Climate Change and Environmental Compliance

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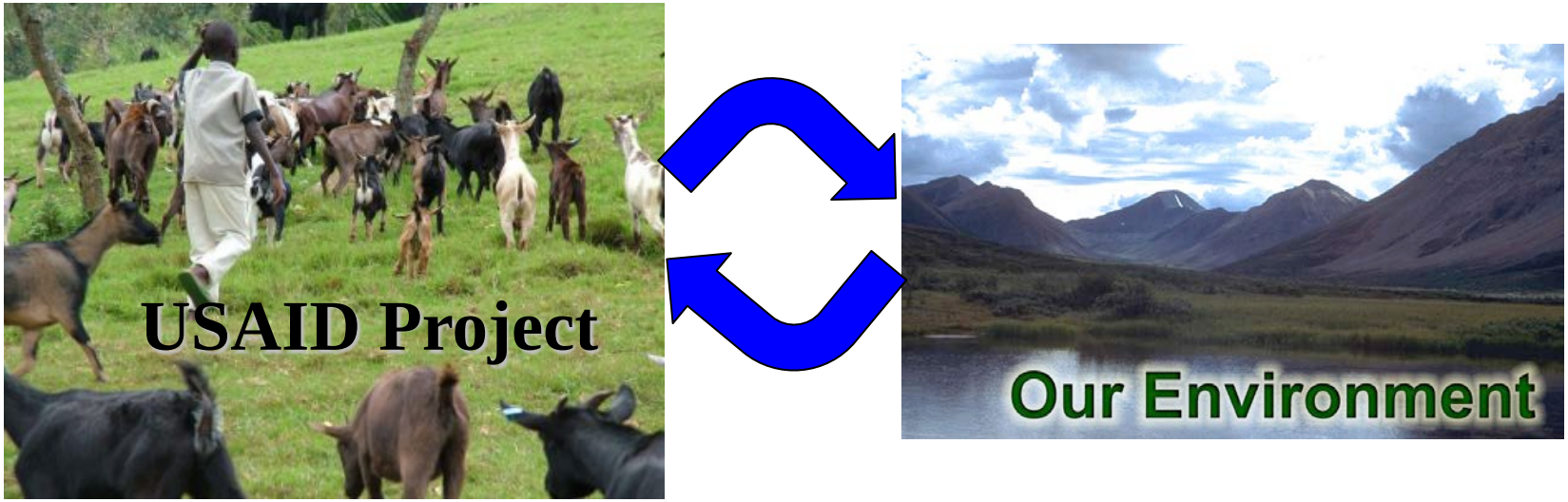
CLIMATE CHANGE & DEVELOPMENT

- What changes in climate are you already observing?
- Who is affected by these changes?
- How do these changes impact our ability to achieve development goals?

Environmental Regulation 216 (22 CFR 216)

"Identify impacts resulting from USAID's actions upon the environment"

"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"



GCC Presidential Initiative

USAID's Climate Change and Development Strategy (2012-2016)

"Strengthen development outcomes through direct climate change program investments and by integrating climate change throughout USAID programming"

Administrator Shah letter to mission directors, May 2010

"*Even if your mission will not receive dedicated … 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."*

CDCS development, from the ADS 201 (Planning)

"*All Missions are required to fully consider climate change during the country-level strategic planning process. Therefore this applies to all Missions, regardless of whether they are projected to receive funds or not."*

DEFINITIONS

- **Adaptation**

"Adjustment …in response to actual or expected climatic…effects, which moderates harm"

- **Mitigation**

"Intervention to reduce the anthropogenic forcing of the climate system; it includes strategies to reduce greenhouse gas sources and emissions and enhance greenhouse gas sinks."

- **Data**

A collection of values/measurements of variables such as temperature, air pressure, wind, humidity, cloudiness, or precipitation

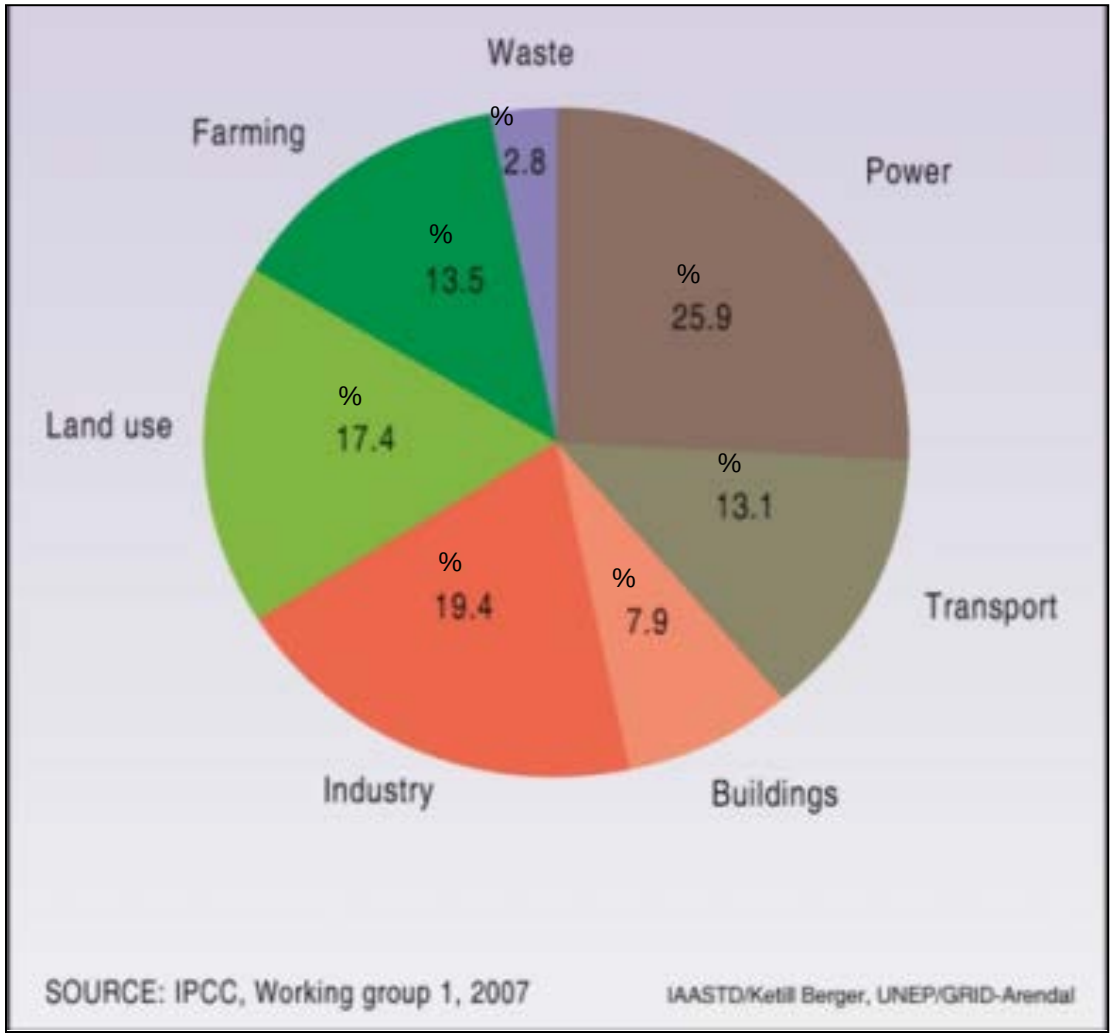
- **Information**

Data that has been analyzed and interpreted with a specific goal or focus, adding value.

GHG EMISSIONS

- Principal GHGs: carbon dioxide, methane, nitrous oxide, fluorinated gases
- GHG emissions have been increasing due to:
  - Burning of fossil fuels
  - Land use activities
- Percent of global CO2 emissions:
  - China: 23%
  - US: 18%

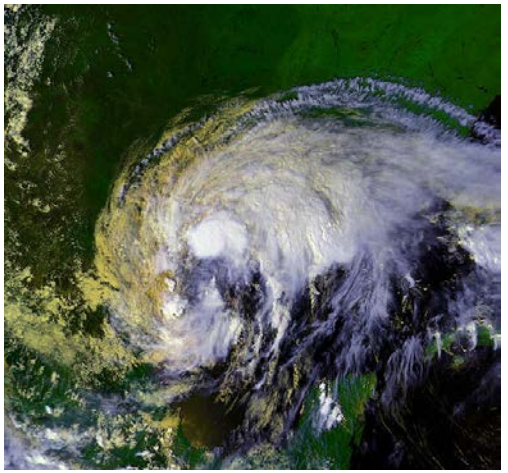
GHG emissions by source as a percentage of total GHG emissions (2004)



CLIMATE CHANGE IMPACTS

Impacts

- Increasing average temperatures
- More extreme weather events, including stronger storms
- Changing precipitation patterns (droughts, floods more common)
- Rising sea levels
- Ocean acidification
- Glaciers melting



LOOK AT CLIMATE INFORMATION

What Climate Changes Are Predicted in Your Region?

- **Temperature:** Do climate models predict temperature changes, such as warming in this region? Has it increased recently? What is the climate history? Are seasonal temperatures changes predicted?

- **Rainfall:** Predicted to increase, decrease, storms more frequent? Delay in onset of the rainy season? Increased variability? Inter-seasonal variations?

- **Water Availability:** Changing water availability impacts agricultural production, as well as water for sanitation, industry, energy, and the environment, undermining economic growth and human security.

- **Groundwater:** Climate change along with rapid population growth are likely to impact all water resources, but the response of groundwater will be slower than that of surface water.

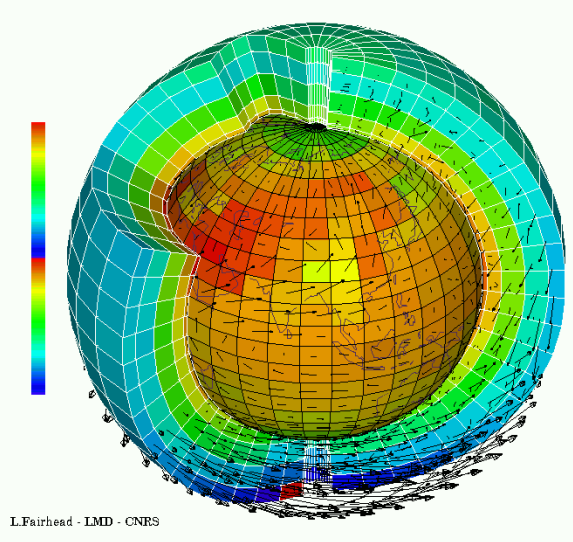
- What is the level of confidence that these changes will occur?

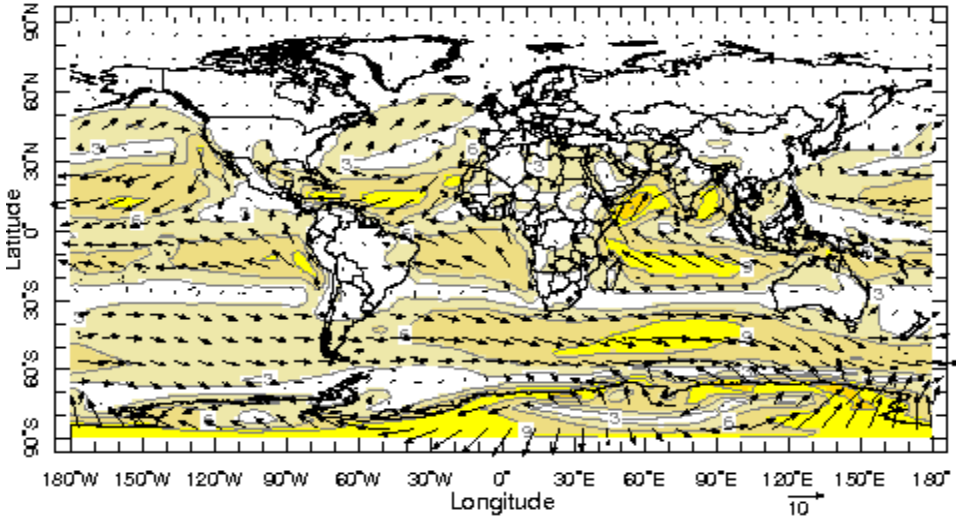
CLIMATE CHANGE IMPACTS ON USAID PROJECTS

•**Agriculture:** Are crops currently grown resilient to changing climate or would increased/less rainfall, higher/lower temperatures, or flooding, result in harm to crops? If temperatures increase above maximum threshold for growth, this may result in lower to no yields
•**Food:** Changing seasons and more droughts and floods reduce crop production, impacting agriculture and food security.
•**Infrastructure:** Climate change impacts, such as extreme weather events, could overwhelm infrastructure undermining economic growth, trade, and health.
•**Global Health:** Changing temperature and precipitation patterns will lead to diseases in places they did not exist before, and potential reduction of diseases in some places.
•**Biodiversity:** Threatened populations dealing with habitat loss may lose more habitat due to climate change impacts, especially populations on mountains whose habitat is constrained by altitude. Loss of biodiversity impact ecosystem services.
•**Migration:** People affected by more severe natural disasters are likely to migrate, increasing the chance of humanitarian problems.
•**Livelihoods:** People with livelihoods closely linked to climate and natural resources may lose income as harvests decrease and/or habitats change.
•**Democracy and Governance:** Insecure livelihoods, diminished access to food and water, and depressed economic growth will exacerbate governance problems and increase potential for conflict, undermining democracy and governance efforts.

TYPES OF CLIMATE INFORMATION

- Routine meteorological observations
- Station data: represents local conditions
- Gridded data: global, merges localized data and satellite data
- Reanalysis models: physics-based interpolation of historical observations
- General circulation models: numerical representation of climate used for forecasting
- Challenges: assumptions, spatial units/resolution, time scale, span of records





INTEGRATING CLIMATE CHANGE INTO DESIGN AND IMPLEMENTATION

- Educate project planners about need to consider climate impacts
- Provide tools, guidance, and access to climate information for non-experts in simple terms and language
- Design projects so that they are resilient to climate change and other stresses and minimize GHG emissions
- Engage stakeholders in planning and prioritization

APPLYING CLIMATE CHANGE TO ENV COMPLIANCE

- Baseline
- Potential Impacts
- Mitigation measures

ADAPTATION MEASURES

- **Water:** repair wells/dig new ones, harvesting/retention, increase increasing efficiency
- **Agriculture:** crop diversification, drought-resistant seeds, tree plantings, reduce erosion, improve soil fertility, irrigation, weather information
- **Governance:** planning for adaptation, early warning systems, resource management
- **Health:** disease warning and epidemic management, early flood warnings

MITIGATION MEASURES

Project Activity	Some Potential Mitigation Actions
Land management	Protect and plant trees
Agriculture	Restore impacted agricultural lands, use conservation agriculture to increase soil nutrients
Deforestation	Minimize clearing/re-plant, compensatory reforestation in a nearby location.
Biogas digesters to manage waste	Investigate potential use of digesters
Fossil fuel-based electricity production and use	Investigate renewable energy alternatives to diesel generators. 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.

USAID'S APPROACH & STRATEGY

Environmental Regulation 216 (22 CFR 216)

- Reg. 216 is an opportunity to…
  - Address how the environment impacts our projects & ensure projects are sustainable in the context of climate change
  - Identify how projects might impact climate change
  - Ensure projects are contributing to low or no emissions development and making people less vulnerable to climate change

DESIGNING FOR CLIMATE CHANGE IS ESDM BEST PRACTICE

- While USAID projects are rarely significant contributors to GCC, **climate change is driven by the sum of many small actions**. Even small-scale projects should seek to:
  - Reduce direct or indirect GHG emissions
  - Increase sequestration
  - Reduce climate vulnerability locally while also achieving development objectives

- It is USAID policy (part of Reg. 216) to:

  "Identify impacts resulting from USAID's actions upon the environment and…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"

USAID has the opportunity to lead by example and ensure development is sound by showing that this can be done, even at a small scale

HELP IS AVAILABLE!

- Updated Sector Environmental Guidelines include advice on how to address climate change
- Regional bureau climate change advisors and the Global Climate Change Office in E3 can provide more help.
  - Email: climatechange@usaid.gov
- Tools, resources, information on upcoming trainings:
  - http://blogs.usaid.gov/climate/

TOOLS AND RESOURCES

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Sector-based

• Global Climate Change sections of the 2013 USAID Sector Environmental Guidelines. www.usaidgems.org/sectorGuidelines.htm

• Climate Change and Infrastructure Briefs. https://decsearch.usaid.gov/viewer/index.jsp?start=0&proxy=%2F&sessionid=a00c09f4-34b7-4d9a-a858-46ffa9566635

Climate Change Science

• World Meteorological Organization

• U.S. Environmental Protection Agency (EPA). Climate Change Science. http://www.epa.gov/climatechange/science/

• IPCC. http://www.ipcc.ch/

USAID Policy

• USAID Climate Change and Development Strategy. http://www.usaid.gov/climate/strategy

TOOLS AND RESOURCES

Climate Change Impacts

• EPA. Climate Change Impacts and Adapting to Change. http://www.epa.gov/climatechange/impacts-adaptation/index.html

• The World Bank's Climate Change Knowledge Portal is intended to provide quick and readily accessible climate and climate-related data to policy makers and development practitioners. The site also includes a mapping visualization tool (webGIS) that displays key climate variables and climate-related data. http://sdwebx.worldbank.org/climateportal/

• USAID Country Vulnerability Profiles include short profiles of several Missions. They lay out the basic expectations for climate change for each country/region, as well as vulnerabilities of the key sectors. http://inside.usaid.gov/E3/offices/enviro_sci/climate/resources/

Mitigation

• USAID's *Clean Energy Emission Reduction (CLEER*) Tool has been developed to estimate emissions benefits of clean energy projects. http://blogs.usaid.gov/climate/ghg-accounting-tools/

• AFOLU Carbon Calculator allows USAID and its partners to systematically estimate the CO_2benefits and consequent climate impacts of its agriculture, forestry and other land use (AFOLU) programs worldwide. http://www.afolucarbon.org/

TOOLS AND RESOURCES

USG Directives

• **Executive Order 13514**, signed October 5, 2009, set sustainability goals for Federal agencies and focuses on making improvements in their environmental, energy and economic performance. It requires agencies to submit a 2020 greenhouse gas pollution reduction target, and to increase energy efficiency, reduce fleet petroleum consumption, conserve water, reduce waste, support sustainable communities, and leverage Federal purchasing power to promote environmentally-responsible products and technologies. http://www.whitehouse.gov/administration/eop/ceq/sustainability

• Executive Order 13653, **Preparing the United States for the Impacts of Climate Change,** signed November 1, 2013. http://www.whitehouse.gov/the-press-office/2013/11/01/executive-order-preparing-united-states-impacts-climate-change

• **Guidance for U.S. Positions on Multilateral Development Banks Engaging with Developing Countries on Coal-fired Power Generation.** In December 2009, the U.S. Department of the Treasury developed guidance regarding coal-fired power generation in the multilateral development banks (MDBs). Revised in October 2013, this guidance further curtails U.S. support for MDB funding for overseas coal projects, except in narrowly defined circumstances. http://www.treasury.gov/resource-center/international/development-banks/Pages/guidance.aspx

• **President Obama's Climate Action Plan**, released June 25, 2013. The plan: 1) Cuts Carbon Pollution in America, 2) Prepares the United States for the Impacts of Climate Change and 3) Lead International Efforts to Address Global Climate Change. http://www.whitehouse.gov/the-press-office/2013/06/25/fact-sheet-president-obama-s-climate-action-plan

Thank You