Crop on the stubble background (Kazakhstan)

DESCRIPTION

Stubble crop for cultivation of grain crops (spring wheat).

Aims / objectives: Crop on the stubble includes. 1) In the spring May 15-25, without special preparations that is on stubble, crop of grain crops is made. 2) Crop is made by stubble seeder. 3) Depth of closing up of seeds of 6-8 centimeters. 4) Norm of seeding is 180 kg per 1 ha. 5) Productivity on stubble is 11,5 centner/ha. The given approach prevents crops from wind and water erosion, goes moisture accumulation in a soil cover and accumulation of organic. Problem of soil degradation is especially sharp in North Kazakhstan, zone of the grain agriculture. For the period of the long-term plugging of virgin land the content of humus has decreased by 5-20% and more. 1.2 billion tons or 28.3% from 4.3 billion tons of the humus stocks of the arable layer (0-25 sm) are irrevocable lost because of mineralizing the organic substance, subtraction with a crop, water and wind erosion. In 70th years in Kazakhstan have developed and introduced soil-protective system of agriculture due to wich has been stopped soils erosion and also the productivity is essentially increased. Before introduction of soil-protective system the productivity in northern Kazakhstan made of 5-7c/ha. After introduction of soil-protective system of agriculture the productivity has raised up to 12-15 c/ha. One of the elements of soil-protective system of agriculture ??¡§ are crop on stubble. In the conditions of Kazakhstan, the plowing and crop should be carried out with preservation of stubble in a fallow field once for rotation. It promotes preservation and rational use of the vegetative rests and moisture reduction of industrial expenses and also increase in productivity of grain crops.

LOCATION

Location: Northern Kazakhstan, Kazakhstan

Geo-reference of selected sites

- n.a.

Initiation date: 1976

Year of termination: n.a.

Type of Approach

- [x] traditional/ indigenous
- [ ] recent local initiative/ innovative
- [ ] project/ programme based

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APPROACH AIMS AND ENABLING ENVIRONMENT

Main aims / objectives of the approach

The Approach focused on SLM only (Herbicides, moisture accumulation, crop rotation)

Prevention of wind and water erosion of soils, increase in productivity of grain crops in a steppe zone of Kazakhstan, preservation of moisture accumulation.

The SLM Approach addressed the following problems: Prevention of water and erosion on an arable land.

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 moderately helped the approach implementation: The property rights to the ground promote more operatively to make decision at land users on introduction of the approach

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

- **Social/ cultural/ religious norms and values**: Treatment through the SLM Approach: Shortage of financial assets.
- **Availability/ access to financial resources and services**: Cooperation of farms. Treatment through the SLM Approach:
- **Legal framework (land tenure, land and water use rights)**: The old worn out park of the agriculture technique. Treatment through the SLM Approach:
- **Knowledge about SLM, access to technical support**: The cooperative approach of farmers to use of technique. Treatment through the SLM 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	Working land users were mainly men (Assosiation of separate farms where the basic volume of agriculture works are carried out by men)	Men participated basically. Work cycles of a grain husbandry are served by men
local government		
national government (planners, decision-makers)	Institutions of local 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; Meetings of farmers
planning		✓				workshops/seminars; Popularization of the approach
implementation					✓	responsibility for major steps; Personal interest of farmers
monitoring/ evaluation	✓					
Research	✓					

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

Advisory service

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

Recommendations on system of conducting of an agri; Key elements: Distribution of methodical manuals, Distribution of agromelioratives directories; 1) Advisory service was carried out through: By personal contact 2) Target groups for extension: land users; Activities: Seminars, conversations, joint introductions of the approach

Advisory service is inadequate to ensure the continuation of land conservation activities; The state structures and services of training are not present

Institution strengthening

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

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

Describe institution, roles and responsibilities, members, etc.

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

Further details

Monitoring and evaluation

bio-physical aspects were regular monitored through observations economic / production aspects were regular monitored through observations ecological aspects were regular monitored through observations There were few changes in the Approach as a result of monitoring and evaluation: The methodical approach remains constant. Changes have been brought in a technological part the design of a seeder was improved.

Research

Research treated the following topics
- [ ] sociology
- [x] economics / marketing
- [x] ecology
- [x] technology

1.Selection of grades of the grain crops. 2.Designing and creation of technique (seeders SZS-2). 3.Development of recommendations on conducting a grain husbandry in dried steppe and steppe zone.

Research was carried out both on station and on-farm

FINANCING AND EXTERNAL MATERIAL SUPPORT

Annual budget in USD for the SLM component
- [x] < 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): 100.0%

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

Financial/ material support provided to land users

	partly financed	fully financed
equipment: machinery	✓	

Labour by land users was
- [ ] 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? The approach considerably reduces erosion of the grounds			✓	
Did other land users / projects adopt the Approach? The given approach is component of SWC on the minimal soil tillage			✓	

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
- Maintenance of guaranteed crops (How to sustain/ enhance this strength: The same)
- Maintenance of guaranteed incomes (How to sustain/ enhance this strength: The same)
- Increase of fertility of the grounds (How to sustain/ enhance this strength: Regular application of SWC approaches)
- Reduces danger of display of water and wind erosion (How to sustain/ enhance this strength: Regular application of SWC approaches)

Strengths: compiler's or other key resource person's view
- Provides a guaranteed crops (How to sustain/ enhance this strength: Ecological propagation and education)
- Increase of fertility of the grounds (How to sustain/ enhance this strength: To expand the areas of application of SWC approach)
- Decrease of eroded lands (How to sustain/ enhance this strength: To expand an area of application of SWC approach)

Weaknesses/ disadvantages/ risks: land user's viewhow to overcome
- Ecological limitation of SWC approach Investments are necessary

Weaknesses/ disadvantages/ risks: compiler's or other key resource person's viewhow to overcome
- Lack of means at small farmers Cooperation of farms and infusing of investments

REFERENCES

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Full description in the WOCAT database
https://qcat.wocat.net/en/wocat/approaches/view/approaches_2363/

Linked SLM data
Technologies: Soil-protective minimal technology of the tillage and sowing
https://qcat.wocat.net/en/wocat/technologies/view/technologies_1092/
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Documentation was faciliated by

Institution
- n.a.

Project
- n.a.

Key references

- Gossen E.F. Without rotation of layer, Almaty 2000 ySoil-protective agriculture Baraev A.I., Moscow 'Floc' 1975 y: SPC for Grain Husbandry of the Baraev???s name 15$SPC for Grain Husbandry Baraev A.I. 10$
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