Picture of a shelter belt in the farmland

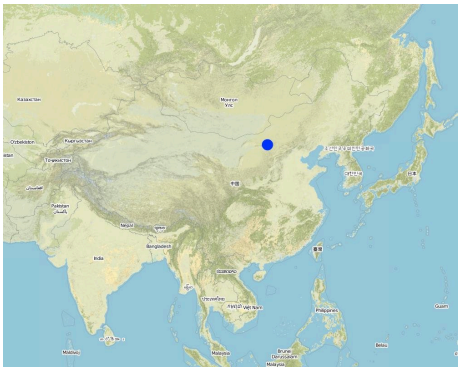
Shelter Belt (China)

DESCRIPTION

The shelter belt is a strip or a row of trees planted in a farmland as a wind barrier to protect crops and reduce wind erosion.

Aims / objectives: Overall purposes are improving environment, and then realization sustainable development of agriculture. Specific objectives are decreasing wind erosion of cropland, increasing foodstuff production. When this approach is decided to implement, the first things to be done are to investigate natural and social-economic environment. Then scope and stages of implementation are decided by government with provision of capital and policies. After that, the approach need to propagandize to people who live in the project area. To implement this approach step by step, local government and land users play an very important role in implementation of the approach.

LOCATION



Location: Inner Mongolia, China

Geo-reference of selected sites

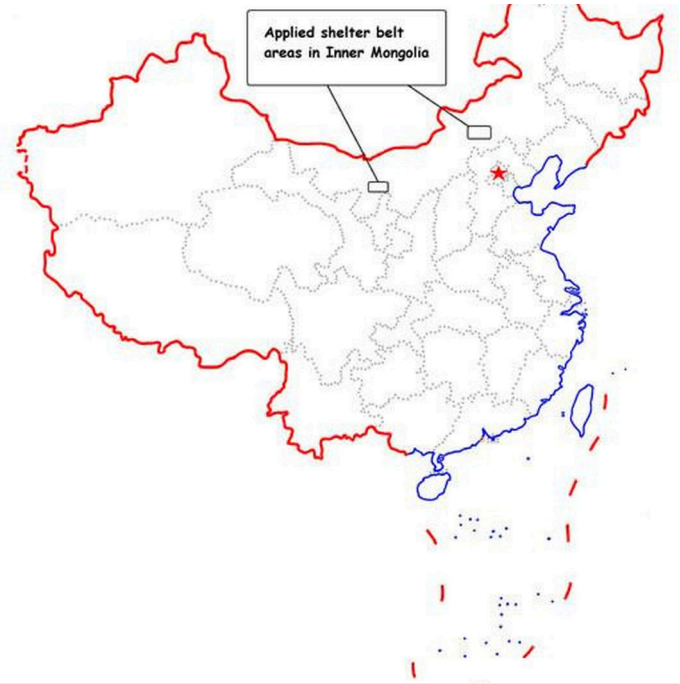
- 111.252, 40.885

Initiation date: 1960

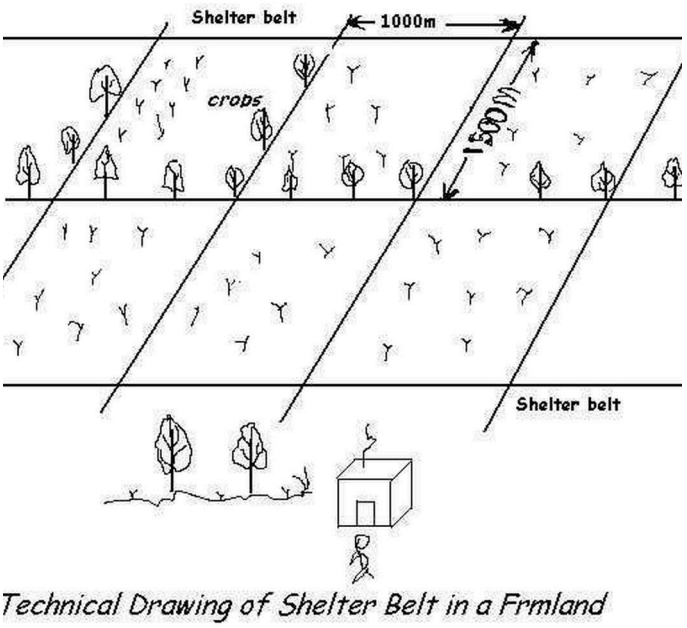
Year of termination: 1981

Type of Approach

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



Relative location of the shelter belt application in the Inner Mongolia, China.



Technical Drawing of Shelter Belt in a Frmland

Patterns of shelter belt distribution in the farmland

APPROACH AIMS AND ENABLING ENVIRONMENT

Main aims / objectives of the approach

The Approach focused mainly on SLM with other activities (Modulation of air temperature, purifying air and increasing oxygen.)

The main objectives of the approach were reducing wind speed and keep soil moisture so as to be sustainable development of local land resources.

The SLM Approach addressed the following problems: Serious wind erosion in the farmland, and poor land management.

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

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

- **Availability/ access to financial resources and services**: No enough money Treatment through the SLM Approach: Raising funds from different level of government
- **Legal framework (land tenure, land and water use rights)**: Lack of enforcement of legislation Treatment through the SLM Approach: Enforcement of legislation The existing land ownership, land use rights / water rights moderately hindered the approach implementation Persuading land users to accept this SWC approach.

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	Mongolian, Moslem, Korean minority nationalities, etc Work equally divided between men and women	
SLM specialists/ agricultural advisers	A group of national and international specialists have been studying for a long time, and summarized this approach.	
national government (planners, decision-makers)	The implementing agencies are national government	

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

	none	passive	external support	interactive	self-mobilization	
initiation/ motivation					✓	public meetings; They were involved in approach by public meeting and understood the approach.
planning				✓		ublic meetings; They involved approach by public meeting and understand the approach
implementation					✓	casual labour; They increased their income by participating casual labour
monitoring/ evaluation				✓		interviews/questionnaires; They pronounced their point of view by interviews or questionnaires
Research				✓		They do not participate in.

Flow chart

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
- 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
- Capacity building/ training
- ✓ Advisory service
- ✓ Institution strengthening (organizational development)
- ✓ Monitoring and evaluation
- ✓ Research

Advisory service

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

On-the-job, farm visits, demonstration areas; Key elements: Quality of on-the-job, Effect of farm visits, Quality of demonstration areas; 1) Advisory service was carried out through: projects own extension structure and agents 2) Advisory service was carried out through: projects own extension structure and agents; Extension staff: mainly government employees 3) Target groups for extension: technicians/SWC specialists; Activities: Courses and demonstration

Advisory service is quite adequate to ensure the continuation of land conservation activities; All land users want to do this approach if they could get economic benefit from it. At each government level, there is a SWC division which is in charge of SWC activities including extension.

Institution strengthening

Institutions have been strengthened / established
- no
- yes, a little
- ✓ yes, moderately
- yes, greatly

at the following level
- ✓ local
- regional
- national

Describe institution, roles and responsibilities, members, etc.

Type of support
- ✓ financial
- capacity building/ training
- equipment

Further details

Monitoring and evaluation

bio-physical aspects were regular monitored by 0 through measurements; indicators: None technical aspects were regular monitored by 0 through measurements; indicators: None socio-cultural aspects were ad hoc monitored by 0 through observations; indicators: None economic / production aspects were ad hoc monitored by 0 through measurements; indicators: None area treated aspects were regular monitored by 0 through measurements; indicators: None no. of land users involved aspects were ad hoc monitored by 0 through measurements; indicators: None management of Approach aspects were ad hoc monitored by 0 through observations; indicators: None There were few changes in the Approach as a result of monitoring and evaluation: Improving the approach according to the practical effect.

Research

Research treated the following topics

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

This approach is applied for improving environment so as to relief their poverty.

Research was carried out on station

FINANCING AND EXTERNAL MATERIAL SUPPORT

Annual budget in USD for the SLM component

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

Precise annual budget: n.a.

Approach costs were met by the following donors: international (-): 25.0%; government (national): 55.0%; international non-government (-): 7.0%; national non-government (-): 3.0%; local community / land user(s) (-): 10.0%

The following services or incentives have been provided to land users

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

Financial/ material support provided to land users

	partly financed	fully financed
equipment: machinery		✓
equipment: machinery: tools		✓
agricultural: seeds		✓
agricultural: seeds: fertilizers		✓
seedlings and biocides		✓
community infrastructure		✓

Labour by land users was

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

Credit

Conditions: Interest rate charged: 0.8%; repayment conditions: Varying every year, repayment is 5 years or 10 years.. Interest was lower than market rate.
Credit providers: n.a.
Credit receivers: n.a.

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? This approach has little relationship to improve soil and water management.		✓		
Did the Approach improve issues of land tenure/ user rights that hindered implementation of SLM Technologies? The policies of land contract distribute land to individuals so that land users who involved in SWC activities need to be organized together for implementation of the SWC. The organization need much time and hard work.			✓	
Did other land users / projects adopt the Approach? A comprehensive SWC technology/approach has been formed based on the single measure such as shelter belt, terrace, check dams involved in agricultural development.			✓	

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
- [ ] yes
- [x] uncertain

CONCLUSIONS AND LESSONS LEARNT

Strengths: land user's view

- Increasing their income (How to sustain/ enhance this strength: Increasing propagandizing and education about SWC knowledge.)

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

- Improving agricultural production conditions. (How to sustain/ enhance this strength: Reinforcing management to this approach)
- Increasing the land users' income (How to sustain/ enhance this strength: Changing part cropland to cash crops or fuit trees so as to get much return and maintain the sustainable SWC approach.)

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

- Poor mamagement after the shelter belt construction. Enhancing management of village communities forbidding deforest.

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

- Cost much money and more labour forces The government should increase fund to implement this kind of approach.

REFERENCES

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Full description in the WOCAT database

https://qcat.wocat.net/en/wocat/approaches/view/approaches_2396/

Linked SLM data

Technologies: Shelterbelts for farmland in sandy areas https://qcat.wocat.net/en/wocat/technologies/view/technologies_1366/
Technologies: Shelterbelts for farmland in sandy areas https://qcat.wocat.net/en/wocat/technologies/view/technologies_1366/
Technologies: Buffer strips and hedges https://qcat.wocat.net/en/wocat/technologies/view/technologies_6162/
Technologies: Shelterbelts for farmland in sandy areas https://qcat.wocat.net/en/wocat/technologies/view/technologies_1366/

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Project

- n.a.

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