



清華大學
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Polycentric Governance of Crisis from the Perspective of Information Economics

An Empirical Study of Wenchuan Earthquake

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- 1. Puzzle and Dilemma**
- 2. Economic Analysis**
- 3. Questionnaire Survey and Case Study**
- 4. Conclusion and Suggestion**





A Brief Introduction of Wenchuan Earthquake

- At 14:28, May 12th, 2008, a magnitude 8 earthquake took place in Wenchuan, Sichuan province.



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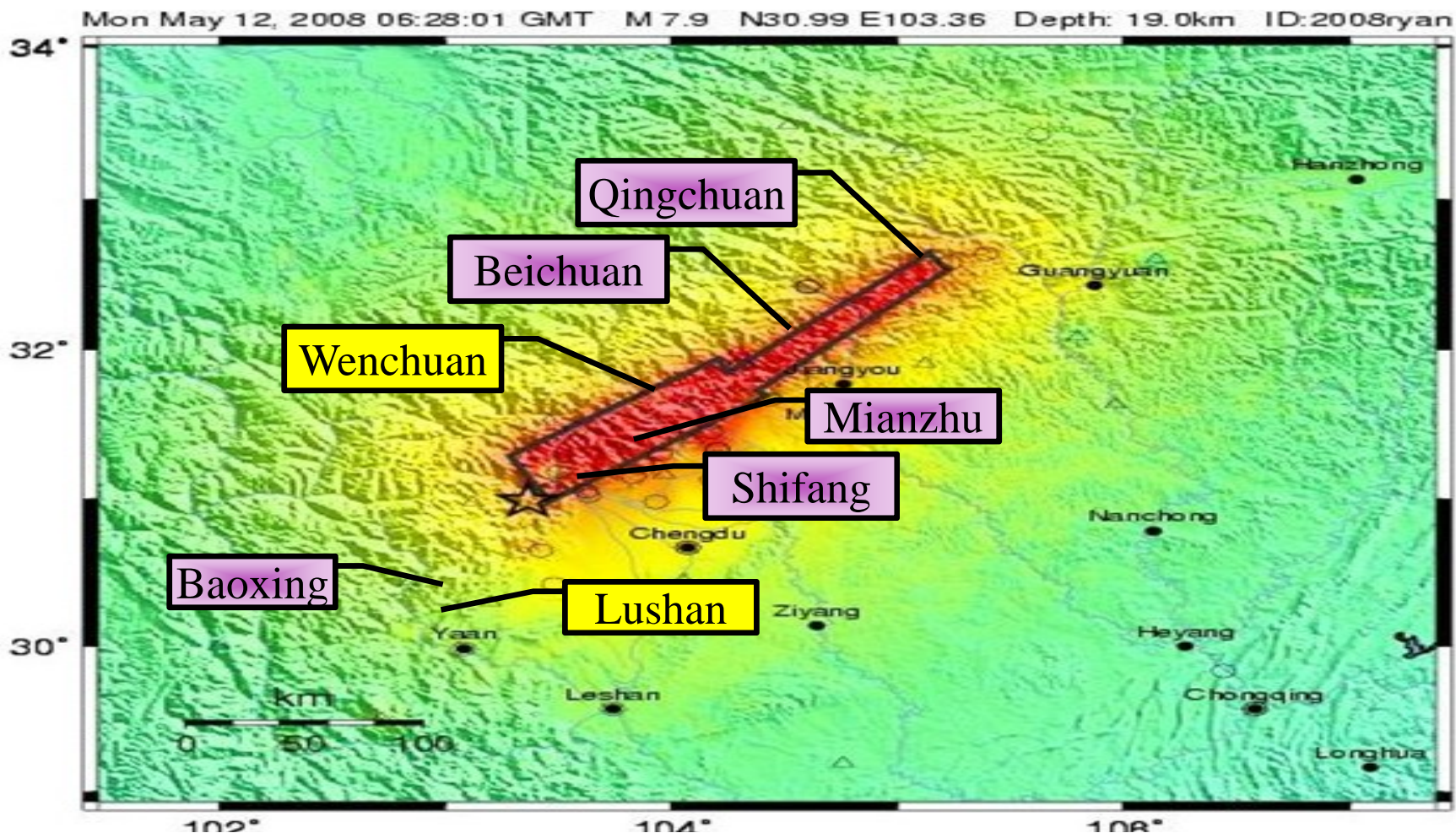
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1. Puzzle and Dilemma

■ Puzzle: Information Concentration VS. Information isolated Islands





2 Economic Analysis

2.1 The analysis of public resources demands in catastrophe

- Catastrophe will make the social situation into a temporary disorder, and the demands for public resources in the disaster area will be urgent.
- We will discuss different stages of the disaster and the characteristics of the law of public resources demands.
- Three stages of the catastrophe response
 - ①the stage of emergency rescue;
 - ②the stage of transitional resettlement;
 - ③the stage of reconstruction;

Wenchuan Earthquake (2008)	
May 12 nd ~ May 19 th	the stage of emergency rescue
May 20 th ~ September 4 th	the stage of transitional resettlement
September 5 th , 2008 ~ 2011	the stage reconstruction





2.1 Economic Analysis: The analysis of public resources demands under the catastrophe (cont')

- The analysis of catastrophe response to the material demands of the various stages.

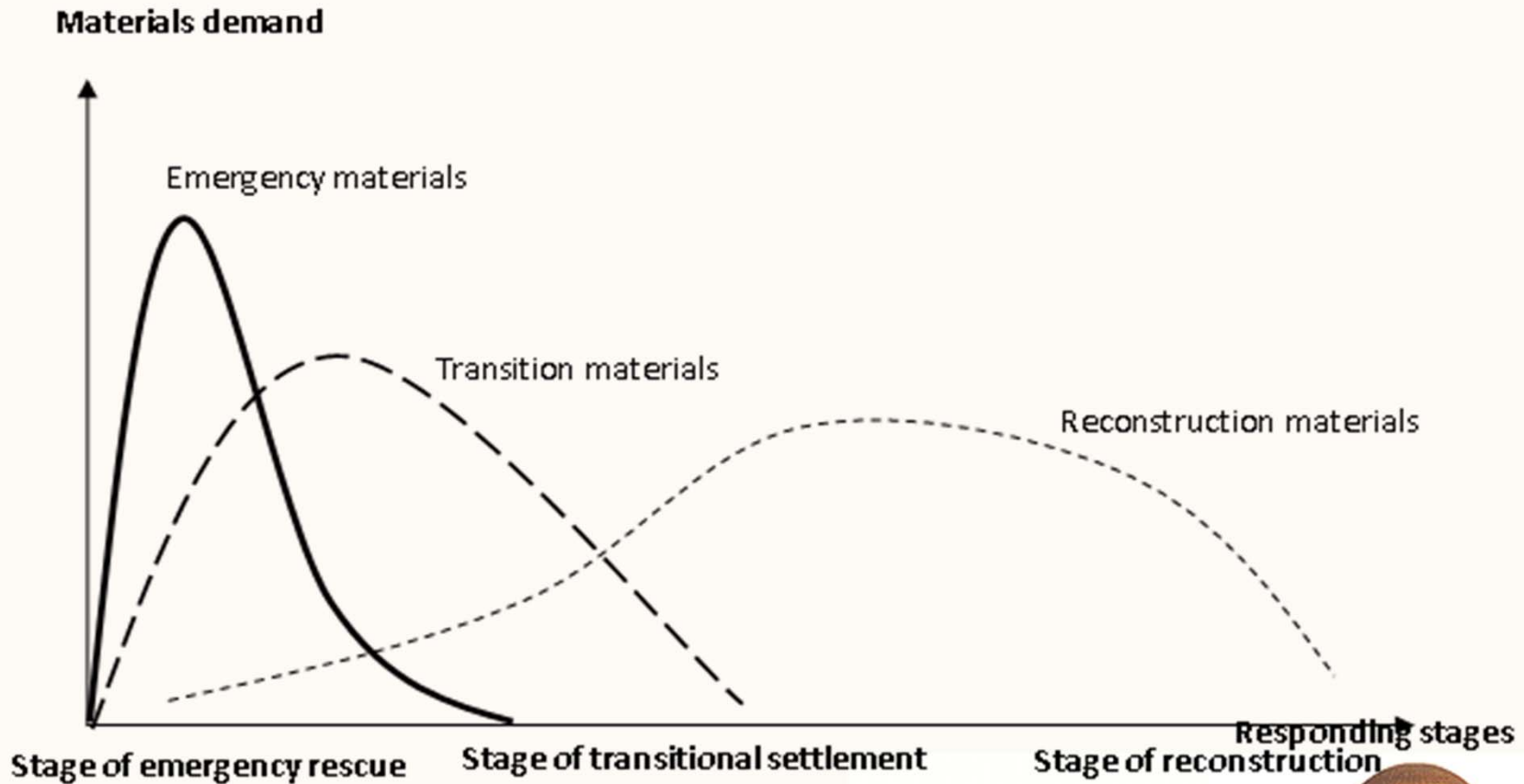
Various Stage	Description of The Stage
<i>The stage of emergency rescue</i>	Life rescue, human and material resources are urgently needed
<i>The stage of transitional resettlement</i>	Demands for life maintenance and psychological support increasingly become the main aspect
<i>The stage of reconstruction</i>	Mainly focuses on the psychological rescue, and restore the quality of life and livelihood development





2.1 Economic Analysis: The analysis of public resources demands under the catastrophe(cont')

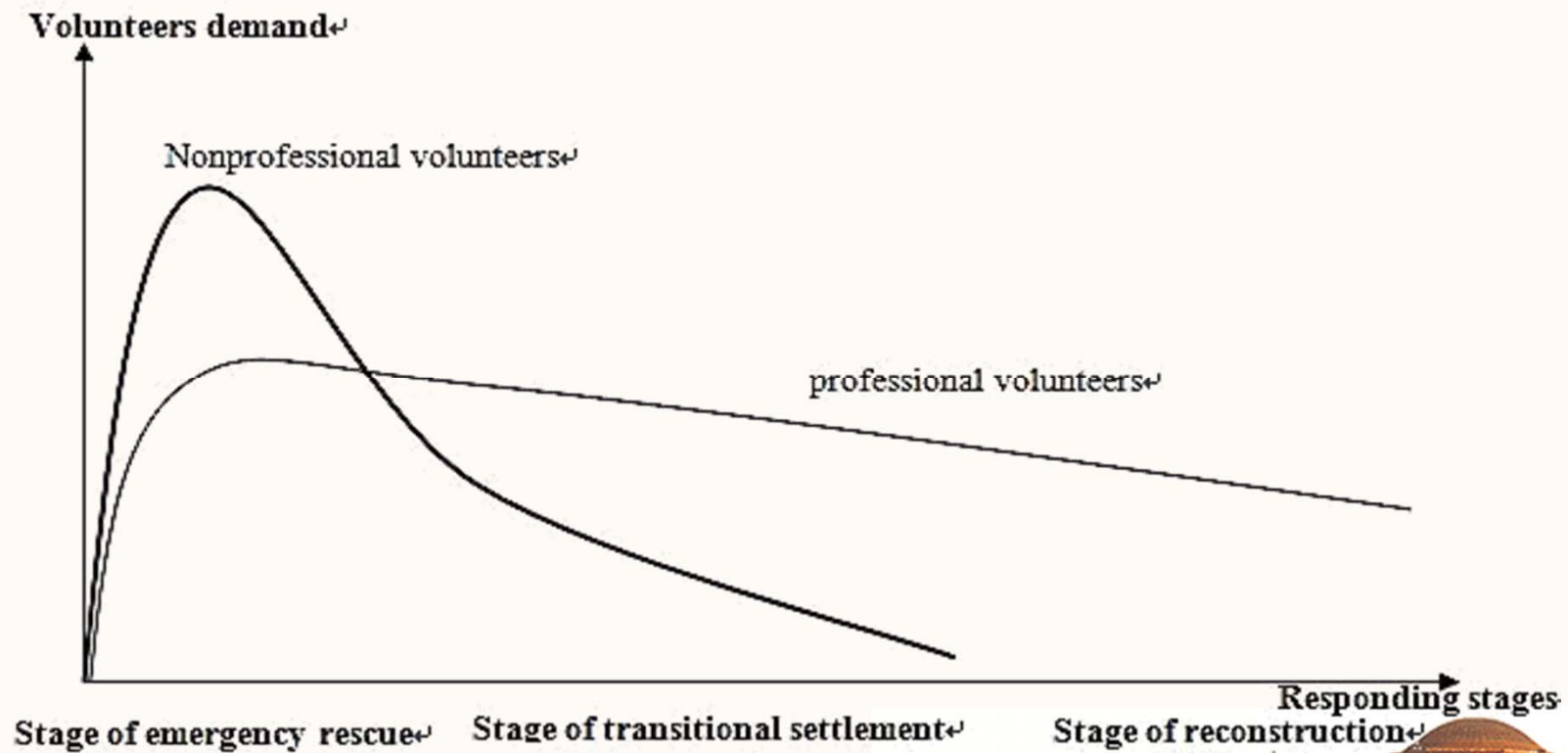
■ Material demands in different stages





2.1 Economic Analysis: The analysis of public resources demands under the catastrophe(cont')

■ Volunteers demand in different stages





2.2 Economic Analysis: Analysis on the supply of charity resources under the catastrophe

- The analysis of the supply of public resources under the catastrophe.

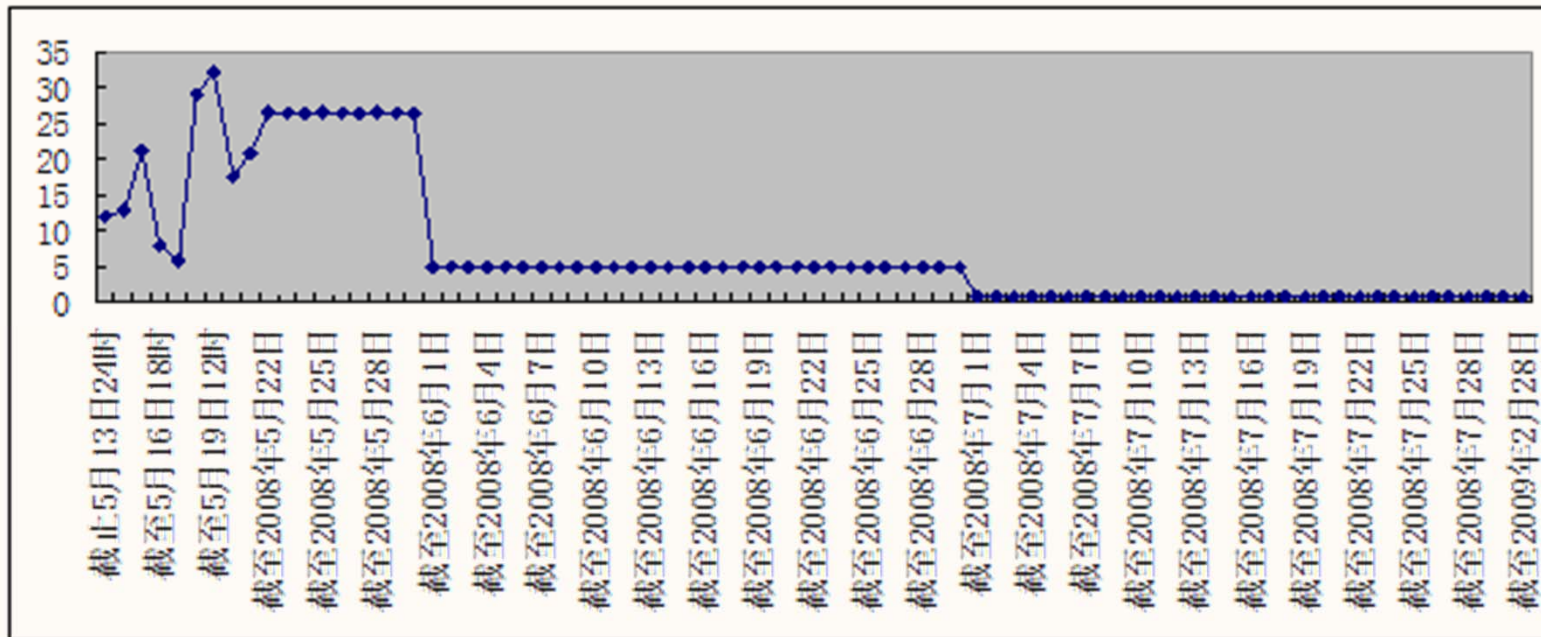
Various Stage	Description of The Stage
<i>The stage of emergency rescue</i>	When the people are aware of the seriousness of the disaster, they will be voluntary to lend a helping hand
<i>The stage of transitional resettlement</i>	Non-professional volunteers appear to be a surplus, but transitional materials are relatively scarce, and donations will reach a peak during this period, and then slowly decrease
<i>The stage of reconstruction</i>	Public supply will encounter a rapid decline, the market mechanism is restored and basic construction materials can be accessed through the market





2.2 Economic Analysis: Analysis on the supply of charity resources under the catastrophe(cont')

■ The analysis of donations in different stages during the catastrophe



Donations basically show a rapidly increasing at the beginning and then slowly decreasing afterwards

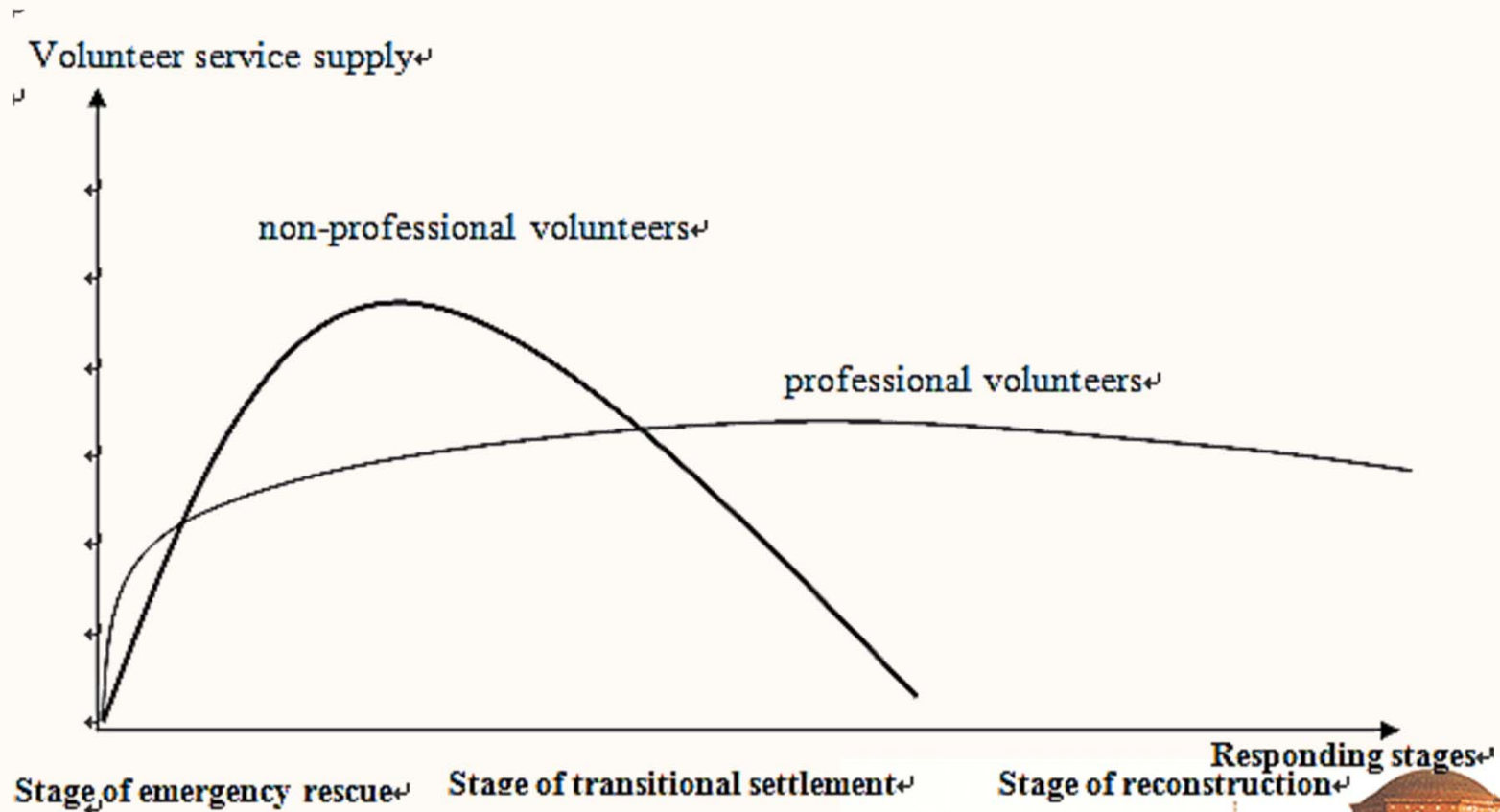
Experience Learning of Taiwan 9.21 Earthquake:

201 To launched a reconstruction Fund from 1999 to 2008



2.2 Economic Analysis: Analysis on the supply of charity resources under the catastrophe(cont')

■ Volunteer service supply in different stages





2.3 Economic Analysis: The contradiction between supply and demand of public resources during the catastrophe

1

- The asymmetric information as well as the blindness and disorder of rescue during the catastrophe
- It is unable to know the comprehensive stricken situations in time, and charity resources cannot be effectively allocated

2

- Supply and demand of commonweal rescue resources are inconsistent
- Especially in microcosmic individual level, due to the fact that each individual's condition is different, the rescue is faced with various personalized demands

3

- The commonweal rescue supply in a catastrophe is lagged
- The infrastructures like communication and transportation are enormously damaged and the channels of information and resources get blocked in the catastrophe

4

- The supply and demand of public rescue resources are unbalanced
- It is an important question on how to realize the match between the overall supply and demand





3. Case Study and Questionnaire Survey

	<p>Existence time</p>	<p>Changing state</p>
	<p>Including all the relief phases and is still in operation</p>	<p>Going to apply for an independent legal status</p>
<p>and social resources</p>		



3. Questionnaire Survey and Case Study

Overall situation of NGOs in Sichuan Province
(officially registered by 2009)

Type of NGO	Administrative Level of Registration		
	Provincial Level	Municipal Level	Total Amount
Society Groups	1, 034	14, 791	15, 825
Private Non-enterprise Entities	448	11, 811	12, 259
Public Funds	38		38
Private Funds	12		12
Total Amount	1, 532	26, 602	28, 134





3.1 Questionnaire Survey

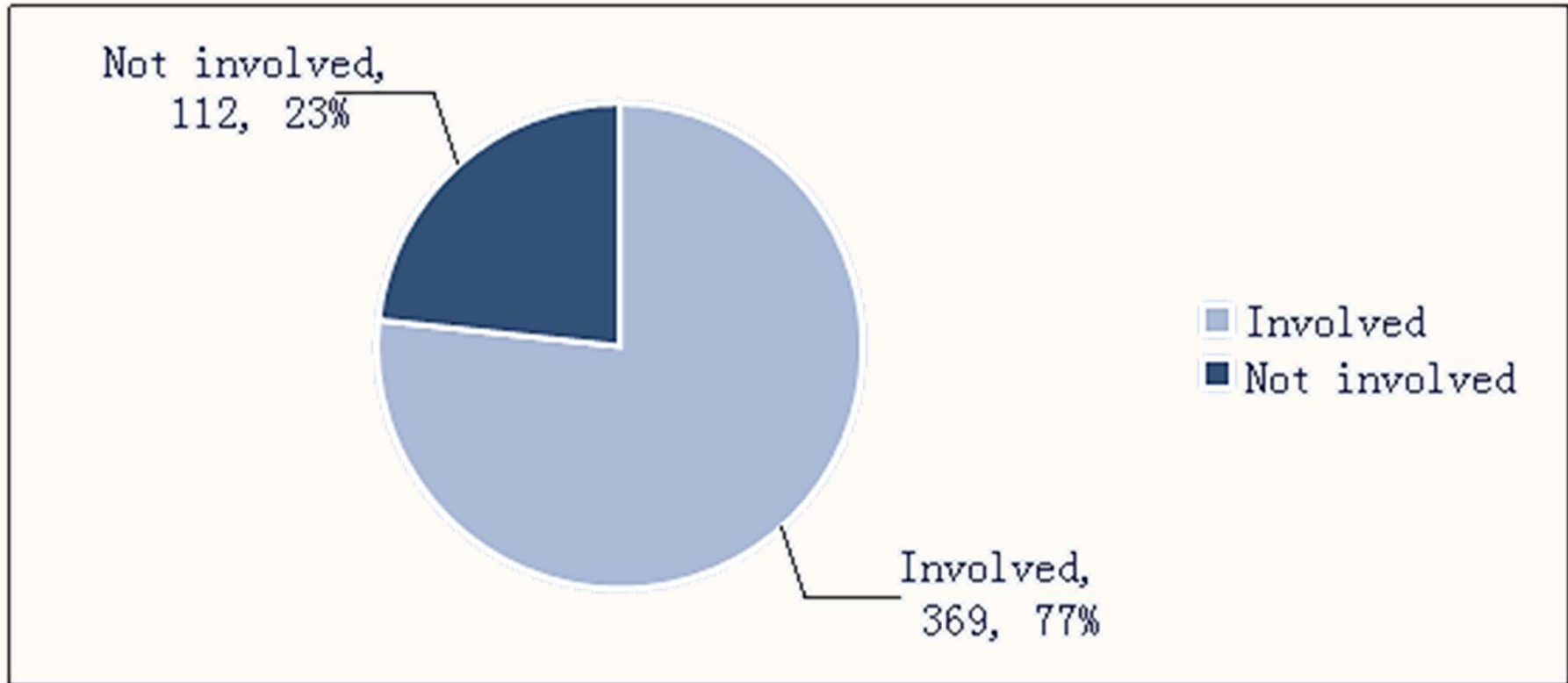
We adopt the method of equidistant sampling randomly to select 800 social organizations out of 28,134 ones registered in Department of Civil Affairs of Sichuan Province to carry out the investigation. Since there are only 50 foundations in Sichuan, we sampled all the foundations.

Type of NGO	Number of Samples		
	Provincial Level	Municipal Level	Total Amount
Society Groups	100	400	500
Private Non-enterprise Entities	50	200	250
Public Funds	38		38
Private Funds	12		12
Total Amount	200	600	800



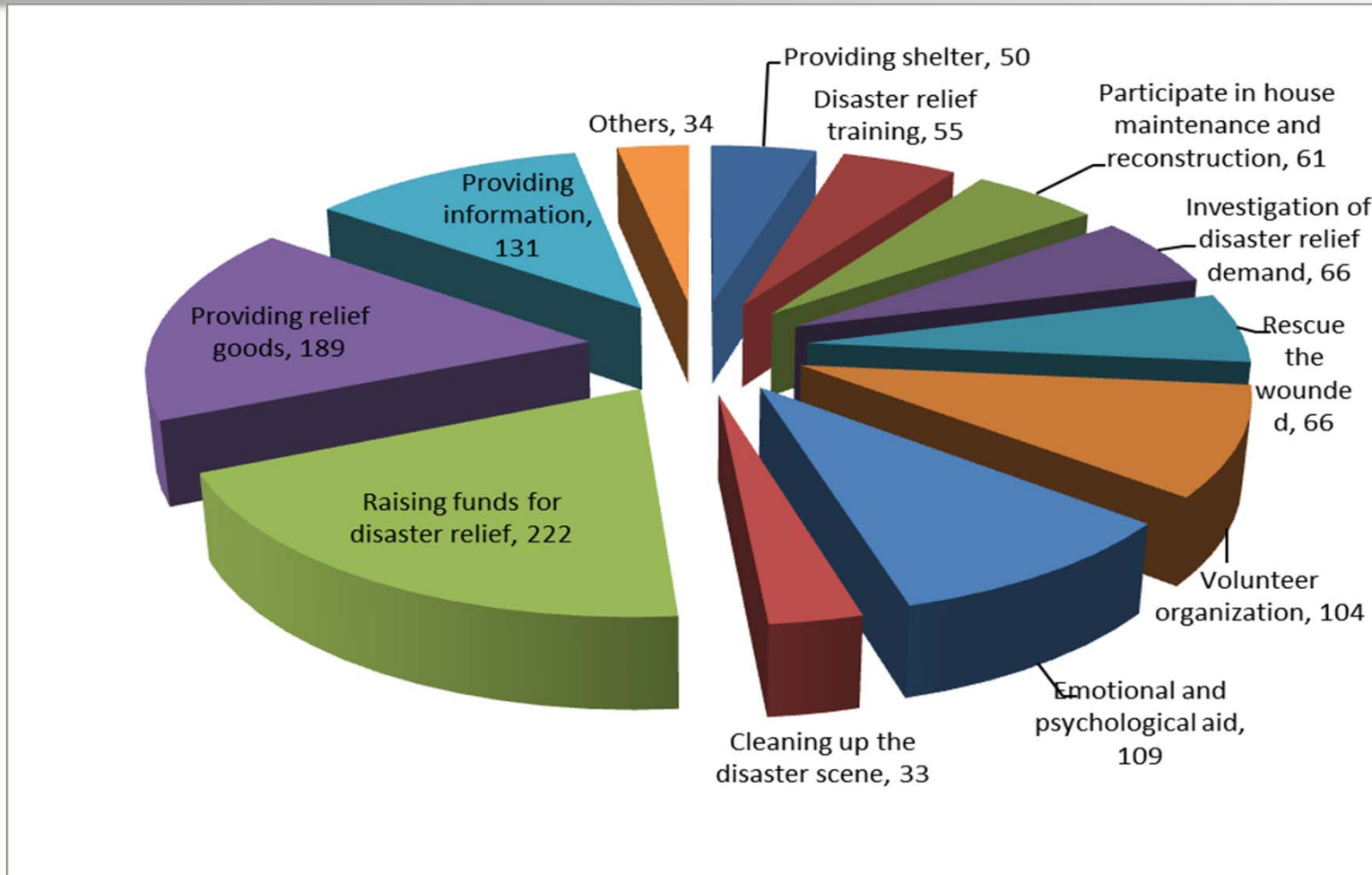


How many NGOs were involved with the rescue



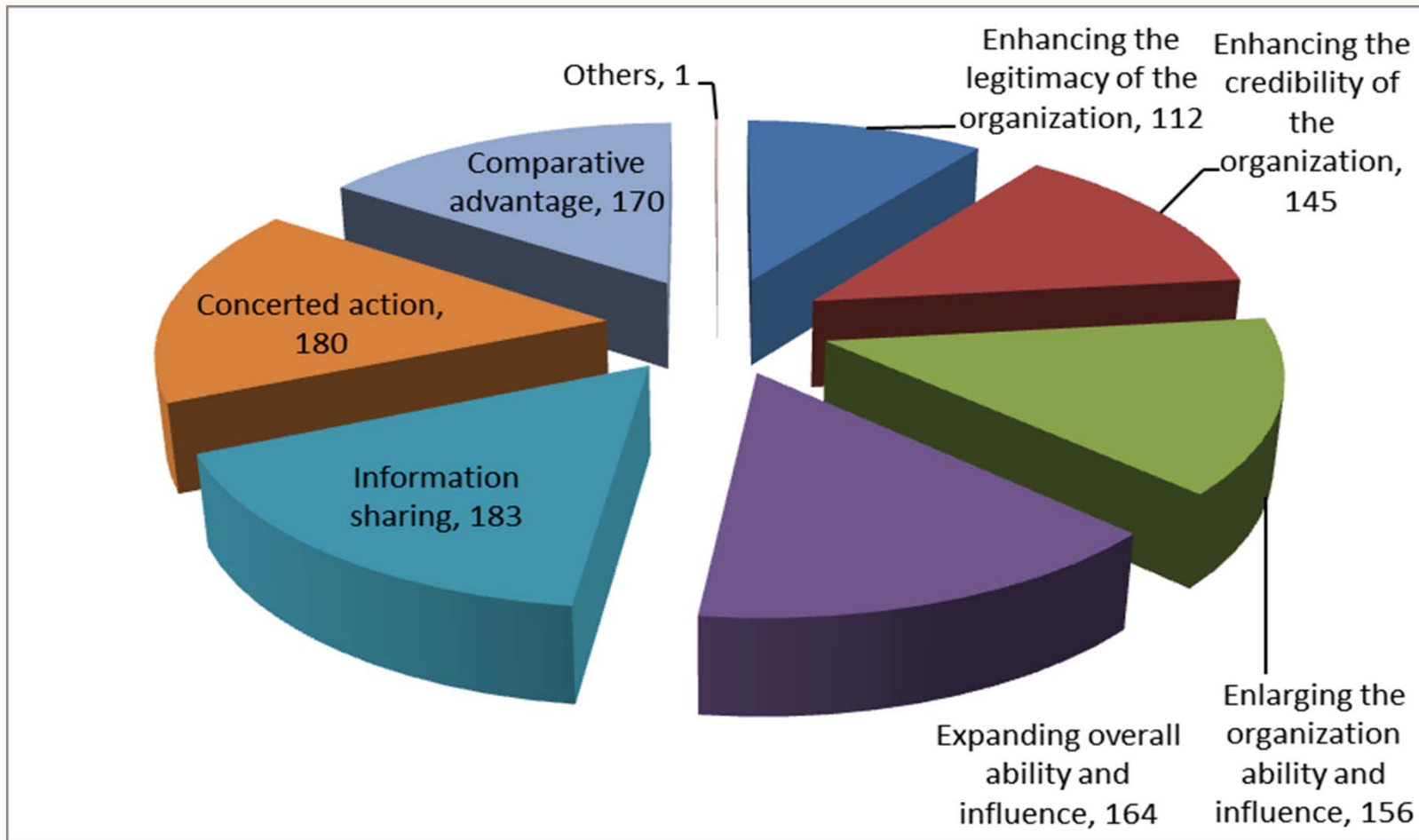


What NGOs can supply





What NGOs want





4. Conclusion and Suggestion

4.1 Conclusion

- The catastrophe rescue is strictly restrained by time. Thus there always appears the dilemma of information concentration and information isolated islands.
- Therefore, in case of catastrophe, cooperation among all actors becomes so important.
- The ideal situation is that actors cooperate seamlessly with each other.
- The seamless cooperation requires for strict conditions. It needs a unified acting platform, where all actors could share their resources and information with each other.
- Thus, it requires for sufficient rationality, sufficient information and sufficient resources. **While in reality, these conditions are difficult to be fulfilled.**

Cooperation, like polycentric governance, can cut the cost by
Sharing information and other resources with each other





4.2 Suggestion

- Two key factors of achieving the timely response to the demands.

Smooth channel
of information

- The public demands can be reflected to the society timely and accurately

Smooth channel
of resource

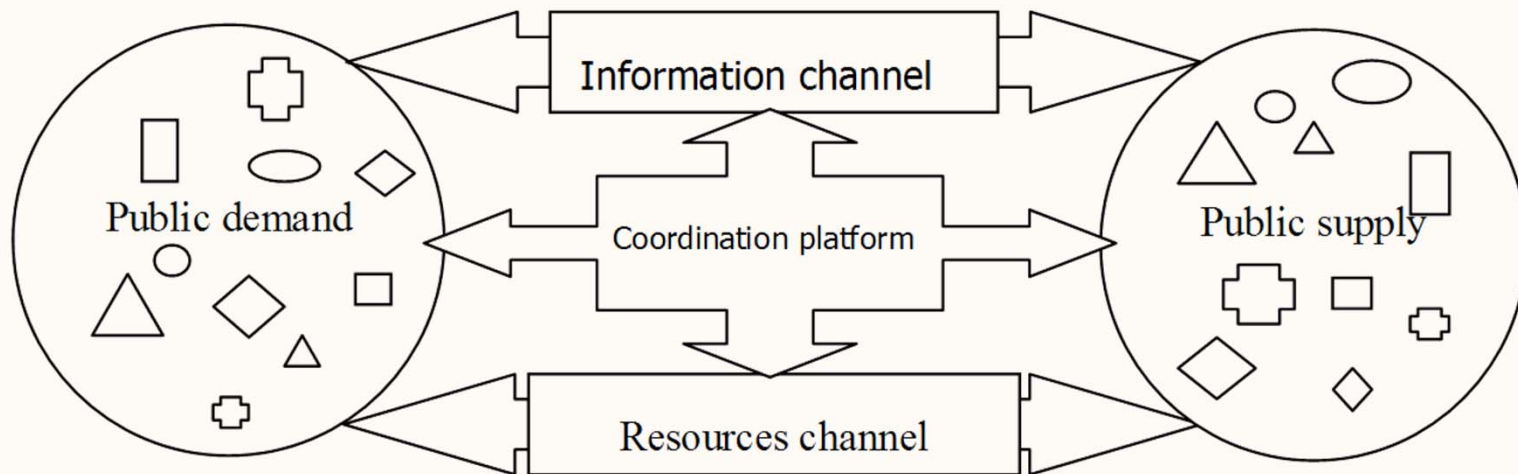
- The public supplies be delivered to the disaster areas accurately and timely





4.2 Suggestion

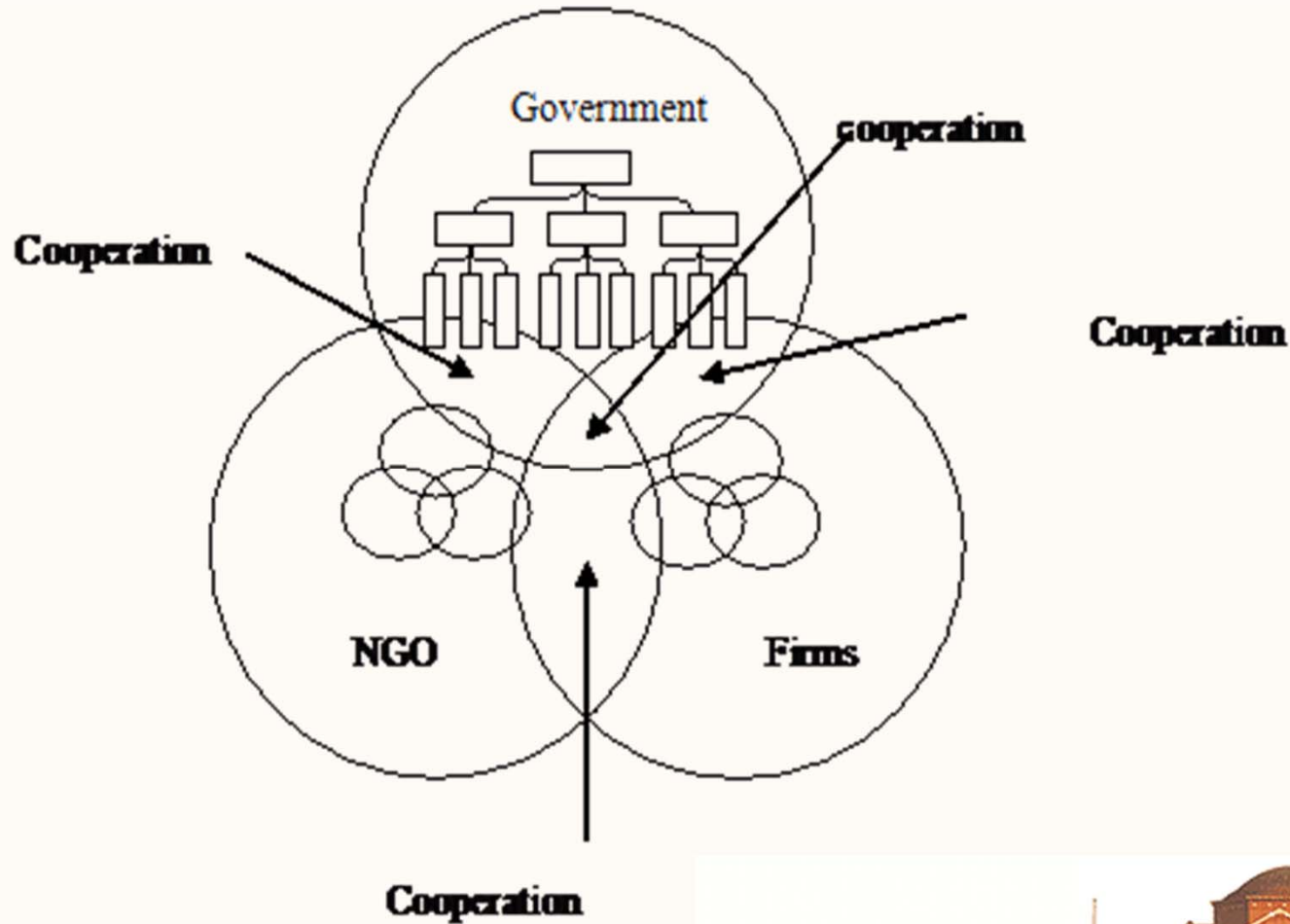
- An important way to achieve the smoothness of information channels and resource channels under the condition of catastrophes is to construct a platform for information communication and resource allocation coordinated with actions.
- Relationship between public demand and supply





4.2 Suggestion

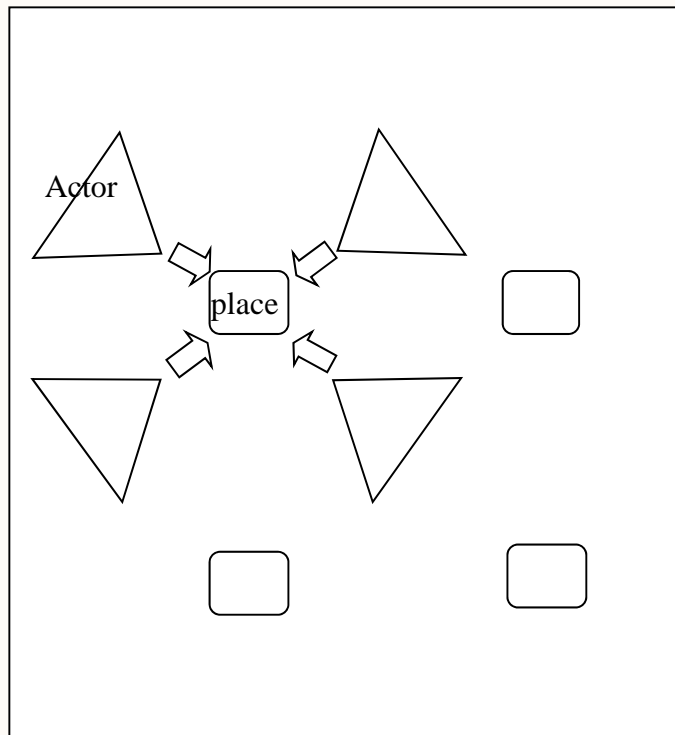
■ Cooperation between Government, NGOs, and Firms





From information failure to polycentric governance

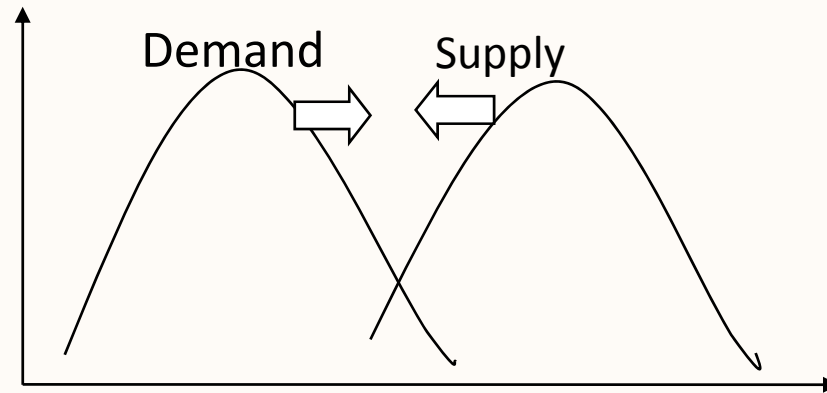
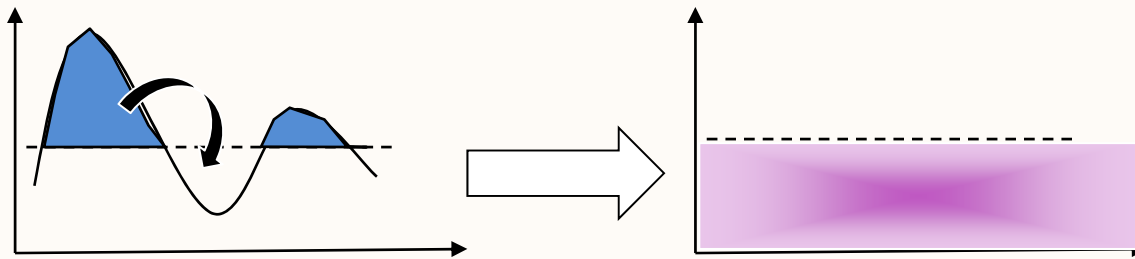
Information failure in space dimension





From information failure to polycentric governance

Information failure in time dimension





Types of Cooperative Platform

- **Forums**
- **Clubs**
- **Projects**
- **Contracts**
- **Networks**





■ Now let's summarize our research routine:

catastrophe

information
failure

mechanism:
polycentric
governance





Thank you !

