



Using of technology of creation of sowed pastures

Creation of sowed pastures from subshrubs and forbs able to use maximally the scanty water resources (Kazakhstan)

DESCRIPTION

Increase of use effectiveness of limited resources of soil moisture in desert with sowing xerophyte fodder plants

Aims / objectives: Vegetation of North desert in modern condition is defective as cenosis owing to anthropogenic factor. Existing phytocenosis is characterized by low saturation of soil with plant organs. Therefore such cenosis can not use material resources of soil maximally (rootage penetrate into soil not more than 80 cm depth). Creation of sowed pastures with plant such as Kochia, Salsola, Artemisia, Ceratoides gives the possibility to use soil resources (first of all, moisture) more, better due to powerful rootage penetrating into soil up to 2.5 m). The method was approved and allows to increase productivity by 2-2.5 times. Studies in South Pribalkhashye showed that in spring soil under degraded pasture contain 295-474 tons of productive moisture, 32-57 tons of humus, 3-8 tons of common nitrogen per ha. At the same time association of sowed sbushrubs occupies soil layer 0-250 cm, what contains 652-1080 tons of productive moisture, 50-61 tons of humus, 11-52 tons of common nitrogen per ha. Degraded pastures could form 210 kg of dry matter per ha while pastures created on SWC-method - up to 580-600 kg per ha.

LOCATION

Location: South Pribalkhashye, Kazakhstan

Geo-reference of selected sites

- n.a.

Initiation date: 1974

Year of termination: 1994

Type of Approach

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



Strongly degraded pastures of Almaty region.



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APPROACH AIMS AND ENABLING ENVIRONMENT

Main aims / objectives of the approach

The Approach focused mainly on SLM with other activities (on SWC and increase of pasture productivity)

Creation of high productive pastures in place of finally degraded sites of vegetation

The SLM Approach addressed the following problems: Maximal use of moisture as limiting factor of growing and development of fodder plants in desert

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: There was no this problem at implimentation of the method

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

- **Availability/ access to financial resources and services:** to implementation of technological processes because of shortage of seeds, machinery, petrol 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	Farmers. Working land users were mainly women (The invited specialists of local community worked in creation and implementation of method)	
SLM specialists/ agricultural advisers		
national government (planners, decision-makers)	Ministry of Agriculture, oblast departments of agriculture	

Lead agency

Pryamishnikov S. - selection of cultures and technology of cultivation. Jurchenko V. - selection of cultures and technology of cultivation. Alimaev Y - theoretical base of method, seliction of cultures and technology of cultivation.

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

	none	passive	external support	interactive	self-mobilization	
initiation/ motivation			✓			responsibility for minor steps, casual labour; mashine - operators of community local specialists
planning	✓					
implementation				✓		responsibility for minor steps, casual labour; mashine - operators of community local specialists
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
- ☒ 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

Capacity building/ training

Training was provided to the following stakeholders

- ☒ land users
- ☐ field staff/ advisers
- ☒ politicians/decision makers

Form of training

- ☐ on-the-job
- ☐ farmer-to-farmer
- ☒ demonstration areas
- ☐ public meetings
- ☐ courses

Subjects covered

science of grasslands, management of pasture ecosystems

Advisory service

Advisory service was provided

- ☐ on land users' fields
- ☒ at permanent centres

Advisory service is totally inadequate to ensure the continuation of land conservation activities; Further development of marketing and introduction groups is needed in oblast departments of agriculture

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 through observations management of Approach aspects were ad hoc monitored through observations There were no changes in the Approach as a result of monitoring and evaluation: Technological processes worked throw in details

Research

Research treated the following topics

- ☐ sociology
- ☒ economics / marketing
- ☒ ecology
- ☒ technology

Technological process was developed on a base of SWC - method and investigation on ecological and economical aspects of effects on nature and people were carried out

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
- ☐ 100,000-1,000,000
- ☐ > 1,000,000

Precise annual budget: n.a.

Approach costs were met by the following donors: government (national - budget): 100.0%

The following services or incentives have been provided to land users

- ☒ Financial/ material support provided to land users
- ☒ Subsidies for specific inputs
- ☐ Credit
- ☐ Other incentives or instruments

Financial/ material support provided to land users

partly financed
fully financed

equipment: machinery	☒
equipment: machinery: tools	☒
agricultural: seeds	☒
Seedlings and biocides	☒

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 technology of creation of sowed pastures	☐	☐	☐	☒
Did other land users / projects adopt the Approach? this method is based on teoretical workings of proffesors Ramenskii L.G, Shamsutdinov Z.Sh, Kurkina K.D.	☐	☐	☒	☐

Main motivation of land users to implement SLM

- ☒ n.a.

Sustainability of Approach activities

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

- ☐ no
☐ yes
☒ uncertain

CONCLUSIONS AND LESSONS LEARNT

Strengths: land user's view

- 1) it increases pasture fodder capacity
- 2) it ceases soil erosion and improves ecological conditions

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

- 1) Sufficiently simple technology (How to sustain/ enhance this strength: to work for reduction of technology price)
- 2) it gives significant effect in increase pasture productivity
- 3) it is able to localize centers of soil erosion.
- 4) it promotes animal husbandry development
- 5) it increases living standards of people

Weaknesses/ disadvantages/ risks: land user's view how to overcome

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

REFERENCES

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Full description in the WOCAT database

https://qcat.wocat.net/af/wocat/approaches/view/approaches_2362/

Linked SLM data

Technologies: Creation of artificial pasturable phytocenosis at north desert subzone

https://qcat.wocat.net/af/wocat/technologies/view/technologies_1093/

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- n.a.

Project

- n.a.

Key references

- Pastures and hayland of Kazakhstan. Alimaev I. Isakov K. Almaty, 1998: Almaty, free

