Central Asia
CLIMATE PORTAL

Evidence-based decision support
What can WOCAT offer?

Godert van Lynden,
ISRIC - World Soil Information,
The Netherlands

WOCAT
World Overview of Conservation Approaches and Technologies

Regional Workshop
Dushanbe 27.9.2019

What is WOCAT?

A global, open **SLM network**

Tools and methods for SLM documentation and evaluation

A global SLM data repository

Capacity building

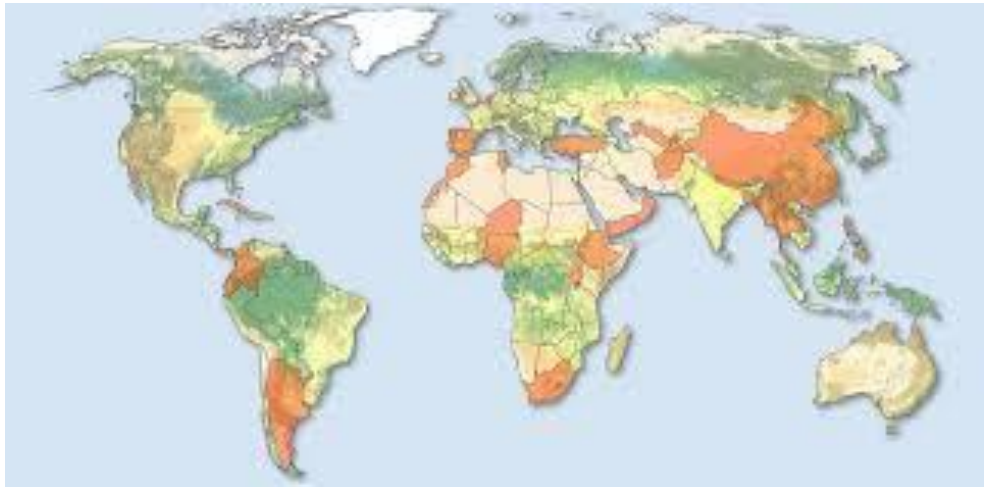
WOCAT: World Overview of Conservation Approaches and Technologies (www.wocat.net)

WOCAT Network

WOCAT International with eight Consortium Partners (Steering Committee)

- Established in 1992
- Biannial international network meetings
- Semi-annual steering committee meetings

WOCAT Regional / National with partners in over 50 countries and *regional hubs*

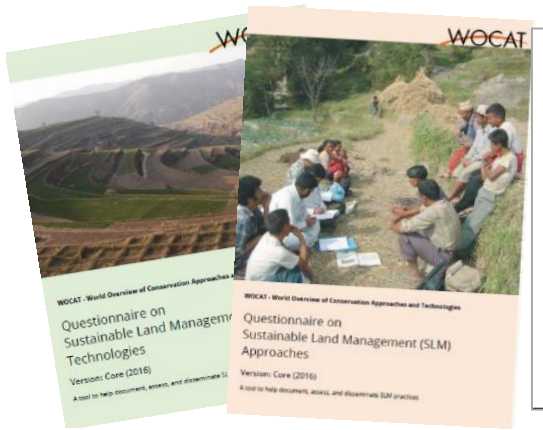


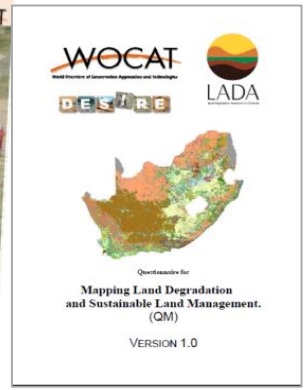
WOCAT 2020+ new strategy

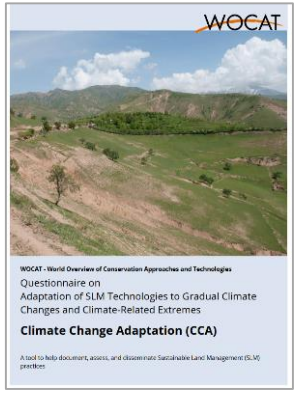
WOCAT 2020+ aims to be a leading **platform of SLM expertise** and in **supporting countries and institutions** around the world to **scale up SLM**, **achieve LDN**, and foster **related SDGs** addressed by the three UN conventions.

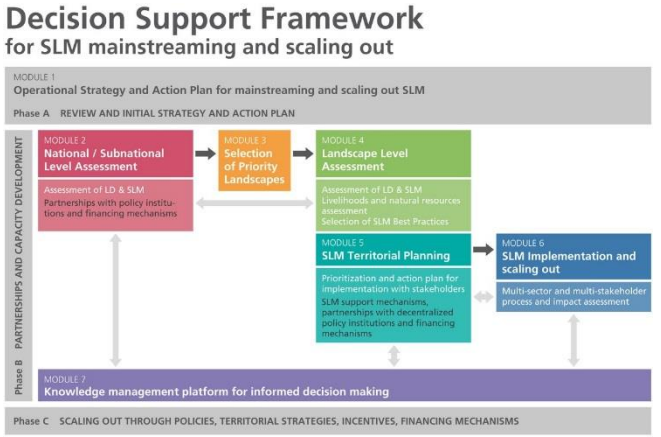
WOCAT tools and methods

Central Asia CLIMATE PORTAL









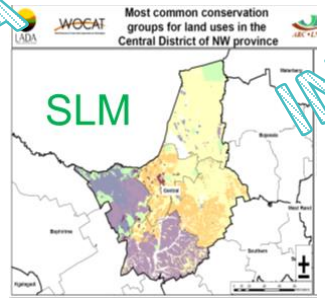
Documentation, evaluation and dissemination of good practices

Spatial assessment of land degradation and SLM

Link to global issues (climate change, LDN)

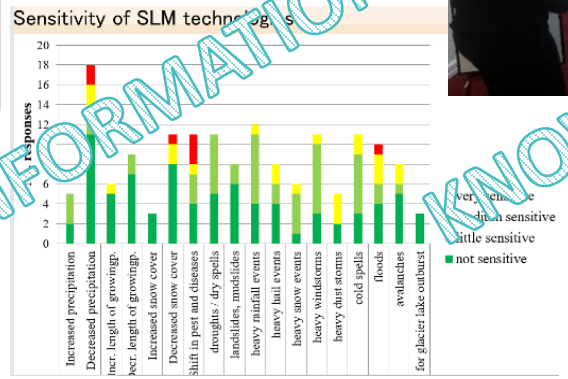
Decision support at national and local level

Scaling up and adoption of SLM



DATA

INFORMATION



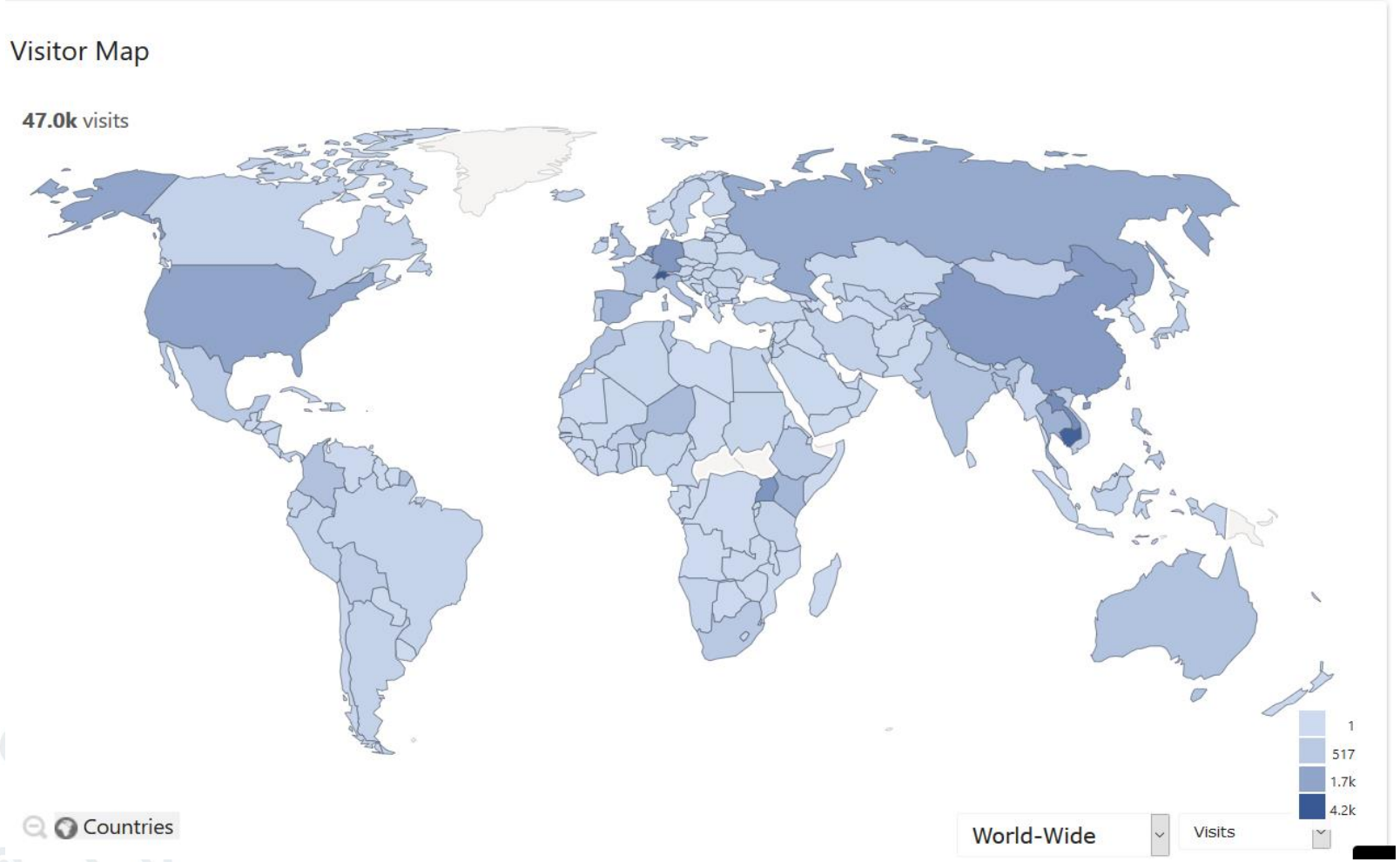
KNOWLEDGE

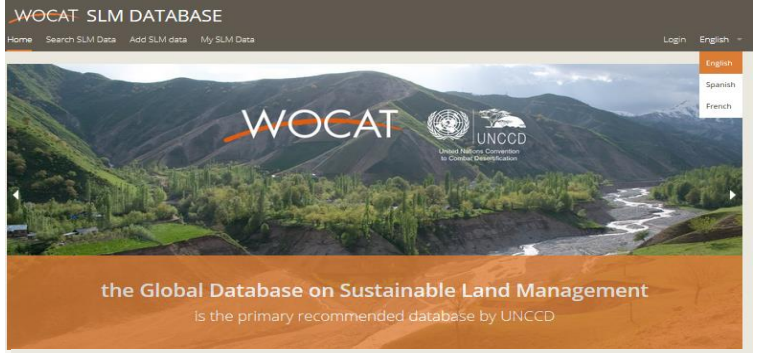
WISDOM

WOCAT Database

Central Asia CLIMATE PORTAL

WOCAT is the primary recommended SLM database by UNCCD



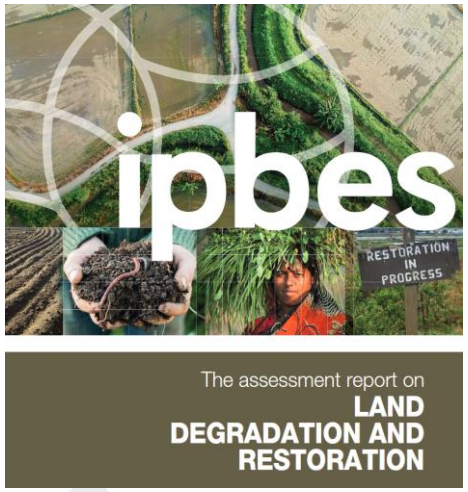


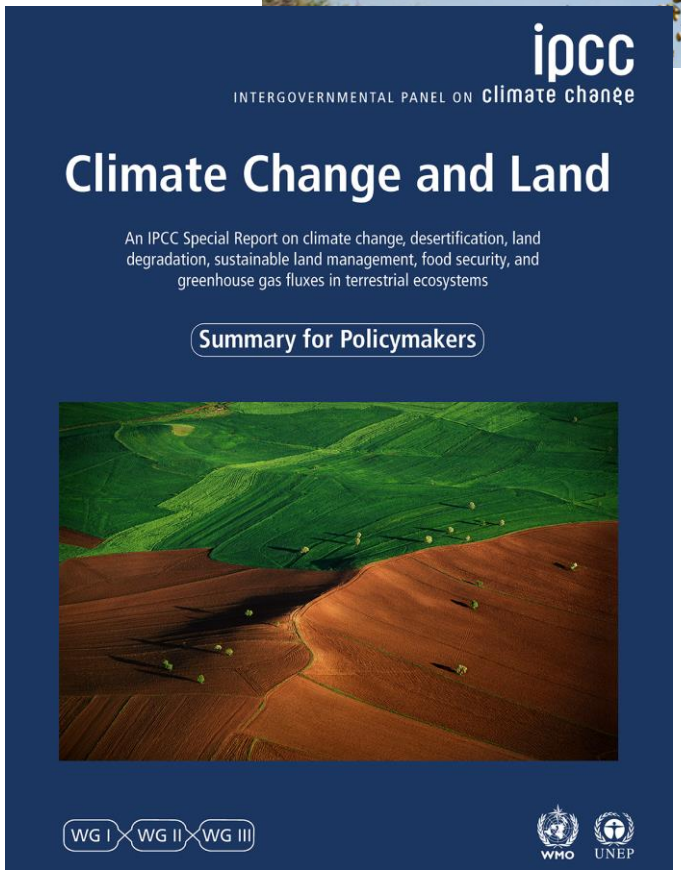
Key Numbers

- 1993 SLM Practices published from 131 countries by 404 users.
  - 1085 SLM Technologies
  - 465 SLM Approaches
  - 443 UNCCD PRAIS Practices
- 79 new practices drafted in the past 90 days.
- 62410 visits from 195 different countries since launch in August 2016.

WOCAT's global position

WOCAT is now globally used and cited in major recent initiatives and publications.
WOCAT was fundamental in the change in focus in the past 20 years from solely LD towards SLM.





WOCATpedia

Search

PORTAL DISCUSSION

Actions

Portal Climate Change Adaptation | All Articles on Climate Change Adaptation

Welcome to the Climate Change Adaptation Portal

In this portal you will general and focus specific articles related to the overall topic of climate change adaptation worldwide.

General articles are related to general information on climate change adaptation, e.g. overviews of the adaptation process, general adaptation measures or indicators of measurements, scientific insights on on climate change and the need for adaptation, etc.

Specific articles are related to case- or topic-specific articles on climate change adaptation, e.g. specific adaptation measures, focus on one aspect of adaptation (e.g. agriculture), case studies, etc.

WOCAT and Climate Change

(from WOCAT Technology questionnaire)

6.3 Exposure and sensitivity of the Technology to gradual climate change and climate-related extremes/ disasters (as perceived by land users)

Indicate gradual changes in climate and climate-related extremes as observed by land users in the last 10 years (trend). Note: for a more detailed assessment, fill in questionnaire module on climate change adaptation.

Several answers possible.

Tick all gradual changes in climate and climate-related extremes/ disasters to which the Technology is exposed			***How does the Technology cope with these changes and disasters in view of achieving its main purposes (as defined in 3.1)?***					
Type of climatic change/ extreme	*Increase*	*Decrease*	*very poorly*	*poorly*	*moderately*	*well*	*very well*	*not known*
Gradual climate change								
☐ annual temperature	☐	☐	☐	☐	☐	☐	☐	☐
☐ seasonal temperature								
indicate season:*	☐	☐	☐	☐	☐	☐	☐	☐
.....	☐	☐	☐	☐	☐	☐	☐	☐
.....	☐	☐	☐	☐	☐	☐	☐	☐
.....	☐	☐	☐	☐	☐	☐	☐	☐
☐ annual rainfall	☐	☐	☐	☐	☐	☐	☐	☐
☐ seasonal rainfall								
indicate season:*	☐	☐	☐	☐	☐	☐	☐	☐
.....	☐	☐	☐	☐	☐	☐	☐	☐
.....	☐	☐	☐	☐	☐	☐	☐	☐
.....	☐	☐	☐	☐	☐	☐	☐	☐
☐ other gradual climate change (specify):			☐	☐	☐	☐	☐	☐
Climate-related extremes (disasters).[1]								
Meteorological disasters:			☐	☐	☐	☐	☐	☐
☐ heatwave			☐	☐	☐	☐	☐	☐
☐ cold wave (any time of the year, e.g. frost)			☐	☐	☐	☐	☐	☐
☐ extreme winter conditions			☐	☐	☐	☐	☐	☐
☐ drought			☐	☐	☐	☐	☐	☐
☐ forest fire			☐	☐	☐	☐	☐	☐
☐ land fire (grass, shrub, bush)			☐	☐	☐	☐	☐	☐
Hydrological disasters:			☐	☐	☐	☐	☐	☐
☐ general (river) flood			☐	☐	☐	☐	☐	☐
☐ flash flood			☐	☐	☐	☐	☐	☐
☐ storm surge/ coastal flood			☐	☐	☐	☐	☐	☐
☐ landslide / debris flow			☐	☐	☐	☐	☐	☐
☐ avalanche			☐	☐	☐	☐	☐	☐
Biological disasters:			☐	☐	☐	☐	☐	☐
☐ epidemic diseases (viral, bacterial, fungal, parasitic)			☐	☐	☐	☐	☐	☐
☐ insect/ worm infestation (grasshoppers/ locusts/ worms, etc.)			☐	☐	☐	☐	☐	☐
Other climate related extremes/ disasters:			☐	☐	☐	☐	☐	☐
☐ (specify):.....								
Other climate-related consequences								
☐ extended growing period			☐	☐	☐	☐	☐	☐
☐ reduced growing period			☐	☐	☐	☐	☐	☐
☐ sea level rise (gradual change)			☐	☐	☐	☐	☐	☐
☐ other (specify):.....			☐	☐	☐	☐	☐	☐

** For temperate, boreal, and polar/ arctic climate choose: winter, spring, summer, autumn; For tropics and subtropics choose: wet/ rainy season, dry season .*

Comments: .....

.....

6.4 Cost-benefit analysis

Refer to questions 4.5 and 4.7 (where costs for establishment and maintenance have been specified).

How do the benefits compare with the <u>establishment costs</u> (from land users' perspective)?

very negative	negative	slightly negative	neutral/ balanced	slightly positive	positive	very positive
☐	☐	☐	☐	☐	☐	☐

WOCAT - World Overview of Conservation Approaches and Technologies

Questionnaire on Adaptation of SLM Technologies to Gradual Climate Changes and Climate-Related Extremes

Climate Change Adaptation (CCA)

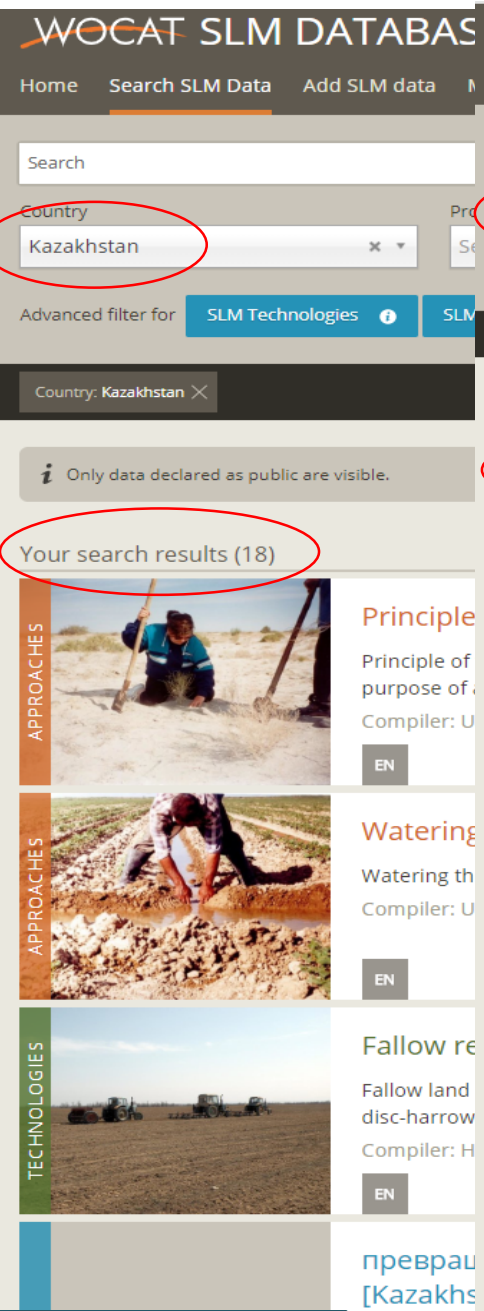
A tool to help document, assess, and disseminate Sustainable Land Management (SLM) practices

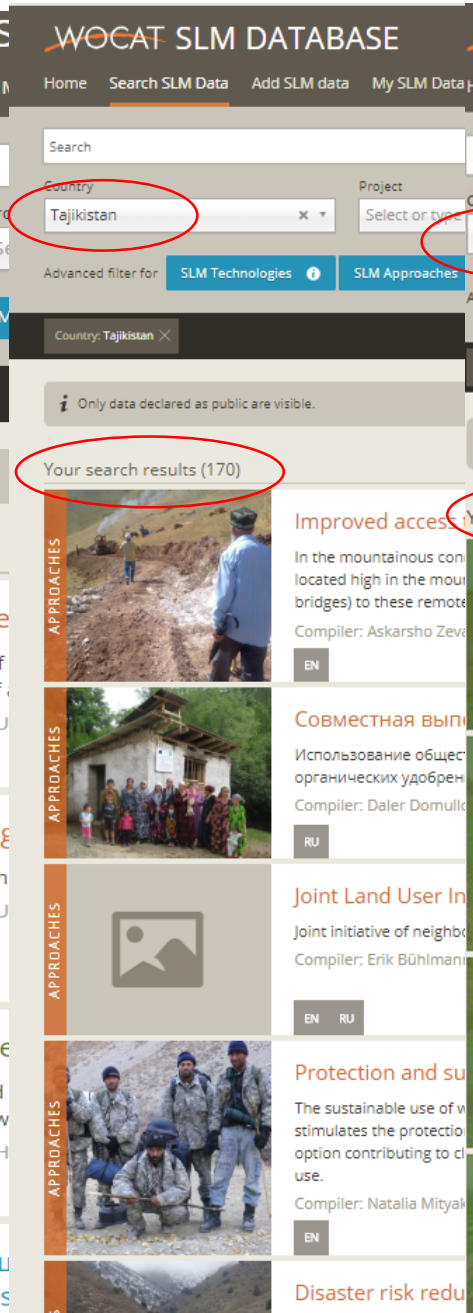
Contents

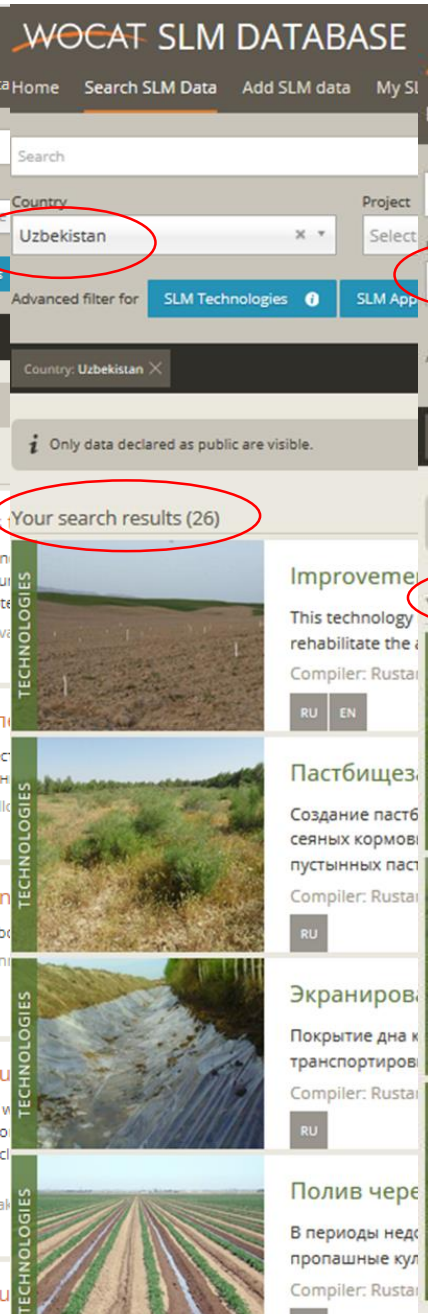
Engagement for Land Degradation Neutrality

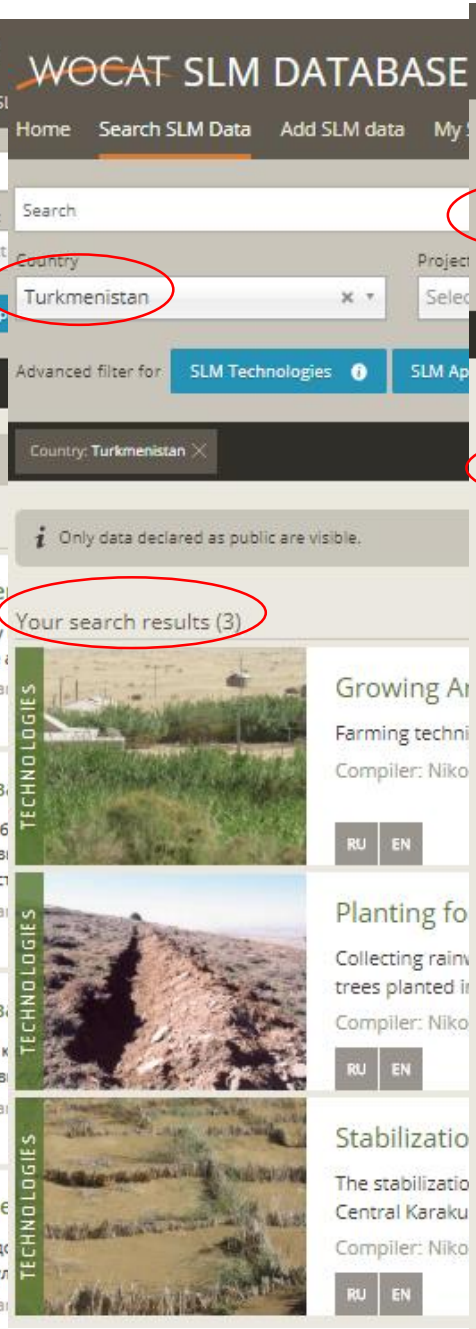
- Collaboration with UNCCD and countries
- WOCAT is the primary recommended database by UNCCD
- Use of WOCAT tools and methods for LDN
- Capacity building
- Interface between science and implementation

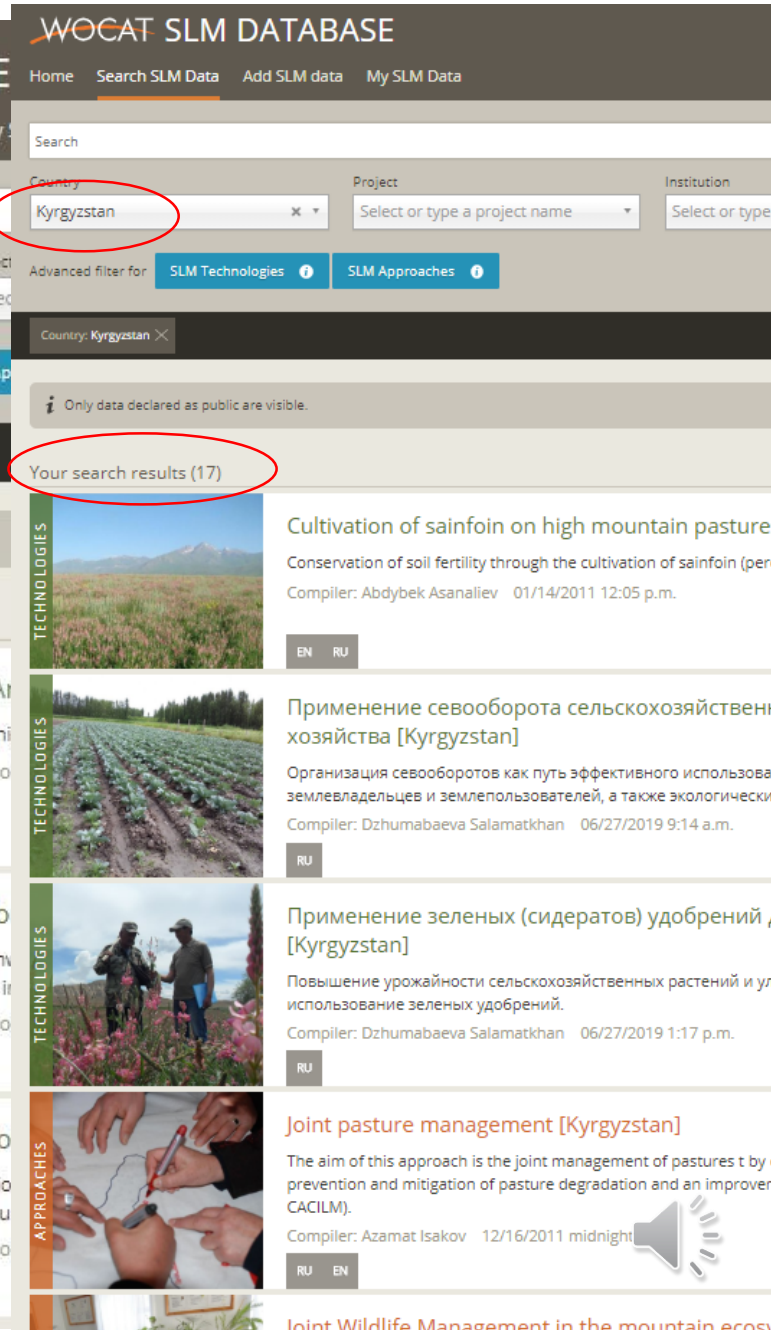
Who is using the Database in Central Asia?





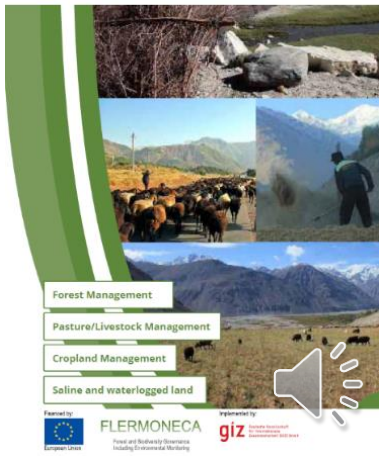






Who is using the Database in Central Asia?

- **Pilot Programme for Climate Resilience Tajikistan** (WB-PPCR), 'SLM Technologies and Approaches – Tajikistan', 2011 in English and Russian.
- **Environmental Land Management and Rural Livelihood Project** (WB-ELMARL)
- **Central Asian Country Initiative for Land Management** (CACILM I), Technologies and Approaches on Sustainable Land Management in Central Asia (ICARDA, IFAD)
- **Integrated natural resources management in drought-prone and salt-affected agricultural production landscapes in Central Asia and Turkey** (FAO-CACILM II)
- **Decision Support for Mainstreaming and Scaling up of SLM** (FAO-DS-SLM)
- **Forest and Biodiversity Governance Including Environmental Monitoring** (GIZ – FLERMONECA), Land Use Planning Catalogue,
- **Initiative on Community-based DRR through IWSM Tajikistan** (SDC), Videos: e.g. 'Good land management to reduce disasters in Tajikistan'
- **Collaboration with**: ICARDA, ICBA, UCA, CAMP Alatoo, Euroasian soil partnership, Central Asian Mountain Partnership (CAMP), ….



What can WOCAT offer

Central Asia
CLIMATE PORTAL

Reconstruction of the irrigation canal by a local community for the irrigation of Lucerne in the Talas village in autumn and early spring (Gulnara Bekturova (Kazakhstan, Almaty, +7 705 5678499 gbekturova@mail.ru))

Off-season irrigation of fields and pastures as a mechanism for pasture improvement under climate change conditions in Southern Kazakhstan (CACILM) (Kazakhstan)

Central Asian Countries Initiative for Land Management (CACILM/ИСЦАУЗР)

DESCRIPTION

Early irrigation of fields and pastures to retain soil moisture during the dry season in Southern Kazakhstan (in the frame of CACILM).

The technology was implemented in Sadu Shakirov village (Talas district of the Zhambyl region). During the soviet era, 210 ha of irrigated arable lands and 66'408 ha of irrigated hayfields were at the disposal of the village. Water for their irrigation was supplied from the 12 km long canal "Sharuashlyk" from the Talas River. The village lands are situated at the end of the canal. In the past few years, over abstraction of irrigation water by water users further upstream and a decrease in the water level of the Talas River have led to a sharp reduction of the water flow in the canal, resulting in the cessation of irrigated husbandry and the degradation of irrigated lands. Irrigated arable lands were abandoned and used now for year-round livestock grazing. The exploitation of the canal stopped, and it became worthless.

The situation is further worsened by the impact of global climate change on the Talas' local climate (decline in precipitation, increase of yearly average temperature, autumn and spring frosts, droughts in summer). The reduction in the number and quality of forage crops due to shortages in irrigation water had a negative impact on stock-breeding and the well-being of the local population.

The problem has been solved by the public association "Kogal Sadu Shakirov Village". The canal's 12 km length and 5 floodgates were restored to supply water to the area and to artificially retain soil moisture conditions through off-season irrigation during the pre-seeding period when most of the water users upstream don't need water for irrigation. The off-season irrigation allowed for the improved growth of grass on pastures. It accumulates soil water storage (1.5-2m in deep), which is used by crops in spring or early summer.

90ha of fallow lands were moistened by local communities in the 1st year. A part of them is used to cultivate fodder crops for supplementary feeding of cattle in winter (in spring, 60ha were sown with Lucerne), and the remaining area was used as natural hayfields. As a result, the hay harvest increased from 3.5 to 5 c/ha.

LOCATION

Location: Talas/Sadu Shakirov village, Republic of Kazakhstan/Zhambyl, Kazakhstan

No. of Technology sites analysed:

Geo-reference of selected sites
- 70.45, 43.16

Spread of the Technology: evenly spread over an area (5.6 km²)

In a permanently protected area?:

Date of implementation: less than 10 years ago (recently)

Отара овец на выделенном участке припоселкового пастбища (У. Назаркулов (Ташкент, 100113, Чиланзар 8, ул. Катартал 21))

Pasture rotation in the desert areas of Uzbekistan (CACILM) (Uzbekistan)

Central Asian Countries' Initiative for Land Management (CACILM)

DESCRIPTION

Improvement of a livestock grazing scheme ensuring the restoration of pasture vegetation and observance of appropriate pasture loading.

As a result of the existing regulations in the pasture-based livestock production sector of Uzbekistan, pasture lands are provided for perpetual use to shirkat farms (large agricultural cooperative) or for long-term use to large farming enterprises. The population is using shirkat pastures for the grazing of private livestock, whose population sometimes exceeds shirkat livestock numbers. Pastures are used without a management plan. Animals are grazing all year round on the same pastures leading to degradation. Trampling occurs on the paths leading the pastures. The proposed technology was developed and introduced within the framework of the UNDP/GEF and Government of Uzbekistan project "Achieving ecosystem stability on degraded lands in Karakalpakstan and Kyzylkum desert" in 2007-2009. Based on traditional methods and approaches to pasture use, this technology enables pasture usage and revenue generation for the local communities without negative impacts on the natural resources (in the frame of CACILM).

The purpose of this technology is to prevent further pasture degradation, loss of biodiversity and to create prerequisites for regeneration of degraded pasture and pasture improvement.

National experts of the project, based on consultations with local community, developed the sustainable pasture use plan. For that purpose, a pasture assessment was performed for each stakeholder (fodder of the state farming enterprises and dekhkan households). The pasture assessment determined the type, forage value and pasture capacity, followed by the calculation of forage balance (ratio of required to available pasture forage). A pasture monitoring system is monitoring pasture vegetation and productivity in order to fine-tune the plan. Based on that, livestock population is corrected each season to ensure safe pasture loading and prevent overgrazing. Two watering wells were assigned to an 800 head-strong sheep flock. The 7859 hectare area (based on 5 km forage radius) around each well was split diametrically in two sectors (I and II), and each sector was split in turn into 3 rotation areas of 1308 hectares each, to be grazed sequentially. Based on the current pasture productivity of 1,65 centners/ha, each area can be used for 15 days, i.e. the first sector of the pasture provides 90 days, the entire spring period. 6 of forage for 800 head of sheep. In summer, the flock is driven into sector II and the autumn to the second watering well, where rotation-based grazing is organized. Two sectors split into rotation areas for

LOCATION

Location: Romitan district, Uzbekistan / Bukhara oblast, Uzbekistan

No. of Technology sites analysed:

Geo-reference of selected sites
- 62.17988, 40.55545

Spread of the Technology:

In a permanently protected area?:

Date of implementation: less than 10 years ago (recently)

Type of introduction
- through land users' innovation as part of a traditional system (> 50 years)
- during experiments/ research
- through projects/ external interventions

The established structural protection measures with planted seedlings of Haloxylon persicum (Nikolay Zverev, 65 Turkmenbashi-1 District, ap.26, 774019), e-mail:nikolay.zverev@gmail.com)

Stabilization and afforestation of sand dunes around settlements in the Karakum Desert (CACILM) (Turkmenistan)

Central Asian Countries Initiative for Land Management (CACILM/ИСЦАУЗР)

DESCRIPTION

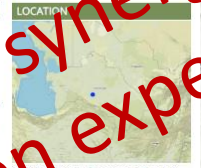
The stabilization of shifting sands by installing a system of mechanical protection and planting shrubs around settlements in the Central Karakum

As a result of overgrazing, the pasture surrounding Bokurdok village have been transformed into barren land and dunes which now threaten infrastructure. Families are forced to spend up to 40% of their savings for the construction of new houses. This problem was solved using the technology of sand dune stabilization which includes the installation of mechanical sand dune fixation devices (MSDFs) and planting vegetation adapted to desert environments. MSDFs were made using burnt reed (of 1.5-2.0 m length), which widely grows along the channels in the boundles, 0.02-0.03m in diameter, were bent in the middle (0.5m) and placed vertically into the sand in 25-30cm depth. In this way they are used to establish quadratic grids typically 25cm high sandwalls. The optimum grid size is 2x2m and depends on local wind and sand transport conditions. 2x2m MSDFs are used when winds of different directions dominate, otherwise MSDFs are set forming rows perpendicular to the predominant sand transport direction.

The MSDFs assure sand dune stabilization for 2 years. In subsequent years, the stabilization process is achieved by planting seedlings of desert trees and shrubs and by natural reproduction. 3500-4000 seedlings/ha should be planted. The areas are to be successfully stabilized without irrigation. The plants are watered only on the first season, then the standard watering setting is 1200-1500 l/seedling per ha. The planting scheme is as follows: the distance between the plants in the row is 2m, and the spacing between the rows is 3m. Plants are planted 20-40cm deep after the sand has been soaked by rain. January is the only once temperatures are above 0 °C.

Purpose of the Technology: The focus of the technology is to improve environmental conditions and the sustainability of farms in the village in general. This can only be achieved if vegetation on degraded pastures near the village is restored and infrastructure is protected against the advance of the desert

LOCATION



Location: Kuhabadsky etrap, Bokurdak village, Turkmenistan, Akhal velayat, Turkmenistan

No. of Technology sites analysed:

Geo-reference of selected sites
- 58.4953, 38.77

Spread of the Technology: evenly spread over an area (approx. 0.1-1 km2)

In a permanently protected area?:

Date of implementation: less than 10 years ago (recently)

Road Construction to open access to remote summer pasture (Boronov Ibrohim)

Improved access to remote summer pasture - through infrastructure development (Tajikistan)

Таъмини дастраси ба чарогохи тобистона

DESCRIPTION

In the mountainous conditions of Tajikistan the main source of fodder for livestock is accumulated in remote pastures, which are located high in the mountains and are classified as summer pastures. Improving access with building infrastructure (roads and bridges) to these remote pastures as a main source of fodder for livestock during summer period will decrease burden on pastures close to the village and will help rehabilitation of degraded pastures and improvement of other environmental services provided by pasture lands.

The main feature in this approach is to balance the use of the pasture land in different seasons thorugh development of access to this resources. After the collapse of the Soviet Union and break down of the kolkhozes and Sovkhozes in the mountainous area of Tajikistan, utilization of pasture lands were suffering because of poor infrastructure, such as roads and bridges. Through community mobilization and sharing of funding costs such as labour force, roads and bridges providing access to remote pastures are build. This approach motivated communities to put in place rotation plans of patures. The main objective of promoting this approach is to organize the whole potential of existing fodder from the pasture and decrease burden on the close pasture lands to communities.

In this approach participatory methods was used, where community shared labour force and the local government support with formal documentation to allow contraction of new roads and bridges. Funding was mobilized from different sources, such as donor funds, governments and sometimes from the community itself.

Communities as members of PULIs were mobilized to serve as labour with some funding from project to access materials and means for implementation. The plan was negotiated and coordinated with the local level governmental authorities for legal permission both on improving infrastructure and use of pastures remote from villages. Communities were excited to have access to additional pasture lands, as source of fodder for livestock development. Under this approach communities were motivated to plan pasture use in a sustainable way. Since the approach involves construction of roads and bridges, it involved a lot of manpower, especially during the agriculture season, where land users were also busy in their fields.

LOCATION

Location: Usually this approach is applicable in many parts of the country which is mainly mountainous regions and a similiar geography. , Roghun District/Rasht Valley, Tajikistan

Geo-reference of selected sites
- 69.717, 38.752

Initiation date: n.a.

Year of termination: n.a.

Type of Approach
- traditional/ indigenous
- recent local initiative/ innovative

Демонстрационное поле оборота сельскохозяйственных культур (Советбек Мамытканов)

Применение севооборота сельскохозяйственных культур в условиях фермерского хозяйства (Kyrgyzstan)

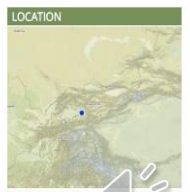
Село Жар-Маала, Сузакский район, Джалалабадская область

DESCRIPTION

Организация севооборотов как путь эффективного использования земель с учетом экономических интересов землевладельцев и землепользователей, а также экологических и экономических факторов.

В Кыргызстане вопрос деградации и опустынивания земель является актуальной проблемой, которая создает угрозу не только экосистеме, но негативно сказывается на жизненном уровне населения и экономическом развитии. Произошедшая в 1991 году аграрная реформа имеет положительные и отрицательные стороны. Одной из положительных сторон аграрной реформы является то, что были созданы равные стартовые условия: свою земельную и имущественную долю могли получить все, кто жил в селе - работающие, безработные, младенцы и пенсионеры, врачи и учителя. В ходе реформы земельные доли получили 510 тыс. семей, то преимущественная часть фермерских хозяйств состоит из одной семьи. В стране доминируют мелкотоварные крестьянские хозяйства, которые на большие доходы рассчитывать не могут. Основные затраты приходятся на производство, транспортировку и сбыт продукции. Кроме того, отсутствие знаний по обработке земель, выращиванию соответствующих сельхозкультур, мелкие наделы земель, привели к негативным последствиям, такие как: снижение качества и плодородия почвы, эрозии и др. Многовековой накопленный опыт земледелия показывает: бессменное возделывание почти всех сельскохозяйственных растений приводит к существенному снижению урожайности, эрозии, загрязнению и засолению почв. В решении проблемы регулирования почвенного плодородия важная роль принадлежит севооборотам. Для восстановления и повышения плодородия почвы

LOCATION



Location: Широта 41.099358, Долгота 73.370870, село Жар-Маала, Сузакский район, Джалалабадская область, Kyrgyzstan

No. of Technology sites analysed: single site

Geo-reference of selected sites
- 73.17093, 40.78064

Avoid duplications
Make use of synergies and comparative advantages
Capitalize on experiences

Analysis of WOCAT data

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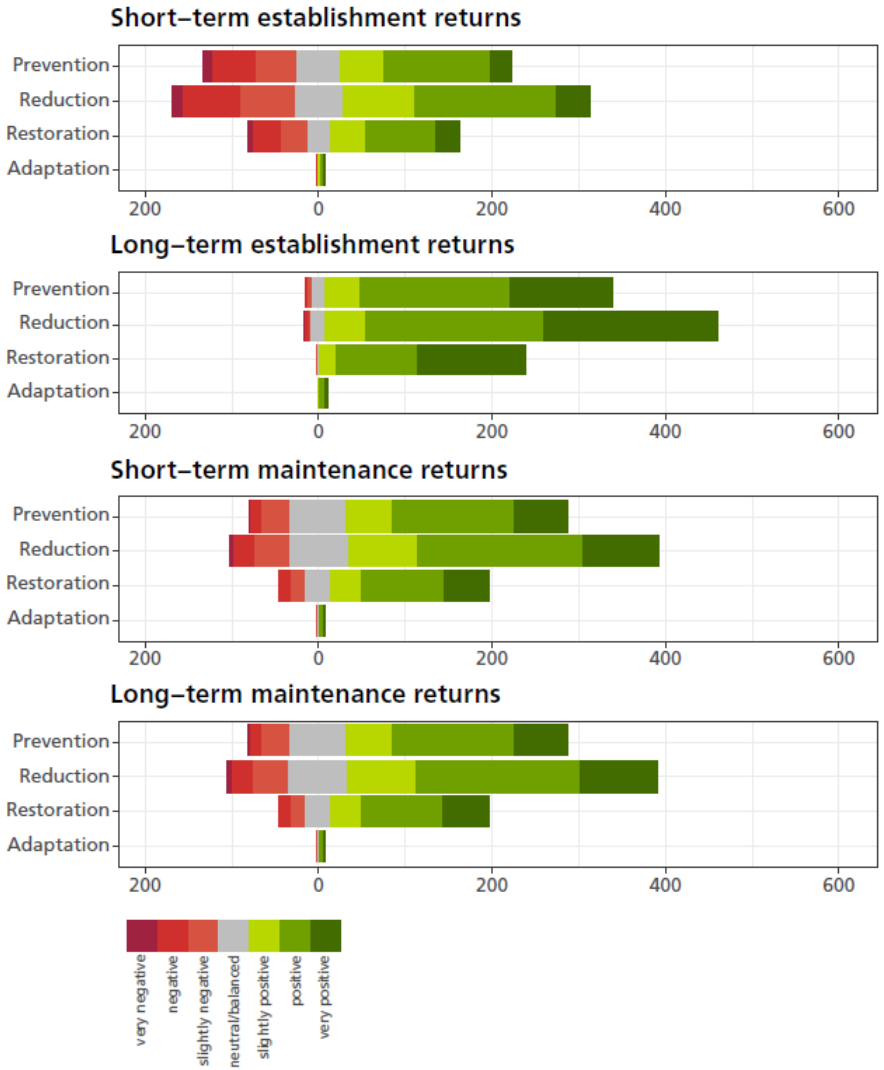
Economics of LD



Impacts on ESS

What can WOCAT offer?

To remember it is about…

- **Building a knowledge base** for evidence-based decision-making
- Serving as a **main data layer** for a national/ regional SLM platform
- **Sharing knowledge** of single experiences with a wide community
- **Building capacities** in understanding what SLM is how it functions and what it needs
- **Bringing stakeholders together** to create a dialogue about barriers and solutions

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Thank you

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