

Global Economic Assessment of SDS

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Brief Overview of Goyang Workshop



Brief Overview of Goyang Workshop

- **Broad overview of SDS in global context, including identifying**
 - Source regions
 - Impact regions
- **How to measure impacts of SDS**
- **How to measure economic impacts in both regions.**
- **Different approaches to measuring impact.**

Economic Impact Assessment

- EIA goes beyond simple economics
 - Economic activity
 - Environmental impact
 - Human impact
 - Health
 - Wealth



Economic Impact Assessment

- Economic activity impacts of SDS
- Infrastructure damage – usually minimal
- Reductions in
 - Commerce – trade/retail/wholesale
 - Transport – Air, land, water
 - Construction and mining
- Increases in
 - Cleaning – households, firms and government
 - Health mitigation expenses

Economic Impact Assessment

- **Economic activity impacts of SDS**
- **Agricultural production**
 - Annual crops – loss or reduction in current year
 - Perennial crops – loss or reduction in current year, future losses?
 - Animal systems – loss of animals, loss of forage, higher costs of production due to feed purchases or loss in income.
 - Insects – Bees loss of pollination services

Economic Impact Assessment

- **Environmental impacts**
- **Source region**
 - Soil erosion
 - Ecosystem services – habitat loss
 - Water ways
- **Impact region**
 - Air quality
 - Ecosystems services – damage and loss

Economic Impact Assessment

- **Human impact**
- **Source region**
 - **Loss in production/productivity**
 - **Lower income, or higher food costs**
 - **Reduced nutrient intake? – health implications**
 - **Welfare, equality issues**



Economic Impact Assessment



- Human impact
- Impact region
 - Health – mortality and morbidity – attribution?
- Note the linkages to human impact throughout.

Measuring Impact

- **Critical to measurement of impact is availability of data.**
- **Methods to measure impact need to take into account data available.**
- **Also need to take into account non-market impacts**
 - **Environment**
 - **Human**

Measuring Impact

- **Methods**
- **Econometric/simulation**
 - CGE, I-O – Only focus on economic transactions, and interrelationships between sectors - no non-market transactions
 - No human side, no environmental
 - Data needs are relatively large

Measuring Impact

- **Methods**
- **Accounting/surveys**
 - Less restrictive, more flexible
 - Ad hoc
 - Can capture human and environmental side through non-market valuation techniques

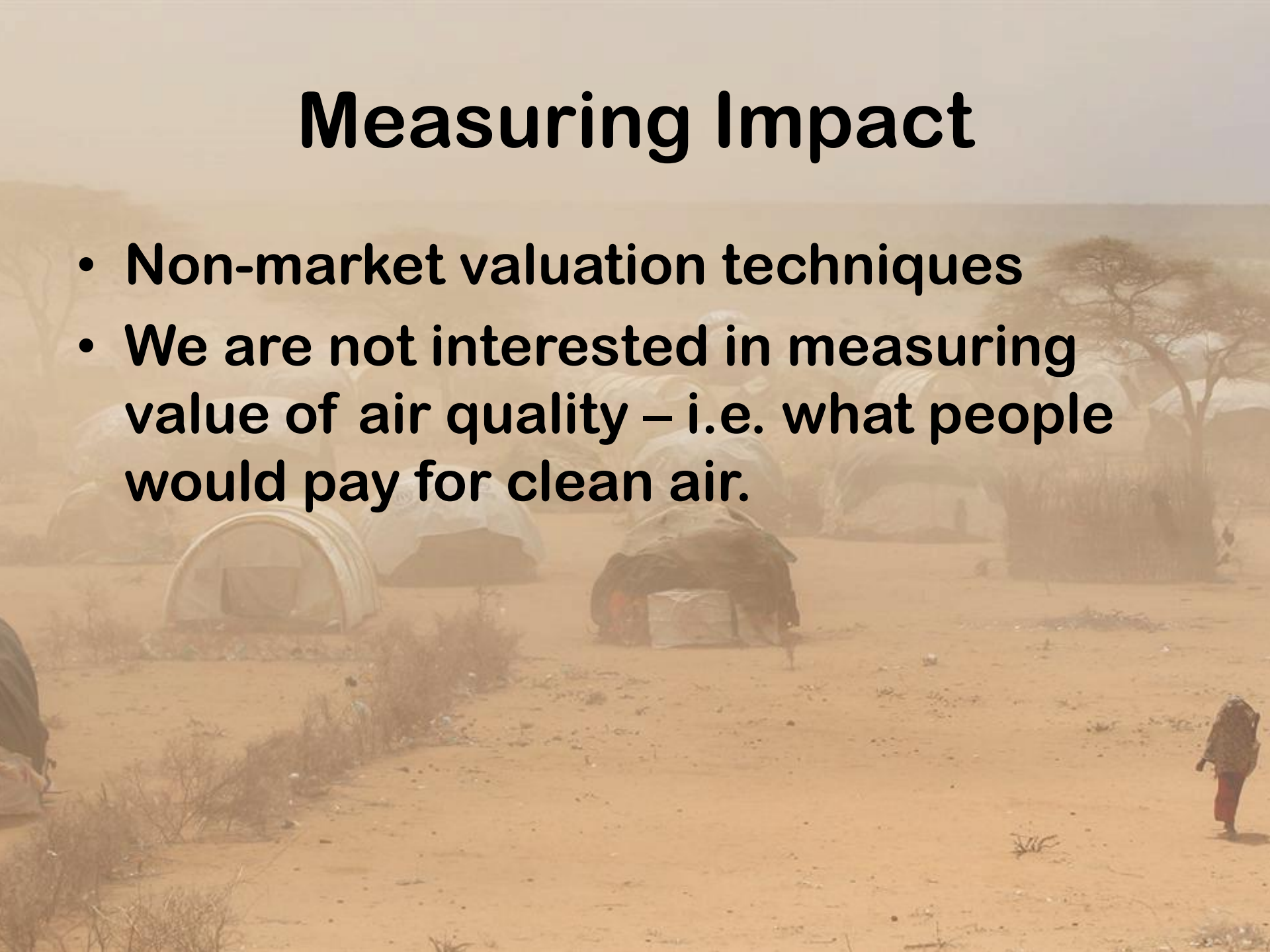


Measuring Impact

- **Non-market valuation techniques**
- **Contingent valuation – willingness to pay**
 - Can be used for environmental or ecosystems costs or damage
- **Travel Cost Method – how much would people pay to travel to a particular destination**
 - Can be used to value cultural or one-off events affected by SDS

Measuring Impact

- **Non-market valuation techniques**
- **We are not interested in measuring value of air quality – i.e. what people would pay for clean air.**



Measuring Impact

- **Human Aspect**
- **Loss of income/productivity in source region – Using ELD framework or output.**
- **Mortality or morbidity – can use standard if necessary (i.e. DALY, QALY).**
 - Need to think about attribution more
- **Poverty and inequality – hard to measure – What to do?**

Case Studies

- **Kuwait, Iran, Iraq**
- **Not confirmed completely yet.**
- **Data requirements identified.**
- **Other aspects need work – non-market valuations etc.**

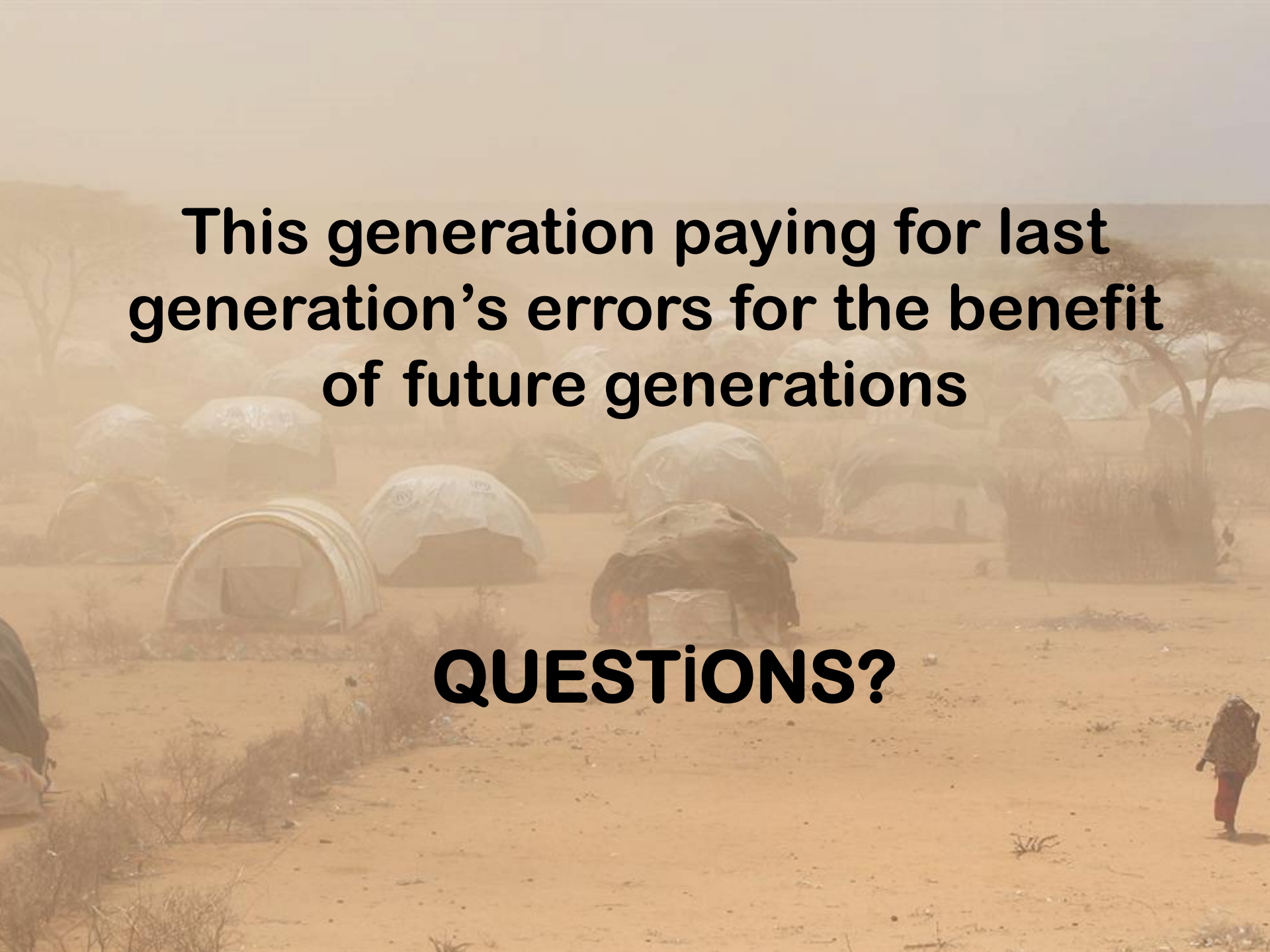


Cost-Benefit Analysis of Mitigation

- After measuring costs of SDS, need to know if costs of mitigation exceed benefits (mostly in impact region, but also in source region).
- Standard cost benefit analysis (CBA) framework will be designed.
- Will take into account some of the non-market factors discussed earlier, i.e. human factors and environmental impacts.

Cost-Benefit Analysis of Mitigation

- Need to know dynamics of mitigation factors and of reduction of impact.
- Mitigation can occur in source region or impact region.
 - Some form of soil cover – crop, forest, pasture
 - Changing practices – clearing, timing
 - Early warning systems, storm forecasting
 - Do nothing

A photograph of a refugee camp in a dry, dusty environment. The scene is filled with numerous tents, some made of plastic and others of fabric, scattered across a sandy landscape. In the background, there are sparse, dry trees and a hazy sky. A person is visible walking in the distance on the right side of the frame. The overall atmosphere is one of hardship and displacement.

**This generation paying for last
generation's errors for the benefit
of future generations**

QUESTIONS?