



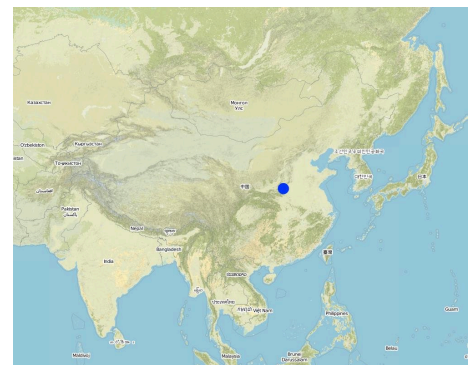
Operation of subsoiling in the field.

Subsoiling (中国)



Subsoiling with mulching is one of the conservative tillage using subsoiling plough to loose subsoils with surface soil undisturbed.

Sustainable agriculture in the dry and semidry region in the North China, especially on the slope farmland is searching always based on the ecological balance. Conservative tillage such as subsoiling, zero and reduced tillage are important to keep soil fertility. Mulching is also a way to improve the soil organic matter. So subsoiling with mulching is an approach to do this. Subsoiling using subsoiling plough is to loose subsoils let all rainfall in the soils and avoid runoff occur.



地点: Henan, 中国

选定地点的地理参考

- 112.446, 34.701

启动日期: 1995

终止年份: 2003

方法的类型

☐ 传 ☐ / ☐ ☐ ☐ / ☐ ☐ ☒ 于 ☐ / ☐ ☐



Where the subsoiling approach is being applied.



Leaving residual(winter wheat straw) when harvest in June.

和利

该方法的主要目的/目标

The main objectives of the approach is to change the traditional multi-till farming to conservation tillage for sustainable agricultural development.

The SLM Approach addressed the following problems: Traditional multi-tillage farming system with little return of organic matters to soils results in soil fertility decline and nutrient loss as well as yield decrease. This approach is designed to change the traditional pattern to conservation tillage.

推动实施本办法所应用技术的条件

- 法律框架（土地使用权、土地和水使用权）：The existing land ownership, land use rights / water rights helped a little the approach implementation: Because land ownership belongs to state.

阻碍实施本办法所应用技术的条件

- 财务资源和服务的可用性/可得性: Lack of fund to buy till machines Treatment through the SLM Approach: subsidy

参与和

该方法涉及的利益相关者及其职责

该方法涉及哪些利益相关者/执行机构？	指定利益相关者	说明利益相关者的角色
使用区	work equally divided between men and women (Because of expensive input for buying tools, usually several households can jointly buy one set, so they generally work as a group)	
规划、决策		

当地土地使用者/当地社区参与该方法的不同阶段

	启动/动员	互动	动员
启动/动员	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
规划	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
评估	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Research	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

interviews/questionnaires; Generally local and/or village committee call land users who involved in the SWC project together and illustrate the purpose and obligation.
rapid/participatory rural appraisal
responsibility for minor steps; Each step and procedures are guided and checked for implementation.
measurements/observations; Mainly done by the researchers and local government staffs not by local land users.
on-station; The effect and impacts of the SWC technology on the soil and environment are investigated and studied on experimental station and on farm.

流程图

有关SLM技术选择的决策

决策者...做出

- ☐ 仅由项目所有者使用
- ☐ 项目所有者使SLM专家提供
- ☐ 项目所有者参与作为参与者的一部分
- ☒ 项目所有者SLM专家咨询使项目之后
- ☐ 仅由SLM专家和

决策者...于

- ☐ 项目所有者充分SLM专家和
- ☐ 项目所有者和
- ☐ 项目所有者和

项目所有者、项目所有者和

以下活动或服务是该方法的一部分

- ☒ 项目所有者/项目所有者
- ☒ 项目所有者服务
- ☒ 项目所有者化项目所有者发
- ☒ 项目所有者和估
- ☒ 项目所有者

能力建设/培训

向以下利益相关者提供培训

- ☒ 项目所有者使项目所有者
- ☐ 项目所有者作人员
- ☒ SWC specialists, extensionists/trainers

培训形式

- ☐ 项目所有者
- ☒ 项目所有者农
- ☒ 项目所有者区
- ☒ 项目所有者公
- ☒ 项目所有者会

涵盖的主题

Teaching them how to operate tractors/tillage with residuals and soil & water conservation knowledge, etc.

咨询服务

已提供咨询服务

- ☒ 项目所有者使项目所有者
- ☐ 项目所有者固中

Name of method used for advisory service: In situ demonstration and training; Key elements: Demonstration, Introduction, Training; 1) Mainly: projects own extension structure and agents Partly: partly: government's existing extension system 2) Mainly: projects own extension structure and agents Partly: partly: government's existing extension system; Extension staff: mainly government employees 3) Target groups for extension: land users; Activities: Demonstration, training Advisory service is quite adequate to ensure the continuation of land conservation activities; There is a nation-wide top-down agricultural technology extension service system which can support the activity.

机构强化

机构已强化/建立

- ☐ 否
- ☐ 项目所有者
- ☐ 项目所有者
- ☒ 项目所有者

在下述层面上

- ☒ 项目所有者
- ☐ 项目所有者区
- ☐ 项目所有者国

描述机构、角色和职责、成员等。

支持类型

- ☒ 项目所有者
- ☒ 项目所有者/项目所有者
- ☒ 项目所有者

进一步细节

监测和评估

bio-physical aspects were regular monitored through observations economic / production aspects were regular monitored through measurements area treated aspects were regular monitored through observations land users involved aspects were ad hoc monitored through measurements management of Approach aspects were ad hoc monitored through observations There were few changes in the Approach as a result of monitoring and evaluation

研究

项目所有者及以下主

- ☐ 项目所有者会
- ☐ 项目所有者和
- ☒ 项目所有者
- ☒ 项目所有者

The successful results of the SWC study obtained by the SWC approach are widely applied to the control of the dust devil, and ecological recover. Research was carried out both on station and on-farm

项目所有者和项目所有者

SLM组成部分的年度预算，以美元计算

- ☐ < 2,000
 - ☐ 2,000-10,000
 - ☐ 10,000-100,000
 - ☒ 100,000-1,000,000
 - ☐ > 1,000,000
- Precise annual budget: 不
- Approach costs were met by the following donors: government (national - Central government): 60.0%; international (NGO): 5.0%; local community / land user(s) (Luoyang): 30.0%; other (-): 5.0%

已向土地使用者提供以下服务或激励

- ☐ 项目所有者使项目所有者供
- ☒ 项目所有者入
- ☒ 项目所有者信
- ☐ 项目所有者励

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WOCAT数据库中的完整描述

https://qcat.wocat.net/zh/wocat/approaches/view/approaches_2401/

链接的SLM数据

Technologies: Subsoiling https://qcat.wocat.net/zh/wocat/technologies/view/technologies_6250/

文件编制者

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- Institute of Agricultural Resources and Regional Planning of Chinese Academy of Agricultural Sciences (CAAS) - 中国

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主要参考文献

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- No-till farming for sustainable rural development, 2002: World Bank
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- Conservation agriculture, 2001: FAO

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