USAID
FROM THE AMERICAN PEOPLE

Integrating Climate Change Adaptation into Development

UNFCC African Regional Workshop on Adaptation in Accra, Ghana

September 21-23, 2006

USAID
FROM THE AMERICAN PEOPLE

Why is USAID promoting climate change adaptation?

- **Many developing country economies are climate sensitive**

- **Climate change links several development challenges:**
  - energy for development
  - agriculture/food security
  - poverty reduction
  - public health

USAID
FROM THE AMERICAN PEOPLE

USAID activities in Climate Change Adaptation

1. Pilot studies for integrating adaptation into planning

2. Guidance manual for adaptation

USAID
FROM THE AMERICAN PEOPLE

Pilot studies

1. **Mali: rice and potato production in Sikasso region**
2. **South Africa: municipal water sources**
3. **Honduras: coastal zone development**
4. **Thailand: seasonal wetlands**

Mali Situation: Rice and potato production is vulnerable to climate change

1. 1˚ C temperature rise by 2030; 2-3˚ C rise by 2060
2. Decreasing length of rainy season
3. Greater seasonal variability of rainfall

USAID
FROM THE AMERICAN PEOPLE

Sikasso, Mali

Impacts of climate change:

1. Greater seasonal drought risk in rice and maize production
2. Increased runoff from greater storm intensity
3. Higher temperatures negatively impacting cool-season potato production

Adaptation recommendations

1. Drought avoidance

- short duration crop varieties
- new drought-tolerant varieties
- increase rainfall capture

2. Mitigation for increased temperatures

- more heat-tolerant crops, possibly moving out of potato

Adaptation recommendations

3. Reversing degradation of natural resource base

- agroforestry
- soil fertility enhancement

4. Better access to seasonal climate forecasts

- farmer access to 10-day forecasts and seasonal projections

How can Mali use the adaptation recommendations?

- Improvements in the seed sector
- Enhanced access to credit for crop storage, fertilizers, and irrigation
- NRM management and crop/agroforestry diversification
- Integration of long-term weather forecasts into local-access media

USAID
FROM THE AMERICAN PEOPLE

Pilot studies

1. Mali: rice and potato production in Sikasso region
2. South Africa: municipal water sources
3. Honduras: coastal zone development
4. Thailand: seasonal wetlands

South Africa Situation: Polokwane Water Supply from Oliphants Basin

To review vulnerability, South African organizations, analyzed:

1. Population/water demand scenarios (4) through 2050

2. Climate change scenarios

3. Impacts of climate on supply, demand, and yield

South Africa Situation: Vulnerability of the Polokwane Water Supply from Oliphants Basin

The issue is that water demand may triple by 2050 creating a vulnerability - insufficient water supply due to:

- **Population growth**

1. **Competing water demand from industry and for environmental protection**

2. **Climate change**

South Africa Situation: Polokwane Water Supply from Oliphants Basin

Climate models all show increased temperatures for the region, but disagree on precipitation.

- A number of the models project increased summer precipitation
- Many project a decrease in winter precipitation
- An overall reduction in precipitation is projected by some models
- We cannot conclude if the region will get wetter or drier on the whole
- Precipitation intensity is likely to increase, which will increase risk of flooding.

USAID
FROM THE AMERICAN PEOPLE

Polokwane, RSA

Scenarios for 2050

Scenario	S01	S02	S03
Change in Precipitation (%)	+ 25	+10	-10
Change in Temperature (C)	1.9	2.2	2.8

Scenarios for 2025

Scenario	S04	S05	S06
Change in Precipitation (%)	+ 12.5	+5	-5
Change in Temperature (C)	0.5	1	1.2

Adaptation recommendations

- Runoff is very sensitive to changes in precipitation.
- If conditions become drier, reservoirs become a lot less effective
  - Conservation will be needed even more than it is today
- If conditions become wetter, flooding can be a problem
  - More reservoirs may be needed to capture the runoff
- Government officials feel the best adaptation to climate change is to re-emphasize conservation although modifications in water supply systems could also be considered

Adaptation recommendations

- **Water conservation**
  - reduced leakage and pressure
  - technologies for increased water use efficiency
  - institutional changes to improve demand management
- **Expanded water use**
  - reuse and recycling

USAID
FROM THE AMERICAN PEOPLE

For further information

Bill Breed, Director
Global Climate Change Team
US Agency for International Development
wbreed@usaid.gov