Unpacking and operationalizing resilience

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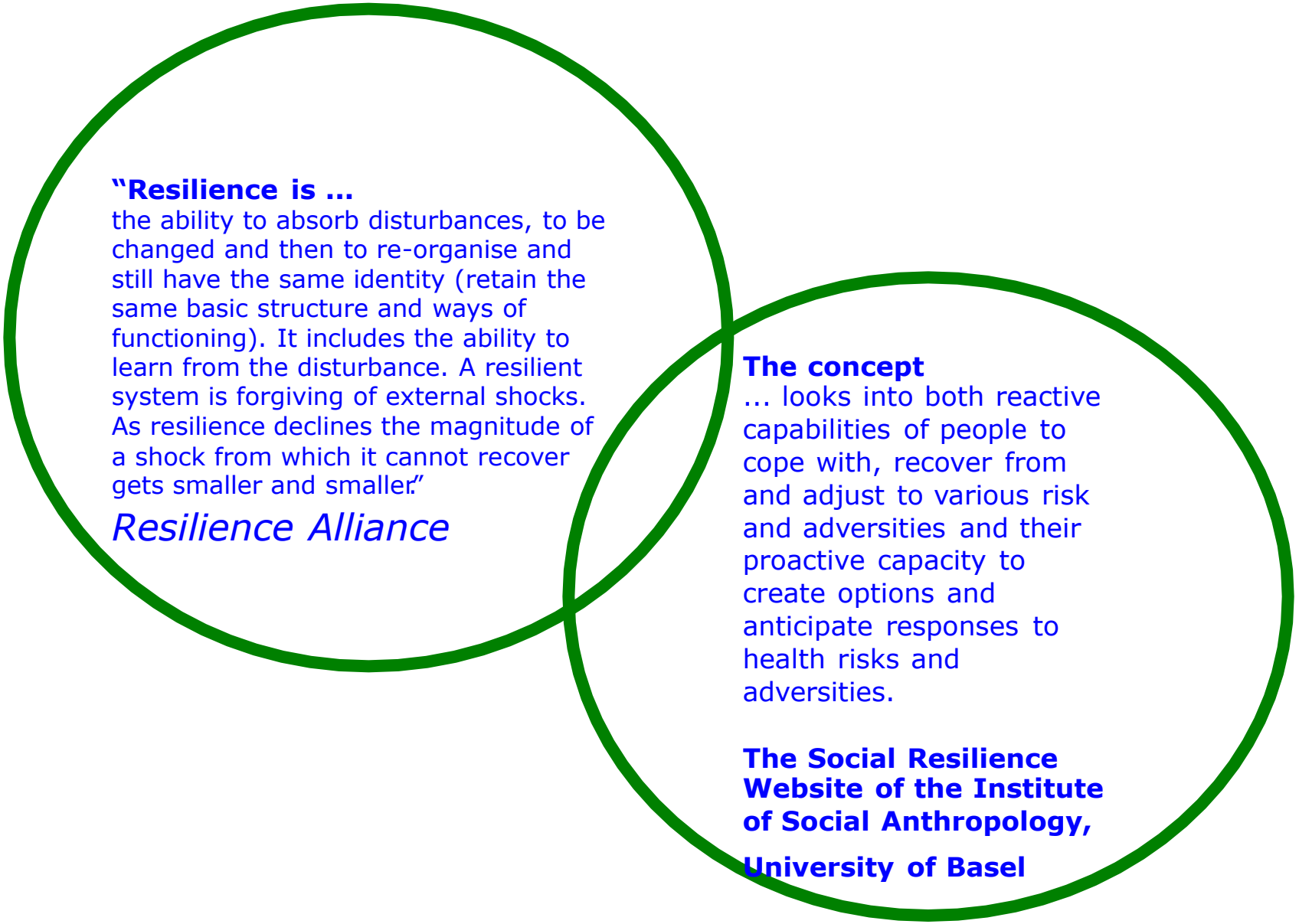
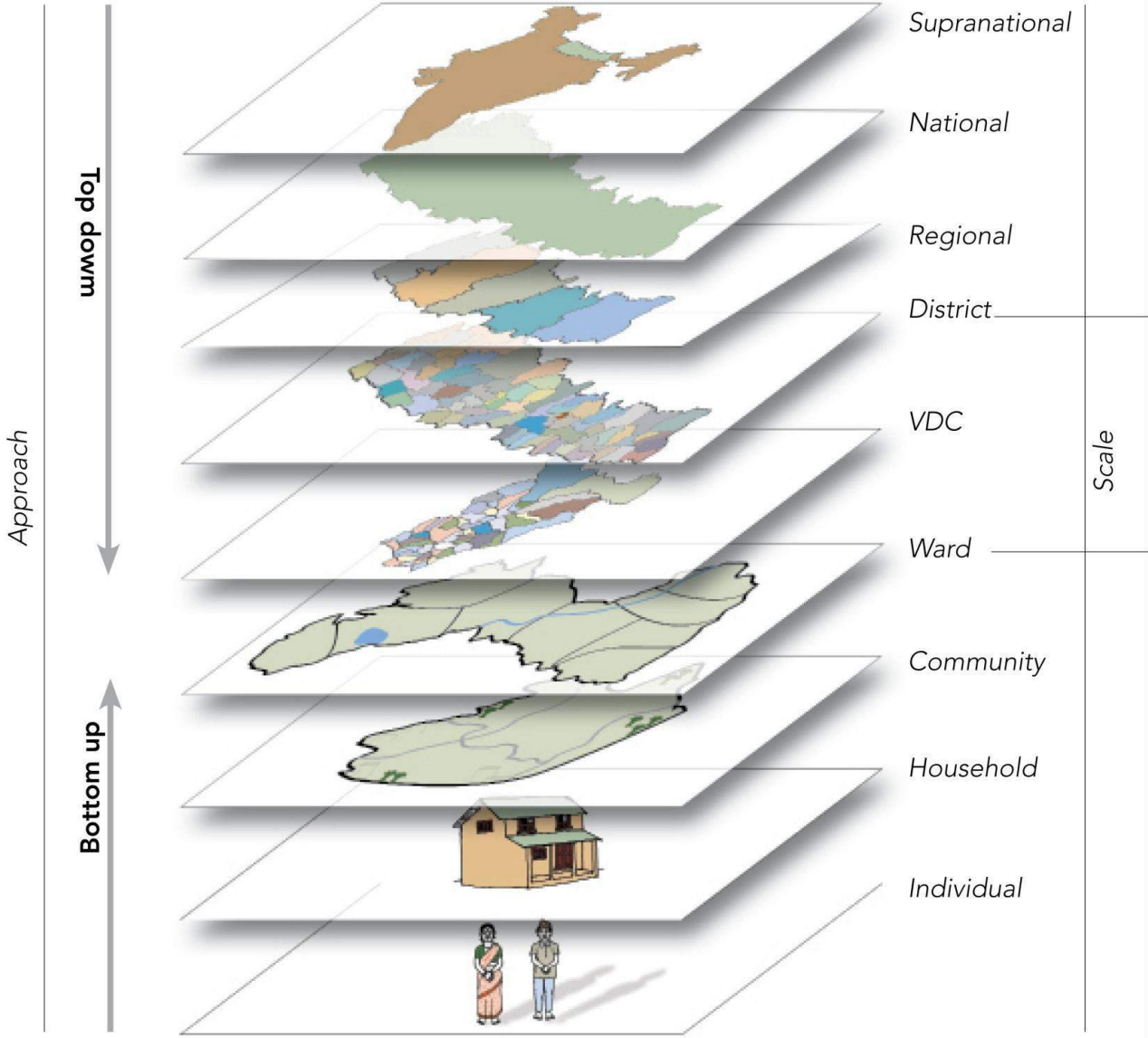
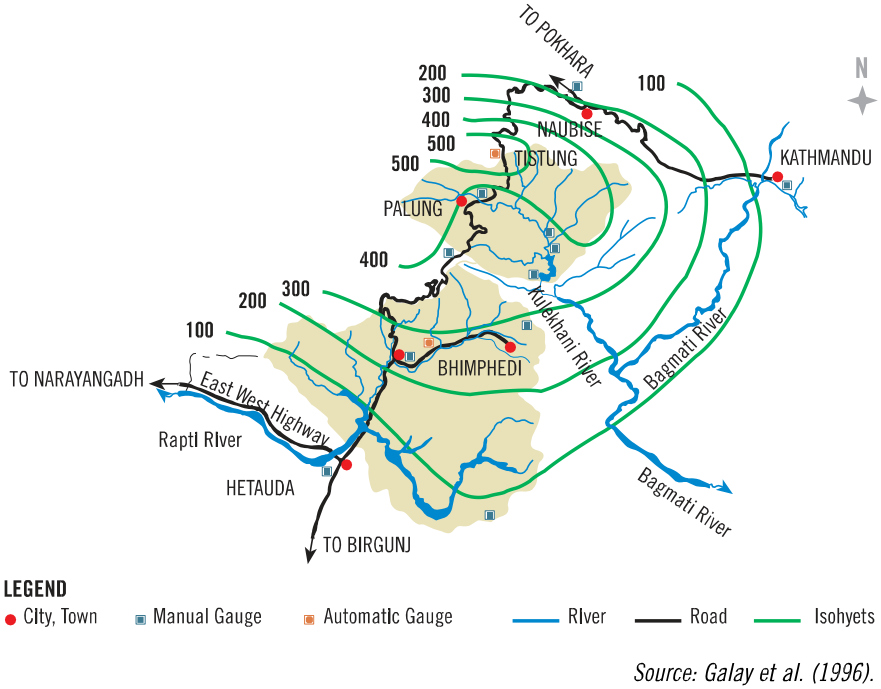

"Resilience is ...
the ability to absorb disturbances, to be changed and then to re-organise and still have the same identity (retain the same basic structure and ways of functioning). It includes the ability to learn from the disturbance. A resilient system is forgiving of external shocks. As resilience declines the magnitude of a shock from which it cannot recover gets smaller and smaller."
Resilience Alliance
The concept
... looks into both reactive capabilities of people to cope with, recover from and adjust to various risk and adversities and their proactive capacity to create options and anticipate responses to health risks and adversities.
The Social Resilience Website of the Institute of Social Anthropology,
University of Basel

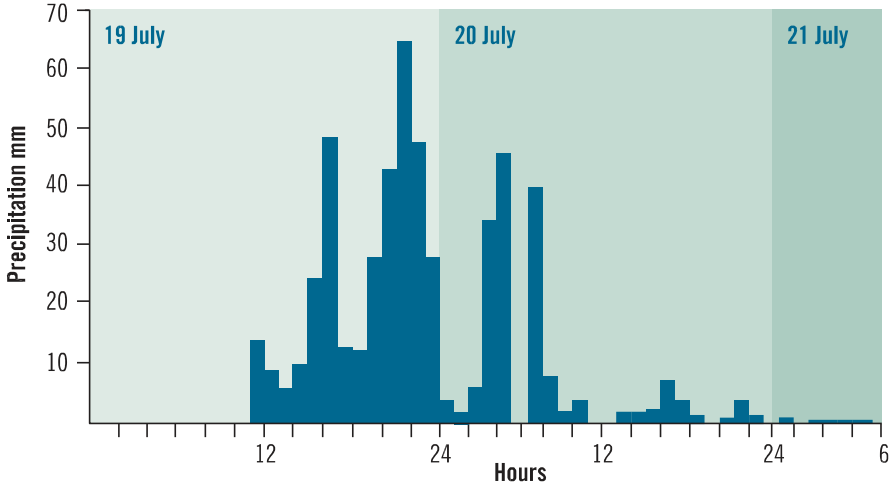
Question of scale



1993 Kulekhani cloudburst

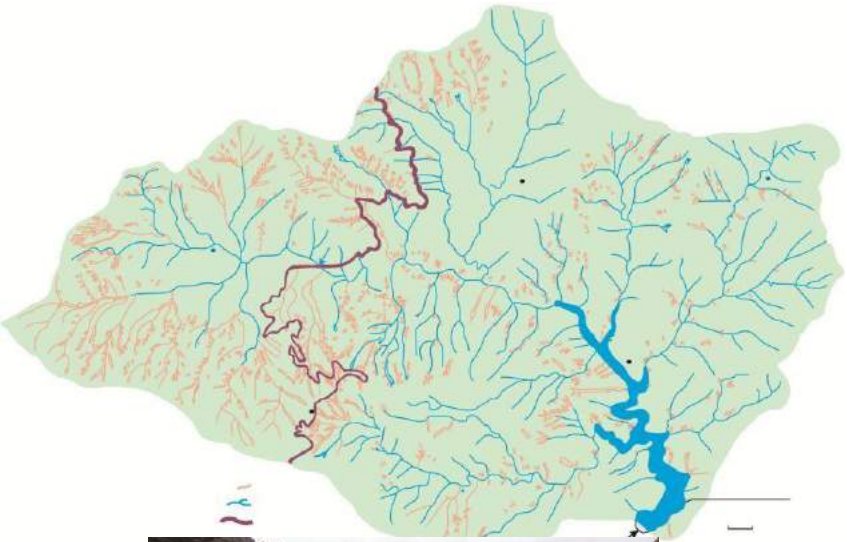


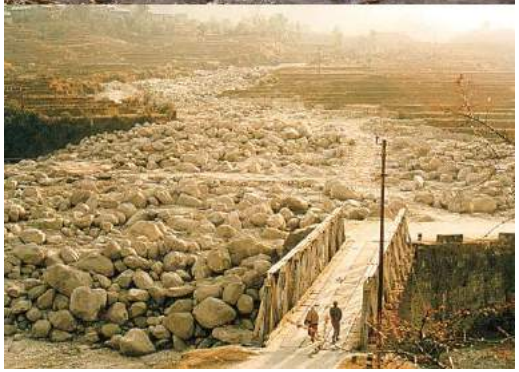
Source: Galay et al. (1996).



Source: DHM (1993).

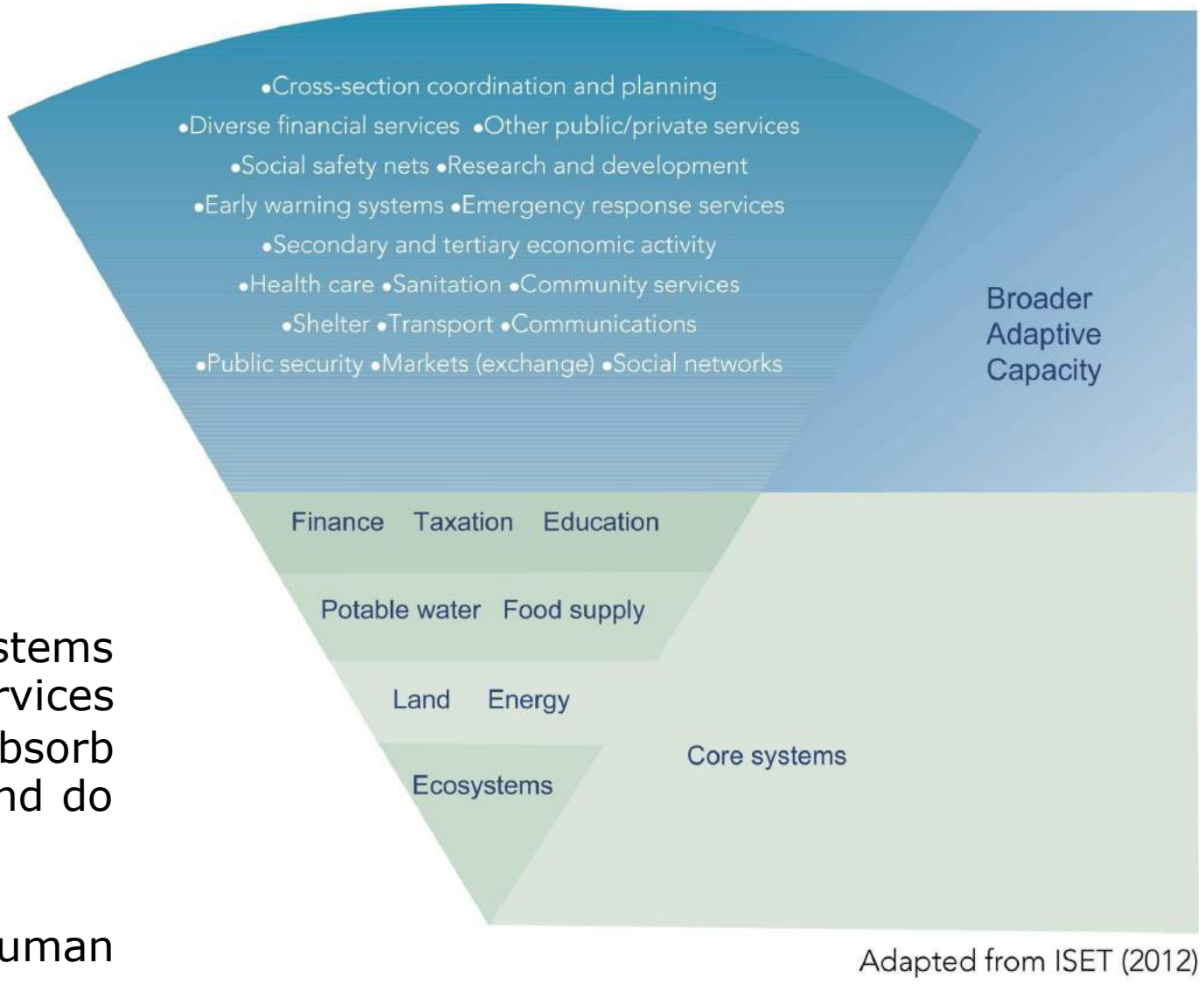
Scarred slope





Damaged forest patch/vegetation within threshold can regenerate

Shock impact on livelihoods and communities depends on preexisting condition, and

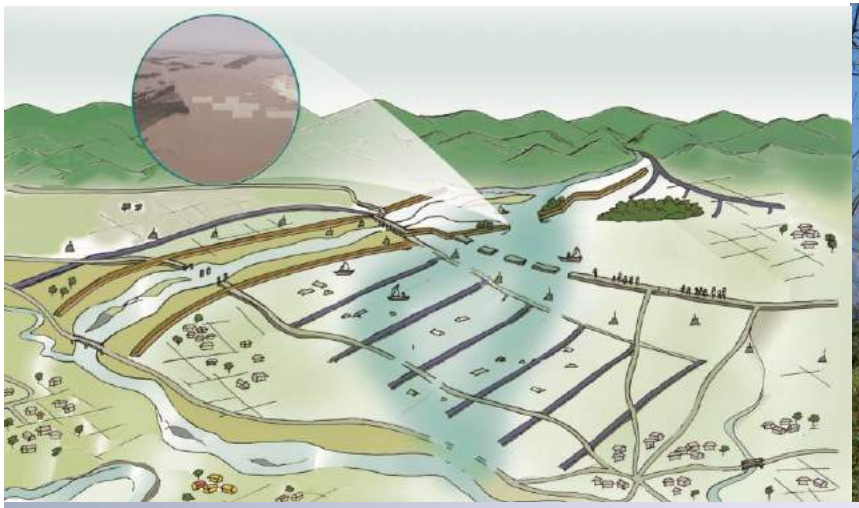


Adapted from ISET (2012)

Access to systems and services important to absorb shock, adapt and do well

How about human built systems?

Human-built systems: house, a bridge or a highway section cannot revert back to their pre-damaged status on its own.



Construction, operation and management quality is key not to reproduce vulnerability cascading through the system.

Examples of efforts at earthquake recovery:

Family

Community

Sub national

Jarayatar, Sindhupalchowk

Priorities of affected families

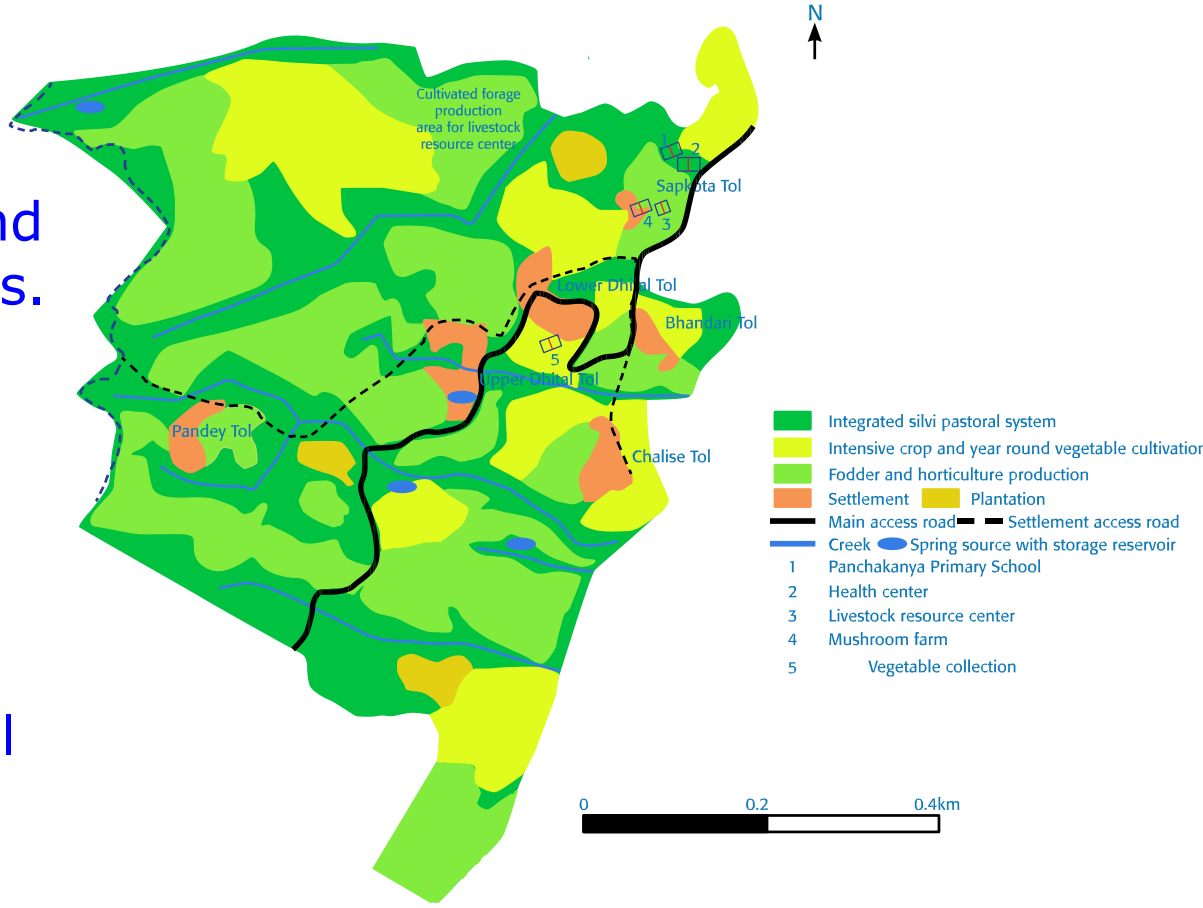
1:Construction of safe house (multi hazard).

2: Rebuilding and diversifying livelihood/income, crop and livestock based enterprises.

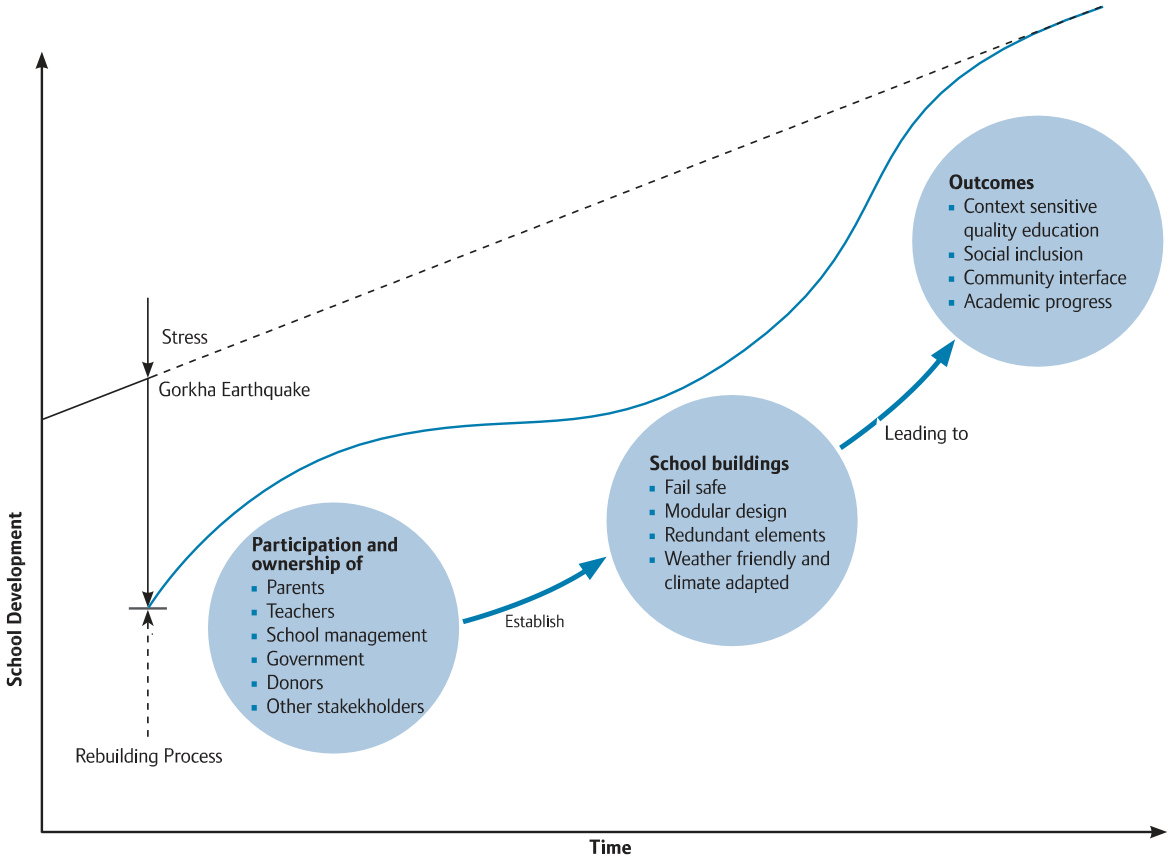
3: Building physical and livelihood infrastructures and services.

4: Conserving and managing forest, land, soil and water.

5 : Developing tourism based enterprises.



School rebuilding



Adapted from Conway et al (2012)

Community Rural Electricity Entity (CREEs)

26 CREEs in Kabhre, Dhading, Gorkha and Lalitpur served 28,570 households

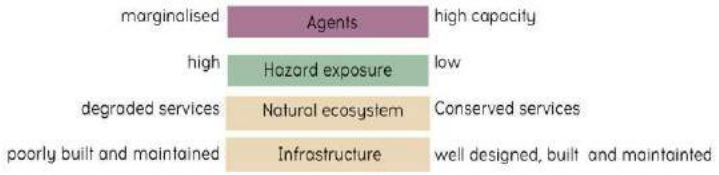
District	Dhading	Gorkha	Khabre	Laltpur
No of CREEs	7	7	11	1
VDCs	7	11	20	19
Consumers	4,216	7.262	10,785	4,587
Damages				
Wooden ploes	1014	3226	3564	275
Length of conductors	7.17	24.2	21.3	14.5
Energy meters	302	1010	521	658
Length of service cable	6.62	2365	30.21	2.5

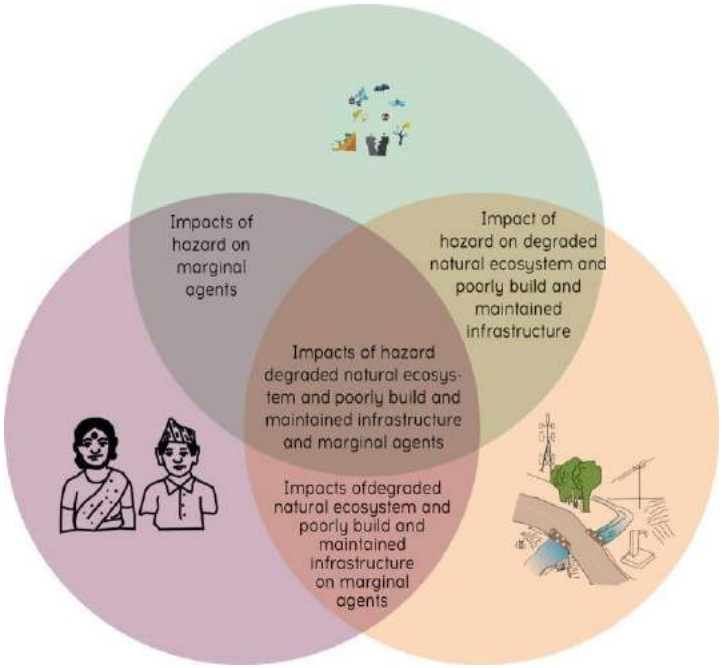
- Public and security agencies demanded supply restoration for mobile charge and communication
- Health post for treatment

Because locally *accessible immediate* response, but

- Lacked proper equipment
- No reserve fund
- Lacked procedures
- Point of weaknesses apparent: fragile distribution system, poor quality, skill sets, safety, organization management

Resilience Framework (RF)





HAZARD EXPOSURE
Exposure to hazard encompasses the direct and indirect impacts that affects natural ecosystem, infrastructure and agents.

SYSTEMS
Natural ecosystem and infrastructure are the foundations that enable people to adjust as exposure changes.

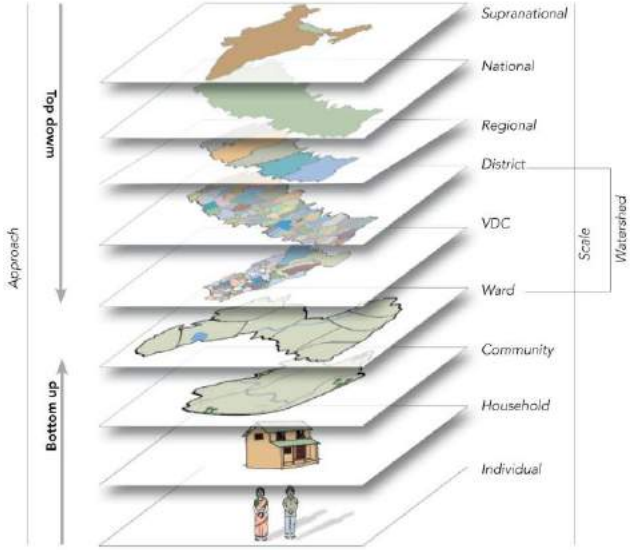
AGENTS
The capacities of agents (individuals, households, communities, business, government organisations, NGOs, etc.) that help them adjust as exposure changes.

INSTITUTIONS
The rules and social conventions that guide interactions of agents with each other and access to services from natural ecosystem and infrastructure

Vulnerability is highest when marginalised agent depending on degraded natural ecosystem and poorly built and maintained infrastructure are expose to higher hazard risk

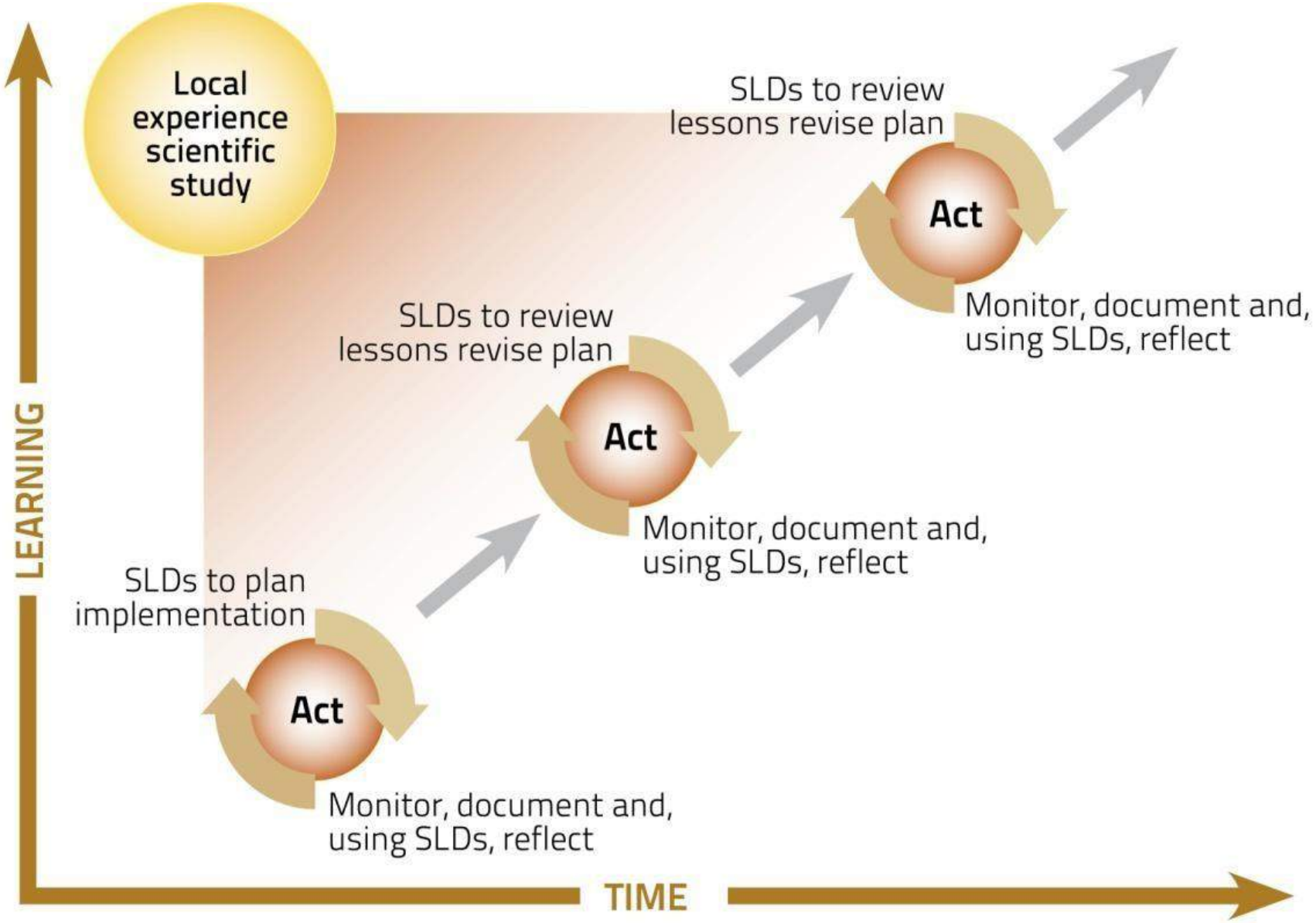
ISET (2009) Dixit and Khadka, (2013)

	Systems	Agents	Institutions
Resilience characteristics	Flexibility and diversity	Resourcefulness	Recognition of access rights and entitlements
	Redundancy and modularity	Responsive	Decision making processes follow principles of good governance
	Fail safe	Ability to learn	Transparent information flows
			Able to apply new knowledge



Adapted from ISET (2012)

Shared learning: generate knowledge to operationalize resilience



Back to conceptual

Resilience

- A lens to adjust our relation with self, one another, community and institutions, our immediate surroundings, the larger environment and mother earth.
- No goal post and no silver bullets.
- Always sub-optimal and presents a real political challenge.
- New constraints may stress system, lead to failure, efforts will fade.
- Does not buy certainty but helps start a new day.

Adapted from Zolli and Healy, 2012

Disaster risk reduction buzzword bingo

Socio-ecological approach	**Holism**	Policy coherence	Local knowledge	Participatory risk assessment
Complexity	Coproduction	Mainstreaming	Community based	**Bottom up**
Sensitization	**Cost-benefit analysis**	Free space (resilience)	**Multi-hazard**	**Top down**
Knowledge transfer	Transformation	**Good governance**	**Capacity building**	**Innovation**
Risk transfer	**Sendai**	**Build back better**	**Adaptive capacity**	Public private partnership

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Source: Aron Clark Ginsberg, Twitter

Thank You

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