



# Climate Change, Project Planning, and Environmental Compliance

---



GEMS Environmental Compliance-  
ESDM Training Series

Afghanistan ▪ July/August 2016

# 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?

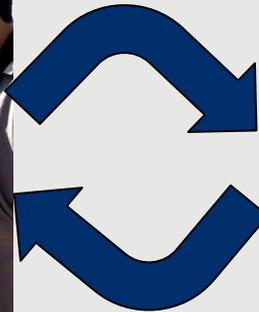


# CLIMATE CHANGE & REGULATION 216

- 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”*



# USAID CLIMATE CHANGE AND DEVELOPMENT

## 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”*

## Executive Order 13653: Preparing the United States for the Impacts of Climate Change (2013)

*“agencies should promote: (1) engaged and strong partnerships and information sharing at all levels of government; (2) risk-informed decision making and the tools to facilitate it; (3) adaptive learning, in which experiences serve as opportunities to inform and adjust future actions; and (4) preparedness planning”*

## Executive Order 13677: Climate-Resilient International Development (2014)

*“This order requires the integration of climate-resilience considerations into all United States international development work to the extent permitted by law.”*

## 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

## WEATHER

Describes the condition of the atmosphere, usually expressed in terms of air temperature, rainfall, or wind speed, over the timescale of days to weeks.

## CLIMATE

“The ‘average weather’, or...the mean and variability of [temperature, precipitation, and wind] over a period of time ranging from months to thousands or millions of years. The classical period of time is 30 years, as defined by the WMO”

## 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.”

## ADAPTATION

“Adjustment...in response to actual or expected climatic...effects, which moderates harm”

## RESILIENCE

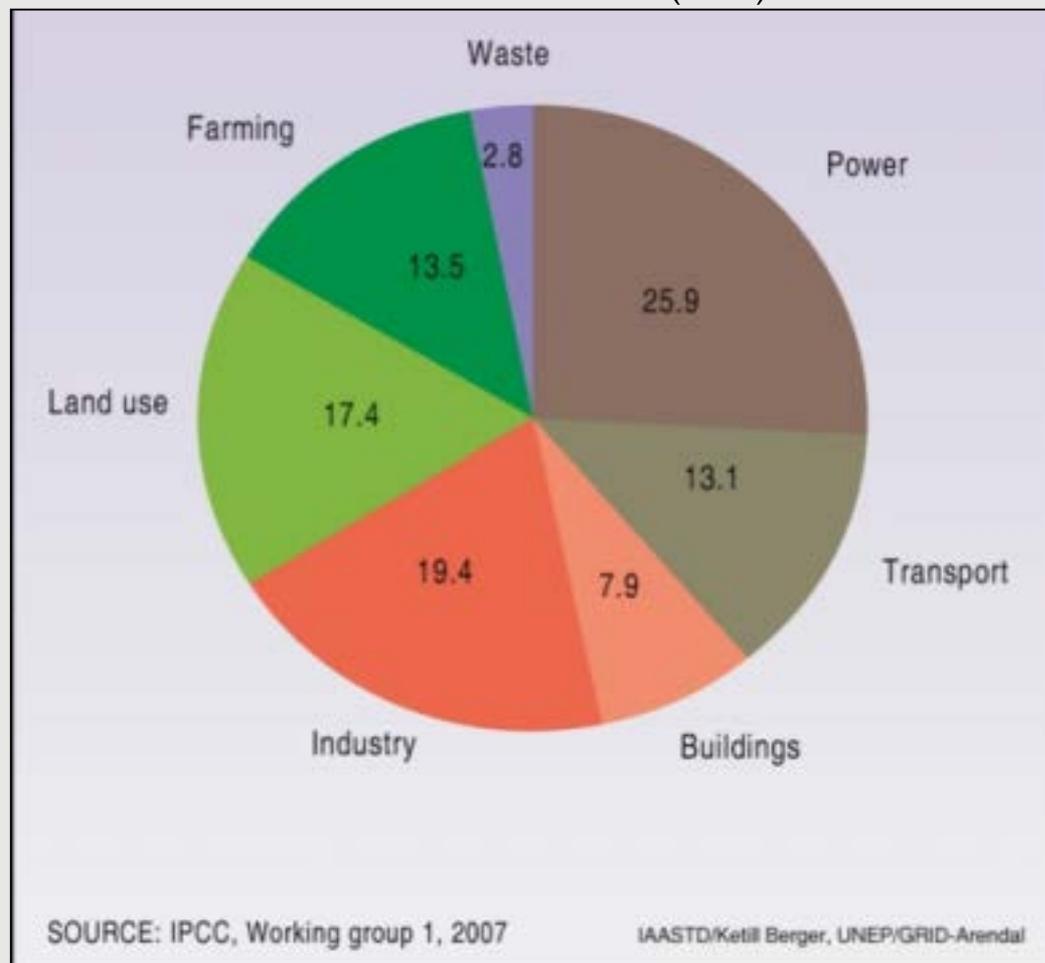
“The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning...and the capacity to adapt to stress and change”

Definitions from IPCC Fourth Assessment Report: Climate Change 2007

# GHG EMISSIONS

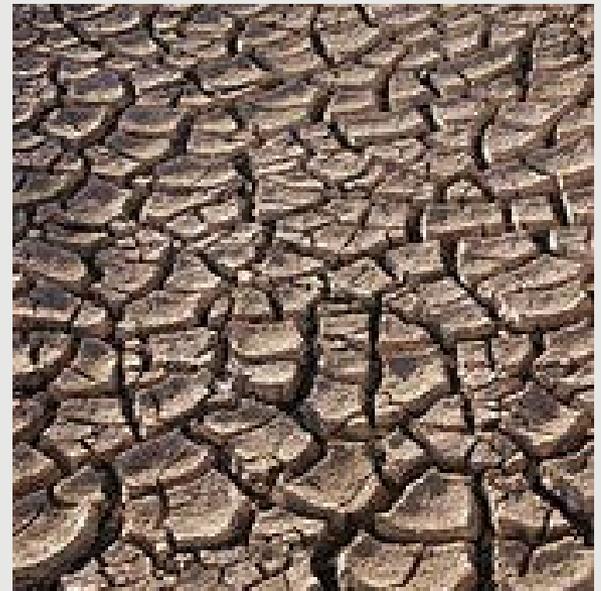
- Principal GHGs: carbon dioxide, methane, nitrous oxide, fluorinated gases
- GHG emissions have been increasing due to:
  - Burning of fossil fuels
  - Land use activities
- Percent of global CO<sub>2</sub> emissions:
  - China: 23%
  - US: 19%
  - Afghanistan: .003%

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



# CLIMATE CHANGE IMPACTS

- Increasing average temperatures
- More extreme weather events, including stronger storms
- Changing precipitation patterns (droughts, floods more common)
- Rising sea levels
- Changes in vector-borne disease patterns (e.g., malaria, dengue fever)
- Ocean acidification
- Glaciers melting



# CLIMATE CHANGE IMPACTS IN AFGHANISTAN

- Periodic drought
- Floods from heavy rainfall or thawing snow and ice
- Frost, thunder and lightening
- Increased severity and frequency of heatwaves
- Disrupted agricultural development



# CLIMATE CHANGE IMPACTS ON USAID PROJECTS

**AGRICULTURE** – Changes in rainfall, temperature, or flooding

**FOOD** – Changing seasons and flood/drought period

**INFRASTRUCTURE** – Extreme weather events

**GLOBAL HEALTH** – Changing range of disease vectors and exacerbating environmental conditions

**BIODIVERSITY** – Habitat loss due to changing conditions

**MIGRATION** – As a result of extreme weather/natural disasters

**LIVELIHOODS** – Change in harvests, habitats, and resource availability

**DEMOCRACY AND GOVERNANCE** – Changes to livelihoods and economic growth, access to food and water, increased migration

# LOOK AT CLIMATE INFORMATION

## HOW IS CLIMATE CHANGE PREDICTED TO CHANGE THE BASELINE IN AFGHANISTAN?

- **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.
- **What is the level of confidence that these changes will occur?**
- **What is the relevant time scale?**



# 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



<https://www.usaid.gov/climate>

# ADAPTATION MEASURES

## IMPROVING RESILIENCE OF PROJECT AND PEOPLE TO CC

- **Water:** repair wells/dig new ones, harvesting/retention, increasing efficiency, ensure minimum flow levels used in design take into account predicted changes in water availability
- **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

## REDUCING PROJECT CONTRIBUTION TO CLIMATE CHANGE

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
Infrastructure	Source materials locally when possible, minimize clearing and re-plant.



# DESIGNING FOR CLIMATE CHANGE IS ESDM BEST PRACTICE

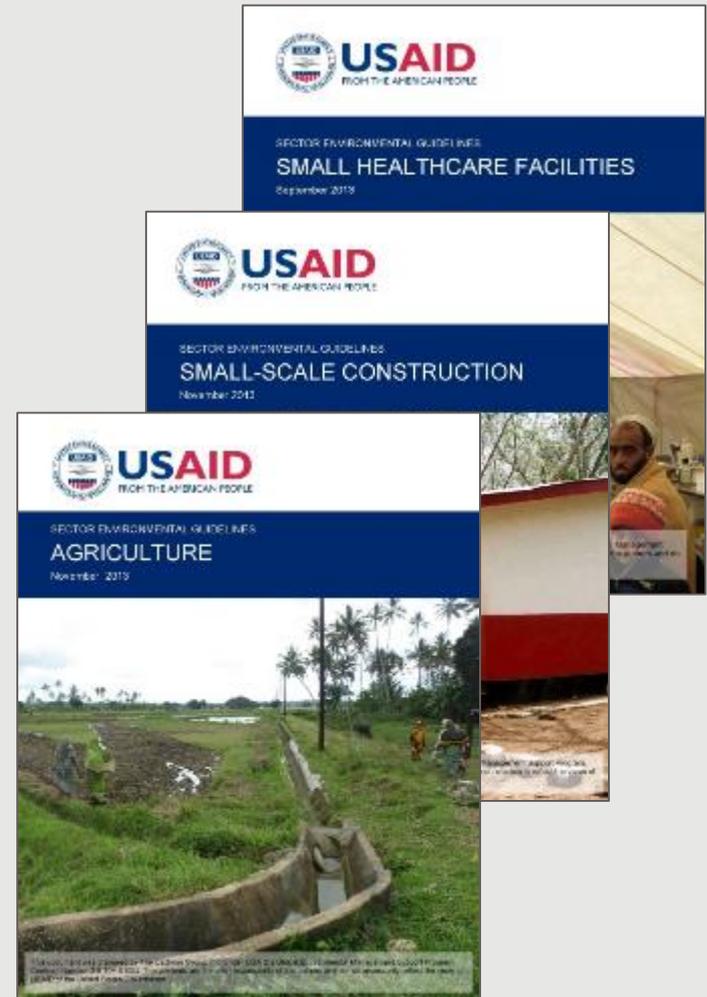
- While USAID projects are rarely significant contributors to GCC, **climate change is driven by the sum of many small actions. Additionally, projects may be impacted by climate change.** Even small-scale projects should seek to:
  - Reduce direct or indirect GHG emissions
  - Increase sequestration
  - 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](mailto:climatechange@usaid.gov)
- Tools, resources, information on upcoming trainings:
  - <http://blogs.usaid.gov/climate/>



# TOOLS AND RESOURCES

# TOOLS AND RESOURCES

## SECTOR-BASED

- Global Climate Change sections of the 2013 USAID Sector Environmental Guidelines. [www.usaidgems.org/sectorGuidelines.htm](http://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/](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<sub>2</sub> benefits and consequent climate impacts of its agriculture, forestry and other land use (AFOLU) programs worldwide. <http://www.afolucarbon.org/>

# Thank you

