

Obstacles to implementation and implementation science

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Definition and Goal of Implementation Science (from Ravello, 2004)

- Implementation science within the domain of disaster management is the systematic study of the relationship between the production of the knowledge necessary for prevention or mitigation of loss due to hazards and the successful implementation or use of that knowledge. The goal of implementation science is to accelerate the rate of successful application and use of knowledge of all sorts (from engineering, design, natural science, social science, public administration, law, and planning) for increased safety.

Fractal Structure (Self-Similarity)

Local Level

Life
Land
se
From
Infrastr
Culture
Social
Schemes
Culture and
Natural Environment
Convention

Slower

Faster

IIASA-DPRI IDRiM 2002
Okada-Amendola

Regional Level

Life
in
Com
Landuse
and Built
Environm
Infrastruct
ure
Social Schemes
Culture and
Convention
Natural Environment

Infrastructure

Slower

Faster

Slower

National Level

Life in
Communit
y
Landuse and
Built
Environment
Infrastructure
Social Schemes
Culture and Convention
Natural Environment

Social Schemes
Culture and Convention

Slower

Natural Environment

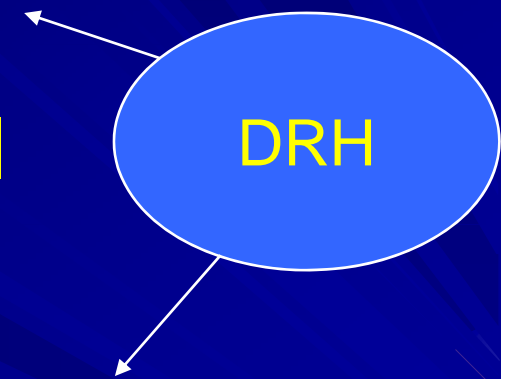
Global Level

Levels of implementation

- Global – National – Regional - Local
- Process **Top** ► **Down** and **Bottom** ► **Up**
- Obstacles to implementation must be identified at all levels and for all processes

Where are our activities located?

- Global – international programs
- National – national programs
- Regional **Tonankai initiative, EMI**
- Local **Casifica**
- Process
 - Top ▶ Down
 - Bottom ▶ Up **Casifica**



COMMON LEARNING

- An example from Accident Risk in EU:
 - Accident reporting from industry to CA
 - From CA to EU-JRC
 - Urgent notification
 - From JRC spread out
 - Feedback on regulation

Methods of Implementation Science (B. Wisner)

- IDENTIFICATION AND MONITORING OF CASES: under what circumstances knowledge has been successfully applied to prevent or mitigate loss from hazards.
- COMPARATIVE REVIEW OF ANALOGOUS CASES. Review of a range of successfully applied knowledge and instances of techno-social change from domains other than disaster risk reduction also yield clues to the circumstances required for achieving effective implementation.
- THEORY. Review of social theories of social and institutional change and theories of knowledge, action, and human agency provide the context within which the empirical circumstances of “successful” implementation is given a general meaning.
- MODELING. Systems engineering provides the tools for synthesizing all of the above into a dynamic model of successful implementation of knowledge

National level

- How the state constitutional law takes into account DRM
 - Example France, constitution changed for stating that all citizens are equal vs. losses from natural disasters
 - State supported all hazards insurance
 - Example NI, unconstitutional people not at risk pay for people at risk!
 - Example Turkey: Istanbul earthquake master plan not implementable is constitution not changed, allowing backfitting of multi-owners buildings without the unanimity of the owners
- How DRM is integrated in the policy agenda vs. other issues, e.g.
 - Bridge Sicily – Italy vs. combat of hydrological risks

Role of formal and informal institutions

- Laws and regulations vs. way of behavior
- Not only for DRM, some time laws are promulgated without real possibility of being implemented
- Corruption
- People urgent trade-off between remote and immediate risks
- Lack of accountability and ineffective pursuit of responsibility after a disaster

Understanding uncertainty

- Uncertainties are not only of scientific nature
- De Marchi et al. (1993)
 - *situational*: inadequate available information in relation to the necessary decisions
 - *legal/moral*: possibility of future liability or guilt for actions or inaction
 - *societal*: high when there is little integration between the public and concerned institutions
 - *institutional*: the withholding of information by agencies for bureaucratic reasons
 - *proprietary*: contested rights to know, warn or conceal (especially these concerning technological risks)
- Example Aquila earthquake April 2009

Conclusions

- Implementation science: understanding real world
- Implementation: moving from academy to engagement in the real world
- Case studies clarifying the social and policy context, the root causes of disasters