Check dams in a gully of the Loess Plateau.

Check Dam (China)

DESCRIÇÃO

Check dam is a kind of sediment storage dam of 5m below and is built in channels to control the down cutting of channel bed.

Aims / objectives: Xifeng county is one of the key areas of soil erosion control in China. In order to reduce the local soil erosion, and also to bring certain economic benefits to local residents, the Ministry of Water Resources is in charge of check dam construction activities. Check dam is widely used in controlling soil erosion. The training is a main approach to promotion of the check dam technology. It is necessary to mobilize local people to participate in construction, while providing to them some cash subsidies. In such a way local people can get economic benefits, and strengthen their awareness and
knowledge of soil and water conservation.

Methods: Main objectives: (1) Elevating erosion basis of channel bed to prevent the channel down cutting and channel bank expansion, and decrease channel gradient. (2) Storing silt and reducing the amount of sediment, transported into the rivers. (3) Decreasing channel flow rates and reducing the flood risk of the lower reaches. (4) Debris flow control by use of strong permanent check dams. (5) Making channel silted to form sediment-covered terraces for future use.

Stages of implementation: Implemetation procedure: (1) site selection and design; (2) material preparation, labor recruitment and temporary road buliding; (3) main project construction.

Other important information: The construction cost of check dam is determined by project quality requirements, difficulty of construction, work size, construction technology, and some other factors. Regional factors have also an important impact. Therefore, the investment is mainly made by government with local supporting funds. Check dam construction is often associated with plant cultivation, aquaculture design and other measures to make comprehensive use of sediment retention and water storage. It can increase agricultural productivity and farmers' income in addition to improve local environment.

LOCALIZAÇÃO

Localização: Xifeng, Shanxi, Beijing, China

Geo-referência de locais selecionados

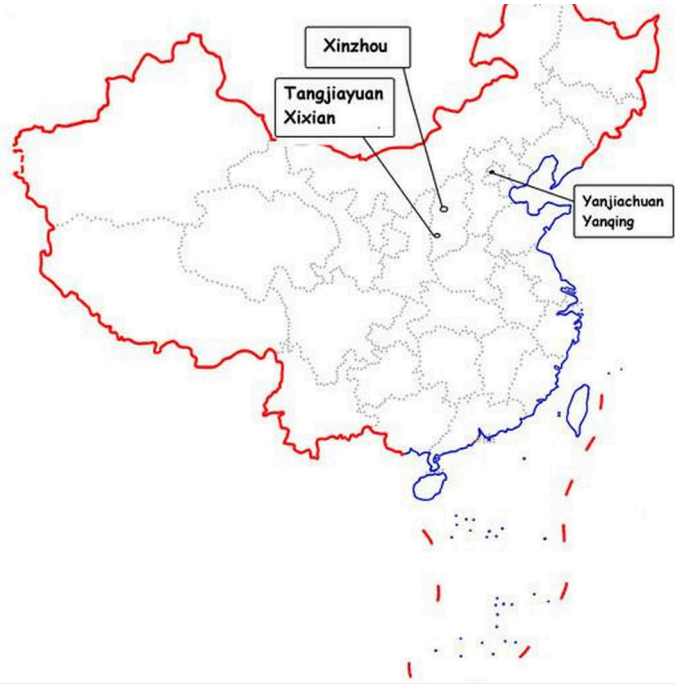
- 115.918, 40.461

Data de início: 1960

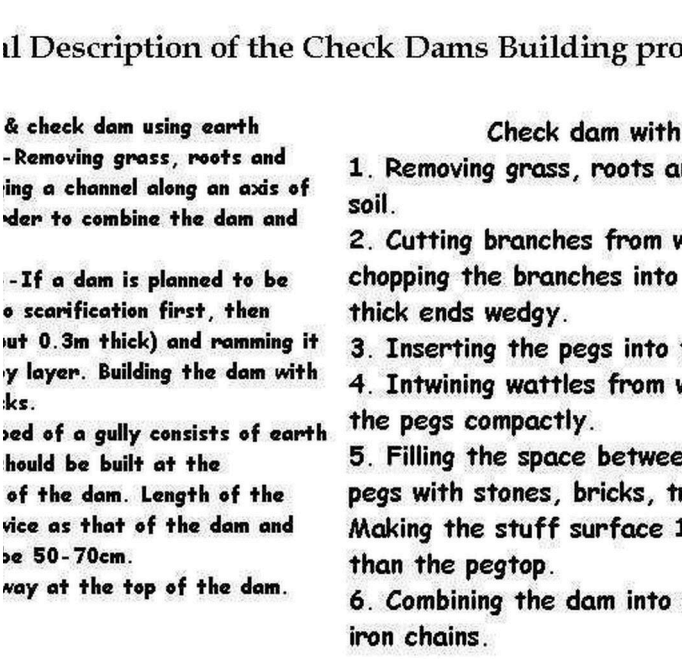
Ano de término: n.a.

Tipo de abordagem

- [x] Tradicional/Indígena
- [ ] Iniciativa/inovação local recente
- [ ] Baseado em projeto/programa



Check dam in a gully of the Loess Plateau.



l Description of the Check Dams Building pro

& check dam using earth
-Removing grass, roots and
ing a channel along an axis of
der to combine the dam and

-If a dam is planned to be
o scarification first, then
ut 0.3m thick) and ramming it
y layer. Building the dam with
ks.
ed of a gully consists of earth
hould be built at the
of the dam. Length of the
vice as that of the dam and
e 50-70cm.
way at the top of the dam.

Check dam with
1. Removing grass, roots a
soil.
2. Cutting branches from
chopping the branches into
thick ends wedgy.
3. Inserting the pegs into
4. Intwining wattles from
the pegs compactly.
5. Filling the space betwee
pegs with stones, bricks, t
Making the stuff surface
than the pegtop.
6. Combining the dam into
iron chains.

Description of building a check dam procedures.

OBJETIVOS DE APROXIMAÇÃO E AMBIENTE PROPÍCIO

Principais metas / objetivos da abordagem

The Approach focused on SLM only

1) Fixation and raise of erosion basis, preventing down cutting of channel and channel bank expansion. 2) Making channel silted to form sediment-covered terraces for farming. 3) Decreasing channel gradient and flow rates and reducing the flood risk of the lower reaches.

The SLM Approach addressed the following problems: 1) Serious debris flow which causes tremendous economic loss and threats to the residents safety. 2) Serious soil erosion, especially down cutting and expansion of gully. 3) Poor local economy, lack of funds and technology for soil erosion control.

Condições que permitem a implementação da Tecnologia(s) aplicada(s) sob a Abordagem

Condições que dificultam a implementação da Tecnologia(s) aplicada(s) sob a Abordagem

- **Normas e valores sociais/culturais/religiosos**: Unawareness of soil and conservation knowledge. Treatment through the SLM Approach: Strengthening education and training.
- **Disponibilidade/acesso a recursos e serviços financeiros**: More investment needed for mortar stone check dam. Treatment through the SLM Approach: Government and company investment to develop eco-industry.
- **Quadro jurídico (posse de terra, direitos de uso da terra e da água)**: The existing land ownership, land use rights / water rights hindered a little the approach implementation The state has ownership of the land resources, land users can only lease the land for a period of time, they worry about their land would be transferred to others.
- **Conhecimento sobre GST, acesso a suporte técnico**: Check dam design and construction need qualified technicians. Treatment through the SLM Approach: Professionals and training.

PARTICIPAÇÃO E PAPEL DAS PARTES INTERESSADAS ENVOLVIDAS

Partes interessadas envolvidas na abordagem e seus papéis

Que partes interessadas/órgãos de implementação estavam envolvidos na abordagem?	Especifique as partes interessadas	Descreva o papel das partes interessadas
Usuários de terra/comunidades locais	Working land users were mainly men (In 1960s and 1970s, the SWC activities mainly distributed and administrated to farmers to do in leisure time(winter), and grouped to build check dams, terraces, etc Existing groups of land users;	Those who live in gully areas and have less flat crop land provide their advices and requirement to the government and decision makers.
Governo nacional (planejadores, responsáveis pelas decisões)		

Envolvimento do usuários de terra/comunidades locais nas diferentes fases da abordagem

	Nenhum	Passivo	Apoio externo	Participativo	Automobilização	
Iniciação/motivação			✓			Mainly:public meetings; partly: workshops/seminars; Series of site meetings to explain the SWC to the land users.
Planejamento			✓			Mainly: public meetings; partly: workshops/seminars
Implementação				✓		casual labour
Monitoramento/avaliação				✓		Mainly: interviews/questionnaires; partly: reporting;
Research					✓	on-station

Fluxograma

Tomada de decisão sobre a seleção da Tecnologia GST

As decisões foram tomadas por

- Somente usuários da terra (iniciativa própria)
- Principalmente usuários da terra, apoiados por especialistas em GST
- todos os atores relevantes, como parte de uma abordagem participativa
- Principalmente especialistas em GST, após consulta com usuários da terra
- Somente especialistas em GST
- ✓ Políticos/líderes

As decisões foram tomadas com base em

- Avaliação de conhecimento bem documentado de GST (tomada de decisão baseada em evidências)
- Resultados de pesquisa
- Experiência pessoal e opiniões (não documentado)

SUPORTE TÉCNICO, REFORÇO DAS CAPACIDADES E GESTÃO DO CONHECIMENTO

As seguintes atividades ou serviços têm sido parte da abordagem

- ✓ Reforço das capacidades/ formação
- ✓ Serviço de consultoria
- ✓ Fortalecimento da instituição (desenvolvimento organizacional)
- ✓ Monitoramento e avaliação
- ✓ Pesquisa

Reforço das capacidades/formação

Foi fornecido treinamento às seguintes partes interessadas

- ✓ Usuários de terra
- Equipe de campo/consultores
- ✓ extensionists/trainers, politicians/decision makers

Tipo de formação

- Em exercício
- ✓ Agricultor para agricultor
- Áreas de demonstração
- ✓ Reuniões públicas
- ✓ Cursos

Assuntos abordados

The approach provide the training about the technology, such as check dam dimension and materials etc.

Serviço de consultoria

Foi prestado um serviço de consultoria

- ✓ nas áreas dos usuários da terra
- Em centros permanentes

The Basic Farmland Construction; Key elements: Government plan, design, distribute, Farmers implement; 1) Advisory service was carried out through: government's existing extension system 2) Advisory service was carried out through: government's existing extension system; Extension staff: mainly government employees 3) Target groups for extension: land users; Activities: Field visit and demonstration

Advisory service is quite adequate to ensure the continuation of land conservation activities; At each government level, there is a SWC division which is in charge of SWC activities including extension.

Fortalecimento institucional

As instituições foram fortalecidas / estabelecidas

- Não
- Sim, pouco
- ✓ Sim, moderadamente
- Sim, significativamente

no seguinte nível

- ✓ Local
- Regional
- Nacional

Descreva instituição, papéis e responsabilidades, membros, etc.

Tipo de apoio

- ✓ Financeiro
- ✓ Reforço das capacidades/ formação
- Equipamento

Mais detalhes

Monitoramento e avaliação

bio-physical aspects were ad hoc monitored by 0 through observations; indicators: debris flow frequency,speed,volume, time and damage technical aspects were ad hoc monitored by 0 through observations; indicators: damage degree socio-cultural aspects were ad hoc monitored by 0 through measurements; indicators: accredited attitude for debris flow control and part icipation in check dam building. economic / production aspects were ad hoc monitored by 0 through observations; indicators: control area area treated aspects were ad hoc monitored by 0 through measurements; indicators: science and rationality of Management no. of land users involved aspects were ad hoc monitored by 0 through observations; indicators: None management of Approach aspects were regular monitored by 0 through measurements; indicators: None There were several changes in the Approach as a result of monitoring and evaluation: Improving the construction method so as to make the check dams much durable.

Pesquisa

As pesquisas trataram dos seguintes tópicos

- ☐ Sociologia
- ☑ Economia/Marketing
- ☑ Ecologia
- ☑ Tecnologia

Manual and criteria for standardization design and construction.

Research was carried out both on station and on-farm

FINANCIAMENTO E APOIO MATERIAL EXTERNO

Orçamento anual em USD para o componente GST

- ☐ < 2.000
- ☐ 2.000-10.000
- ☐ 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: government (national): 90.0%; local community / land user(s) (-): 10.0%

Os seguintes serviços ou incentivos foram fornecidos aos usuários de terras

- ☑ Apoio financeiro/material concedido aos usuários da terra
- ☑ Subsídios para insumos específicos
- ☑ Crédito
- ☐ Outros incentivos ou instrumentos

Apoio financeiro/material concedido aos usuários da terra

	Parcialmente financiado	Totalmente financiado
Equipamento: Maquinário	☐	☑

A mão-de-obra dos usuários da terra foi

- ☐ Voluntário
- ☐ Comida por trabalho
- ☑ Pago em dinheiro
- ☐ Recompensado com outras formas de apoio material

Crédito

Condições: Interest rate charged: 2.0% Interest was lower than market rate.
Fornecedores de crédito: n.a.
Receptores de crédito: n.a.

ANÁLISE DE IMPACTOS E DECLARAÇÕES FINAIS

Impactos da abordagem

	Não	Sim, pouco	Sim, moderadamente	Sim, significativamente
A abordagem auxiliou os usuários da terra a implementar e manter as tecnologias de GST? Harvesting runoff in the rainy season and making 'deposited flat land'.	☐	☑	☐	☐
A abordagem melhorou as questões de posse de terra/diretos do usuário que inibiam a implementação das tecnologias de GST? The SWC activities were organized to implement by local communities which can properly deal with the relationship. The problem is likely to be overcome in the near future. The SWC applied area can be contracted for a long time between land ownership and users.	☑	☐	☐	☐
Did other land users / projects adopt the Approach? The method will help to control debris flow; the check dam is widely used	☐	☐	☐	☑

Principal motivação dos usuários da terra para implementar a GST

- ☑ n.a.

Atividades de sustentabilidade de abordagem

Os usuários da terra podem sustentar o que foi implementado através da Abordagem (sem apoio externo)?

- ☐ Não
- ☑ Sim
- ☐ Incerto

CONCLUSÕES E EXPERIÊNCIAS ADQUIRIDAS

Pontos fortes: visão do usuário de terra

- Mitigating damage caused by debris flow and floods (How to sustain/ enhance this strength: Making planning and design on watershed management)

Pontos fortes: a visão do/a compilador/a ou de outra pessoa capacitada

- Erosion control to decrease sediment (How to sustain/ enhance this strength: Check dams building.)
- More effective use of rainfall resources (How to sustain/ enhance this strength: Develop compound management with cultivation and aquaculture.)
- Increasing farmer's income (How to sustain/ enhance this strength: Completing irrigation facility and establishing economic forest)

Pontos fracos/desvantagens/riscos: visão do usuário de terracomo superar

- After abolition of the compulsory labor and accumulative labor service, the enthusiasm and willingness of farmers to participation is lowered Some measures shoule be taken by government at all levels to stimulte and encourage farmers to participate in the construction work

Pontos fracos/desvantagens/riscos: a visão do/a compilador/a ou de outra pessoa capacitadacomo superar

- Large investment. Multi-level investment system, which includes national investment with local support, labor input by farmers, and use of foreign and social funds.

REFERÊNCIAS

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Revisor
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Pessoas capacitadas

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Descrição completa no banco de dados do WOCAT

https://qcat.wocat.net/pt/wocat/approaches/view/approaches_2397/

Dados GST vinculados

Technologies: Check Dam https://qcat.wocat.net/pt/wocat/technologies/view/technologies_1365/
Technologies: Check Dam https://qcat.wocat.net/pt/wocat/technologies/view/technologies_1365/

A documentação foi facilitada por

Instituição

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Projeto

- n.a.

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