Comprehensive development & management of Xinxili small watershed.

Comprehensive Development & Management of a Small Watershed (China)

DESCRIPTION

The comprehensive measures including interplanting & intercropping are applied in the small watershed to control soil and water loss and improve land production and farmers' income.

On the basis of the local national conditions and soil and water loss, the comprehensive SWC measures were adopted to pursue the targets including: 100% control of the soil and water loss; Ground cover rate up to 90%, among them forest cover rate reaches 85%; Adjusting agricultural structure to increase the local farmers' income of US Dollar 39337 by the end of the project implementation; Improving sluice ability in the basin. 5. Solving the problems of energy source in countryside.
The implementation stages of the project: 1990--1996: Planting trees including fruit trees. 1992--1994: preparing and programming. 1995: Initiating the program including a. planting vegetation of 461 ha; b intercropping area of 26.5 ha; c. building 2.5 km road and a water dam. 1996: a. closing mountain area 224.1 ha; b. Changing 3.3 ha of farmland to afforest; c. building a 2 km road. The Zhenghe county division of SWC took charge in preparation, programming and guidance.

LOCATION

Location: Fujian, China

Geo-reference of selected sites

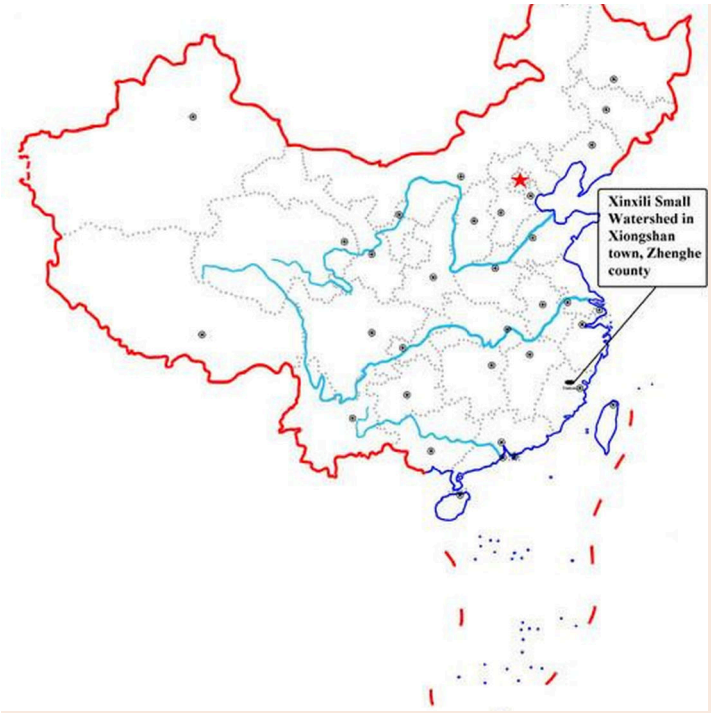
- 119.326, 26.477

Initiation date: 1990

Year of termination: 1996

Type of Approach

- ☐ traditional/ indigenous
- ☐ recent local initiative/ innovative
- ☑ project/ programme based



Location of Xinxili Small Watershed in Xionshan town.

APPROACH AIMS AND ENABLING ENVIRONMENT

Main aims / objectives of the approach

In principle, the local farmers play main role in the SWC project and government give proper subsidy. Aiming to solve the problems of water loss and serious soil erosion, frequent natural disaster in the watershed. Considering the desire of the peasants' increasing income, comprehensive development of mountain, water, forest and farmland in the basin.
The SLM Approach addressed the following problems: Disafforestation and irrational land use led to the disasters such as flooding and land degradation, e.g.. The floods of '5.21' in 1988 and '7.22' in 1989 which caused much loss; the drought disaster in 1990 resulted in loss of 23'614 US dollars. The disasters affect the agricultural production and people's life.

Conditions enabling the implementation of the Technology/ ies applied under the Approach

- **Legal framework (land tenure, land and water use rights)**: The existing land ownership, land use rights / water rights greatly helped the approach implementation: Because most of the mountain lands and forest belong to community, it is convenient for the management and development with large scale.

Conditions hindering the implementation of the Technology/ ies applied under the Approach

- **Availability/ access to financial resources and services**: financial crisis in the county, lack of capital Treatment through the SLM Approach: Government support and peasants raise fund by themselves

PARTICIPATION AND ROLES OF STAKEHOLDERS INVOLVED

Stakeholders involved in the Approach and their roles

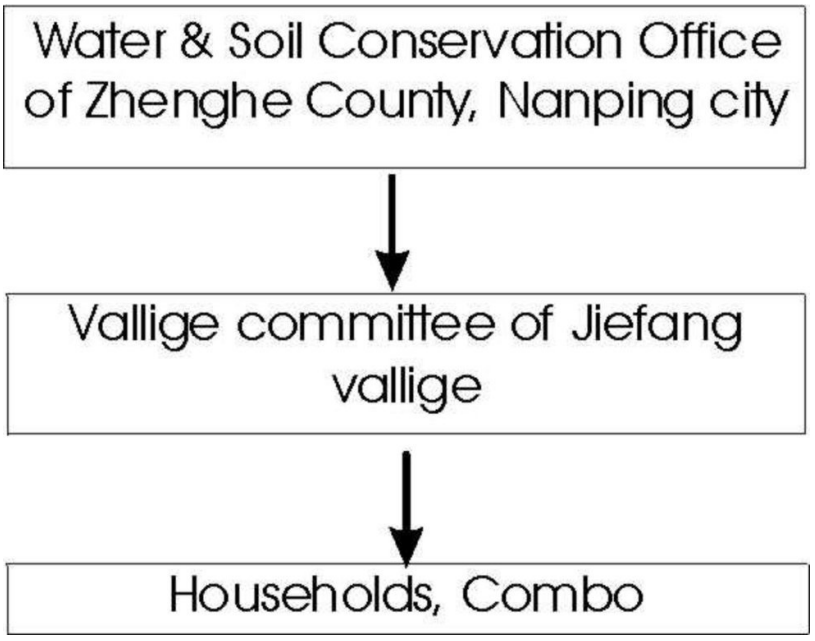
What stakeholders / implementing bodies were involved in the Approach?	Specify stakeholders	Describe roles of stakeholders
local land users/ local communities	Working land users were mainly men (Men bear main labor.)	
local government	SWC Office of Zhenghe County	

Involvement of local land users/ local communities in the different phases of the Approach

	none	passive	external support	interactive	self-mobilization	
initiation/ motivation	✓					
planning				✓		Mainly: Workshops/seminars; partly: Interviews/questionnaires
implementation	✓					
monitoring/ evaluation				✓		Mainly: Measurements/observations; partly: Interviews/questionnaires;
Research					✓	on-station; Mainly in small watershed

Flow chart

Approach of the SWC implementation in Xinxili Small Watershed.



Decision-making on the selection of SLM Technology

Decisions were taken by
- [ ] land users alone (self-initiative)
- [ ] mainly land users, supported by SLM specialists
- [ ] all relevant actors, as part of a participatory approach
- [x] mainly SLM specialists, following consultation with land users
- [ ] SLM specialists alone
- [ ] politicians/ leaders

Decisions were made based on
- [ ] evaluation of well-documented SLM knowledge (evidence-based decision-making)
- [ ] research findings
- [ ] personal experience and opinions (undocumented)

TECHNICAL SUPPORT, CAPACITY BUILDING, AND KNOWLEDGE MANAGEMENT

The following activities or services have been part of the approach
- [x] Capacity building/ training
- [x] Advisory service
- [x] Institution strengthening (organizational development)
- [x] Monitoring and evaluation
- [x] Research

Capacity building/ training

Training was provided to the following stakeholders
- [x] land users
- [ ] field staff/ advisers
- [x] Extensionists/trainers (2)

Form of training
- [ ] on-the-job
- [x] farmer-to-farmer
- [ ] demonstration areas
- [x] public meetings
- [x] courses

Subjects covered

Planting skills and management as well as fertilization for orange and pear trees etc.

Advisory service

Advisory service was provided
- [ ] on land users' fields
- [ ] at permanent centres

Name of method used for advisory service: Comprehensive management and development; Key elements: The enthusiasm of the local peasants, Comprehensive control and development of a small watershed., maintaining; 1) Mainly: projects own extension structure and agents, Partly: government's existing extension system 2) Mainly: projects own extension structure and agents, Partly: government's existing extension system; Extension staff: Mainly government employees 3) Target groups for extension: Land users; Activities: Technicians instruct peasants
Advisory service is quite adequate to ensure the continuation of land conservation activities; Top-down agricultural/SWC technology extension service system has been established at variable government levels, they have capability of extension all kinds of the new techniques.

Institution strengthening

Institutions have been strengthened / established
- [ ] no
- [ ] yes, a little
- [x] yes, moderately
- [ ] yes, greatly

at the following level
- [x] local
- [ ] regional
- [ ] national

Describe institution, roles and responsibilities, members, etc.

Type of support
- [ ] financial
- [x] capacity building/ training
- [ ] equipment

Further details

Monitoring and evaluation

technical aspects were ad hoc monitored through observations socio-cultural aspects were ad hoc monitored through observations economic / production aspects were regular monitored through measurements land users involved aspects were ad hoc monitored through measurements management of Approach aspects were regular monitored through observations There were several changes in the Approach as a result of monitoring and evaluation: Species of fruit trees constantly being improved. Technical management were perfect.

Research

Research treated the following topics

- [ ] sociology
- [ ] economics / marketing
- [x] ecology
- [ ] technology

Studying on practical situation in the region, illustrating where and what fruit trees can be planted as well as their values etc.
Research was carried out both on station and on-farm

FINANCING AND EXTERNAL MATERIAL SUPPORT

Annual budget in USD for the SLM component

- [ ] < 2,000
- [ ] 2,000-10,000
- [ ] 10,000-100,000
- [x] 100,000-1,000,000
- [ ] > 1,000,000

Precise annual budget: n.a.

Approach costs were met by the following donors: government (National - invest 24'229 USD by the SWC section): 23.0%; other (Self-raise fund by group and individuals): 77.0%

The following services or incentives have been provided to land users

- [ ] Financial/ material support provided to land users
- [x] Subsidies for specific inputs
- [ ] Credit
- [ ] Other incentives or instruments

	partly financed	fully financed
agricultural: seeds seedlings	✓	
agricultural: seeds: fertilizers	✓	

Labour by land users was

- [x] voluntary
- [ ] food-for-work
- [ ] paid in cash
- [ ] rewarded with other material support

IMPACT ANALYSIS AND CONCLUDING STATEMENTS

Impacts of the Approach

	No	Yes, little	Yes, moderately	Yes, greatly
Did the Approach help land users to implement and maintain SLM Technologies? Applying the mixed organic fertilizer to amend soil structure and plant grass.				✓
Did the Approach improve issues of land tenure/ user rights that hindered implementation of SLM Technologies? The land use right can help the land users to conduct development and management on the lands after signing land use right contract. The problem is likely to be overcome in the near future. Rational planning and design to adjust the proportion of farmland and woodland, timely solve the disagreement of land use.			✓	
Did other land users / projects adopt the Approach? The other places in Zhenghe county have been initiating to plant fruit trees following this demonstration project.				✓

Main motivation of land users to implement SLM

- [x] n.a.

Sustainability of Approach activities

Can the land users sustain what hat been implemented through the Approach (without external support)?

- [ ] no
- [x] yes
- [ ] uncertain

CONCLUSIONS AND LESSONS LEARNT

Strengths: land user's view

- The economic income has increased greatly. (How to sustain/ enhance this strength: It is needed for the mass to rationally use land and control the water loss and soil erosion and protect forest.)
- The living environment of the residents have been changing more beautiful. (How to sustain/ enhance this strength: Forbidding disafforesting and overgrazing.)

Weaknesses/ disadvantages/ risks: land user's viewhow to overcome

Weaknesses/ disadvantages/ risks: compiler's or other key resource person's viewhow to overcome

Strengths: compiler's or other key resource person's view

- The technique were warmly belcome by the farmers. (How to sustain/ enhance this strength: constantly maintain primary layout, insisting maintains in long time.)
- The land users self-conscious maintain the range of exerted plan of the SWC
- Most regions have realized the importance of the SWC.

REFERENCES

Compiler
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Editors

Reviewer
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Resource persons

Ling Ye - SLM specialist

Full description in the WOCAT database

https://qcat.wocat.net/en/wocat/approaches/view/approaches_2408/

Linked SLM data

Technologies: Comprehensive Development & Management of a Small Watershed
https://qcat.wocat.net/en/wocat/technologies/view/technologies_971/
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Project

- n.a.