



Lecture I: Introduction to the Economics of Adaptation

Lecture II: Adapting to Extreme Events

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Outline

The first lecture introduces the basic concepts of the economics of adaptation. The concept of efficiency, public versus private adaptation, and anticipatory versus reactive adaptation are all covered. With short lived decisions in efficient systems, adaptation is often just a matter of fine tuning management to take into account current climate. With longer term decisions, adaptation must address the uncertain role of future climate. With decisions in inefficient systems, adaptation can also involve institutional reforms to improve the efficiency of the system. Precise changes are clear for each sector. This is why the summer school has focused on sectors.

The second lecture deals with the special case of extreme events. Extreme events occur rarely but have potentially devastating local effects. The lecture provides an overview of weather related extreme events and then develops an integrated assessment model to study tropical cyclones (hurricanes). The model forecasts how damage and fatalities would change as what is in harm's way increases and how climate change would affect these future impacts. The lecture concludes with an analysis to detect if adaptation is already being done in this area to limit damage and fatalities.

Readings

Bakkensen, L. and R. Mendelsohn. 2014. "Risk and Adaptation: Evidence from Global Hurricane Damages and Fatalities"

Mendelsohn, R. 2000. "Efficient Adaptation to Climate Change", *Climatic Change* **45**: 583-600.

Mendelsohn, R. 2006. "The Role of Markets and Governments in Helping Society Adapt to a Changing Climate" *Climatic Change Special Issue on Climate, Economy, and Society: From Adaptation to Adaptive Management* **78**: 203-215.

Mendelsohn, R. 2012. "The Economics of Adaptation to Climate Change in Developing Countries" *Climate Change Economics* **3**: 125006:1-21.

Mendelsohn, R., K. Emanuel, S. Chonabayashi, and L. Bakkensen. 2012. "The Impact of Climate Change on Global Tropical Cyclone Damage" *Nature Climate Change* **2**: 205-209.