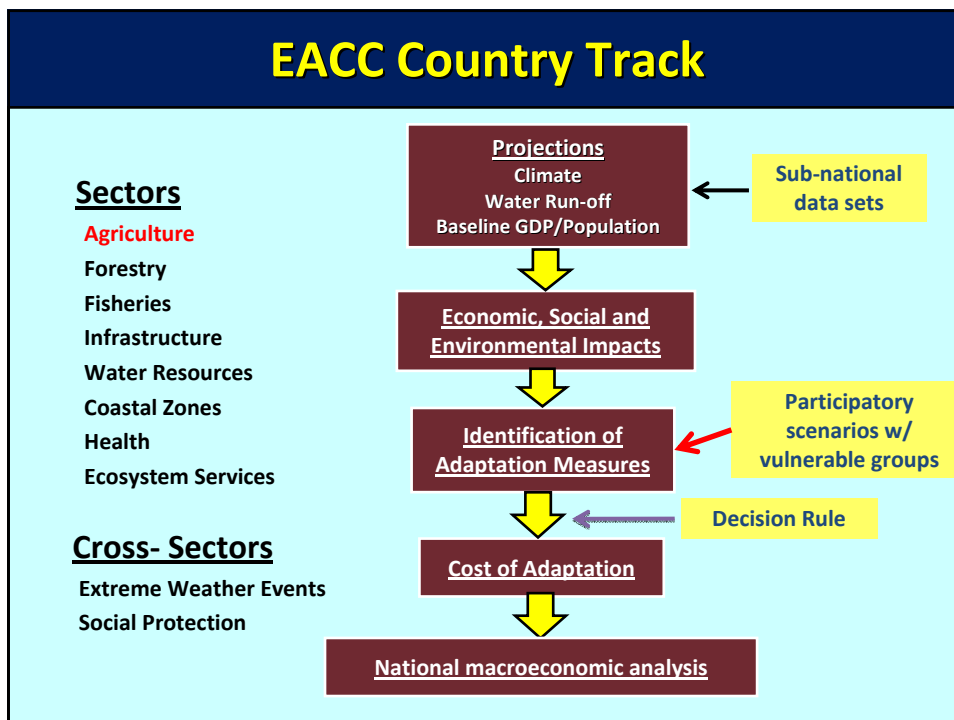


UNFCCC Workshop on Costs and Benefits of Adaptation Options – Madrid, June 22-24, 2010



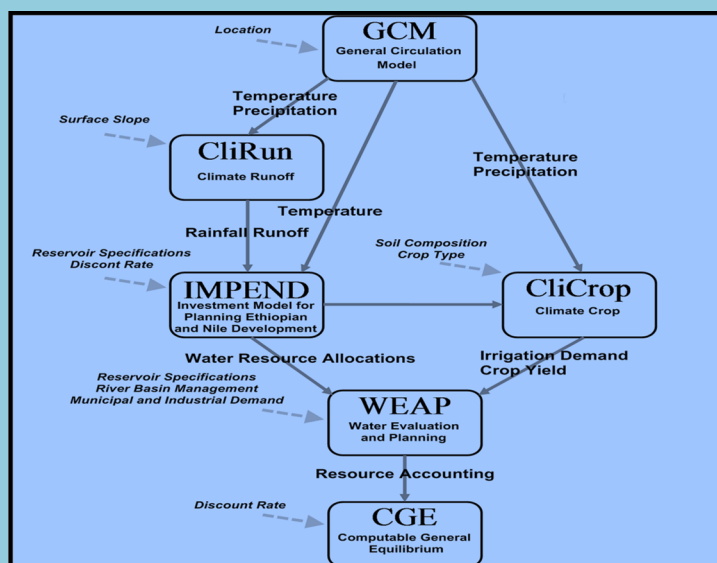
EACC Country Track



Mozambique: vulnerability to climate

- Mozambique is subject to extreme weather events – drought, flooding and tropical cyclones, and ranks third amongst the African countries most exposed to climate risks
- During the past 50 years, the country has suffered from 68 natural disasters, which have killed more than 100,000 people
- Drought is the most frequent disaster: contributed to 4,000 deaths between 1980 and 2000. Frequency of 4-7 in 10 years
- Floods largely due to water drainage from 9 major rivers in neighboring countries.
- In 2000, Mozambique experienced its worst floods in fifty years, killing about 800 people and displacing 540,000.

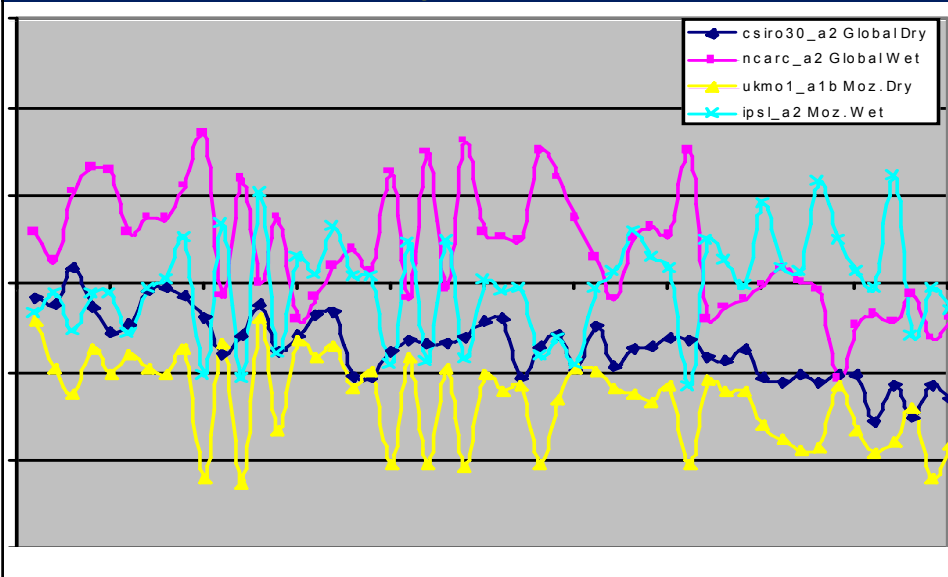
Modeling structure and modules



Clicrop model description

- Uses crop moisture index generated by 4 GCMs to calculate the effect of changing daily precipitation patterns on crop yields and irrigation water demand
- Yield effects are due to lack of / overabundance of water
- Inputs are weather (temperature and precipitation), soil parameters, historic yields for each crop and region, and irrigation distribution by crop
- Impacts vary over regions, crops and increase in time. The MOZAMBIQUE-dry scenario is the most damaging.
- Yield impacts trigger direct and indirect economic impacts – reductions in income, employment, savings and investments. These are captured in the CGE analysis.

Change in Cassava Yield for Northern Mozambique, 2001 - 2050



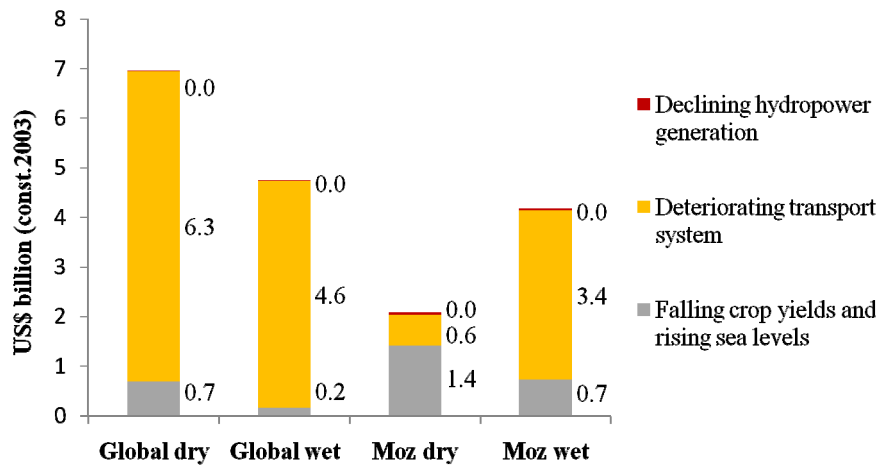
Macroeconomic model

- The dynamic Computable General Equilibrium (CGE) model complements the sector models by looking at the impact of climate change on aggregate economic performance and then considers potential adaptation measures in four sectors (hydropower, agriculture, transportation, and coastal infrastructure).

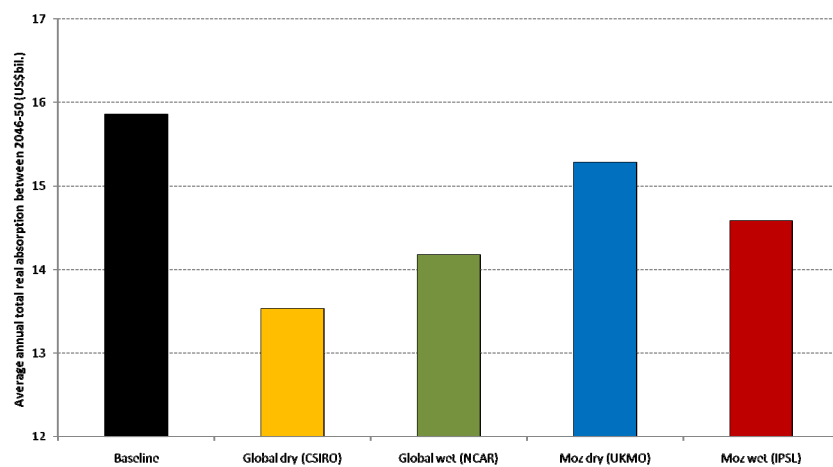
Adaptation strategies

- Investment in irrigated agriculture with complementary investments in other rural infrastructure.
- Investment in dryland agriculture with complementary investments in other rural infrastructure.
- Investment in non-climate sensitive sectors with greater emphasis on urban infrastructure and education (i.e., economic development as an adaptation strategy).

Decomposition of Impact Channels from a macroeconomic perspective



Average annual value of absorption, 2046-2050



Average real per capita absorption growth rates (%)

	Baseline	Impact	Adaptation scenarios			
	No climate change	With climate change	Transport infra-structure	Agricult. R&E	Irrigation expansion	Education
	(1)	(2)	(3) = (2+)	(4) = (3+)	(5) = (3+)	(6) = (3+)
Global dry	2.11	1.75	1.87	2.12	1.90	2.11
Global wet	2.11	1.86	1.96	2.20	1.99	2.20
Moz dry	2.11	2.03	2.11	2.32	2.14	2.35
Moz wet	2.11	1.92	2.04	2.27	2.07	2.28

Reduction in national absorption losses under the adaptation scenarios, 2003-2050

