – special obligations about financial resources and technology transfer
- **Non-Annex I** mostly developing countries

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The Kyoto Protocol

- UNFCCC took effect 1994, first COP Berlin 1995
- **Berlin Mandate**: agreed to work to binding commitments - voluntary approach insufficient
- **Kyoto Protocol** adopted at COP3 1997

The Japan Times

Conference adopts Kyoto Protocol

Greenhouse gas emissions to be cut by average of 5.2%

KYOTO COP3

Kyoto convention's success open to debate

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Kyoto Protocol - main features

- Shares UNFCCC objective, principles and institutions
- Sets mandatory emissions reductions targets **for Annex 1 Parties only, ie developed countries**
  - Cover 6 main greenhouse gases
  - Commitment period: 2008-2012
  - -5.2% overall
  - Commitments vary from nation to nation
- **Countries to take action to meet their targets primarily through domestic action.**
- **'Flexibility mechanisms'** – to supplement domestic actions. Different mechanisms for developed and developing countries

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Kyoto Protocol – targets

- 8% EU
  - Internal agreement ranges from -28% Luxembourg, -21% Denmark and Germany to +25% Greece and +27% Portugal
- 7 % US
  - Nb Bush administration withdrew support
- 6 % Canada, Hungary, Japan, Poland
- 0% New Zealand, Russia, Ukraine
- + 1% Norway
- + 8% Australia
  - Nb Howard govt withdrew support, Rudd ratified 2007
- +10% Iceland

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Flexibility mechanism 1: Emissions trading

- Emissions trading = reducing GHG emissions through use of a ‘market-based mechanism’
- Developed countries that emit less than their targets can sell surplus credits to other developed countries that have not met their targets
- Currently, developing countries can’t participate as they don’t have set targets

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Flexibility mechanism 2: Project-based

- Projects to generate credits to help meet targets
- **Joint Implementation (JI)**:
  - Annex 1 country can implement projects in the territory of another Annex 1 country
- **Clean Development Mechanism (CDM)**:
  - Annex 1 country implements project in non-Annex 1 country
  - To reduce GHG emissions and promote sustainable development
  - To generate investment in developing countries
  - Technology and expertise transfer
  - Approved private companies and organisations can participate

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Clean development mechanism

- Wind farms
- Rural project making use of solar panels
- Hydropower projects
- Reforestation of degraded land
- Not reduced or avoided deforestation

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Implementing the Kyoto Protocol

- Kyoto – set out mechanisms, but no operational rules and details
- At Marrakesh (Morocco) in **2001** (COP7) details were finally agreed
- Domestic actions must constitute a '**significant element**' of Annex 1 efforts
- Ratification
  - KP much slower than UNFCCC (stricter commitments)
  - 9 years after text adopted, it entered into force 2005
  - To date, 174 parties have ratified
  - Commitment period 2008-2012

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History of 'REDD'

- **R**educed **E**missions from **D**eforestation and **D**egradation = **REDD**
- **Growing awareness about contribution of deforestation to global GHG emissions**
- Rejected for inclusion in Kyoto Protocol – too complex
- Kyoto commitment period ends 2012
- In **2005** UNFCCC meeting (Montreal) –inclusion of REDD mechanism proposed for post-2012
- PNG and Costa Rica - Coalition for Rainforest Nations (CfRN)
- Idea: to establish an **international finance mechanism** to provide **incentives for developing countries** to reduce emissions from deforestation

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UNFCCC - Bali, 2007

- At Bali, discussions on post 2012 commitments
- Issue: relative action between developed and developing countries
- Deadlock in last session due to USA position on technology and financial assistance
- Kevin Conrad, ‘special envoy’ for PNG: ‘lead or get out of the way’
- Turning point

Source: IISD/Earth Negotiations Bulletin

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Bali Action Plan

- “Road map” outcome from UNFCCC 2007
- **Bali Action Plan** requires parties to consider policy approaches and positive incentives for REDD in developing countries
- **REDD-plus** calls for consideration of:
  - Role of conservation
  - Sustainable management of forests
  - Enhancement of forest carbon stocks

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Towards 2012

- Growing impetus to address REDD
- UNFCCC COP 2008 (Poznan, Poland) - little progress and contentious discussions about REDD = weak reference to indigenous peoples
- Funding bodies include World Bank, UN-REDD (FAO, UNDP, UNEP)
- Ongoing work by technical committees/ inter-sessional meetings
- Focus on generating a formal text to be negotiated at COP 15 in **Copenhagen, December 2009**

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Copenhagen

- Little achieved; ‘Copenhagen Accord’ not binding
- Some movement on REDD: Accord calls for “immediate establishment of a mechanism including REDD-plus, to mobilise financial resources from developed countries”
  - $30 billion USD 2010-2012;
  - $100 billion USD by 2020 for mitigation actions, including REDD-plus
- Technical body adopted a decision on methodological issues
- REDD mechanism yet to be determined

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Summary: Part 1

- Climate change is occurring due to increasing GHG emissions, a result of human activities
- UNFCCC recognises ‘common but differentiated responsibilities’ and was widely ratified
- Kyoto Protocol has been more challenging to implement; commitments end 2012
- REDD introduced as potential financial mechanism to provide incentives to reduce deforestation in developing countries
- REDD likely to proceed in the future, but how?

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Part 2: REDD - Status, options and issues

- Overview of REDD
- Advantages and Disadvantages of REDD
- Voluntary vs compliance market
- Current status of REDD
- Key Issues in REDD for Solomon Islands
- Case studies

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Overview of REDD

- **R**educing **E**missions from **D**eforestation and Forest **D**egradation

  Or '**avoided deforestation**'
- Financing mechanism to reduce emissions from developing countries with tropical forests:
  - **significant**
  - **cheap**
  - **quick**
- "win-win"?
- Reality = very complicated
- Serious option for post-2012 agreement; outcome from Copenhagen suggests it will happen

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Advantages and Opportunities

- “Win win”
- **Efficiently** and **effectively** reduce global GHG emissions
- **Financial benefit** from participation in international carbon market = funding for sustainable development
- Enhance protection and sustainable management of tropical forests
  - Protect & enhance **livelihoods** for forest dwelling communities, **reduce poverty**
  - Conserve **biodiversity**

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Disadvantages and Risks

- **Discourage developed countries** from making their own fossil fuel emissions reductions
- If designed, implemented, managed incorrectly:
  - **Harm wellbeing** of forest communities, human rights violations
  - Fail to alleviate **rural poverty**
  - Reward persistent **poor governance and corruption**
- Inclusion of REDD mechanism could flood the trading markets with many credits = carbon price would drop
- **Equity**: developed v developing countries

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Voluntary vs compliance market

- No international REDD mechanism permitting trading
- A **voluntary offset market** is developing
- Standards to certify voluntary projects
  - **Voluntary Carbon Standard**
  - **Climate, Community and Biodiversity Standard**
- Both have forest project standards
- Estimates voluntary market worth $335 million in 2007 and $705 million in 2008 (USD)

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Voluntary standards

Voluntary Carbon Standard (VCS):

- Focus on carbon accounting: permanence, additionality, monitoring and verification

  http://www.v-c-s.org/

Climate, Community & Biodiversity Standards (CCBS):

- Focus on community, biodiversity and emission reductions ie social and environmental impacts too (multiple benefits)
- Assists in design of project, as well as throughout the life of the project (monitoring)

  http://www.climate-standards.org/

- Ideally, projects should be certified under **both**

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Current status of REDD

- Currently:
  - Only voluntary market exists
  - No international compliance market
- Voluntary market is speculative but legitimate, and is anticipating a future compliance market
- Voluntary market may facilitate move to development of compliance market
- If REDD is included in the post Kyoto agreement, international carbon markets may be established and REDD credits could be traded
- After Copenhagen, it seems likely that REDD will eventually proceed, yet uncertainty remains

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Current status of REDD

- World Bank and UN (FAO, UNDP and UNEP) are both funding **capacity building** and **pilot projects** around the world
  - World Bank Forest Carbon Partnership Facility (FCPF)
  - UN-REDD Programme
- Aimed to assist developing countries **prepare for REDD**
- Other international and domestic NGOs are also involved in helping countries around the world

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REDD in the Pacific

- CfRN members include **Fiji, PNG, Solomon Islands, Vanuatu, Samoa**
- **PNG** has been leading the push for REDD:
  - Established an Office of Climate Change and Environmental Sustainability
  - Two “official” pilot projects and many reports of ‘carbon trading’
  - Signed up to UN-REDD ($2.5m) and FCPF
  - Draft framework climate change policy
  - Assistance from Australian government
- **Vanuatu** also signed up to FCPF

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Solomon Islands

- With current rates of harvesting, the natural forest resource could be exhausted by 2015
- Significant impacts include:
  - Loss of forest estate and biodiversity, and forest conservation opportunities
  - Social impacts for forest dependent communities (loss of forest cover and traditional produces and uses)
  - Loss of rural employment and reduced revenue opportunities for rural landowners
  - Loss of foreign earnings
  - Loss of government revenue

Source: National Forest Resource Assessment Update, AusAID 2006

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Could REDD provide an alternative?

Some key issues

- International <=> national level
- Carbon accounting
- Funding
- Land tenure
- Carbon rights
- Benefit sharing
- Co benefits
- Consultation and participation
- Governance and institutional structures

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Carbon accounting

- **Definitions** – what is ‘forest’? What is ‘forest degradation’?
- How to **monitor, report and verify** emission reductions
  - Technically difficult
  - Eg. Satellite monitoring, with ground truthing?
- **Baselines** – a reference scenario is critical for effectiveness
  - Eg. Historical deforestation data vs projected trends
  - Equity issues
- **Leakage**

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Funding

- **Upfront finance –** communities that rely on forests need income; but must be tied to performance
- **On-going finance** also required – monitoring compliance and carbon stocks
- **Non-market:**
  - Financial mechanisms under UNFCCC
  - Official development assistance
  - Domestic funding eg through taxes
- **Market:**
  - Carbon trading
- **Dual?**
  - Funds for early action and capacity building
  - Long term = carbon trading
- Tied to strong requirements for good governance eg to address drivers of deforestation

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Land tenure

- Laws governing **resource and land tenure** are critical
- Secure tenure to ensure forest communities are not vulnerable to **dispossession**, and to give **ability to negotiate**
- Tenure reform likely to be required
- Arrangements tailored to **local needs**
- **Community participation** and **dispute resolution mechanisms** necessary to avoid conflict
- Problem of ‘paper’ vs reality

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Carbon rights

- Who owns the **right to carbon**?
  - Separate from **land** and **trees**?
  - News laws may be necessary to ensure position is clear
  - **Secure**, and established over **long time frames**: permanence
  - Example: NSW ‘proft a prendre’ carbon sequestration right
    - Separate from land ownership
    - Can be bought, sold, mortgaged etc
    - Subsequent landowners bound

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Benefit sharing

- How should financial benefits from REDD be allocated?
- Concern that indigenous people/forest communities may lose out
- Must be **clear** how benefits will be distributed
- Must be **equitable**
- Payment to State for distribution vs direct payment to communities
- Mechanisms for **transparent and accountable financial transfers** critical

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Co-benefits

- REDD offers **environmental co-benefits** (biodiversity protection; soil and water quality and availability; resilience to impacts of climate change)
- REDD must be '**pro poor**'
- REDD must provide **human rights protection** and **improvements in forest governance**
- To ensure these co-benefits, drivers of illegal deforestation must be addressed, and positive incentives provided for stronger forest management

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Participation and consultation

- Human rights issue
- REDD is complex
- **Free and prior informed consent**
  - Access to information and education
  - Capacity building and technical assistance
- **Full and effective participation** by local communities at all stages of decision making
  - policies/strategies, at local, national and international levels
  - about benefit sharing, land tenure, co-benefits
  - in projects
- **Dispute/conflict resolution mechanisms essential**

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Governance and institutional structures

- How will REDD be managed or controlled?
- **Project-based** approach v **national level** schemes
  - Leakage issue
- Top down v decentralised
- Corruption and poor governance means that broader **reform of forest governance** may be necessary
- Need for national multi-stakeholder groups (civil society, local communities etc) to ensure transparency and accountability
- Third party **monitoring and verification**
- Institutional capacity

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Illegal Logging and REDD

Estimated proportion of illegal timber exports from REDD candidate countries in 2007

Source: based on estimates from http://www.globaltimber.org.uk/IllegalTimberPercentages.doc except Colombia (World Bank estimate).

Source: Global Witness

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Case study: Oddar Meanchey, Cambodia

- 60,047 hectares
- Deforestation at 2% 2002-2006
- First project involving suspension of a logging license
- **Output:** 8 million tonnes of CO2 over 30 years
- **Certification:** VCS and CCBS in progress
- **Parties:** Community Forestry International, Forestry Administration; Royal Government of Cambodia; Terra Global Capital; 13 community forestry groups (58 villages)
- **Funding:** Royal Danish Embassy; MacArthur Foundation; Terra Global Capital (technical work for carbon measurement).
- Other NGOs assisted with implementation at provincial level

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Oddar Meanchey, Cambodia

- **Project activities:**
  - Community forestry group strengthening (improved management); Networking with Forestry Authority and neighbouring villages
  - Strengthening Tenurial Authority –mapping and boundary determination
  - Woodfuel savings – introducing improved cook stoves
  - Fire control
  - Illegal logging control – volunteer patrols
  - Stronger coordination with various government levels
  - Creation of financial incentives for successful protection
  - Development of annual carbon stock monitoring systems
  - Agricultural intensification

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Oddar Meanchey, Cambodia

- **Benefit-sharing**:
  - Ministerial decree - at least 50% of revenue from the project to local communities;
  - Continued access for use by local communities factored into carbon accounting eg. Community-based ecotourism infrastructure;
  - Proposed to assist rural people to gain legal tenure rights over local forests
- **Carbon rights:**
  - Only Government Forestry Authority can sell the carbon
- **Legal framework:**
  - Agreement signed between Government and communities to clarify rights.
  - Government owns land but communities have long term legal tenure and management rights

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Case study: Juma Reserve, Amazon, Brazil

- High risk deforestation area
- Approximately 17% of Amazon in Brazil already lost
- Without project, estimate that 62% of reserve would be lost (210,885,605 tonnes of CO2)
- **Output** : avoided deforestation of 589,612 ha from 2006 to 2050
- **Parties**: Initiated by a nonprofit institution (FAS)" Partnership between Amazonas Government and a Bank; state secretary, Marriott International (hotel) and an environment institute
- **Funding**: $2million US from Marriott; FAS spend total of $294,117 from 2008-2011 for implementation; government $4669,175
- **Certification**: CCBS (gold); VCS also being sought.

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Juma Reserve, Amazon, Brazil

- **Legal framework**: State law authorizes the state of Amazonas to 'alienate reductions of emissions and carbon credits' of which it is the beneficiary or title holder
- **Monitoring:** Satellite images
- **Programs:**
  - Strengthening of environmental monitoring and control
  - Income generation through promotion of sustainable business
  - Community development, scientific research and education, and
  - Direct payment for environmental services
- **Benefit sharing**: State policy created 'Forest Allowance Program':
  - Payments to traditional communities as incentives to reduce deforestation
  - 4 components to supplement income and get families involved in conservation

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Case study: Ulu Masen, Aceh, Indonesia

- Sumatra island Indonesia
- 750,000 ha
- 60% of area zoned to be logged; 3 concessions for 161,000 ha already granted
- Estimate is 38% of forest would be lost without the project = 100 million tonnes of CO2 emissions avoided over 30 years
- **Parties**: Governor; Flora and Fauna International and other NGOs
- **Funding:** Carbon Conservation Limited assisting with project design, development and finance. Funding for initial implementation will come from development funds; sale of credits will sustain the project. Closely associated with World Bank Multi-Donor Fund's Aceh Environment and Forest project
- **Certification**: CCBS (silver rating)
- **Monitoring**: ultra-light planes, satellite images and ground inspections

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Ulu Masen, Aceh, Indonesia

- **Laws**: New regulations on pilot projects, revenue sharing rules.
- **Project activities:** alternative livelihoods, increased illegal logging patrols, fund to support limited community-based sustainable logging
- **Community consultation**: at all levels, including with traditional religious leads responsible for land and resource management
- **Land tenure:** problematic – conflict and tsunami: no clear policy or law
- **Carbon rights**: unclear
- **Benefit sharing**: still under design. Project Design Document states that communities, NGOs will be supported to participate in developing strategies to determine distribution.

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Lessons from case studies

- Development of REDD is **uncertain**, people are learning through implementation of pilot projects
- **Accreditation** under CCBS **and** VCS
- **Pilot projects** likely to be important in terms of the design of possible future mechanism for international REDD context
- Not surprisingly, the most difficult, and usually unresolved issues, are:
  - **land tenure**
  - **benefit sharing and distribution of finances**
  - **carbon rights**
- Very few, if any, comprehensive **laws or regulations** on these aspects

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Future directions

- **REDD mechanism in post Kyoto agreement under negotiation**
- **Many issues to be resolved:**
  - **How will "forests" and "forest degradation" be defined?**
  - **How will REDD affect indigenous and forest dependent people?**
  - **Institutional arrangements**
  - **Government accountability**
  - **How will REDD be funded?**
  - **Land tenure arrangements**
  - **Dispute resolution mechanisms**
  - **Ownership rights to carbon**
- **Pilot projects under development for voluntary market**
- **REDD credits from current projects could be used for a future international compliance market**

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Further information and assistance

- To follow progress on REDD: http://www.redd-net.org/
- The EDO welcomes requests for assistance.
- If you would like help from the EDO, contact us:
  - email me at gillian.duggin@edo.org.au
  - call +61 2 9262 6989

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