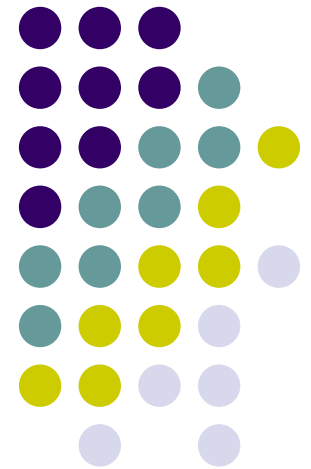


The Role of Institutions in Livelihood Adaptation

Arun Agrawal



Gaps in existing work on climate adaptation and institutions

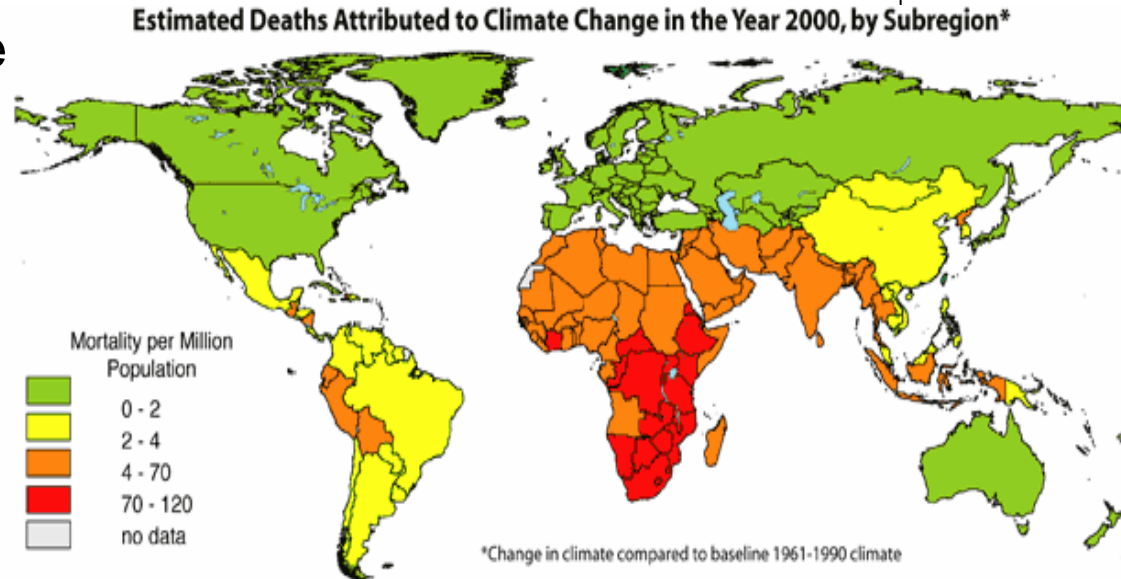


- Absence of middle range theories
- Absence of comparative research drawing on local cases of adaptation
- Need for more work on
 - Institutions and their role in adaptation, especially at the local level
 - Historical continuities in relation to risk and adaptation practices
 - More policy oriented research with strong theoretical underpinnings
 - The relationship of adaptation to local governance and territorial development
 - Challenges in integrating local institutions into policymaking

Why is it important to understand role of local institutions better



- Climate Change a “disruptive problem”
- Many adaptation projects already being supported (> 2 billion dollars) without clear analysis/understanding of role of local institutions
- Increasing urgency of mitigation can pose grave consequences for rural poor; CC already affects the rural poor unequally
- Local institutions relevant for all adaptation interventions for poor – and will continue to be so



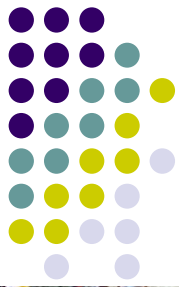
Data Source:

McMichael, JJ, Campbell-Lendrum D, Kovats RS, et al. Global Climate Change. In Comparative Quantification of Health Risks: Global and Regional Burden of Disease due to Selected Major Risk Factors. M. Ezzati, Lopez, AD, Rodgers A., Murray CJL. Geneva, World Health Organization, 2004



Maps produced by the Center for Sustainability and the Global Environment (SAGE)

Focus of presentation



1. Role of institutions in adaptation of livelihoods
2. Major classes of adaptation practices
3. Major classes of relevant rural institutions
4. Major forms of external interventions to facilitate local adaptations to climate risks and changes



Role of local institutions

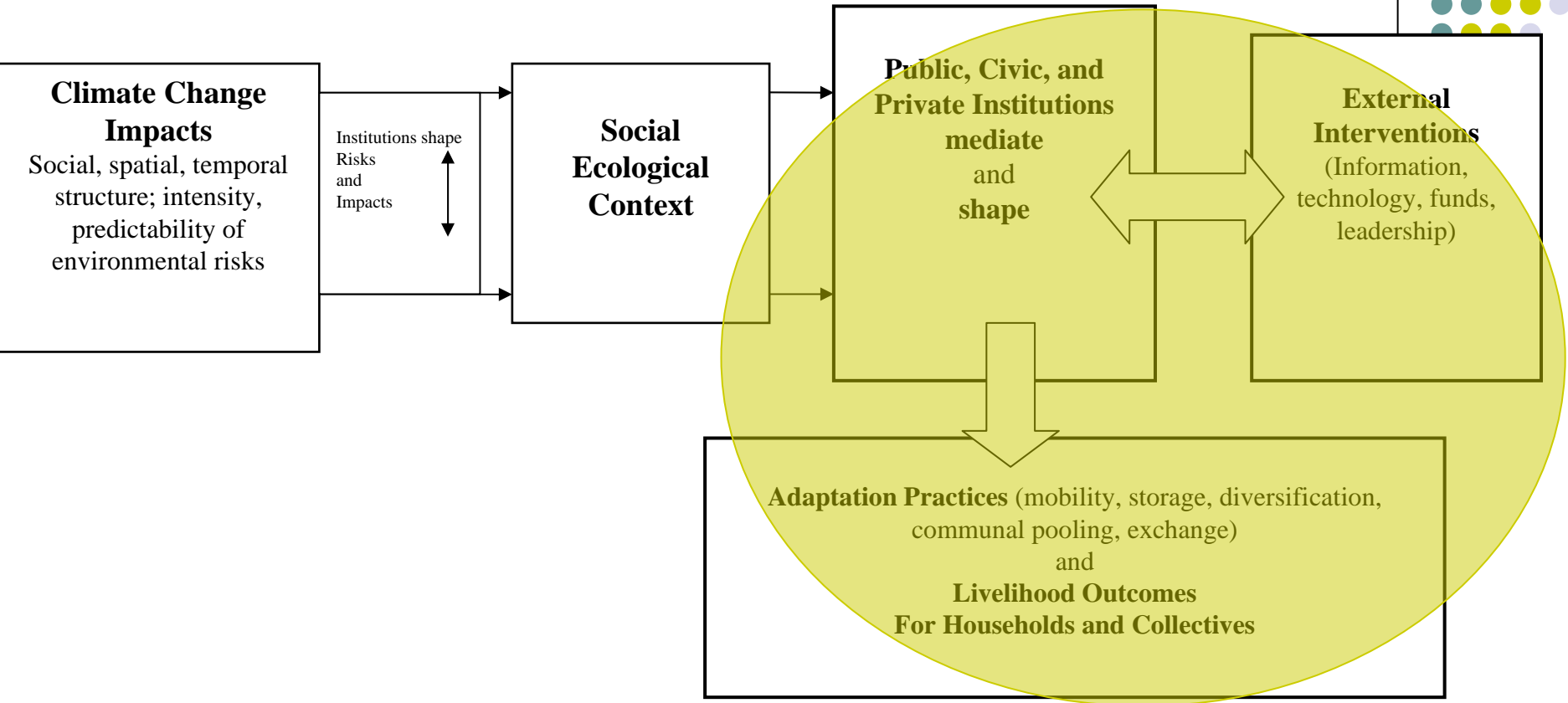
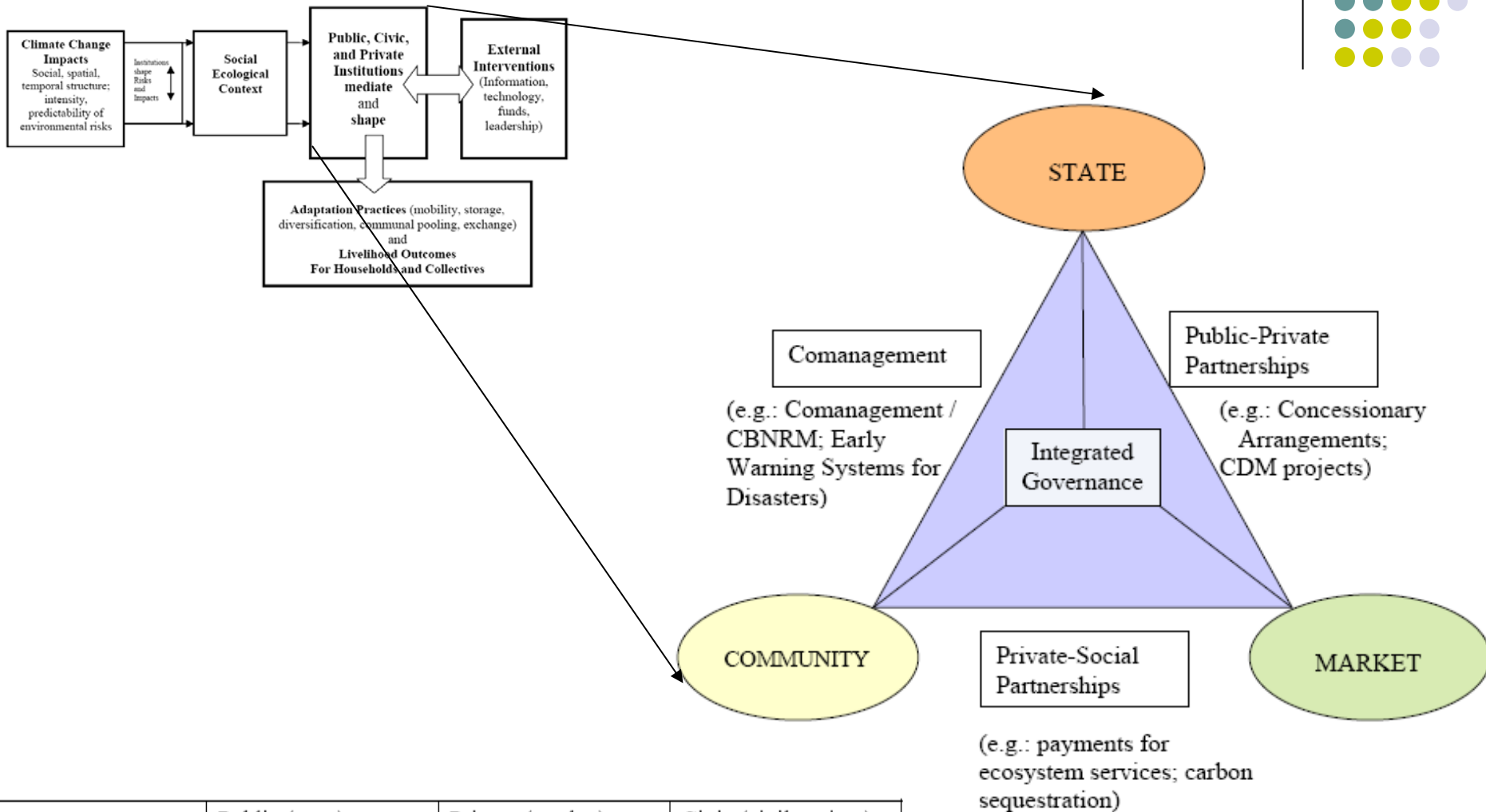


Figure: Adaptation, Institutions, and Livelihoods Framework

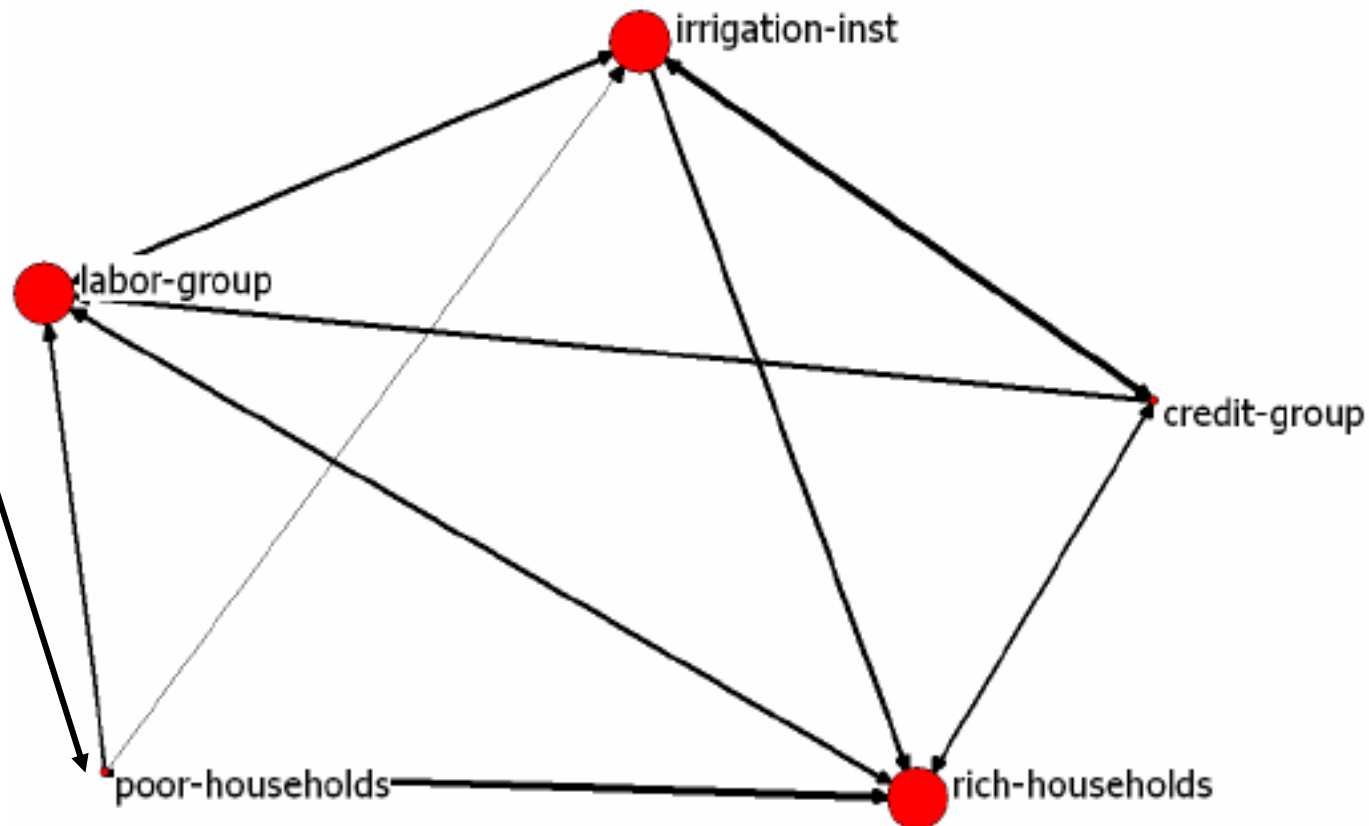
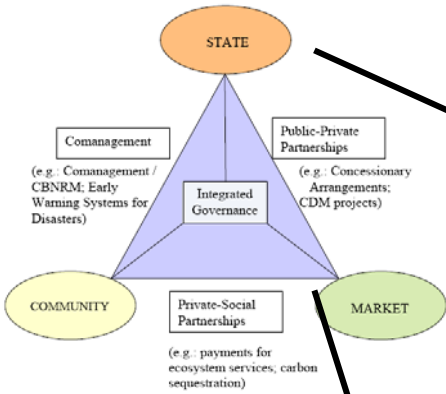
Three roles: 1. Structure risks, sensitivity, adaptive capacity; 2. Constitute the incentive structure for household adaptation practices and joint action at community levels; 3. Mediate external interventions (ubiquitous role)

Major classes of institutions



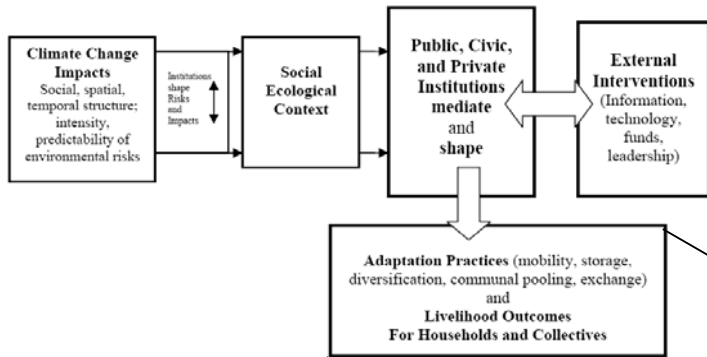
	Public (state)	Private (market)	Civic (civil society)
Types of institutions	Local agencies Local governments	Service organizations Private businesses	Membership organizations, cooperatives

Institutional relationships in a given case





Classes of adaptation practices and climate risks



Mobility – risks across space

Storage – risks over time

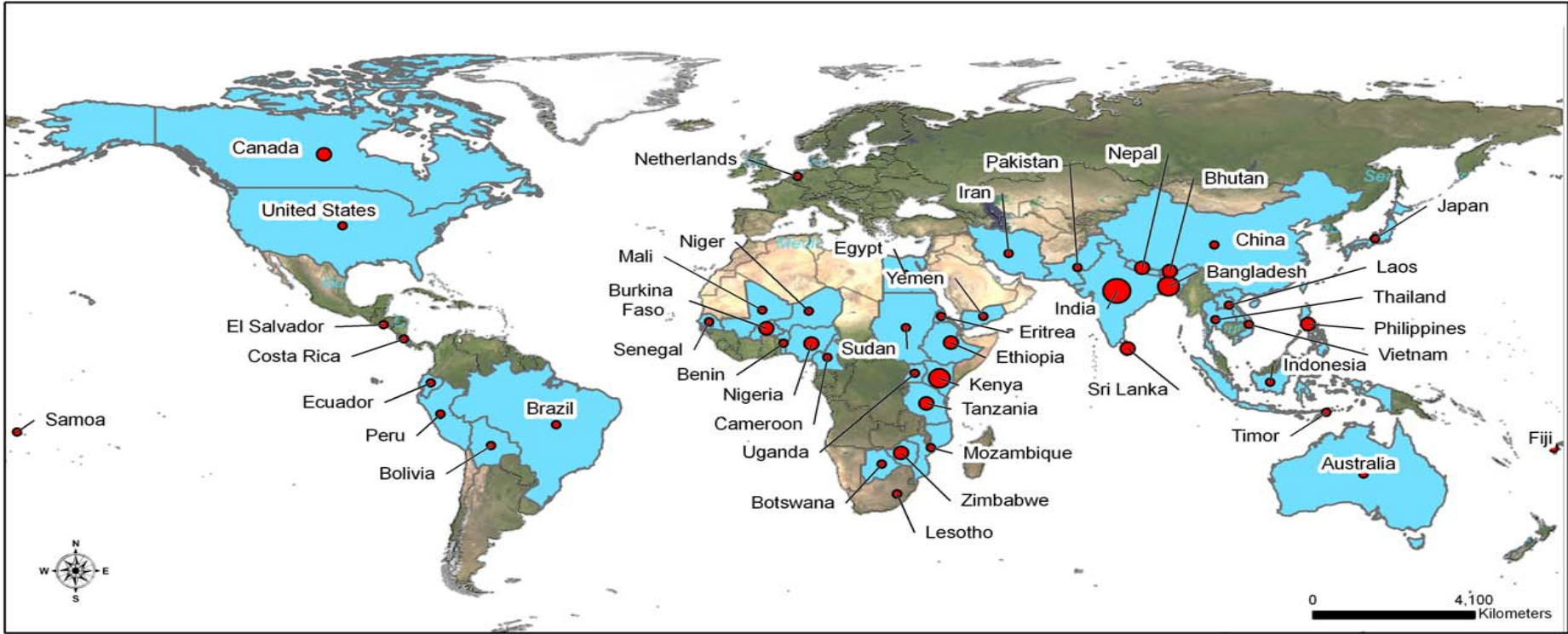
Diversification – risks across asset classes

Communal Pooling – risks across households

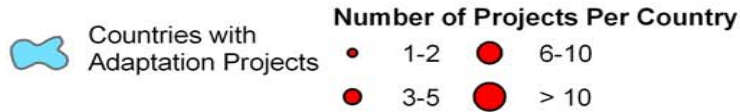
Market Exchange – substitute for any of the above mechanisms through when access to markets

(adapted from Halstead and O'Shea 1989)

Number of Adaptation Projects per Country



Map Source: ESRI ArcGIS 9 Media Kit.



Coping and Adaptation Strategies (UNFCCC data)

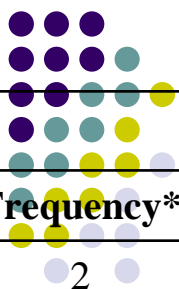


Table 4: Frequency Distribution of Different Classes of Adaptation Practices (N=118)

Class of Adaptation	Corresponding Adaptation strategies	Frequency*
Mobility	1. agropastoral migration; 2. wage labor migration; 3. involuntary migration	2
Storage	1. water storage; 2. food storage (crops, seeds, forest products); 3. animal/live storage; 4. pest control	11
Diversification	1. asset portfolio diversification; 2. skills and occupational training; 3. occupational diversification; 4. crop choices; 5. production technologies; 6. consumption choices; 7. animal breeding	33
Communal pooling	1. forestry; 2. infrastructure development; 3. information gathering; 4. disaster preparation	29
Exchange	1. improved market access; 2. insurance provision; 3. new product sales; 4. seeds, animal, and other input purchases	1
Storage and diversification	Examples of combinations of adaptation classes are drawn from the strategies listed above.	6
Storage and communal pooling		4
Storage and exchange		5
Diversification and communal pooling		4
Diversification and exchange		25

Distribution of adaptation practices by ecological context

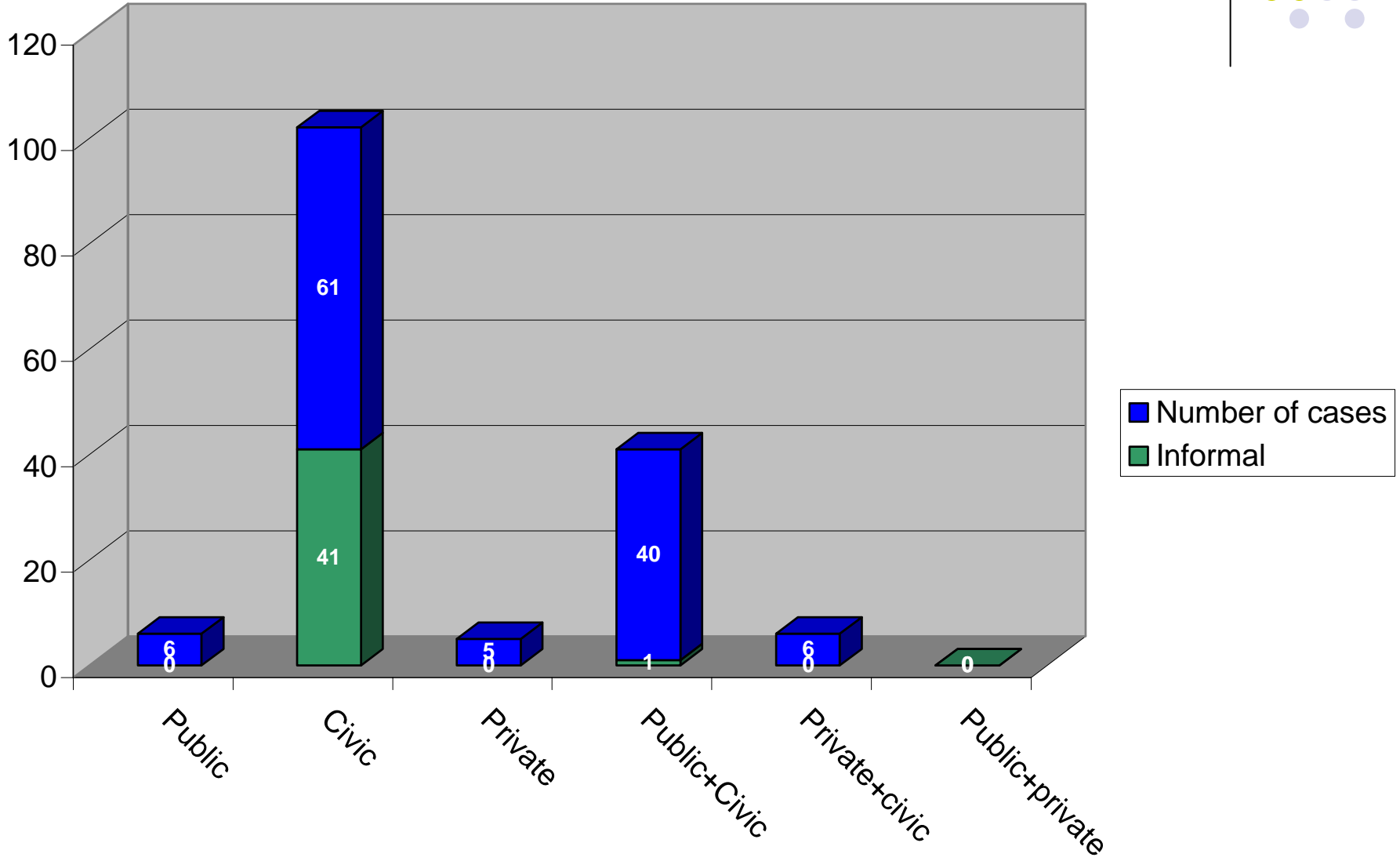


	Semi-Arid areas	Coastal areas	Total
Storage	8	1	9
Diversification	18	7	25
Communal pooling	8	17	25
Storage and diversification	3	1	4
Storage and exchange	5	0	5
Diversification and exchange	15	7	22
Other	4	3	7
Total	61	36	97

The remainder of the 118 cases in the Coping strategies database were from highland, irrigated, or cold regions.

Source: UNFCCC Coping strategies database

Figure 6: Formal vs Informal Institutions in Adaptation





Adaptation strategies and local institutions

Combinations of Adaptation Practices and Institutions in the UNFCCC database

	Public	Civic	Private	Public and Civic	Private and Civic	Total
Storage	0	8	0	3	0	11
Diversification	0	19	1	12	1	33
Communal Pooling	4	11	0	14	0	29
Storage and Diversification	0	2	0	2	0	4
Storage and Exchange	0	4	0	1	1	6
Diversification and Exchange	0	13	4	5	4	26
Other	2	4	0	3	0	9
Total	6	61	5	40	6	118

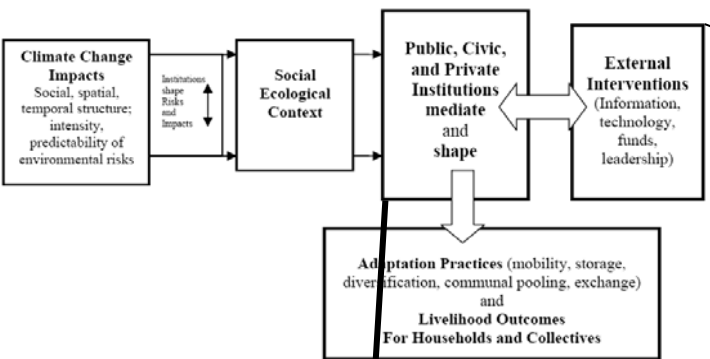
Source: UNFCCC coping strategies database.

Timing and comprehensiveness of local institutional adaptation responses

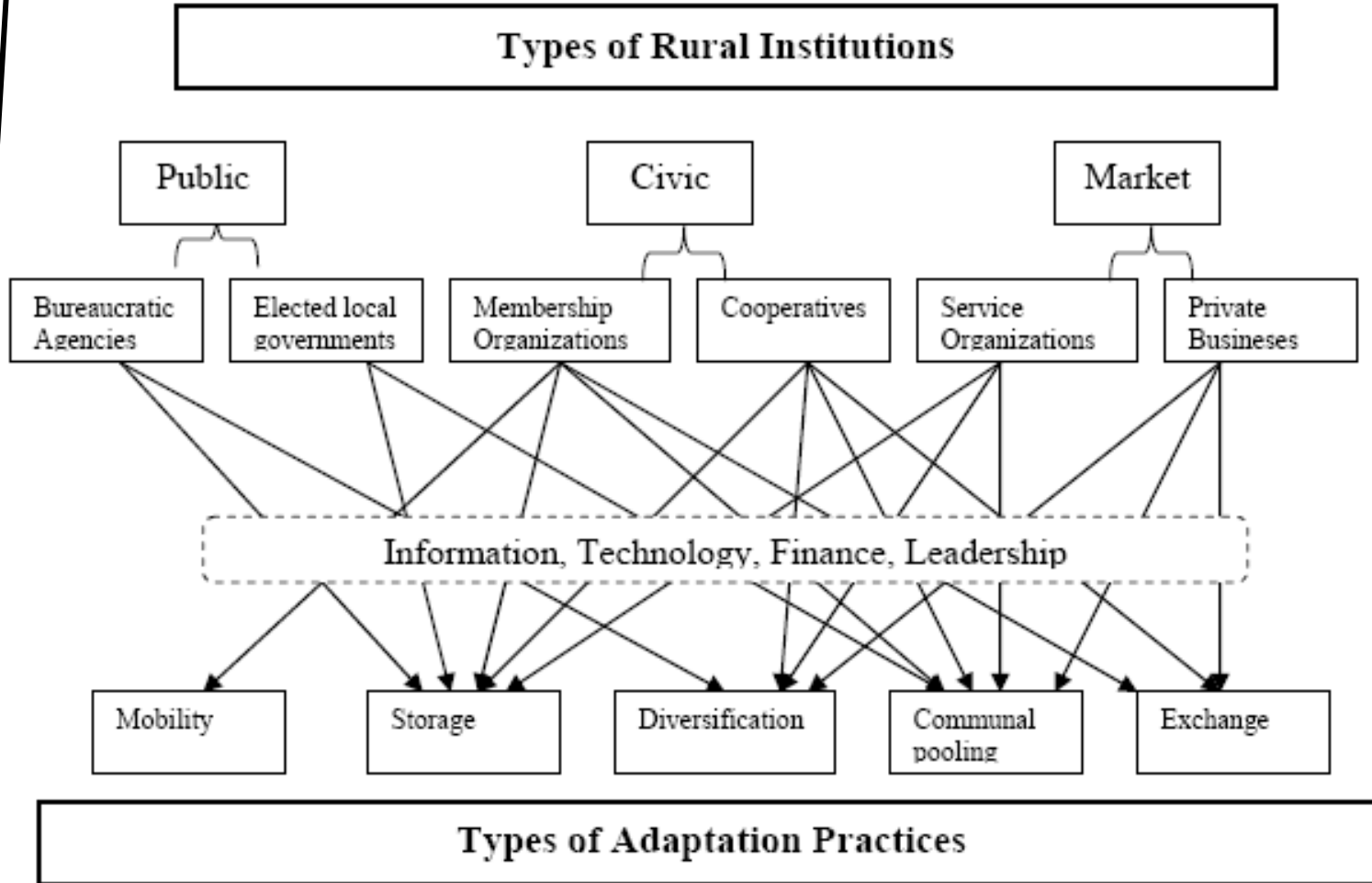


Local adaptation never occurs in an institutional vacuum; usually in an institutionally rich context

	Targeted	Integrated
Reactive	-- post-hazard support for recovery; -- emergency coping strategies	-- integrated hazard management
Proactive	-- specific classes of adaptation practices; -- sectoral interventions	-- integrated development interventions; -- integrated territorial development



External interventions, institutions and adaptations

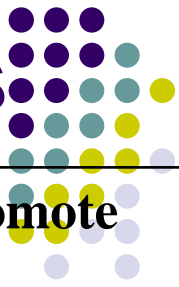


Types of external support



- Information provision
- Technological improvement/skill building
- Financial mechanisms (can be coupled with risk sharing)
- Lowering of barriers to joint action (leadership/ institutional promotion)

Institutions and external interventions



Local Institutions and their Mediation of External Interventions to Promote Adaptation (N=41)

	Public	Civic	Public and civic	Civic and Private	Total
Information	0	2	8	0	10
Technical Inputs	2	4	1	0	7
Financial Support	2	0	6	1	9
Information/Technical Inputs	0	4	2	0	6
Technical Inputs and Financial Support	0	4	1		5
Other	0	2	2	0	4
Total	4	16	20	1	41

Source: UNFCCC Coping strategies database



Public Institutions: Storage, communal pooling, diversification (some exchange)

Civil society institutions: All five classes of adaptation practices

Private market institutions: Diversification and exchange, some storage

Challenges for all 3 types: limited capacity and coordination, information and funding gaps, absence of strong connections across scales, local limits on technological change

General conclusions



- local institutions ubiquitous and central to local adaptations to climate risks; they will continue to be so whatever the degree and intensity of climate change
- Among different classes of adaptation practices, diversification, communal pooling, and exchange in conjunction with diversification are most common; (caution – potential biases in UNFCCC database)
- Local, civil society-based, informal institutions are central in adaptation to climate risk management – both on their own, and in conjunction with external interventions;
- Private market based institutions have, until now, been relatively marginal to adaptation, except in a few cases where they promote exchange-based adaptation strategies



Figure 7: Sector-wise NAPA Adaptation Projects

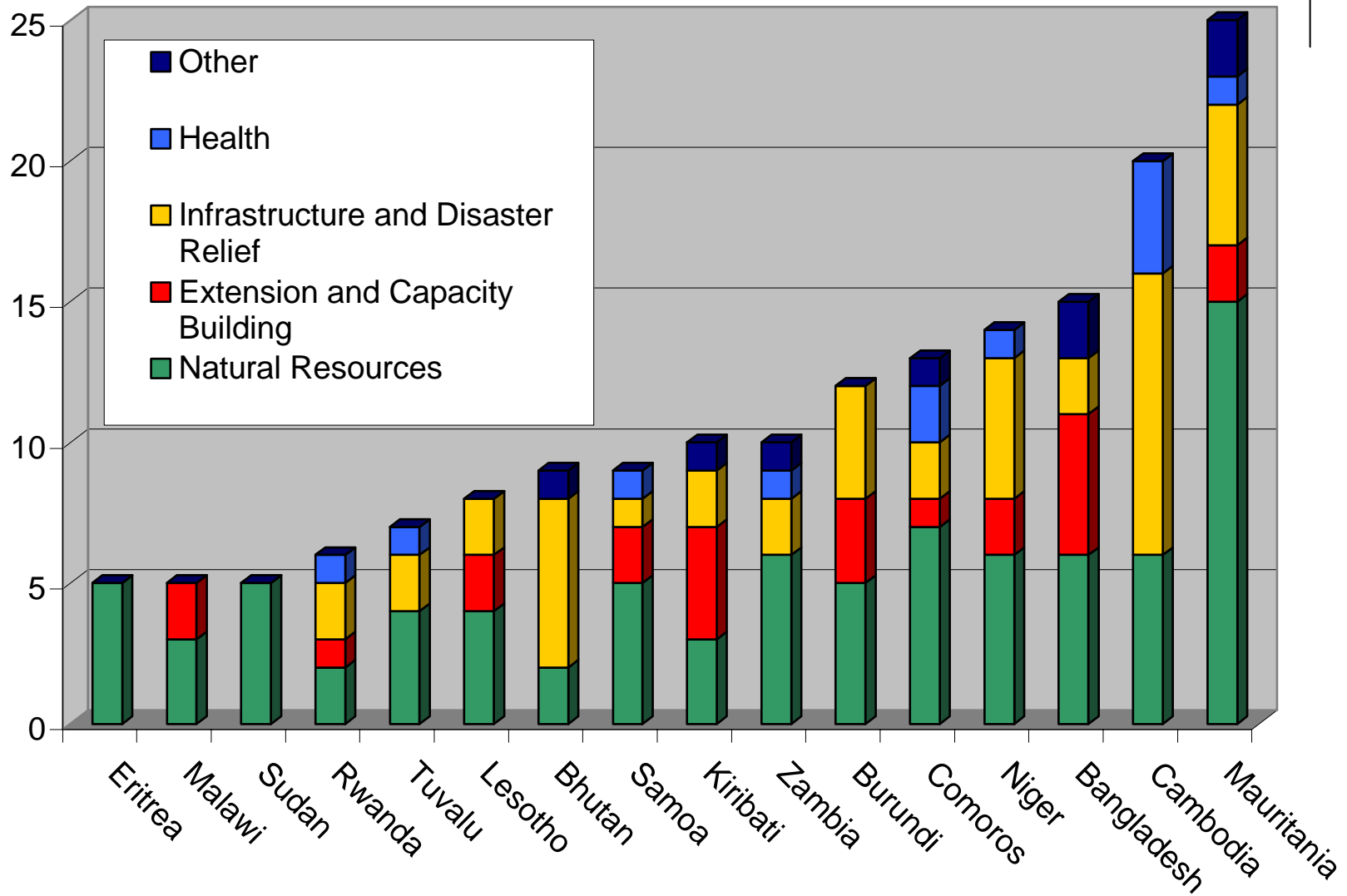
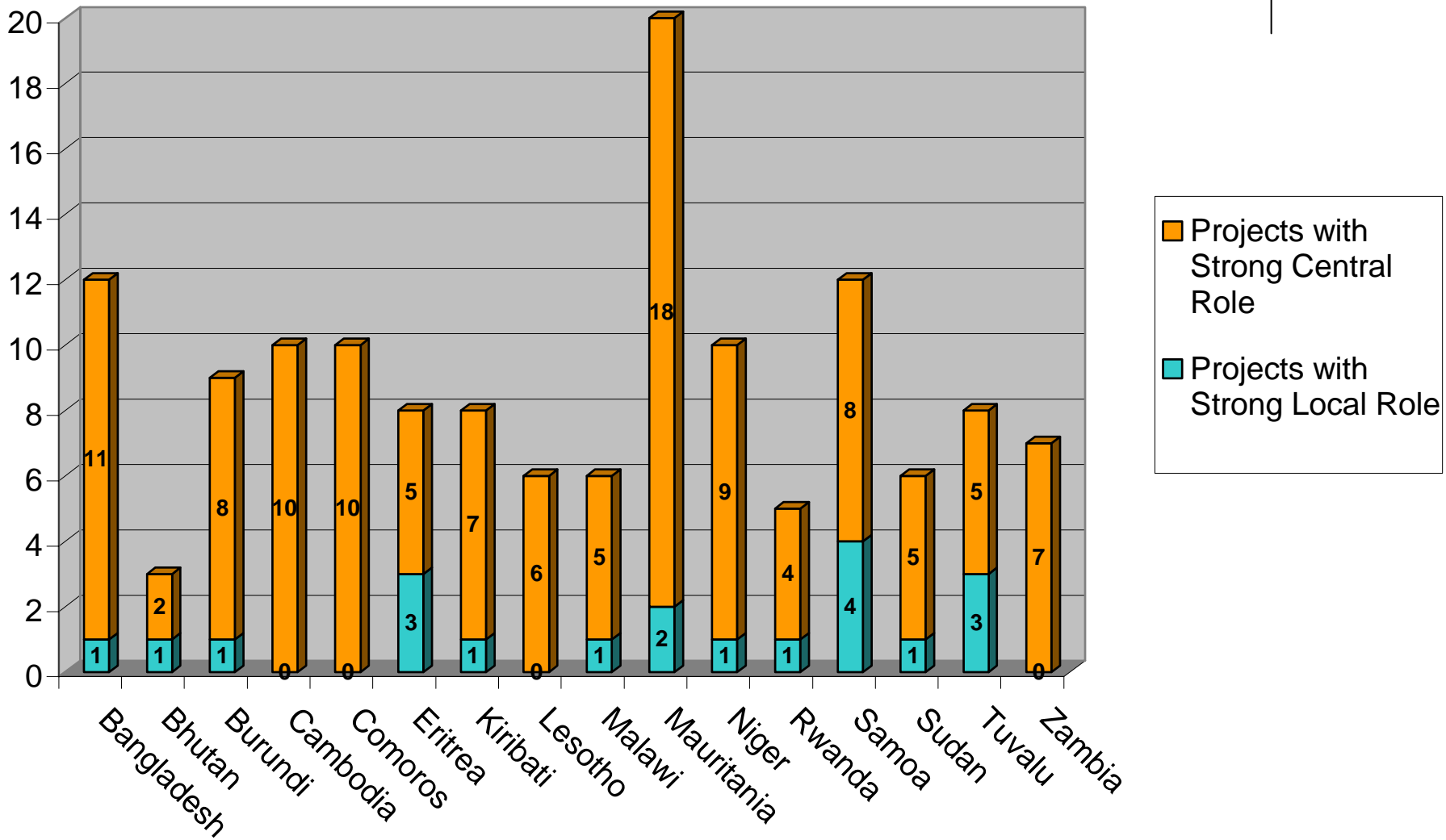


Figure 8: Relative Importance of Local Institutions in NAPA Adaptation Projects





Final words

Although local institutions play a major role in adaptation practices, they are generally underrepresented in existing national plans for adaptation (why?)

Despite their central importance for adaptation, few available analyses of their role (why?)

Gaps in existing plans and analyses constitute a major opportunity for donors, governments, and researchers to integrate local institutions more explicitly in plans for adaptation.

Greater capacity to adapt locally and nationally will require



- **A greater role for institutional partnerships.**
- **Enhanced local institutional capacities.**
- **Understanding of local institutional articulation and access patterns before provision of resources and support in any development/adaptation project.**
- **greater institutional coordination across scales – both for better planning and more effective implementation**
- **Focus on territorial development strategies taking both vulnerabilities and capacities of households and regions into account.**
- **Adoption of an adaptive perspective on institutional development**