

Payment for Environmental Services: An Approach to Sustainable Watershed Management?

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Supa Watershed

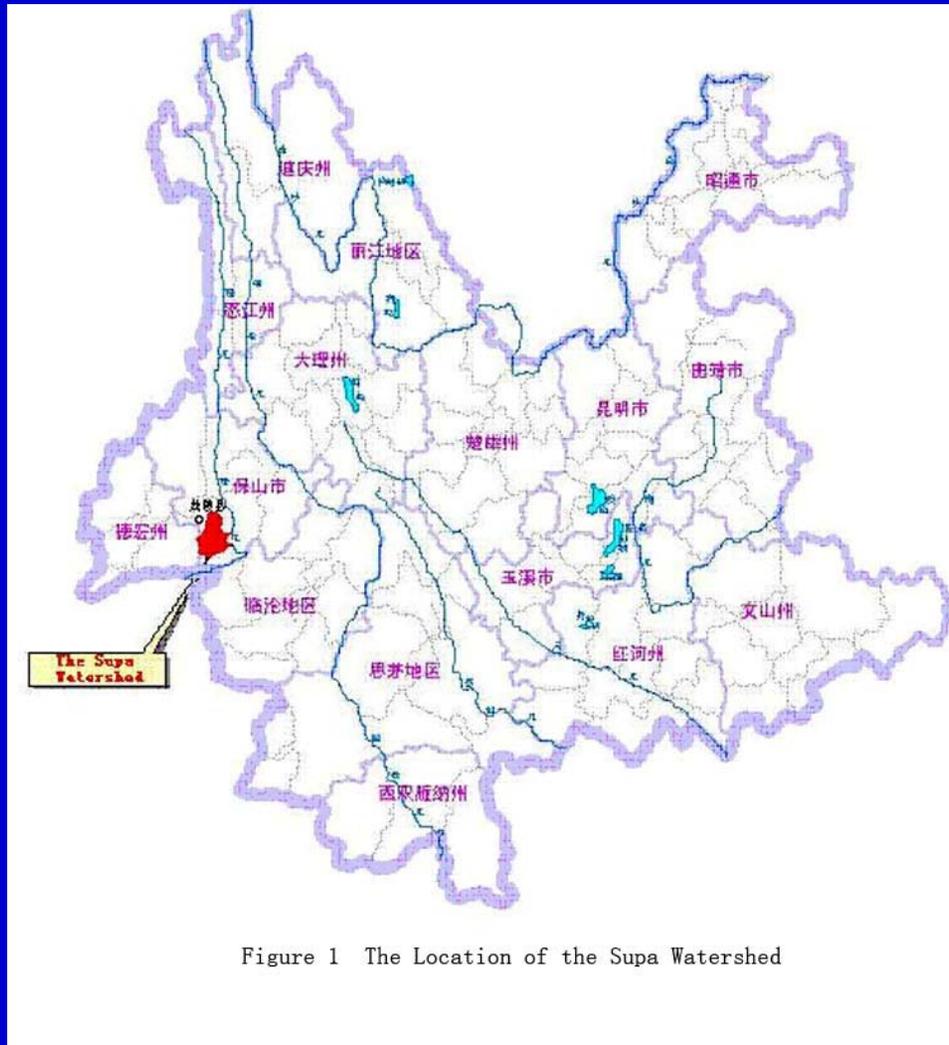


Figure 1 The Location of the Supa Watershed

Supa Watershed



- Area: 667km²
- Length: 71.2km
- Population: 62,000 (94 persons per km²)
- Crop: Rice, Corn, potato
- Income: farming, livestock and forests
- Hydropower

Supa Watershed



Studies Undertaken

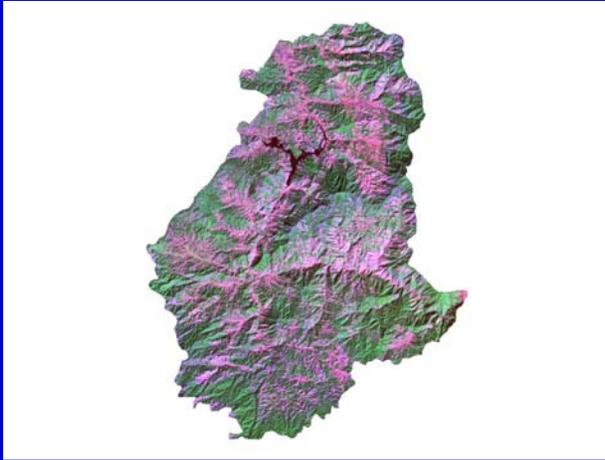
- Understanding perspectives:
 - Interviewed Stakeholders
- Land Assessment
 - Land-use pattern and input-output analysis
 - Soil erosion assessment
 - Critical/fragile area assessment
- Watershed Management assessment
 - Reforestation reflection
 - Community forest management assessment
 - Management of Sloping Land Conversion Land

Major Issues



- Fragile Watershed
 - Very critical 5.92%
 - Critical 14.41%
 - Less critical 43.15%
 - Not critical 36.52%

Major Issues



Intensive farming:

Agri: 22.85%

Dense Forest: 37.51%

Spare Forest: 14.73%

**Waste/shrub land:
24.16%**

Water: 0.75%

Major Issues



- **No erosion: 36.52%**
- **Slight erosion: 47.86%**
- **Intensive erosion: 15.62%**
- -----
- **Life: 50->30 years**
- **loss: US\$728,000/yr**

Major Issues



- Income:
 - UD\$140/person/yr
- Farmland holding:
 - 0.133 ha./person
- SL productivity:
 - 1.15—2.25 ton/ha.

Findings

- There is a demand for watershed services
 - Life of the project to be shortened from 50 yr to 30 yr
 - Annual loss of US\$728,000
 - Willingness to pay for watershed services, like matching fund of SLCP
- The company are not very active in PWS. Why?
 - Insufficient scientific data prove reforestation can reduce sedimentation
 - Company thinks that environment protection is a public goods or governments responsibility (pay tax and loyalty)
 - No guarantee that PWS can improve situation

Findings

- Community do provides for watershed services
 - Worked out rules to protect forests
 - Hire forests guards to protect forests
 - Contributed 60% of costs of forest maintenance
 - But aims to harvest timber, to get their quality water...
- Community has difficulties to claim the services
 - Lack of awareness
 - Not powerful to negotiate
 - Cannot prove their efforts that leads to reduce costs of the company.

Findings

- Policy is not supportive
 - no legal framework to support PWS
 - Economic development policy favors company
- Strong public and private relationship
 - The tax paid by the company is an important source to local government revenue
- Ambiguous property rights
 - State control over water rights
 - State control over state forests
 - Community control over collective forests/agriculture land
 - It is difficult to identify individuals who provides watershed services

Future Activities

- Development of theory to clarify
 - Tax paid
 - Loyalty paid
 - PWS
- Villagers' Networking
 - Make sure services delivered
 - Distribute benefits due to the services
 - Coordinate activities of watershed management
- Watershed protection fund
 - Standard to reward the services
 - Mechanism to disburse the fund
 - Monitoring and evaluation of PWS



Thank you for your attention!