



Better Forest, Better Water, Better Lives

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Looking into the 11 years' FLR efforts in Miyun watershed

- Livelihoods and Landscape Strategy and Megacity watershed
Initiative

International FLR Conference, Manila, 2019



- Combination of different projects from international and domestic funding sources
- Not a systematic robust review of the programs involved



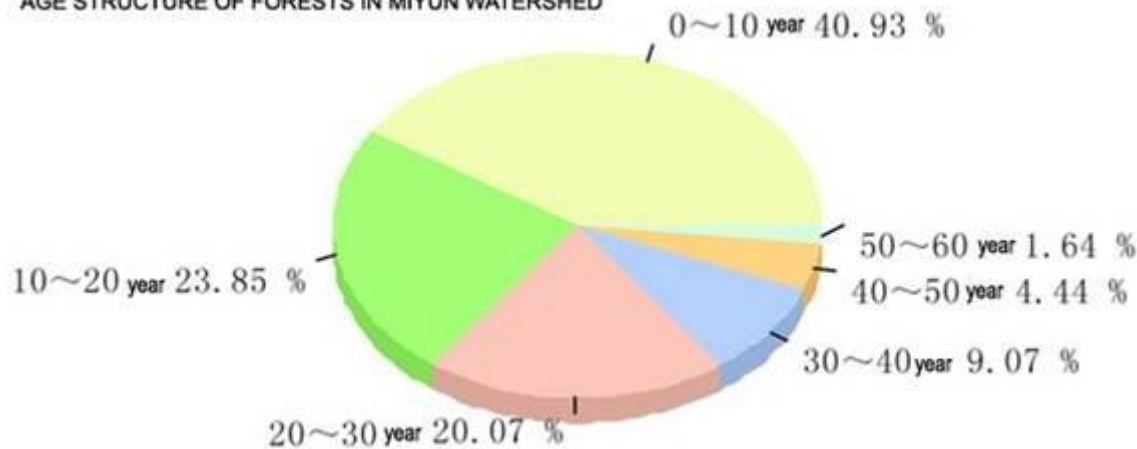
The Forest Context

- Forest coverage in Beijing region
- – Early PRC: 3-5%
- – 2008: 35.5%
- – 2016: 43.77%

Beijing Forest Landscape

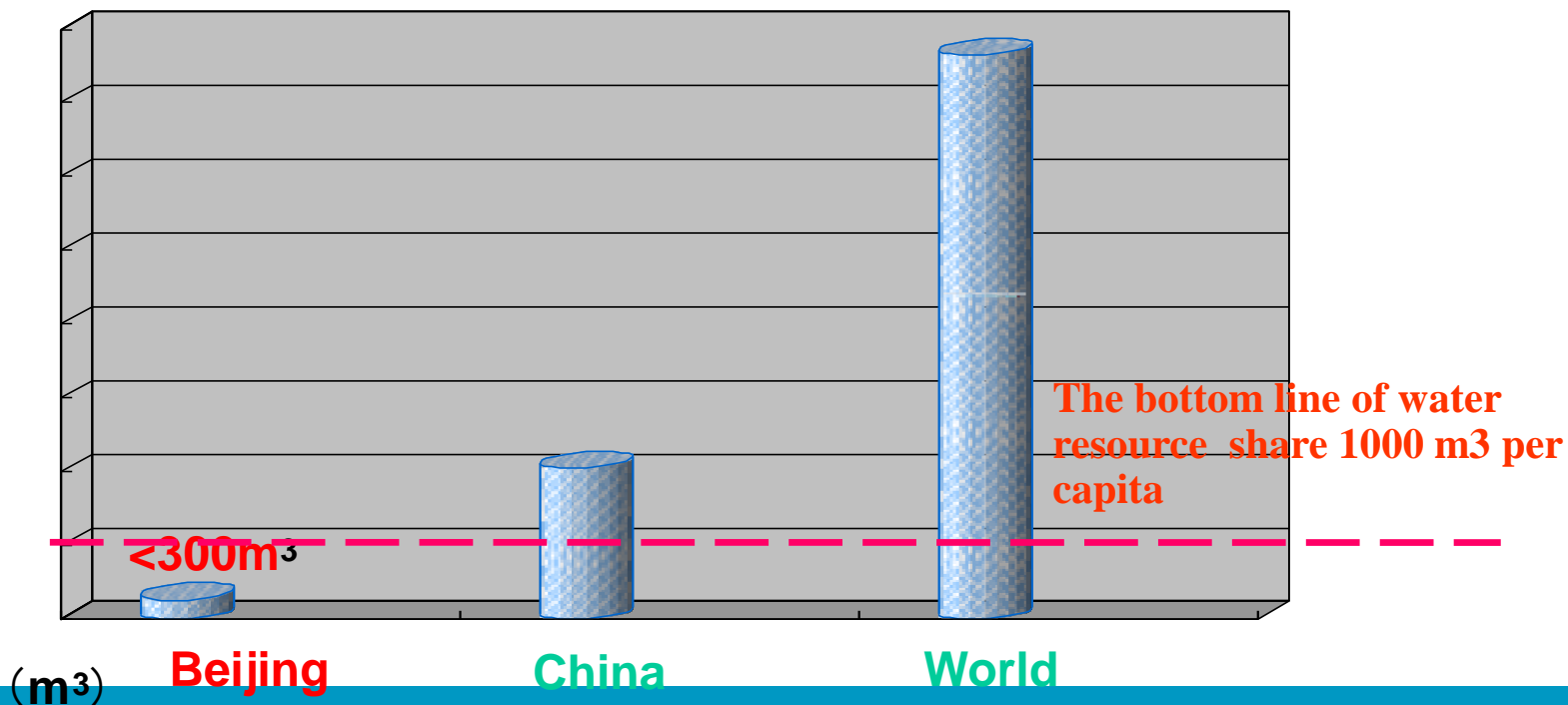
- Monoculture, young forest, High density, sub-healthy, lack of management
- Results: compromised watershed function, and lower biodiversity and carbon values

AGE STRUCTURE OF FORESTS IN MIYUN WATERSHED



The Water Context

- Beijing is a large city suffering from serious water shortage, with water resource share below 300m^3 per capita, 3.5% of world average.

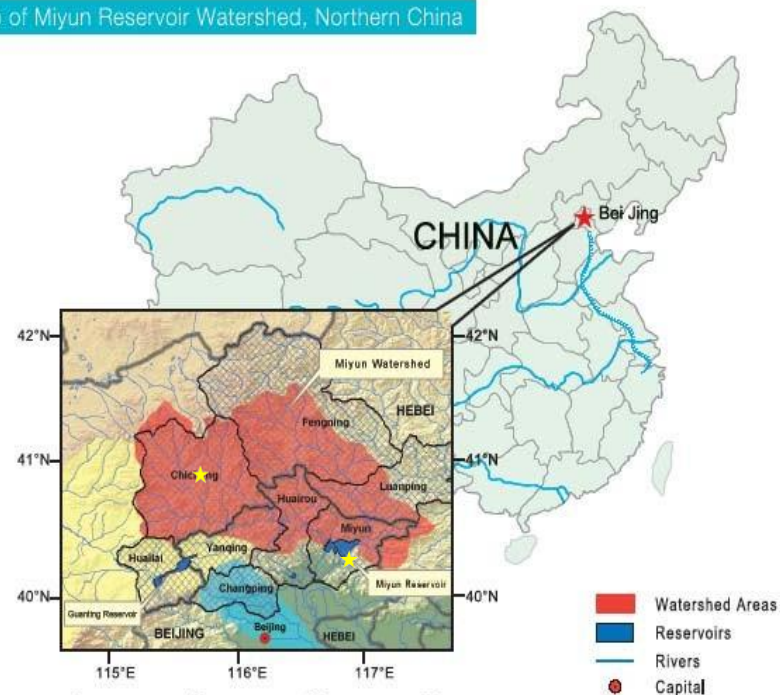


Miyun Reservoir Watershed

- The total watershed area is about 15,780 km²
- 4,500 km² is located in Beijing
- 70% of the drinking water supply for Beijing's 17 million residents.
- One of the most important watersheds in the whole of China
- Success would be relevant to over 4000 watersheds supplying drinking water to 655 cities in China



Map of Miyun Reservoir Watershed, Northern China





Project Implementation

- Forest Landscape restoration (FLR) (demonstration)
 - Close-to-nature forest management practice
 - Participatory Forest Management Plan endorsed County Forest Bureau
- Local livelihoods improvement
 - Fuelwood collection practice and energy-efficient “Kang” bedding system
 - Supports to high-value alternative livelihoods (mushroom schemes, eco-tourisms)
 - Self-management and self-development capacity
- Multiple Stakeholder Dialogue and cooperation
 - Multiple stakeholder dialogue between Beijing and Hebei governments
 - Research, test and propose potential compensation strategies to the government



LLS China: pilot sites interventions

Forest Inventory



Biodiversity survey



Social economic survey



Forest management plans



Close-to-nature silviculture treatments

Target trees



Reserved trees



disturbance



The forest authority approve the harvesting quota with about 100 m³ in year 2009.

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Energy saving and improvement

Livelihoods



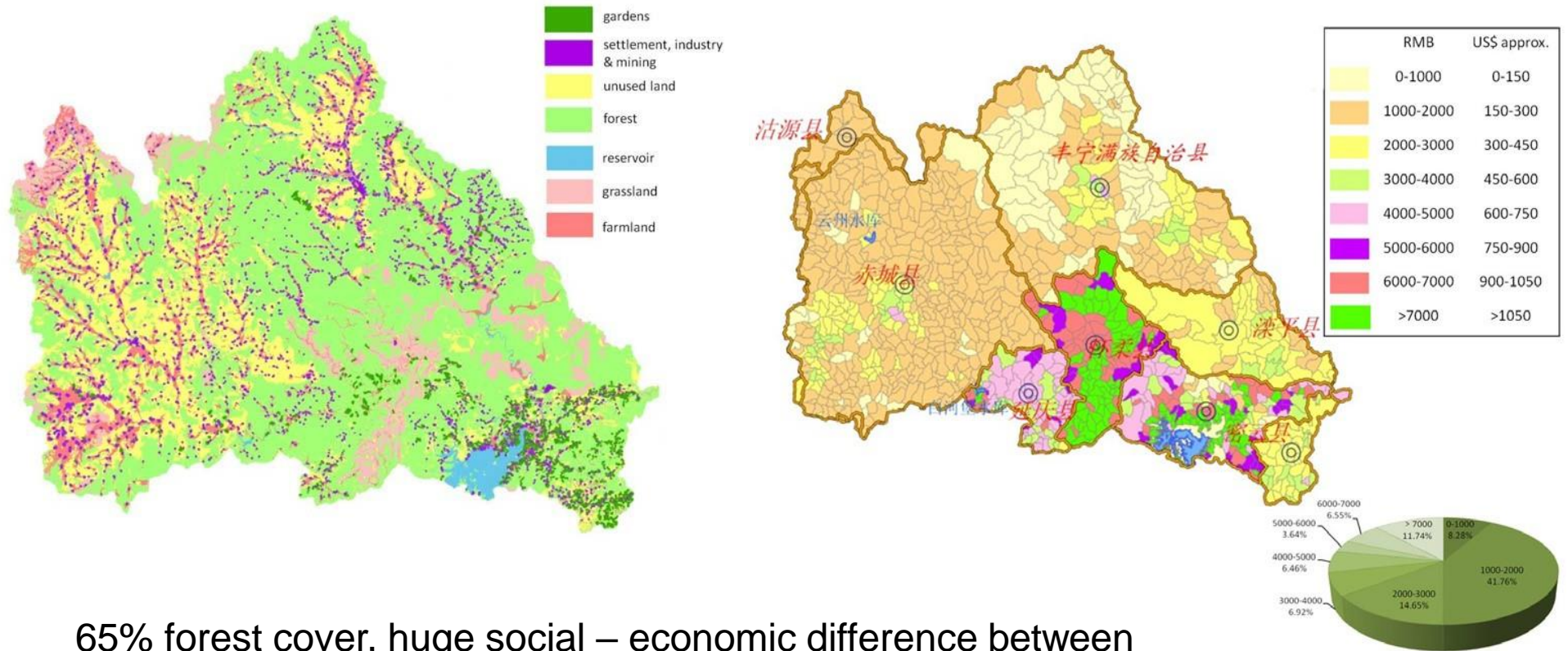
Understanding Fuel wood use
training on fuel wood collection
Reducing dependence on fuel wood by Kang renovation
Providing farmers' cooperative training to build capacity

Baseline survey and analysis

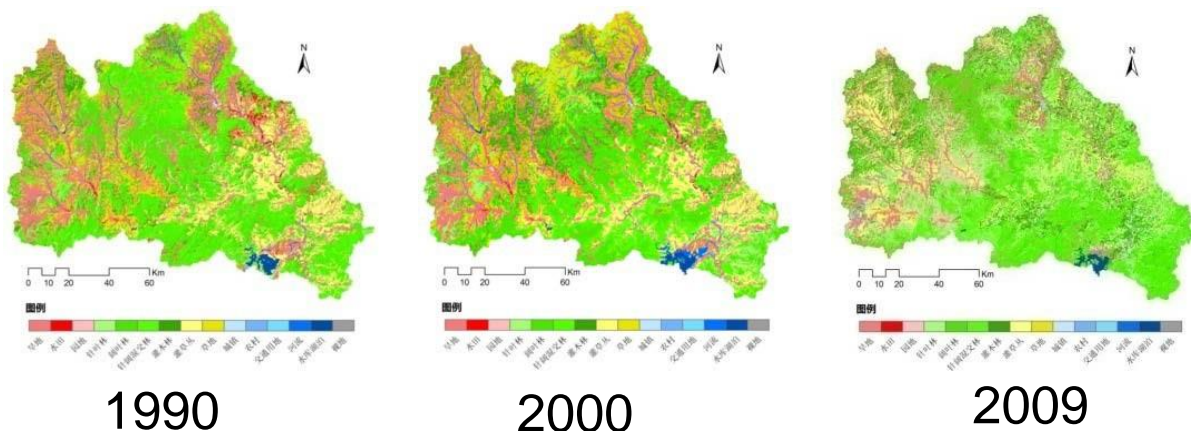
- Socio-economics survey: NTFPs and Markets



LLS China: Landscape baselines



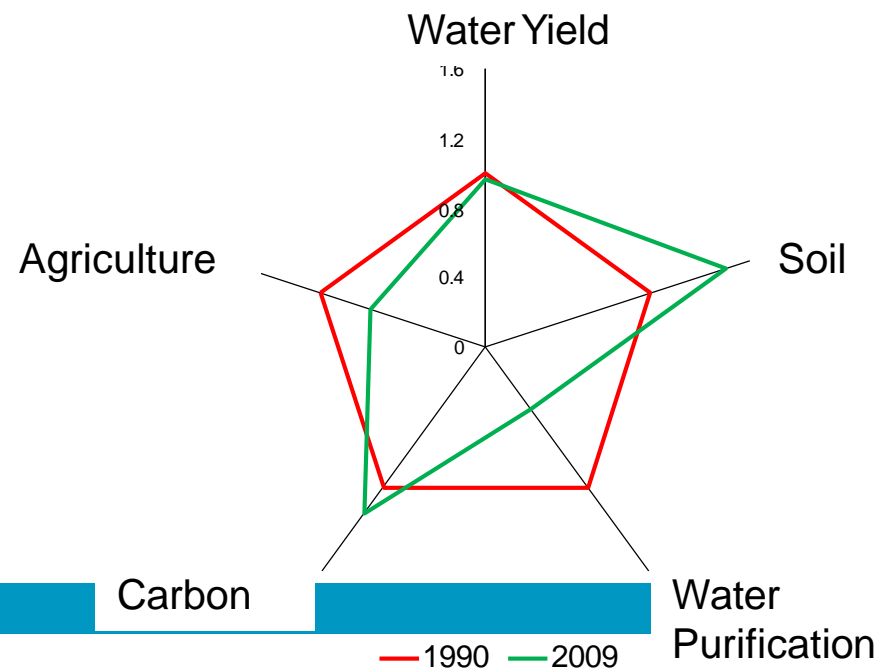
65% forest cover, huge social – economic difference between Beijing and Hebei province



Land use change in Miyun

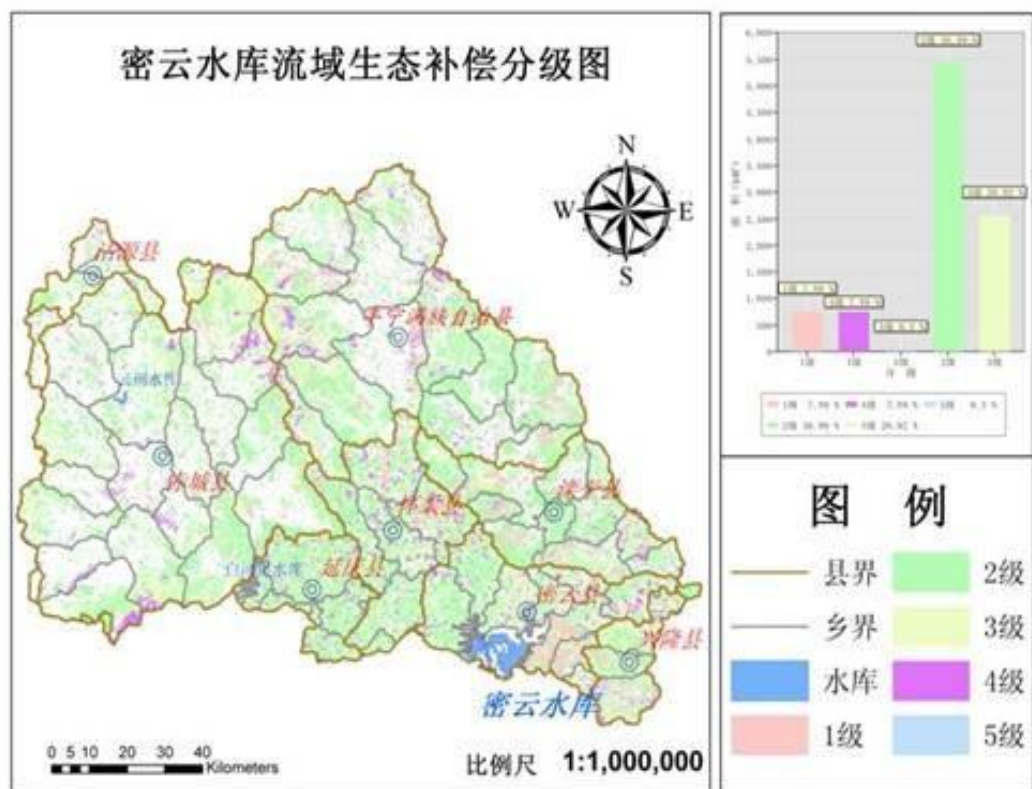
Agriculture land: 30% decrease,
Forest land: 30% increase,
Grassland: 47% decrease,
Urban areas: 47% increase

Ecosystem Services	Changes
Water Yield :	↓ 3%
Water Purification :	↓ 54%
Soil Retention :	↑ 46%
Carbon Sequestration :	↑ 19%
Agriculture Production :	↓ 30%

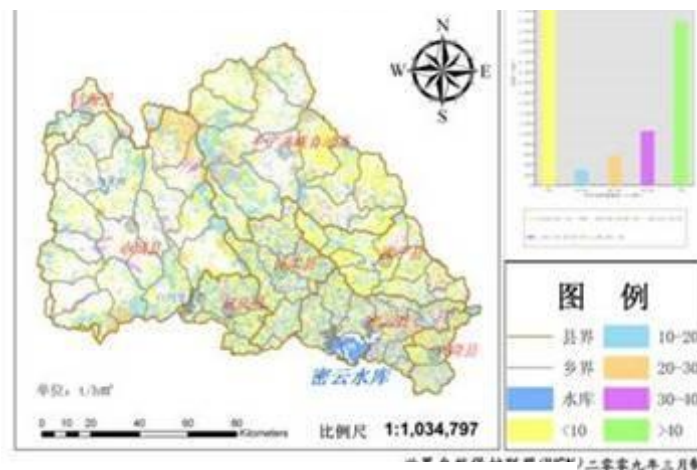


LLS China: Landscape interventions

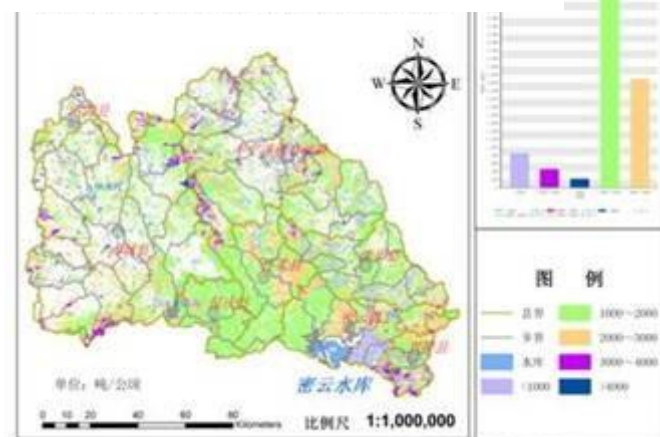
Carbon sequestration function map



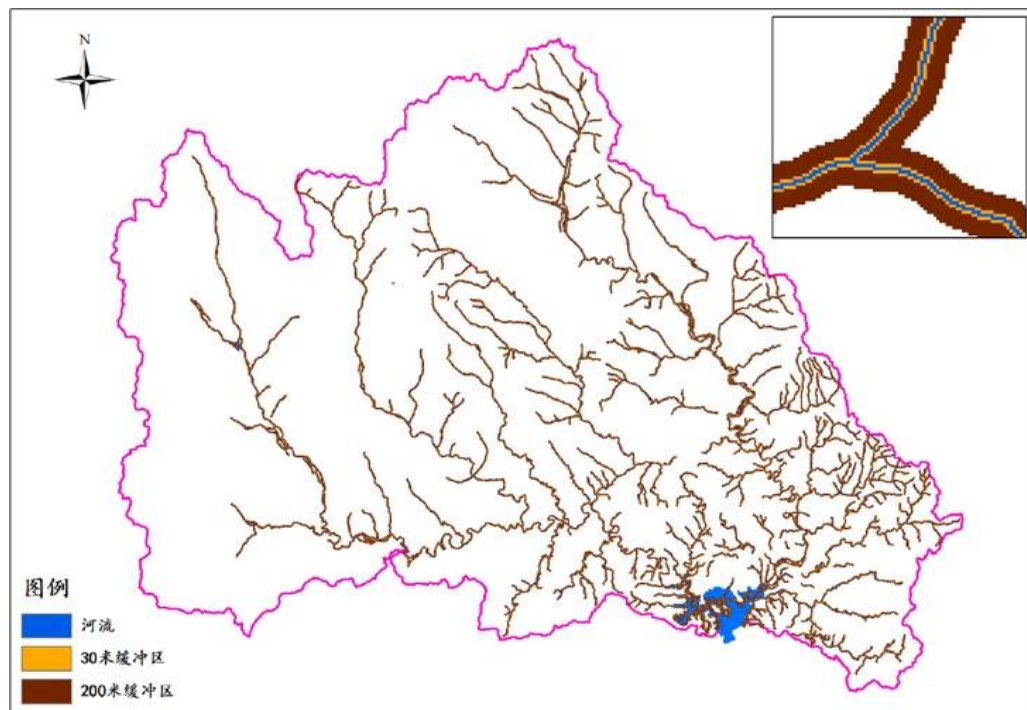
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Watershed function map

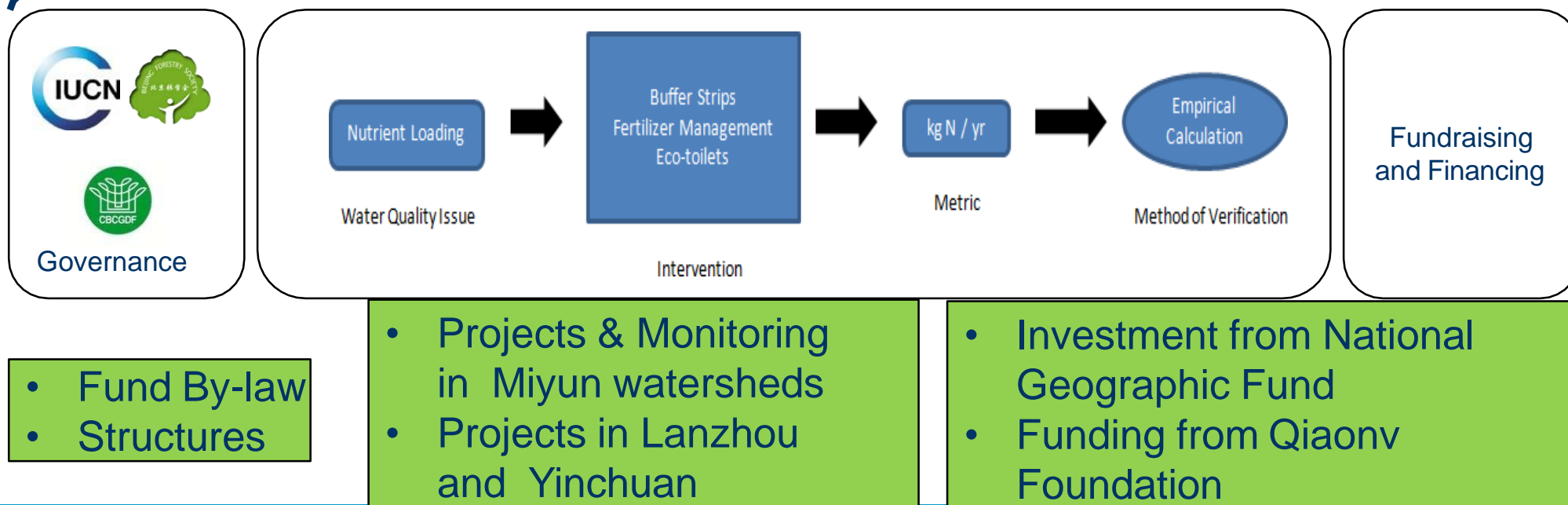
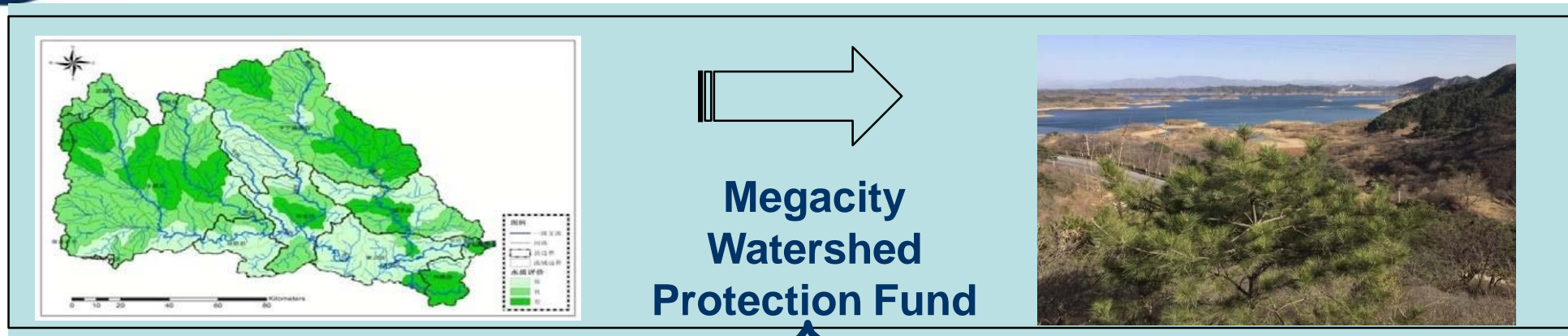


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Land	30 m wide		200 m wide	
	KM2	MU	KM2	MU
Forest	83.8	125,700	680.0	1,020,000
Grassland	20.2	30,300	151.3	226,950
Wetland	8.9	13,350	47.4	71,100
Agriculture	58.1	87,150	351.4	527,100
Urban	6.1	9,150	39.6	59,400
Other	0.2	300	1.7	2,550
Total	177.3	265,950	1,271	1,907,100

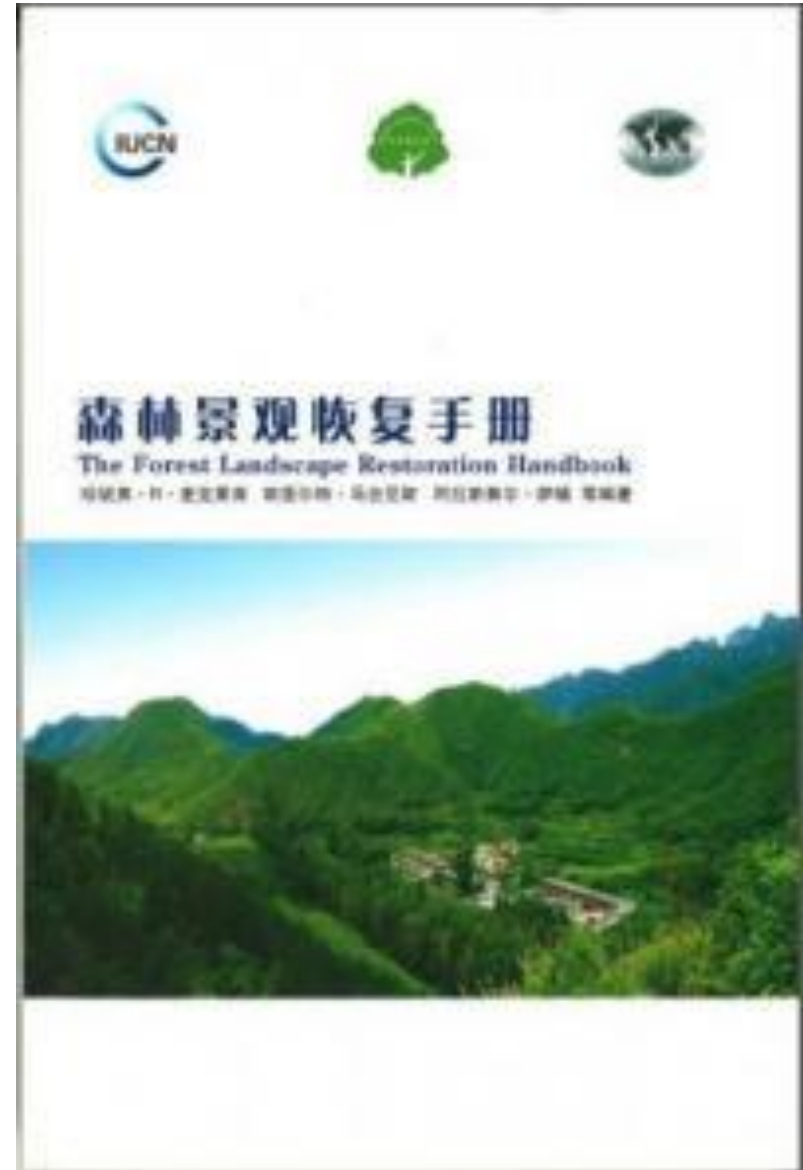
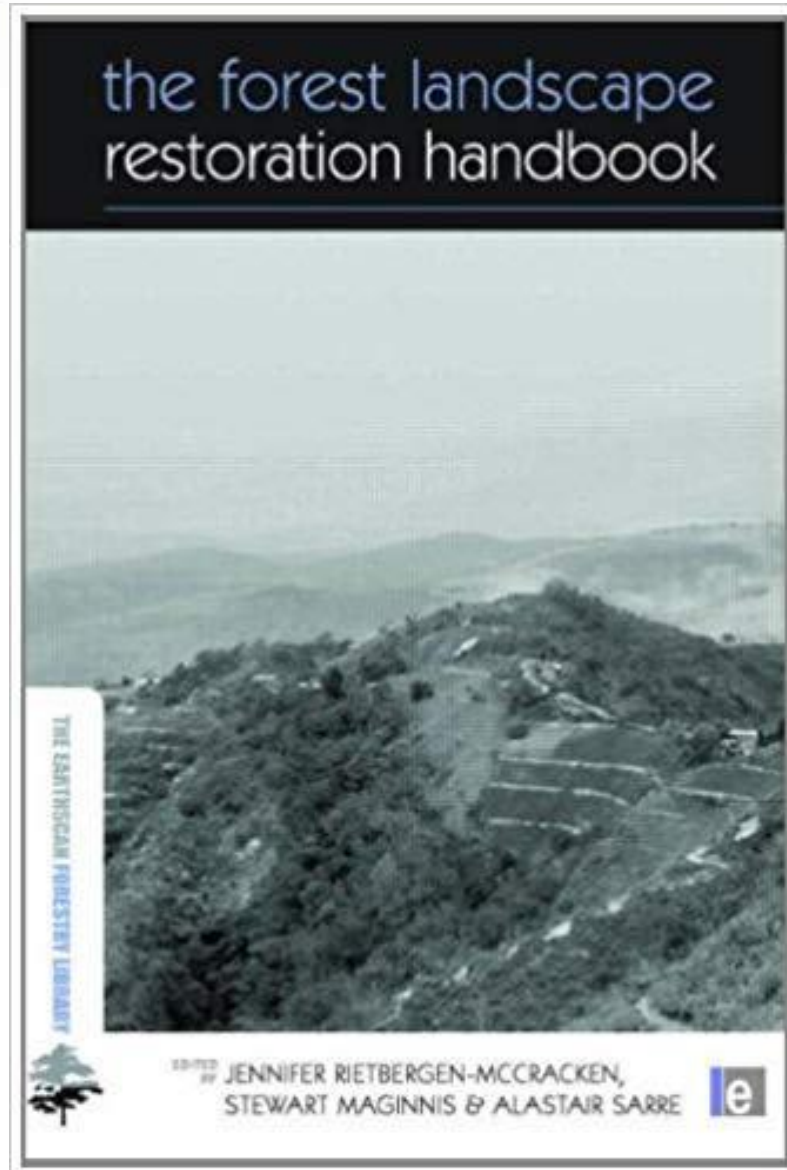
Ecosystem Service	80m Buffer with trees	80m Buffer with grasses
Surface Water	↓ 9%	↑ 5%
Soil Conservation	↑ 49%	↑ 28%
Water Purification	↑ 71%	↑ 63%
Carbon Sequestration	↑ 7%	↓ 6%
Agriculture production	↑ 7%	↑ 7%

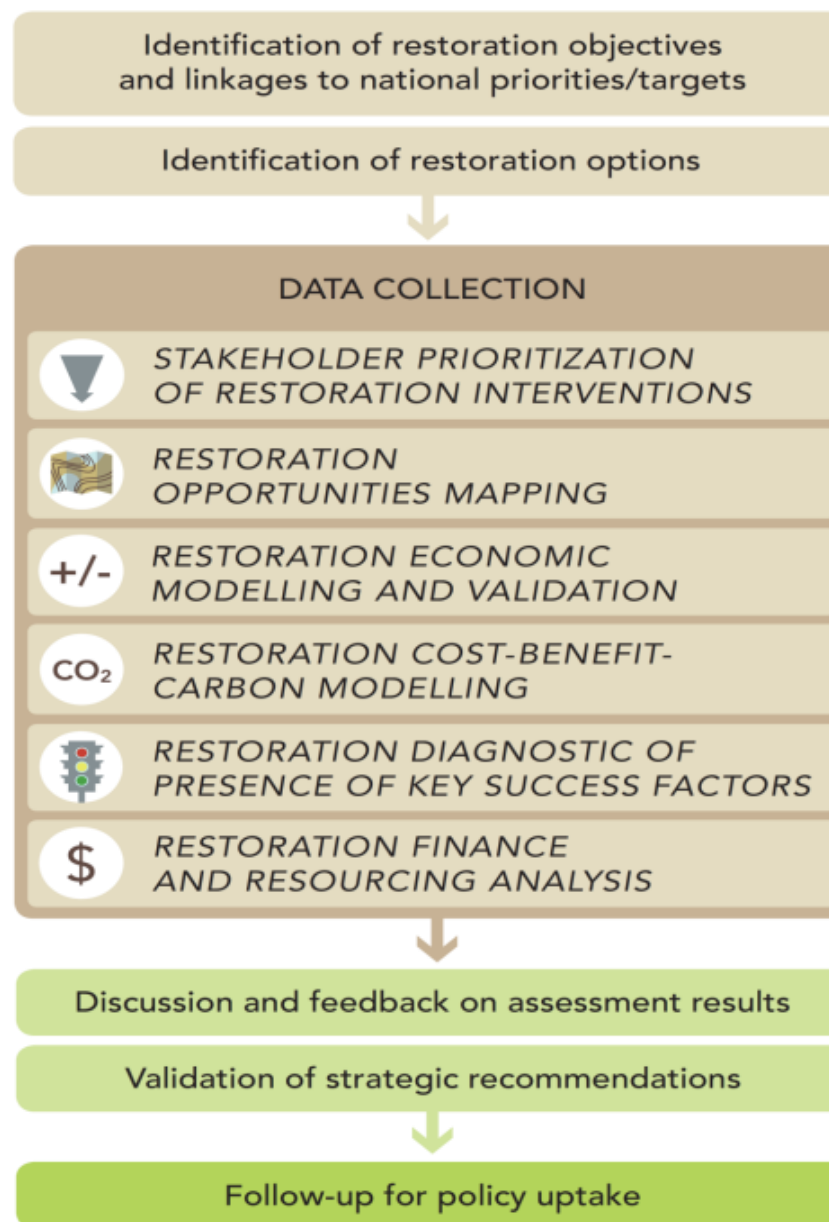
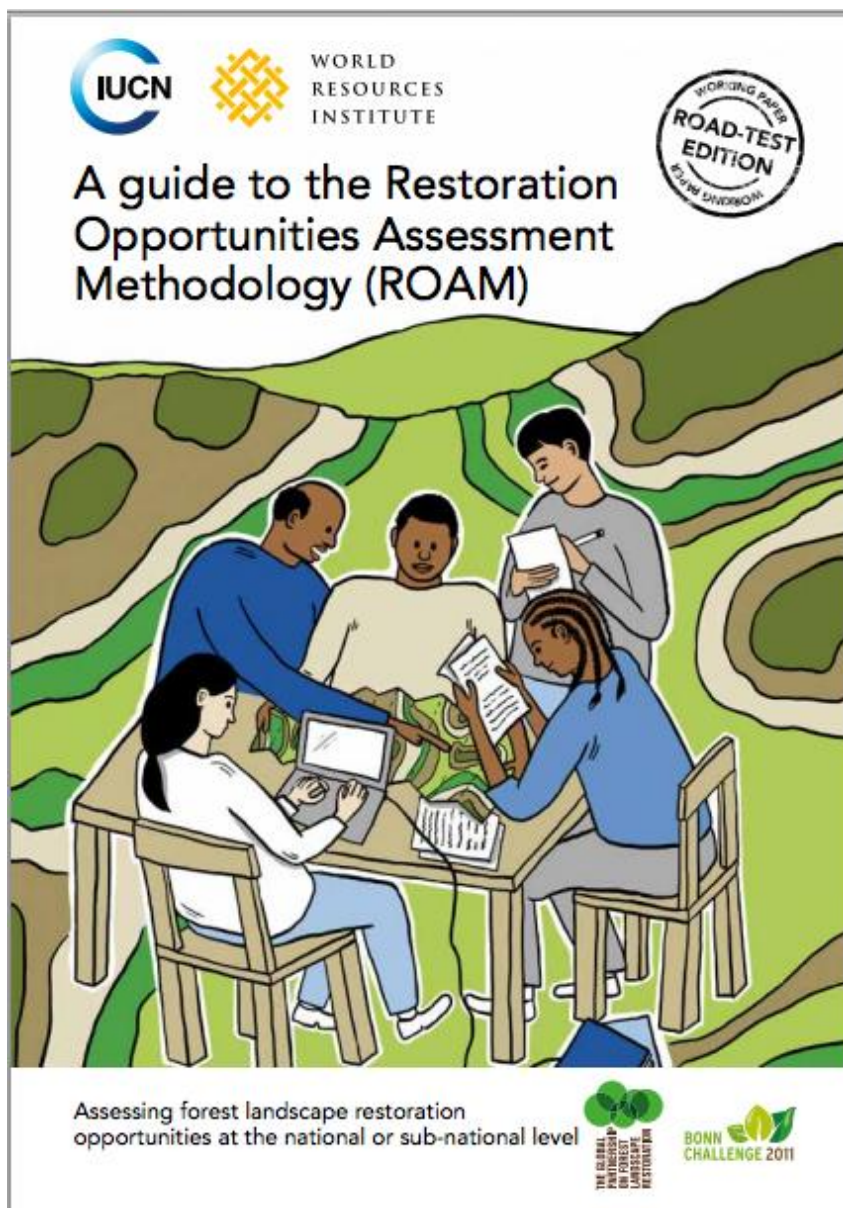




Looking Back the Last 11 Years

- Limited success
- The concept and scope of landscape have evolved.
- It is necessary to keep landscape and site based approaches linked.
- process framework
- the people!





STAKEHOLDER ENGAGEMENT

1. Preparation and planning

2. Data collection and analysis

3. Results to recommendations

Identification of restoration objectives and linkages to national priorities/targets

Identification of restoration options

DATA COLLECTION



STAKEHOLDER PRIORITIZATION OF RESTORATION INTERVENTIONS



RESTORATION OPPORTUNITIES MAPPING



RESTORATION ECONOMIC MODELLING AND VALIDATION



RESTORATION COST-BENEFIT-CARBON MODELLING



RESTORATION DIAGNOSTIC OF PRESENCE OF KEY SUCCESS FACTORS



RESTORATION FINANCE AND RESOURCING ANALYSIS

Discussion and feedback on assessment results

Validation of strategic recommendations

Follow-up for policy uptake

STAKEHOLDER ENGAGEMENT



1. Preparation and
planning

2. Data collection
and analysis

3. Results to
recommendations

4. Adopt and
implement FLR Plan

5. Monitoring and
report

6. Adapt and
improve FLR plan



FLR Champions

People are the critical factor of success!

- a few visionary leaders in municipality /provincial forest bureaus
- villager heads or just a few individuals
- entrepreneurs
- our NGO friends and colleagues
- staff members
- academics



THANK YOU

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