



**Types and Institutional Design
Principles of Collaborative
Governance in a Strong-government
Society: The Case Study of
Desertification Control in Northern
China**

Lihua Yang

**School of Public Administration
&
Workshop for Environmental Governance and
Sustainability Science
Beihang University**



Main Contents 主要内容

I. Research Contribution 研究贡献

II. Research Background 研究背景

III. Research Questions 研究问题

IV. Methods and Data 数据与方法

V. Results 结果

VI. Discussion 讨论

I. Research Contribution 研究贡献

Based on a case study of 12 field sites and a meta-analysis of an additional 16 sites reported in the literature on northern China, this study found that the participation of multiple social actors and their type of collaboration influenced desertification control performance.

This study identified four types of collaboration in a strong society and their effect on the desertification control performance.

The study proposed eight principles for effective collaboration.

II. Research Background 研究背景

1

- Numerous studies on desertification control have highlighted the important roles of local people and communities, businesses, the government, experts and scholars, NGOs, international organizations, and other social actors and organizations.

2

- The existing studies have neglected the concrete types of mechanisms for collaborative governance in desertification control and other types of environmental governance.
 - Furthermore, modern studies of collaborative governance often deem various social actors as equal bodies or call on decision makers and practitioners to reduce reliance on the authority of tradition and, as such, cannot deeply study collaborative governance's characteristics and mechanisms in strong-government societies (such as Chinese society).

III. Research Questions 研究问题

1

What are the major types of collaboration on desertification control in a strong-government society?

2

What are the major design principles of successful collaborative governance in a strong-government society?

IV. Methods and Data 数据与方法

1. Research Design and Sites

研究设计与研究区域

2. Data Acquisition

数据收集

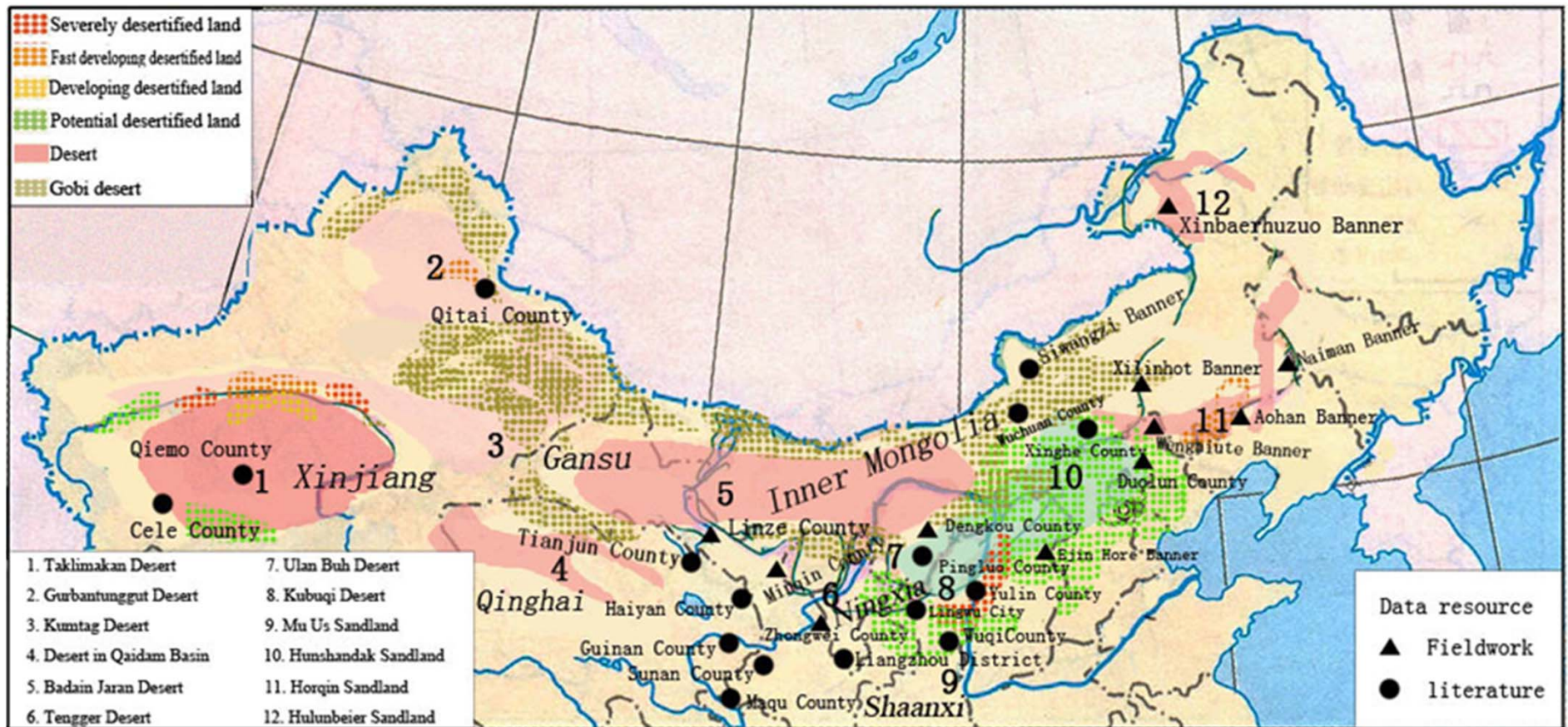
3. Theoretical and Conceptual Background and Framework

研究的理论框架

3. Variables, Measurements, and Data Analysis

变量，测量与数据分析

1. Research Design and Sites



2. Data Acquisition

This research combined field studies and meta-analyses

Table 2

Survey and interview distribution in the 12 cases in northern China (2006-2011)

Areas	Linze	Minqin	Zhongwei	Yanchi	Dengkou	Ejin	Horo	Xilinhot	Duohun	Wengnuite	Xinbaerhuozuo	Aohan	Naiman	Total
a. Interview distribution														
Farmers & residents	4	6	5	1	1	2	1	1	1	2	1	1	1	26
Scholars, experts & technicians	3	11	4	4	2	3	4	0	2	0	4	5	42	
Government officials	1	11	1	3	6	3	4	3	5	3	4	1	45	
Businessmen	0	0	0	0	0	0	0	0	2	0	0	2	4	
Religious groups & NGOs	0	1	0	0	0	0	0	0	0	0	0	0	1	
Total	8	29	10	8	9	8	9	4	10	5	9	9	118	
b. Survey distribution														
Number of copies sent	450	450	450	450	450	450	450	450	460	450	450	450	5410	
Response rate (%)	75.78	100	80.00	99.56	72.00	38.89	93.56	100	100	86.00	100	96.00	86.82	
Number of valid responses	328	418	345	439	304	150	342	449	458	387	362	424	4406	
Valid rate among responses (%)	96.19	92.89	95.83	97.99	93.83	85.71	81.23	99.78	99.57	100	80.44	98.15	93.78	
c. Observation distribution														
Numbers	4	11	7	2	9	2	2	3	2	2	3	5	52	

^a “Types of organization” refers to the people in these organizations.

^b Numbers in brackets are the percentages of valid responses.

Sources: Yang et al., 2013 and Yang and Li, 2012.

Archive materials such as electronic materials from official websites, published and non-published literature, governmental gazettes and documents, news articles, county annals, historical documents, and research reports from 1949 to 2011 were compiled to complement the field data from the 12 field study cases and the 16 meta-analysis cases.

3. Theoretical Framework

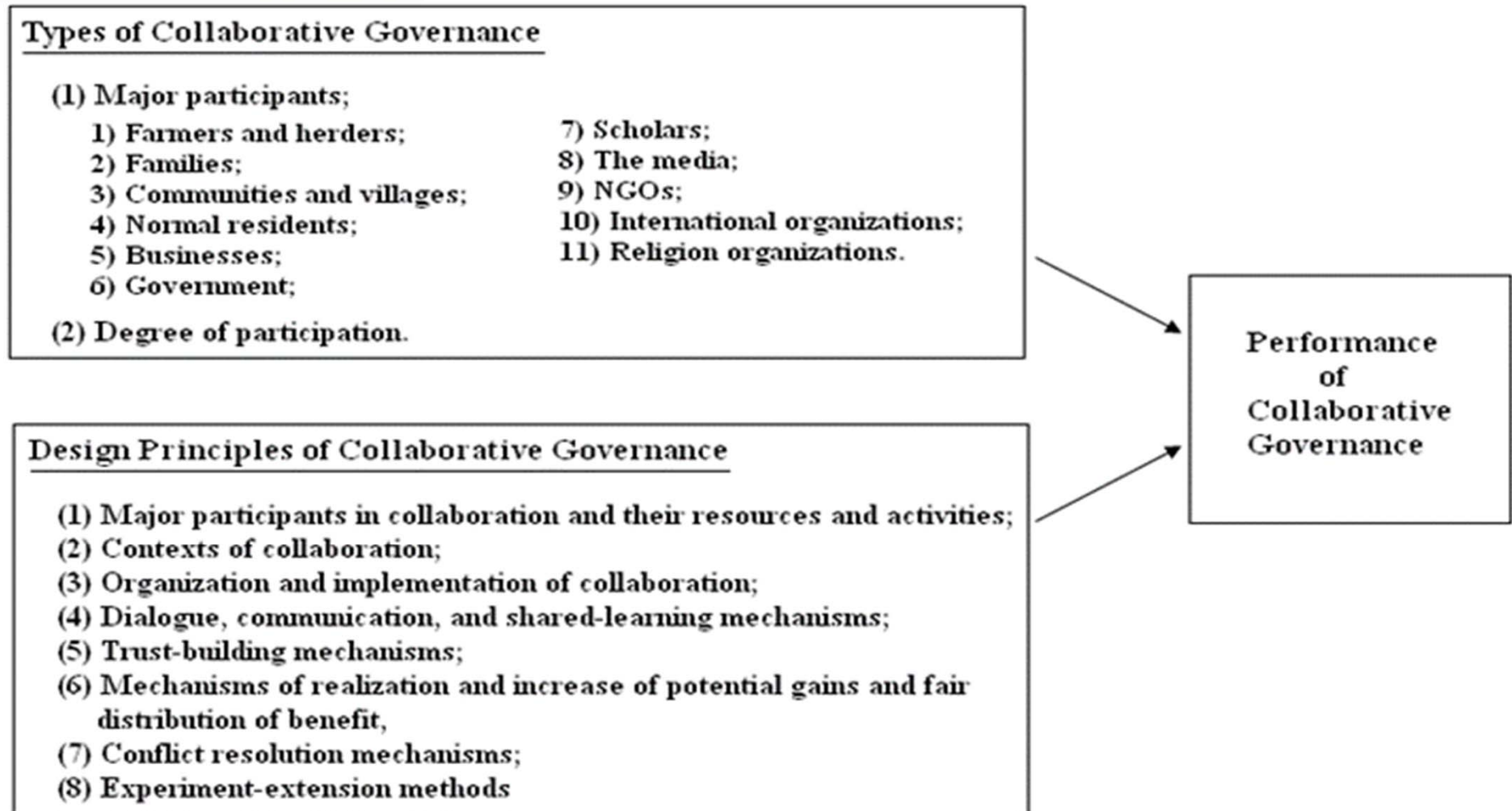


Fig.2. The theoretical framework for analyzing collaborative governance in desertification control

4. Variables, Measurements, and Data Analysis

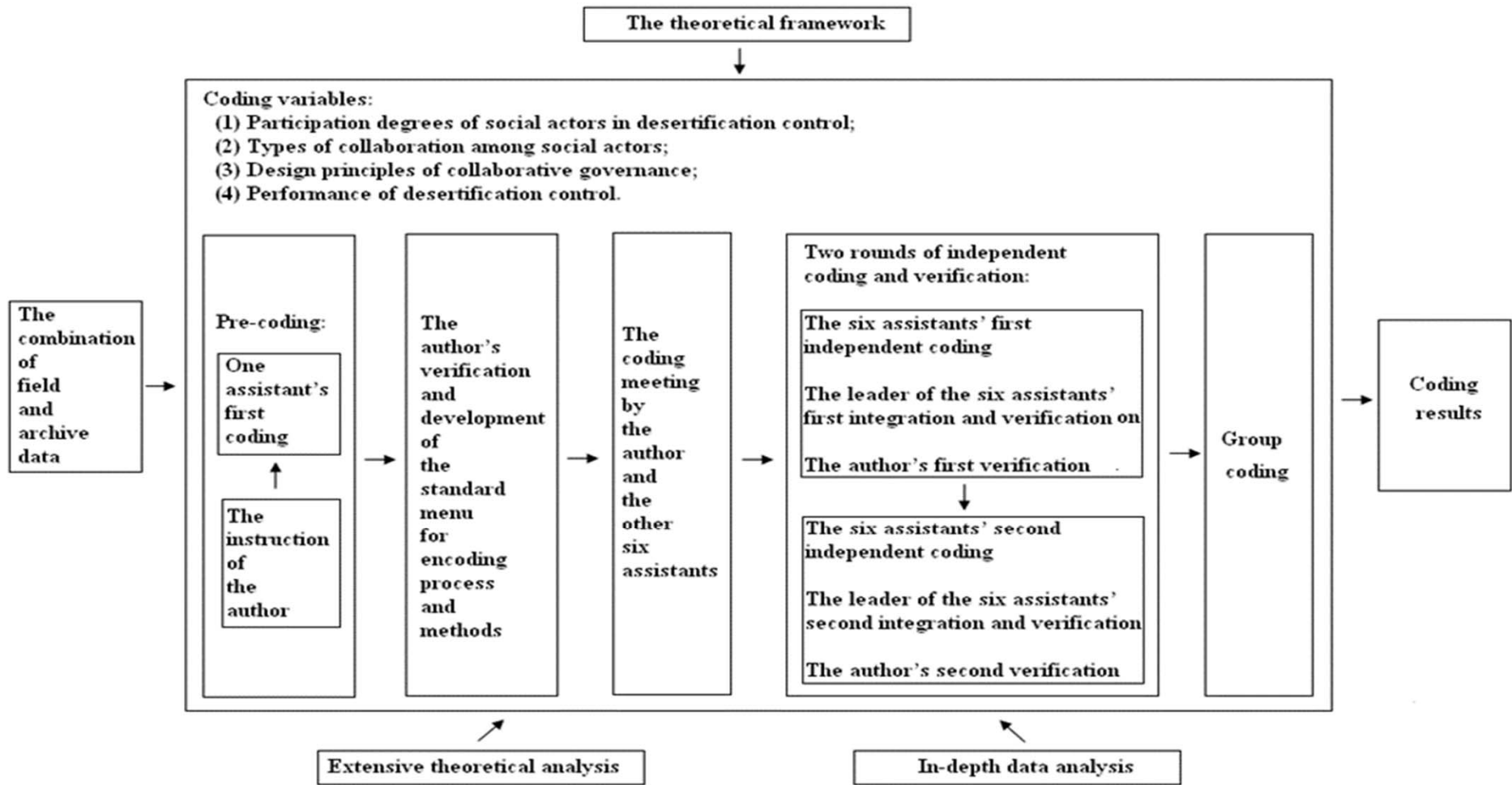


Fig. 3. The framework for coding variables

V. Results 结果

1

Degree of Participation by Various Social Actors in Desertification Control

2

Relationship between the Overall Participation of Various Social Actors and the Results of Desertification

3

Types of Collaboration of Various Social Actors

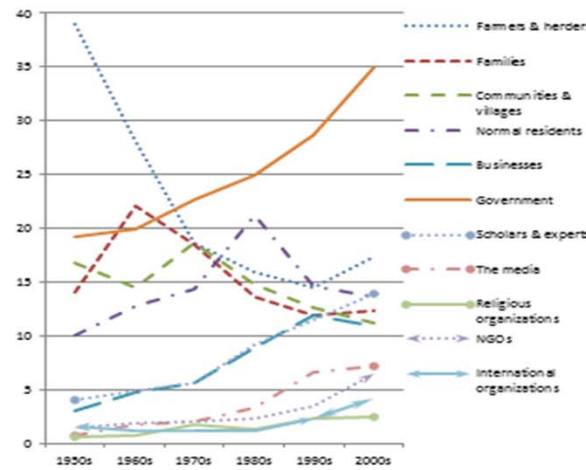
4

Eight Working Principles for Successful Collaborative Governance

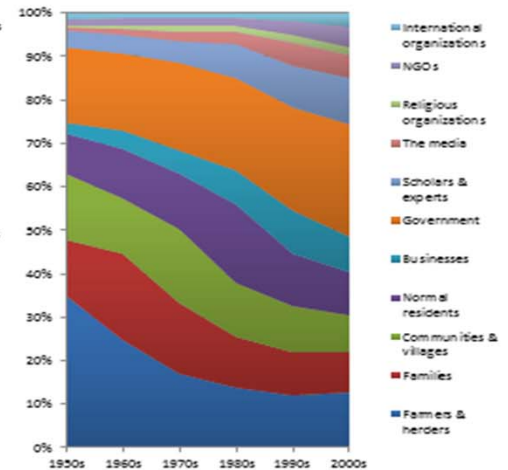
1. Degree of Participation by Various Social Actors in Desertification Control

Although the major participants in different eras were different, the government and farmers and herders were in the top three in every decade.

a. The line chart for different decades



b. The area chart for different decades



c. The area chart for different counties

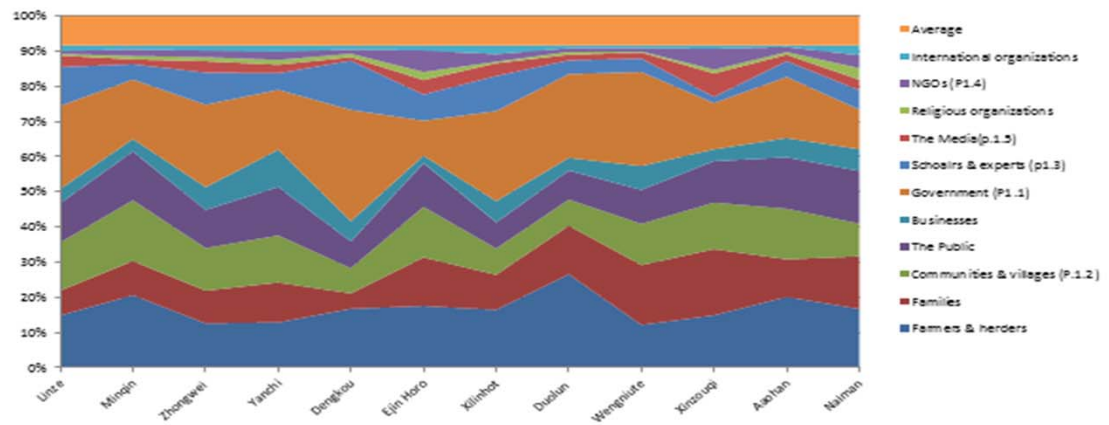


Fig.4. Major participants in different decades from the 1950s to the 2000s as reported by the survey respondents in the 12 field study counties (2011)

2. Correlated Relationship between the Overall Participation of Various Social Actors and the Results of

Table 4

Correlation coefficients (Pearson) between the participation of various social actors and the performance of desertification control as reported by the survey respondents in the 12 cases in northern China from the 1950s to the 2000s (2011)

Eras	Coefficients & significance	Farmers & Families herders	Communities & villages	The Public	Businesses	Government	Scholars & experts	The Media	Religious organizations	NGOs	International organizations	
The 1950s	Coefficient	-0.453	0.145	0.528	-0.261	0.030	0.118	-0.122	-0.031	-0.089	-0.077	-0.250
	Significance	0.139	0.653	0.078	0.413	0.926	0.716	0.706	0.293	0.784	0.227	0.433
The 1960s	Coefficient	-0.077	-0.145	-0.063	-0.047	-0.330	0.066	0.229	-0.048	-0.152	-0.288	-0.049
	Significance	0.811	0.652	0.845	0.885	0.295	0.839	0.475	0.883	0.638	0.457	0.879
The 1970s	Coefficient	0.310	0.304	-0.543	-0.100	-0.306	0.129	0.115	-0.113	-0.186	-0.045	0.330
	Significance	0.327	0.336	0.068	0.758	0.334	0.690	0.722	0.727	0.563	0.889	0.296
The 1980s	Coefficient	0.154	0.328	0.213	0.341	-0.029	0.168	0.272	0.318	0.078	-0.152	0.052
	Significance	0.632	0.298	0.507	0.278	0.930	0.603	0.393	0.314	0.810	0.636	0.873
The 1990s	Coefficient	0.054	-0.015	-0.156	-0.097	-0.186	0.242	0.228	0.749**	-0.340	0.168	0.127
	Significance	0.867	0.962	0.628	0.765	0.562	0.449	0.447	0.005	0.279	0.603	0.694
The 2000s	Coefficient	0.084	-0.167	0.162	0.026	0.303	0.353	0.328	0.648*	0.210	0.622	0.072
	Significance	0.795	0.603	0.616	0.936	0.338	0.260	0.298	0.023	0.513	0.031	0.823
Total	Coefficient	-0.009	0.166	0.174	-0.021	-0.062	0.198	0.243	0.736**	-0.126	0.315	0.085
	Significance	0.977	0.606	0.588	0.948	0.849	0.538	0.446	0.006	0.697	0.318	0.792

Note: *P < 0.05(two-tailed); **P < 0.01(two-tailed).

The correlation coefficients indicated that the participation of the media, families, communities and villages, the government, scholars and experts, NGOs, and international organizations was positively correlated with the performance of desertification control.

Whereas the participation of farmers and herders, the public, businesses, and religious organizations was negatively correlated with performance.

Table 5

Correlation coefficients (Pearson) between different types of scholars and experts and the performance of desertification control as reported by survey respondents in the 12 field study cases over the past 60 years (2011)

	Natural scientists	Research institutions of the Chinese Academy of Sciences	Research institutions of forestry industry	Academic communities of the masses	Colleges & universities	Anti-desertification research bases	Social scientists
Coefficients	0.688*	0.698*	0.659*	0.865**	0.52	0.706*	0.647*
Significance	0.013	0.012	0.020	0.000	0.081	0.010	0.023

Note: *P < 0.05(two-tailed); **P < 0.01(two-tailed).

3. Types of Collaboration of Various Social Actors

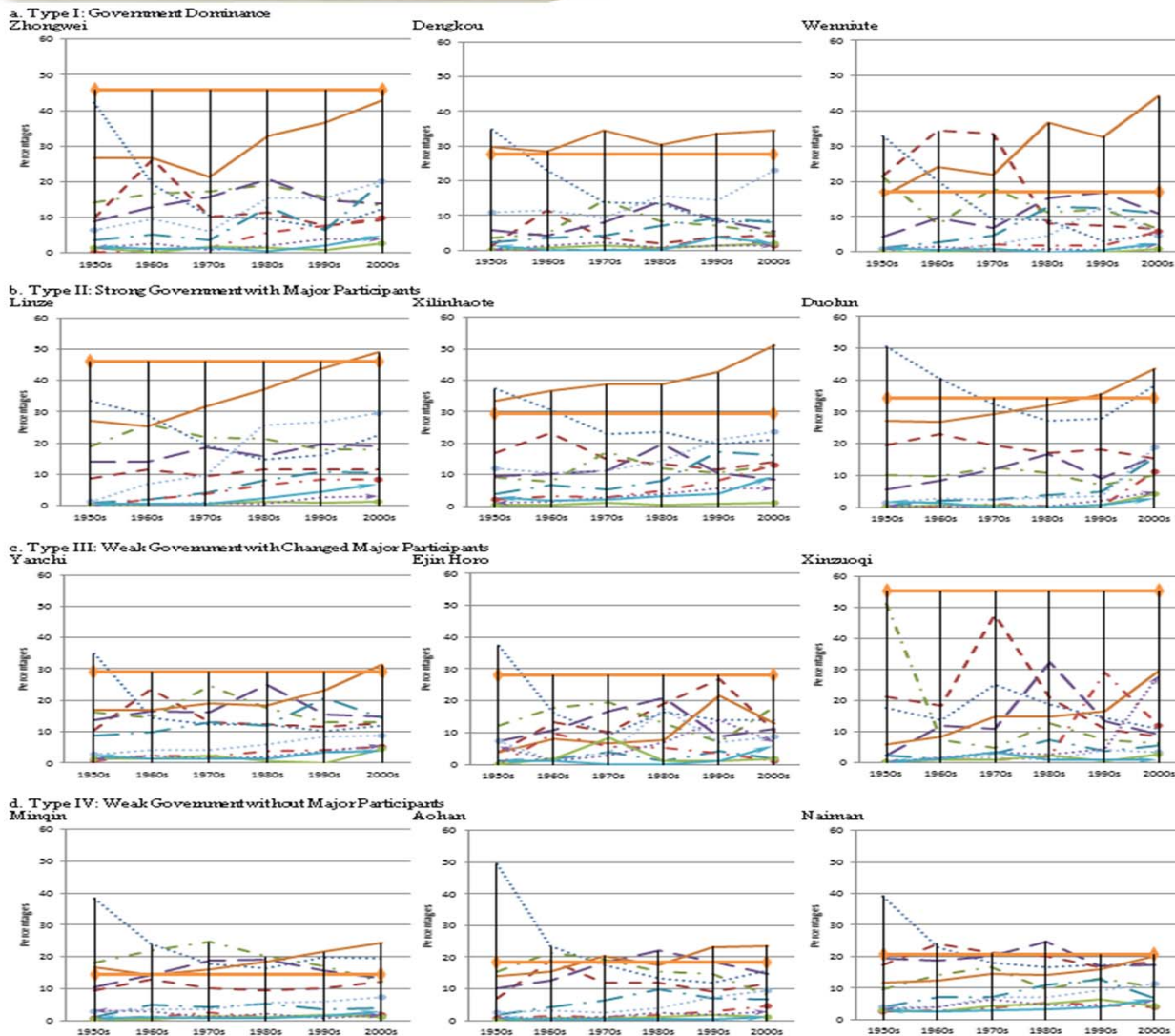


Fig. 5. Four types of collaboration among social actors in desertification control as reported by the survey respondents in the 12 field study counties (2011)

Note: Farmers & herders; - - - Families; - - - Communities & villages; - - - The public; - - - Businesses; - - - Government; Scholars & experts; - - - The media; - - - Religious Organizations; NGOs; - - - International organizations; - - - Governance performance.

Table 6

The relationship between the type of collaborative governance and the performance of desertification control for all 28 cases

	Type I	Type II	Type III	Type IV
Frequencies	7	8	7	6
Average scores of the performance of desertification control	2.14	2.75	2.14	1.67
Ranks	[2]	[1]	[2]	[4]

Note: Given H=3, M=2, L=1 in Table 8; H=High, M=Middle, and L=Low.

The 16 meta-analysis cases were also categorized using these four types (Table 8). By calculating the average performance of desertification control in each the 28 cases, this study found that Type II collaboration had the highest performance, Type IV had the lowest, and Types I and III were in the middle (Table 6).

4. Eight Working Principles for Successful Collaborative Governance

Eight design principles

Eight design principles	Coefficient (Significance)
P1. There is effective participation of multiple social actors with enough support of resources	0.778** (0.000)
P1.1. There is active organization and coordination by the government with policy, organization, institutional, material, and financial support.	0.672** (0.000)
P1.2. There is enough collaboration willingness and ability of farmers, herders, families, and communities as local actors.	0.613** (0.001)
P1.3. There is enough research and technical support by scholars.	0.429* (0.023)
P1.4. There is active participation by NGOs with human resources and financial support.	0.570* (0.002)
P1.5. There is active participation by the media, which improves social concerns and provides material and financial support.	0.639** (0.000)
P1.6. There is active participation by other social actors with human resources, material, and knowledge support.	0.474* (0.011)
P2. There are open and democratic forums for multiple-actor collaboration.	0.643** (0.000)
P3. Collaborative activities are targeted, organized, systematic, and persistent.	0.962** (0.000)
P4. There are effective mechanisms for discussion, communication, and shared learning.	0.717** (0.000)
P5. There are effective trust-building mechanisms.	0.750** (0.000)
P6. There are effective mechanisms of realization and increase of potential gains and fair distribution of benefits	0.679** (0.000)
P7. There are effective conflict resolution mechanisms	0.521** (0.005)
P8. Collaborative activities use experiment-extension governance methods	0.539** (0.003)

VI. Discussion 讨论

1

Participation of Multiple Actors and Characteristics of Collaborative Governance

2

Complex relationships between the participation of social actors and the performance of desertification control

3

The four collaboration types provide a possible type framework for analyzing collaborative governance in a strong-government society

4

The eight design principles provide concrete instructions for analyzing and building successful multi-collaborative governance in a strong-government society

1. Participation of Multiple Actors and Characteristics of Collaborative Governance

1

- The roles of various social actors and their changes in collaborative desertification control under government domination

2

- Collaborative governance is a co-existence structure of competition and cooperation and a fluctuating process of different social actors

3

- Collaborative governance is a networked, nested, and overlapping multi-actor and multi-level governance context

4

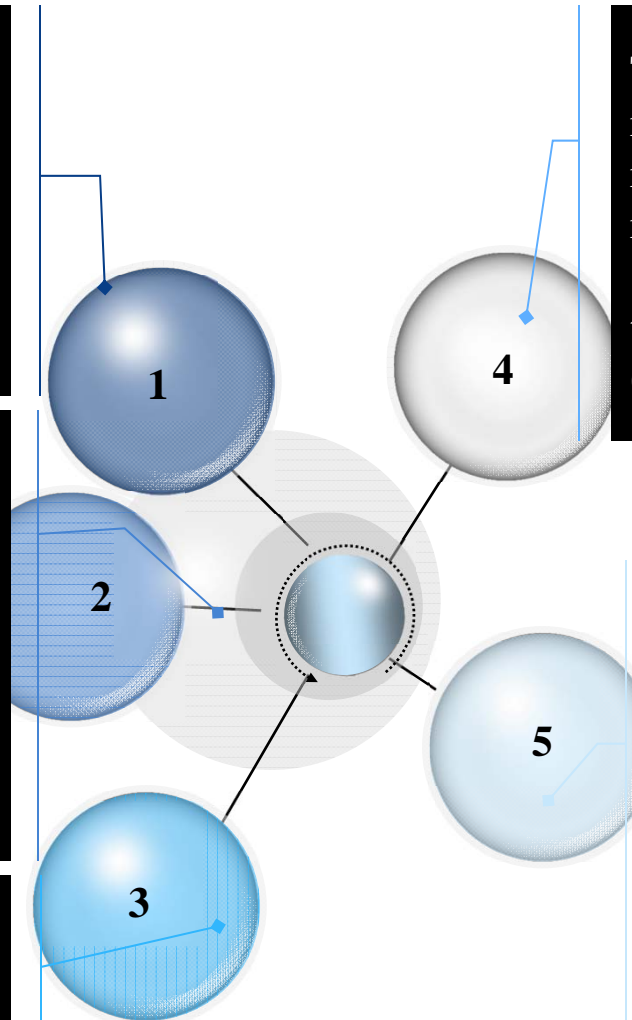
- Collaborative governance is an interactive result of the internal and external factors of its system; endogenous collaborative governance depends on its self-organizing capacity, while exogenous collaborative governance depends on the support of external forces

2. Complex relationships between the participation of social actors and the performance of desertification control

The high value and significance of the coefficient for the media indicated the important role of the media in desertification control, which was ignored by earlier studies and practitioners

The negative coefficients for businesses and the public were consistent with the perceptions of interviewees, while the public, though often highly enthused, deteriorated conditions through unscientific desertification control activities because of their lack of related knowledge, skills, and experience.

The negative coefficient for farmers and herders might be related to their over-cultivation, overgrazing, over-deforestation, and excessive firewood collection



The negative coefficient for religious organizations might be related to the destruction of religious organizations between 1950 and 1980, especially during the Great Cultural Revolution (Yang, 2009).

The high and significant coefficients for the seven types of scholars and experts illustrated the importance of scholar/expert participation in desertification control and suggests that they should be incorporated in other collective action.

