

Migration and Environment - A Review of Empirical Analyses and Theoretical Modelling

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Introduction

Definition of environmental migration?

Introduction

Environmental change:

- Natural disasters (cyclones, earthquakes, hurricanes)
- Increases in the sea level
- Rainfall and temperature changes
- Soil and water degradation
- Deforestation

Timescale

Sudden
distress
migration



Labour migration
from slow-onset
environmental change

Introduction

Widespread economic and social impacts:

- Direct impact on agriculture and food production

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- Impact on net domestic product and income growth

Introduction

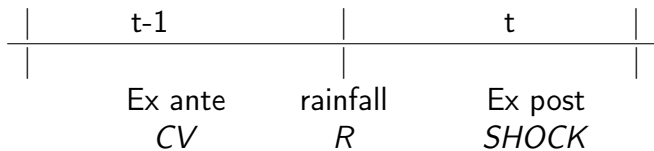
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- Direct impact on agriculture and food production
- Direct effects on health and wellbeing
- Impact on net domestic product and income growth
- Indirect effect on labour markets

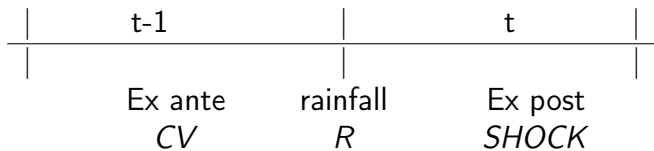
Introduction

Widespread economic and social impacts:

- Direct impact on agriculture and food production
- Direct effects on health and wellbeing
- Impact on net domestic product and income growth
- Indirect effect on labour markets
- Conflict and political change?

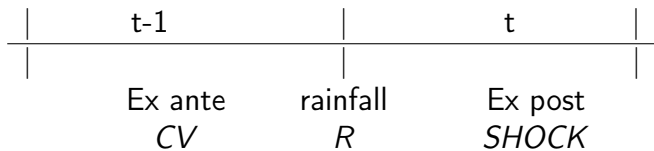


Ex ante strategies:



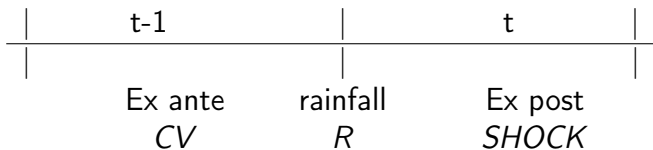
Ex ante strategies:

- Savings



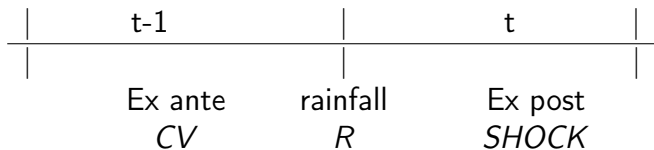
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Ex ante strategies:

- Savings
- Crop choice
- Off-farm labour market participation
- Migration

Limitations of the review

- One-way causality of environmentally-induced migration

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- One-way causality of environmentally-induced migration
- Only migration, not natural population growth

What does the empirical evidence tell us?

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- Regional and country studies vs. international migration flows

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- Regional and country studies vs. international migration flows
- Different responses according to the type of environmental change

Issues for empirical research:

- Definition of the environmental change (time and spatial scale)

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- Definition of the environmental change (time and spatial scale)
- Econometric specification and methods

What does the empirical evidence tell us?

Econometric studies on environmentally induced migration

Authors	Area	Data	Env. change measure
Bhattacharya and Innes, 2008 Boustan et al., 2012	India US	cross-section: 1994 NSSO census data 1920-1940	Rainfall, NDVI Earthquakes, hurricanes, floods and tornadoes
Carvajal and Pereira, 2009	Honduras	LSMS 1998 and 2001	rainfall exposure during Hurricane Mitch
Chopra and Gulati, 1997 Dillon et al., 2011	India Nigeria	1980s 1988 HH survey and 2008 tracking survey	Land degradation CV and SD of temperature degree days
Gray, 2008	Ecuador	2004 tracking survey	Land quality, rainfall and harvest fluctuations
Gray and Mueller, 2012	Ethiopia	3 round panel	Self-reported drought and rainfall
Gutmann et al., 2005	US	county data 1930-1990	Rainfall, temperature and env. amenities: elevation, lakes
Henry et al., 2004a,b Lewin et al., 2012	Burkina Faso Malawi	cross-section 2004/05	Rainfall, soil degradation Rainfall, self-reported drought/flood
Ruitenbeek, 1996 Shah, 2010 Van der Geest et al., 2010	Cameroon Gujarat, India Ghana	1988 HH survey cross-section: HH survey 2000 census	Income from forest products Land quality NDVI

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- Fewer studies on outcomes
(labour market: *Mueller and Quisumbing, 2011*)

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- Fewer studies on outcomes
(labour market: *Mueller and Quisumbing, 2011*)
- Hedonic price studies of environmental amenities
(*Cragg and Kahn, 1997; Poston et al., 2009*)

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- Models of decentralized government and transboundary pollution
(*Wellisch 1994, 1995; Hoel and Shapiro, 2003, 2004*)

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- New Economic Geography models with environmental externalities
(*Elbers and Withagen, 2004; Lange and Quaas, 2007*)
- Models of decentralized government and transboundary pollution
(*Wellisch 1994, 1995; Hoel and Shapiro, 2003, 2004*)
- Few dynamic models
(*Haavio, 2005; Marchiori and Schumacher, 2011*)

Theoretical modelling

Issues for future research:

- analysis of property rights

Theoretical modelling

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- joint determination of policy instruments for environment and migration

Theoretical modelling

Issues for future research:

- analysis of property rights
- joint determination of policy instruments for environment and migration
- equity

Conclusions

Empirical analysis:

- Structural econometric modelling

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- More detailed climate change data that incorporates the spatial aspects

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Empirical analysis:

- Structural econometric modelling
- More detailed climate change data that incorporates the spatial aspects
- Extend models to encompass the role of market potential
- Study the impact of the rural-urban migration flows

Conclusions

Theoretical modelling:

- Assessment of efficiency/equity trade-off

Conclusions

Theoretical modelling:

- Assessment of efficiency/equity trade-off
- Studies on the interaction between environmental and migration policy

THANK YOU!

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