



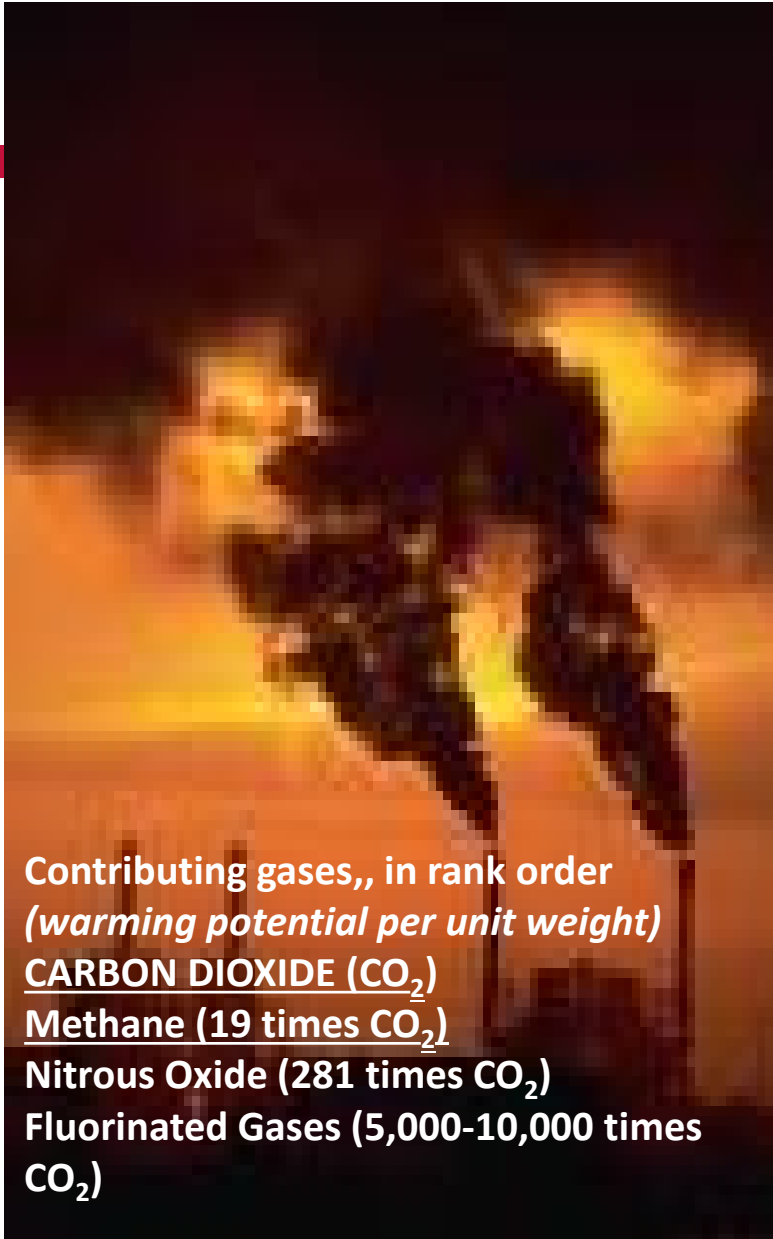
USAID
FROM THE AMERICAN PEOPLE

Incorporating GCC Adaptation & GHG Mitigation in Project Design

GEMS Environmental Compliance/ESDM Training Workshops
Africa –Asia-Latin America-Middle East 2012-2013

Global Climate Change (GCC)

- ❖ ***Increasing concentration of greenhouse gases (GHGs) in the atmosphere are altering global climate***
 - *Increase in global average temperature, most extreme at poles (= sea level rise)*
 - *Changes to precipitation patterns; ocean circulation*
 - *Timescale: discernible NOW, changes will accelerate.*



Contributing gases,, in rank order
(warming potential per unit weight)

- CARBON DIOXIDE (CO₂)**
- Methane (19 times CO₂)**
- Nitrous Oxide (281 times CO₂)**
- Fluorinated Gases (5,000-10,000 times CO₂)**

Climate Change Impacts on Environment

Variability in water supply, quality, and distribution. More competition and cross-border conflicts over water resources

WATER RESOURCES

AGRICULTURE



Loss of habitat, species and protective ecosystems, migratory shifts, ocean acidification

ECOSYSTEMS

FORESTRY



Increasing incidents of infectious, water-borne and vector-borne diseases, heat stress & mortality, additional public health costs from air pollution

COASTAL SYSTEMS

PUBLIC HEALTH



Less predictability in crop yield, changing irrigation demand, growing risk of pest infestations

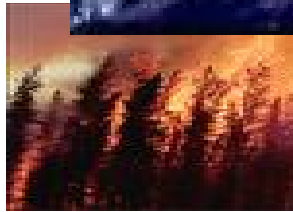
Changes in forest composition, health & productivity

Erosion, inundation, salinisation, stress on coastal forests, marshes, wetlands

GCC Impacts: General

Increase in global average temperature, most extreme at poles (= sea level rise)

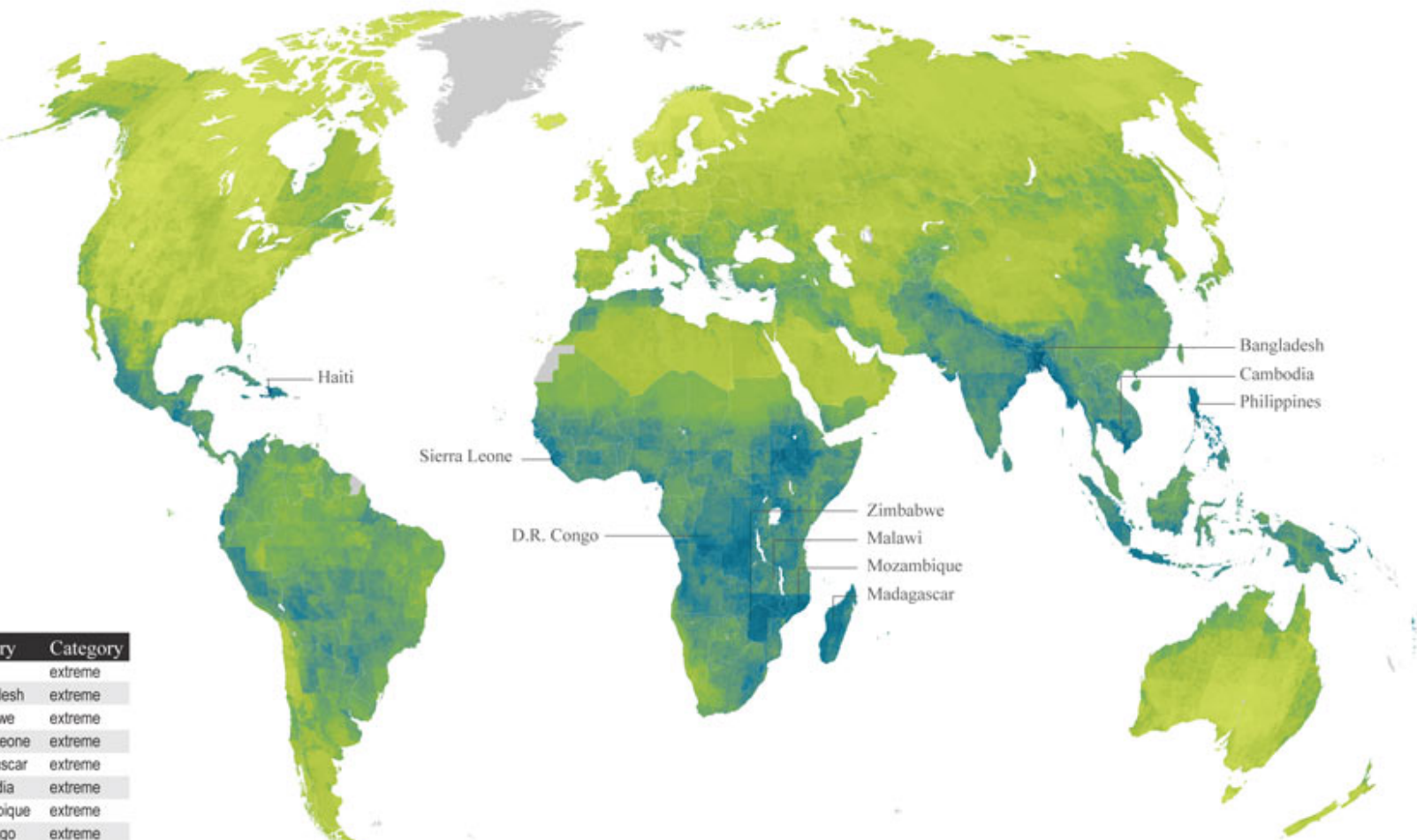
Changes to precipitation patterns; ocean circulation



- ❖ **Alter the emergence and distribution of infectious diseases in plants, animals, and humans**
- ❖ **Affect the productivity of biological resources and ecosystems**
- ❖ **Changes in water availability**
- ❖ **Loss of biodiversity**
- ❖ **Increased extreme weather events; coastal flooding → displaced persons & infrastructure damage**

Southern Africa is Vulnerable

- Extreme risk ■
- High risk ■
- Medium risk ■
- Low risk ■
- No Data ■



Rank	Country	Category
1	Haiti	extreme
2	Bangladesh	extreme
3	Zimbabwe	extreme
4	Sierra Leone	extreme
5	Madagascar	extreme
6	Cambodia	extreme
7	Mozambique	extreme
8	DR Congo	extreme
9	Malawi	extreme
10	Philippines	extreme

USAID Response



Strategy:

Incorporate climate change considerations into development projects to provide climate benefits while meeting development objectives

**Address environmental concerns up front

USAID/Administration Priority

- One of USAID's top three priorities along with Feed the Future and Global Health
- Presidential Policy Directive on Global Development includes Global Climate Change Initiative (GCCl)

USAID Response

Global Climate Change

INTEGRATING CLIMATE CHANGE INTO DEVELOPMENT



ADAPTATION

CLEAN ENERGY

SUSTAINABLE LANDSCAPES

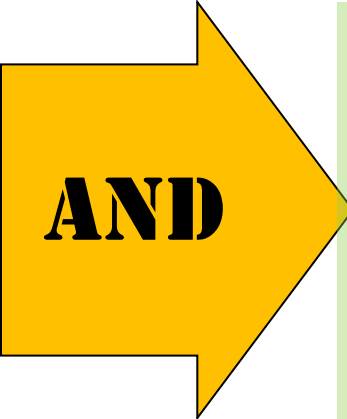
Increasingly designing and implementing projects and programs whose primary objective is GCC-related:

- ***adaptation programming*** to help build resilience to climate change impacts;
- ***clean energy programming*** to support low emission economic growth; and
- ***sustainable landscapes programming*** focused on conserving forests and reducing deforestation to reduce emissions

**BUT IN
ADDITION**

Design for Climate Change is ESDM best practice

Climate change will affect future baseline conditions—all projects should be designed to be **ROBUST** to these conditions



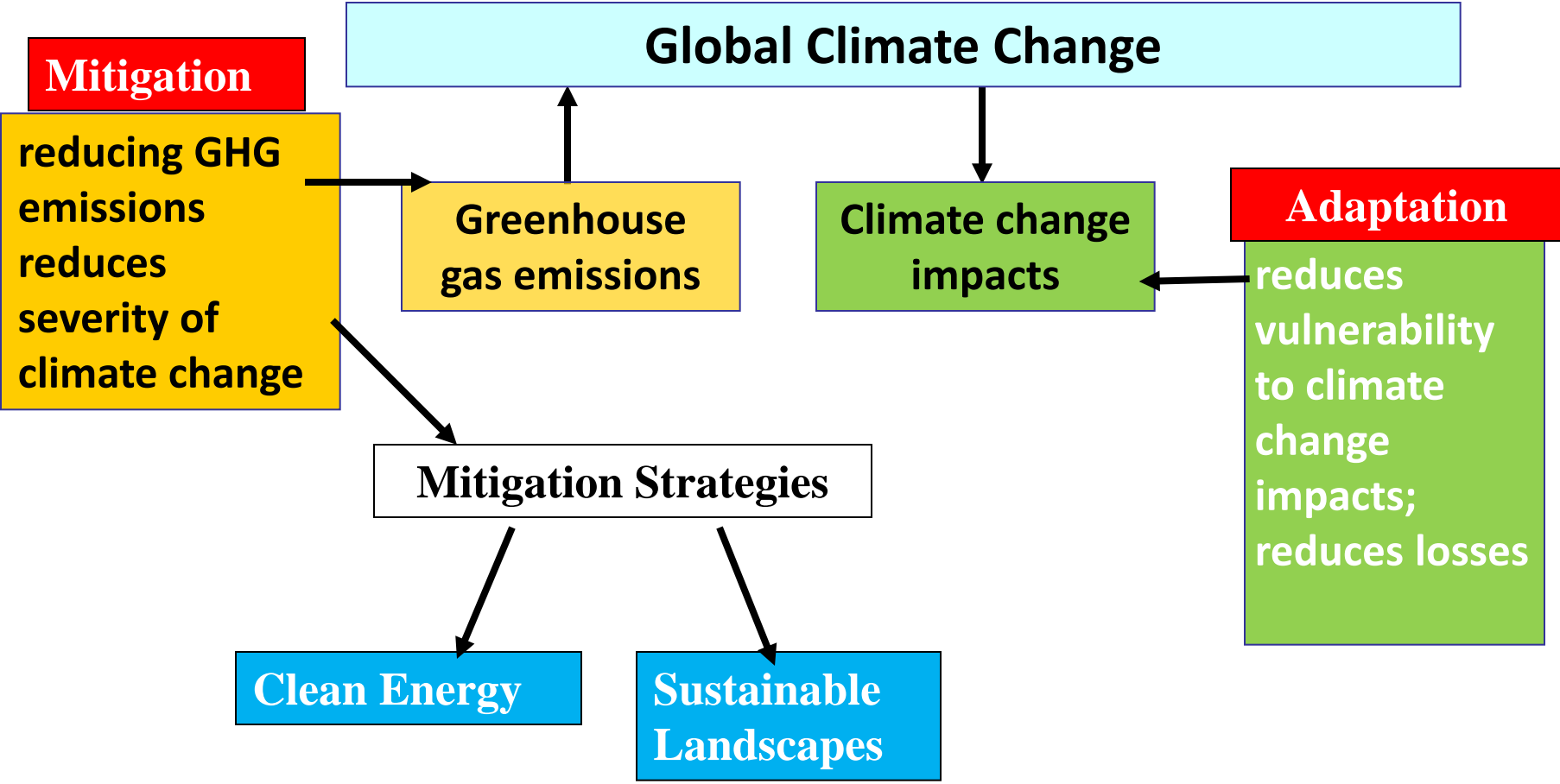
While USAID projects are rarely significant contributors to GCC...
...climate change is driven by the sum of many small actions.
So even small-scale projects should seek to:

- **reduce their direct or indirect GHG emissions/increase sequestration**
- **reduce climate vulnerability in the local area in a manner consistent with their development objectives.**

**USAID
Policy!**



Complementary Approaches to Climate Change



Typical sources of project direct GHG emissions & mitigation options

(direct emissions = emissions from project operations)

Project Aspect	Some Potential Mitigation Actions
Electricity Production & Use when fossil-fuel based	Investigate renewable energy alternatives to diesel gensets for field offices. Purchase efficient AC units.
International Travel by project staff and consultants	Reduce non-essential travel; use local consultants; purchase carbon offsets
Project Motor Pool Operations	Use sedans, not 4X4s for in-town travel; consider fuel efficiency as a selection criteria.
Reduced carbon sink (land development that requires cutting trees or other land conversion – e.g. roads, schools. . .)	Minimize clearing/re-plant Compensatory reforestation in a nearby location.

Some typical sectoral activities with significant indirect GHG emissions & mitigation actions

(indirect emissions = emissions from activities supported or promoted by the project)

Sector/Activity	Issue	Potential Mitigation Actions
Promotion animal husbandry	Methane emissions	Methane recovery from manure; wastewater
Support for Industrial, agro-processing or manufacturing activities	CO2 emissions from equipment and processes	Emphasize industrial energy efficiency/incorporate cleaner production
Tourism Promotion	CO2 emission from tourist facilities & travel	Promote adoption of green certification standards and practices
Urban Sanitation	Methane emissions	Methane recovery from landfills & from wastewater treatment

Guidance – Three Categories for Adaptation

1. Science and Analysis for decision making

- *Investments in scientific capacity*
- *Collect, disseminate climate information and predictions*

2. Governance for climate resilience

- *Investments in capacity to use climate information and analysis in decision making*
- *Effective governmental coordination and response*
- *Improved public communication, education and participation*

3. Implementation of adaptation solutions

- *Support for adaptation strategies and areas like water, agriculture, disaster risk management, infrastructure, health, natural resource management*

Illustrative GCC Adaptation Measures

Energy

- *Hydro-electric facilities – Design for extreme events*
- *Promote clean energy use*

Water

- *Increase Water Use Efficiency*

Agriculture

- *Crop Diversification*

Health

- *Disease Warning and Epidemic Management System*

Coastal Infrastructure

- *Integrated Coastal Zone Planning and Management*
- *Assess effects of sea level changes on ports; coastal roads; drainage—design and build to accommodate expected sea level rise*

Tourism

- *Assess climate change impacts on tourism “product”*

Integrating and Mainstreaming Global Climate Change

- ❖ **Climate change is not just an environmental issue**
- ❖ **It is also an economic, governance, and social issue**
- ❖ **Climate change affects all development sectors**
- ❖ **Climate change needs to be “mainstreamed” or integrated in the design and implementation of all USAID programs**
 - *Educate project planners about need to consider climate impacts*
 - *Provide tools, guidance, and climate information for non-experts*
 - *Design projects so that they are resilient to climate change and other stresses*
 - *Engage stakeholders in planning and prioritization*

Integrating and Mainstreaming Global Climate Change

- ❖ **Not necessary to have GCC funds to address climate change in programming**
- ❖ **Mainstreaming and integration of climate change considerations is encouraged even for Missions not receiving GCC funds**
- ❖ **Activities should have a climate vulnerability and adaptation analysis and address needs identified through this analysis**

Administrator Shah Letter to Mission Directors, May 2010

“Even if your mission will not receive dedicated FY 2010 or 2011 climate funds, I ask that you consider how climate will impact your work in such areas as food security, water, and health, and where co-benefits may exist.”

Climate Change, Sustainability, and Regulation 216

- **22 CFR 216.1(b), Environmental Policy, states that in addition to identifying impacts from USAID actions, it is USAID policy to:**
 - (4) Define environmental limiting factors that constrain development and identify and carry out activities that assist in restoring the renewable resource base on which sustained development depends.**
- **Climate change represents a potentially significant constraining factor that needs to be considered in project design, long term sustainability, and impact assessment**

Best Practice: Design for Climate Change

Example actions in small-scale projects:

reduce **GHG** emissions



Use alternative energy (PV, windmill water pumping, etc)

Improve thermal performance in building design

Buy carbon offsets for int'l travel.

reduce climate vulnerability in the local area



Prioritize water efficiency to reduce a project's contribution to the area's future water stress

increase sequestration



Tree-planting.

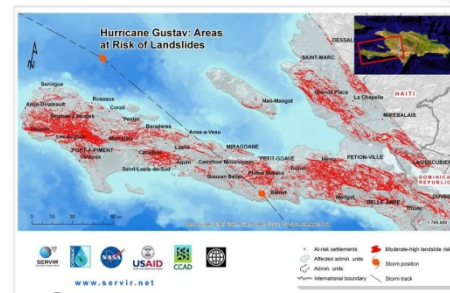
Land management (sustainable grazing, cropping)



Soil carbon measurement by hand in Senegal

Tools and sources for Climate Change Adaptation

- Adaptation Manual helps assess vulnerability to climate change
http://www.usaid.gov/our_work/environment/climate/index.html
- SERVIR system uses satellite imagery and other data for environmental management and disaster support
- EGAT's Global Climate Change Team can help –
http://inside.usaid.gov/EGAT/off-esp/techareas/climate_change/overview/index.html
- USAID Climate Change and Development Strategy, January 2012
http://www.usaid.gov/our_work/policy_planning_and_learning/documents/GCCS.pdf



Small Group Exercise – Instructions

- ❖ **Read one-page project scenario**
- ❖ **Identify needs and opportunities for GCC adaptation and GHG mitigation**
 - *Refer to presentation; in-group expertise; adaptation & mitigation measures table*
- ❖ **Propose changes that support GCC adaptation and GHG mitigation**
 - *Revise proposed activities*
 - *Suggest new activities*
- ❖ **Document in EMMP-type table
(issue → action/response → monitoring for effectiveness)**