Research Priorities and Gaps:

Migration & the Environment

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Environment – Migration links today and tomorrow

- The development nexus
- A working definition of environmental migration
- Environmental hotspots and migration
- Scenarios and early evidence
- Research agenda and policy options

Environment & Migration: The Development Nexus

- **Two issues on the global agenda, being discussed separately**
  - Climate change and environmental degradation
  - Migration
  - How are they linked?
- **How many will migrate?**
  - Estimates vary from 25 to 700 million by 2050
- **Climate change is a sustainable development challenge**
  - The IPCC says less developed regions are especially vulnerable to impacts of environmental change
- **„Climate chnage has serious implications on international peace and security, including migration."**
  - UN General Assembly Thematic Debate, 11-12 Feb. 2008

Working definition

The Need for a Definition and the Controversies

No agreed international definition of "environmental migration"

A Working Definition

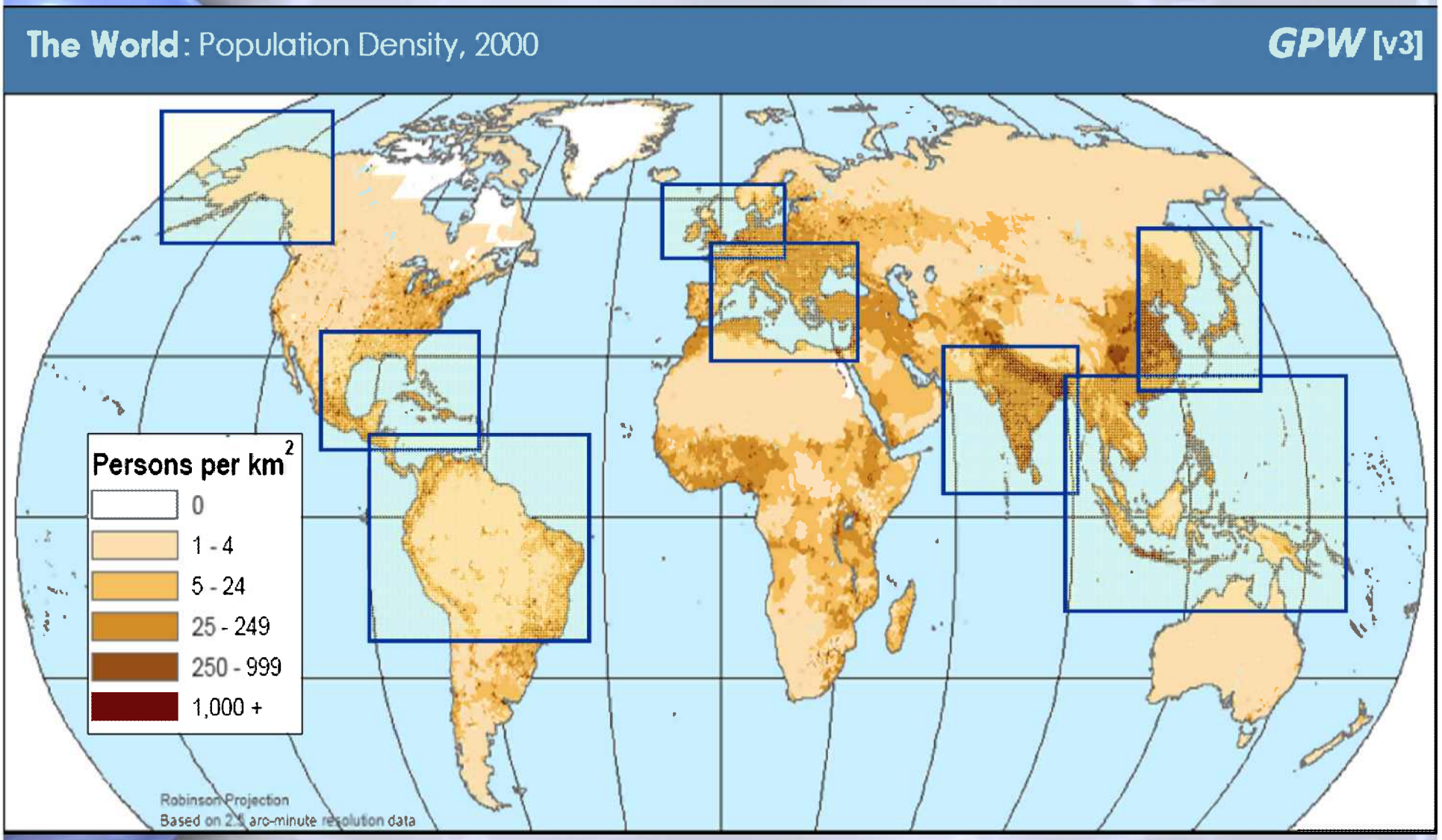
*"**Environmental migrants** are persons or groups of persons who, for compelling reasons of sudden or progressive change in the environment that adversely affects their lives or living conditions, are obliged to leave their habitual homes, or choose to do so, either temporarily or permanently, and who move either within their country or abroad". (IOM 2007)*

Purpose of Definition

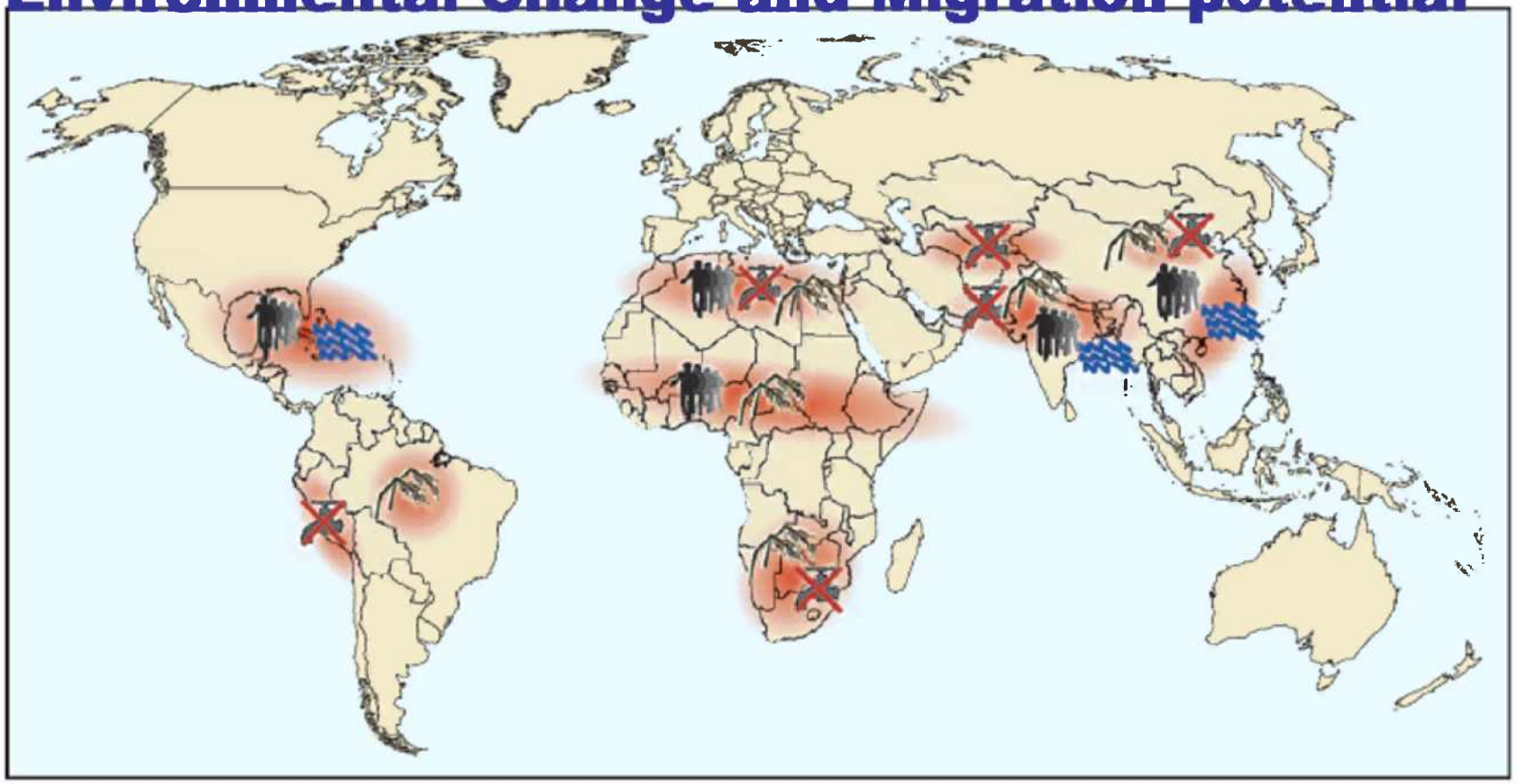
Seeks to encompass population movement or displacement:

- Temporary or permanent; internal or cross-border
- Regardless of whether voluntary or involuntary
- Due to sudden or gradual environmental change

Global Trends in Climate Change: Example of Sea-Level Rise up to 1 metre



Environmental Change and Migration potential



Konfliktkonstellationen in ausgewählten Brennpunkten:

Klimabedingte Degradation von Süßwasserressourcen

Klimabedingter Rückgang der Nahrungsmittelproduktion

Brennpunkt

Klimabedingte Zunahme von Sturm- und Flutkatastrophen

Umweltbedingte Migration

Abbildung 8.1-3
Sicherheitsrisiken durch Klimawandel: ausgewählte Brennpunkte. Die Karte zeigt beispielhaft nur jene Regionen, die in diesem Gutachten abgehandelt werden und die sich zu Krisenherden entwickeln könnten.
Quelle: WBGU

Preliminary field results (EACH-FOR)

- **European Commissioned-funded scoping project**
  - Environmental Change and Forced Migration Scenarios (EACH-FOR)
  - 24 case studies worldwide, interviews, surveys, modeling
- **Egypt**
  - Movement occurs over 1-2 generations as desertification advances. Land ownership key factor. The poorest cannot move unless displaced by the government.
- **Mozambique**
  - Perception of people who have moved: „the government moved me. I am not a migrant."
- **Vietnam**
  - Environmental degradation pressures growing, migration expressed indirectly through human trafficking, unsustainable adaptation measures

Correlation between environmental degradation and migration: A gravity model approach

The countries of research that are used in the model are 172, with 26 independent variables including 13 environmental variables. The model consists of 29,756 observations.

The regression takes the following form:

$$\log\_migr\_st = \alpha\ log\_gdp\_snd + \beta\ log\_gdp\_rcv + \gamma\ log\_distwces + \delta\ log\_unempl\_snd + \eta\ log\_eth\_grps\_snd + \theta\ log\_lndl\_snd + \lambda\ log\_isl\_snd + \mu\ log\_contig + \nu\ log\_comlang\_off + \omega\ log\_comlang\_ethno + \rho\ log\_colony + \pi\ log\_comcol + \sigma\ log\_col45 + \partial\ log\_smctry + \kappa1\ log\_overfish + \kappa2\ log\_earthqu + \kappa3\ log\_tsun + \kappa4\ log\_flood + \kappa5\ log\_hurric + \kappa6\ log\_desert + \kappa7\ log\_pot\_wat + \kappa8\ log\_soil\_sal + \kappa9\ log\_defor + \kappa10\ log\_sea\_l\_r + \kappa11\ log\_air\_pol + \kappa12\ log\_soil\_eros + \kappa13\ log\_soil\_pol + \varepsilon$$

Source	SS	df	MS
Model	149060.164	26	5733.08322
Residual	136055.818	29729	4.57653529
Total	285115.982 29755	29755	9.58212003

Number of obs = 29756
F(26, 29729) = 1252.71
Prob > F = 0.0000
R-squared = 0.5228
Adj R-squared = 0.5224
Root MSE = 2.1393

log_migr_st	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
log_gdp_snd	.4767321	.0068116	69.99	0.000	.463381	.4900832
log_gdp_rcv	.571421	.0047716	119.76	0.000	.5620685	.5807735
log_distwces	-.3840757	.0105698	-36.34	0.000	-.404793	-.3633585
log_unempl	.1445718	.014807	9.76	0.000	.1155494	.1735943
log_eth_grps	.072116	.0213475	3.38	0.001	.0302739	.1139581
log_lndl	-.0906215	.0928394	-0.98	0.329	-.2725906	.0913477
log_isl	-.1123437	.0893118	-1.26	0.208	-.2873986	.0627113
log_contig	6.370566	.2669732	23.86	0.000	5.847287	6.893845
log_comlan_off	.8606873	.1675603	5.14	0.000	.5322618	1.189113
log_comlan_ethno	1.970925	.162702	12.11	0.000	1.652022	2.289828
log_colony	5.882625	.2855163	20.60	0.000	5.323	6.442249
log_comcol	.5722701	.1126712	5.08	0.000	.3514297	.7931105
log_smctry	3.30404	.3835437	8.61	0.000	2.552277	4.055802
log_overfish	548661	.1309796	4.19	0.000	.2919352	.8053867
log_earthqu	.4346097	.072518	5.99	0.000	.2924712	.5767481
log_tsun	.3964188	.1409338	2.81	0.005	.6726553	.1201824
log_flood	.1269831	.0708324	1.79	0.073	-.0118515	.2658178
log_hurric	.6633578	.0739554	8.97	0.000	.518402	.8083135
log_desert	.3023922	.0819841	3.69	0.000		
log_pot_wat	.6687008	.0861606	7.76	0.000		
log_soil_sal	.6562985	.1787346	3.67	0.000		
log_defor	.4992765	.0679991	7.34	0.000		
log_sea_l_r	1.7379	.4276085	4.06	0.000		
log_air_pol	.9783325	.0806143	12.14	0.000		
log_soil_eros	.664975	.0742909	8.95	0.000		
log_soil_pol	1.356702	.1270344	10.68	0.000		
_cons	-38.39872	.5619546	-68.33	0.000	-39.50018	-37.29727

Environmental variables show statistically significant correlation

Model interpretation (UNU-EHS)

- **This research suggests that there is a positive correlation between environmental degradation and international migration**
- **Caveats:**
  - Model is an INDICATOR of the situation, but has limitations, including
  - Difficulty in capturing environmental processes (e.g. flooding, desertification)
  - Migration variable limited to international flows. We expect that there is significant internal migration and internal displacement

Possible Scenarios (IOM Discussion Note Nov. 2007)

To help organize policy thinking and inter-agency coordination

Environmental Migration

A. At less advanced stages of gradual environmental change

B. At advanced stages of gradual environmental change

C. Due to extreme environmental events

D. Due to large-scale development and land conservation

Impacts of Migration on the Environment:

E. In areas of destination

F. In areas of origin

Conflict Potential of Environmental Change and Migration:

G. Conflict potential

Scenarios are not mutually exclusive

Towards a Global Agenda for Research on Migration and the Environment

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Munich Re Foundation
From Knowledge to Action

17-18 April 2008, Munich Reinsurance Company headquarters Munich, Germany

Munich April 2008: Defining the research agenda on environmental migration

Expert Group Meeting

Expert Group Meeting to explore the research agenda

Co-sponsored by UNU-EHS, IOM, and Munich Re Foundation with Rockefeller Foundation and UNEP

Invited experts will:

1. Assess existing knowledge base on environmental migration
2. Promote a new agenda of policy-oriented research on migration and the environment
3. Identify key questions, research themes and innovative research methods needed for more accurate data collection and cross-cutting approaches to migration and the environment

Migration



&



the Environment

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