# ANNEX 4. DS-SLM Regional WOCAT-FAO and National SLM Delivery and Local Workshops

# Annex 4.1. Summary Report of the Regional WOCAT–FAO training workshop on SLM mainstreaming technologies and approaches questionnaires and database

# (August 7-12, 2017, Tashkent, Uzbekistan)

#### Background

The Regional WOCAT-FAO Training Workshop on SLM Mainstreaming Technologies and Approaches Questionnaires and Database was organized under coordination and supervision of Mr. Stefan Schlingloff, FAO CBL, FAO SEC and FAO office in Tashkent, Uzbekistan in accordance with Project Logframe and Work Plan 2017.

# Objective

<u>The main objective</u>: the training of experts from the countries of participants of the global GEF/FAO-WOCAT project «Decision Support for Mainstreaming and Scaling up of Sustainable Land Management» (DS-SLM), and other Central Asia countries:

- to document of SLM best practices and approaches, as evidential basis for decisions support on sustainable management of land resources;
- to use of WOCAT knowledge base and tools for SLM Mainstreaming and Scaling;
- to develop of the DS-SLM Mainstreaming Strategy

### Agenda

Agenda of the Regional WOCAT–FAO Training Workshop is given below in Table 1.

 Table 1. Agenda of the Regional WOCAT–FAO Training Workshop

Time	Торіс				
Day 1: Monday	Day 1: Monday, 7 August 2017				
8:30 - 9:00	Registration				
9:00 - 9:30	Welcome remark and opening of the training session				
9:30 - 10:00	Objectives of the training. Introduction and expectations of participants Administrative information				
10:00 - 10:30	Introduction to Decision Support for Mainstreaming and Scaling out of SLM Project (DS-SLM), methodological approach of the DS-SLM project, objectives of the training				
10:30 - 11.00	Tea /coffee break (group photo)				
11:00 - 11:30	DS-SLM project in the Uzbekistan: The objectives, priorities, expected outputs and achieved results to scaling out of SLM				
11:30 - 12:30	Introduction to WOCAT methodology and tools				
12:30-14:00	Lunch				
14:00-15:00	Assessment and documentation of SLM Practices Questionnaires on Technologies (QT) and Approaches (QA): (i) Brief identification, (ii) Area Information, (iii) Specifications on the SLM Technology, (iv) Analysis of the SLM Technology Examples from Uzbekistan and Central Asia				
15:00-15:30	Tea /coffee break				
15:30-17:00	Inventory of Ts and As and practicing with the questionnaires (QT and QA).				

Time	Торіс					
17:00-17:30	Introduction to the field visit, location, Technologies and Approaches to be visited. Division into groups, logistics					
DAY 2 : Tuesda	DAY 2 : Tuesday, 8 August, 2017					
07:00- 08:00	Departure from hotel to Tashkent region					
08:00-12:00	Field program in Urta-Chirchik district: documentation of technologies (2 groups)					
12:00-14:00	Lunch					
14:00- 17:30	Field program in Bostanlik district: documentation of technologies (2 groups)					
DAY 3: Wedne	sday, 9 August 2017					
09:00-9:30	Lessons learned and issues from the field day					
9:30-10:30	How to enter data into the WOCAT on-line Technology and Approach databases. Explain review process and quality assurance of data.					
10:30-11:00	Tea /coffee break					
11:00-12:30	Data entry of SLM Technologies and Approaches					
12:30-14:00	Lunch					
14:00-15:00	Introduction to Questionnaires on Climate Change Adaptation					
15:30-16:00	Tea /coffee break					
16:00-16:30	Introduction to Landscape approach					
16:30-17:30	Introduction of DS-SLM Mainstreaming strategy and framework in more details					
DAY 4: Thurso	lay, 10 August 2017					
8:30-9:30	Procedures and development of the DS-SLM Mainstreaming Strategy: Module 1 of the DS-SLM Logframe					
9:30-10:30	Group work					
10:30-11:00	Tea /coffee break					
11:00-11:30	Presentation and discussion of results					
11:30-12:30	Creation of excel Table for mainstreaming / up-scaling SLM. Conclusions					
12:30-14:00	Lunch					
14:00-15:30	Country and regional plans of action for SLM assessment and documentation and technical support					
15:30 - 16:00	Tea/coffee break					
16:00 - 17:15	Conclusions and recommendations and workshop evaluation Closing of the training workshop					
17:15-18:00	Individual meeting of the country-participants with WOCAT and FAO Resource Person					
Day 5: Friday,	11 August 2017					
07:00 -09:30	Departure from Tashkent by train					
09:30-16:00	Samarkand oasis - one of the ancient regions of Uzbekistan, located in the Zarafshan river basin. Participants of this field trip will be given a chance to get introduced the existing problems and challenges, as well as to see the nature landscapes, climate, history, cultural heritage and agricultural production systems.					
17:00-20:00	Departure to Tashkent by train					

## **Participants**

47 persons - country-partners of GEF/FAO DS-SLM project Group 4 - Turkey, Bosnia-Herzegovina and Uzbekistan, experts from Kyrgyz Republic, Kazakhstan and Russia, and representative of FAO SEC, FAO office in RUZ, consultants of the ICARDA, IWMI, ICBA, UNDP projects and key national partnerorganizations) participated in the workshop. Training was provided by the international consultants and experts from FAO HQ and WOCAT.

# **Results of Training Workshop**

The Regional WOCAT - FAO Training Workshop lasted five day with a program of consisting:

- (i) Welcome remark and opening of the training session;
- (ii) Training Program for Assessment and documentation of SLM Practices including field day to Tashkent region;
- (iii) Introduction to the DS-SLM mainstreaming strategy and the use of the related toolbox for the development of an Operational and Strategic action plan for SLM mainstreaming and scaling out (Module 1).
- (iv) Group work included: filling of WOCAT questionary on technologies and approaches, development of the DS-SLM Mainstreaming Strategy.

As a result of training, conducted by experts Ms. Soledad Bastidas, FAO and Ms. Rima Mekdaschi Studer, WOCAT, participants of the workshop acquired theoretical and practical knowledge on the documenting of SLM best practices with Questionnaires on Technologies (QT) & Approaches(QA). Participants of the workshop learned to be guided in the database, to enter data online, to add information with a geographical binding to maps, and also to apply landscape approach when using SLM technologies.

Visit to the "Shon Sharaf Biznes" (Urta-Chirchik district) and the "Akmal-Nargiz-Abbas" (Bostanlyk district) farms and meeting with the farmers provided practical experience in gathering field information for questionnaires. Work in two groups provided experience on documenting of technology (Cultivation of soy), and approach (Creation of farm network for industrial production of soy).

Participants of the Workshop exchanged the results of the activities on the mainstreaming and scaling up SLM within the framework of the DS-SLM project and received knowledge on development of main concept of SLM mainstreaming in the context of DS-SLM, decision-making processes/policy instruments, procedures and model of mainstreaming SLM strategy.

Work in groups and discussion of working group results provided practical knowledge on (i) identification of Mainstreaming objectives, barriers and decision-making processes (ii) creation of excel Table on DS-SLM mainstreaming strategy in each country.

Meeting with the staff of Karakul sheep farming and Desert Ecology Institute (Samarkand) familiarized with scientific activity of the institute and contribution to a SLM knowledge platform of pastures and rainfed lands, etc. Participants in Samarkand trip got a chance to see nature landscapes, climate, history, cultural heritage and agricultural production systems.

At the end of training program all participants of the regional workshop were awarded WOCAT-FAO Certificates.

Minutes of Regional WOCAT–FAO Training Workshop was presented in 6-Month Progress Report. The photo album of the Regional WOCAT - FAO Training Workshop is given below.

# Photo Album of the Regional WOCAT–FAO Training Workshop in Tashkent, August 7-12, 2017

# August 7-12, 2017, Tashkent, "City Palace" Hotel, Uzbekistan. Plenary meetings



Tuesday, 8 August, 2017. Field training in the farm "Shon Sharaf Biznes" (Urta-Chirchik district),





Tuesday, 8 August, 2017. Field training in the farm Akmal-Nargiz-Abbas (Bostanlyk district)





Work in groups



# Annex. 4.2. Summary Report of «National SLM Delivery Capacity Building Workshop»

(November 23, 2017, "Shodlik Palace" hotel, Tashkent, Uzbekistan)

# Background

National SLM Delivery Capacity Building Workshop was organized under coordination of Mr. Stefan Schlingloff, FAO HQ, FAP SEC and FAO office in Tashkent, Uzbekistan in accordance with Project Logframe and Work Plan 2017. The workshop took place on November 23, 2017 in Tashkent ("Shodlik Palace" hotel).

**Objectives:** The workshop purpose – building capacity of target groups on sustainable land management (SLM) and promoting the identification, systematization and selection the most acceptable and priority technologies and approaches to out scaling in the wide landscapes within project area and its harmonized integration into the global WOCAT knowledge database

Agenda of Workshop: The Agenda of Workshop included 3 Sessions (Table 1):

Session 1. Approaches and tools for SLM scaling out;

Session 2. Technologies and approaches on SLM and Land use management;

Session 3. Work in groups on prioritization and selection of technologies and approaches

Time Subject		Key note speaker			
08:30-9:00	30-9:00 Registration				
Introductory se	ssion				
	Opening of the workshop: Welcome speech.	<ul> <li>A. Namozov, MAWR, Department of investments management and monitoring;</li> <li>B. Nishanov, Uzgydromet,</li> </ul>			
9:00-9:20	Introduction of the workshop porticipants	First deputy general director; <b>U. Abdullaev,</b> UZGIP, National Coordinator of DS-SLM project.			
Session 1. Appr	Introduction of the workshop participants       R. Taryanikova, NC CACILM, Uzgydromet         Session 1 Approaches and tools for SLM scaling out       Provide the second se				
9:20-9:35	Target tasks and results of GEF/FAO WOCAT DS-SLM project on SLM scaling out. Review.	T.Khamzina, DS-SLM project.			
9:35-9:50	WOCAT approaches and tools for integration into the global knowledge database.	O. Anorbekov, WOCAT, Tashkent.			
9:50-10:05	Management of SLM knowledge within the 2nd phase of CACILM. IFAD/ICARDA project.	A. Akramkhanov, ICARDA.			
10:05-10:20	Small Grants Program GEF.	A.Volkov,SGP, GEF			
10:20-10:35	Coffee break				
10:35-10:50	Sustainable lands resources management.	L. Gafurova, National University of Uzbekistan, Biology&Soil Faculty			
10:50-11:05	50-11:05 Approaches on SLM scaling up by the example of N.Rudenko, NGOKRASS KRASS NNO				
Session 2. Tech	nologies and approaches on SLM and Land use m	nanagement			

### Table 1. Agenda of National SLM Delivery Capacity Building Workshop

11:05-11:20	Water resources integrated management and water saving	O. Anorbekov, IWMI
11:20-11:35	Technologies of bio-agriculture for restoration of the salted soils in arid conditions.	Ch. Toderich, ICBA
11:35-11:50	Soils fertility integrated management.	M. Tashkuziev, SRI of Soil Science and Agrochemistry.
11:50-12:05	Water saving.	Yu.Shirokova, G. Paluashova, SANIIRI.
12:05-12:20	Agricultural afforestation of lands.	E. Botman, SRI of forestry
12:20-12:35	Sustainable pastures management.	T. Mukimov, Karakul Sheep Farming and Desert Ecology Institute, Samarkand
12:35-13:00	Answers to questions and discussion.	
13:00-14:00	Lunch	
14:00-14:15	Pastoralism / grazing land management	U. Nazarkulov, UNDP Project
14:15-14:30	Conceptual issues of sustainable lands management	A. Chertovitskiy TIIAM, Land use department
14:30-14:45	Tashkent Agricultural University	
Session 3. Wor	rk in groups on prioritization and selection of tech	nologies and approaches
14:45-15:00	Methodology of work on groups, priorities and evaluation criteria.	T. Khamzina DS-SLM project.
15:00- 16:30with	<b>Group 1</b> . Technologies and approaches for the integrated management of natural resources and water saving.	Moderator: R. Taryanikova, NC CACILM, Uzgydromet
break for coffee	<b>Group 2</b> . Sustainable Lands Management technologies and approaches	Moderator: I. Saidov, A.Tursunov
16:30-17:00	Representation of results of selection of SLM practices on groups. General discussion <b>Closing of the session</b>	U. Abdullaev UZGIP, National Coordinator of DS-SLM project

**Participants:** 30 experts (scientists, teachers of universities, young specialists, consultants, experts) from 15 national scientific institutions, universities, NGO, international institutions and programs participated in this workshop, including:

Institutions	Institutions	
Soil Science and Agrochemistry,	Design and Research UZGIP Institute	
Water Problem Institute	Institute of Hydrometeorology, Uzhydromet	
Forestry Institute,	NGO KRASS (Agro-consultative Centre)	
Karakul Sheep Farming and Deserts Ecology,	ICARDA	
State University (biology&soil faculty),	GEF Small Grants Program (SGP)	
Institute of Irrigation and Mechanization of Agriculture,	UNDP	
TashGAU	NCs of DS-SLM Project and other	

# **II. Workshop Activity**

## Session 1: Approaches and tools for SLM scaling out

The objective of Session 1 - to enhance acquaintance of involved target groups with the SLM approaches and tools, and results and learned lessons in scaling out process. Key plenary speakers made presentations: T. Khamzina (DS-SLM), A. Akramkhanov (ICARDA), I. Rudenko (KRASS) and A. Volkov (GEF SGP-Uzbekistan).

**Ms. Tatyana Khamzina,** DS-SLM SLM mainstreaming/ TL provided the first technical presentation on acquainting of participants with DS-SLM project activities, expected outputs, with focusing on FAO LADA and WOCAT techniques, tools and approaches (PLUD, FFS), which were used by national team for mainstreaming and scaling out of SLM practices. She highlighted the need for enabling environment to mainstream and scaling out of SLM, and indicated the major attributes of SLM mainstreaming process - building partnerships, knowledge management and capacity building on SLM, supported by baseline information on land degradation and sustainable land management (LD / SLM).

Ms. Khamzina presented outputs of the Module 4 activities, such as: (i) general list of technologies and approaches collected from WOCAT database and other sources, which were discussed with stakeholders for adaption at local levels (ii) SLM technologies that was distributed in demonstration sites in project areas taking into account the economic efficiency and benefits of selected practices; (iii) developed of 4-5 SLM options and financial requirements at farm level for implementation in the project areas; (iv) GIS mapping of SLM options at local level to ensure wider scaling up of selected best practices in similar irrigated salt-affected landscapes of Zarbdar project area in terms of biophysical and agro climatic conditions, soil properties and farming systems, costs and the needs for conservation/mitigation measures.

**Mr. Akmal Akramkhanov (ICARDA)** shared experience of the multi-country project on knowledge management within CACILM-II under support of IFAD and ICARDA in the 5 countries of the Central Asian region. Knowledge management includes creation / generation, data collection/fixing, storing /holding, extraction of information, improving, scaling out. About 90 technologies and approaches were collected and described, including 23 T&A of Uzbekistan. The knowledge base is enriched with information on traditional practices; www.cacilm.org website of Knowledge Platform was used, communication materials (video infographics, TV programs, printing materials, video record for educational process) were prepared, etc.

However, many of the collected technologies require economic justification, and cost-benefits analysis in accordance with WOCAT requirements.

**Mr. AlexeyVolkov** (**SGP**) introduced review on the Small Grants Program (SGP) activities as one among many tools of GEF for scaling out of SLM. He submitted detailed description of the successful technologies demonstrated by the SGP projects, which found wide replication among local population, including: (i) improvement of lands in arid conditions through creation of pistachio varietal plantations; (ii) cultivation of saxaul and other wood species for improvement of deserts; (iii) use of production wastes of biogas for increase of soil fertility, etc. The main obstacles, which constrain distribution of separate technologies (high cost, mentality of local people, insufficient knowledge of benefits, etc.) and ways of their overcoming were analyzed and discussed. U. Abdullaev, Yu. Shirokova, G. Khasankhanova and A. Akramkhanov participated in the discussion

**Ms. Inna Rudenko** ("**KRASS**" **NGO**) acquainted participants of the workshop with methods, tools and approaches, which are used by the Agro-consultative center (ACC) for extension/distribution of SLM practices. The main approaches of ACC include: consultations of experts on individual inquiry of farmers, trainings, development and distribution of manuals, booklets, holding of innovations exhibitions, demonstration days, workshops and TV programs.

Ms. Yu. Shirokova, A. Volkov, U. Abdullev, T. Khamzina, E. Botman and G. Khasankhanova took part in the discussion on the main issues and learned lessons from experience of "KRASS" NGO in Khoresm region, Uzbekistan.

# Session 2: Technologies and approaches on SLM and land use management

The objective of the Session 2 to promote presentation and discussions of SLM technologies and approaches that represent the countries' experiences and capabilities of scientific institutions in this focal area. About 14 SLM technologies were presented by the authors and representatives of national scientific institutes, NGO and international organizations, using basic template prepared by the DS-SLM team. All involved institutions presented at least 2-5 technologies and approaches as an acceptable for documentation and adoption in farming practices:

- Soil Science and Agrochemistry Institute 4 technologies (Dr. M. Tashkuziev);
- Forestry Institute 2 technologies (Dr. E. Botman);
- Water Problem and Irrigation Institute 2 technologies (Dr. Yu. Shirokova),
- TashGAU 2 technologies (G. Nabieva),
- Karakul Sheep Farming and Desert Ecology 2 technologies (Dr. T. Mukimov),
- GEF SGP Projects 4 technologies (A. Volkov)
- UZGIP/DS-SLM project team 4 technologies and 1 approach (T. Khamzina)

The general discussion of suggested SLM technologies were concerned on the weak and strengths aspects (shortcomings and advantages) for the effective choice of acceptable and reliable options, and opportunities of delivery of technologies to land users in various landscapes.

# Session 3. Group Work on prioritization and selection of SLM best practices

Work in groups target to (i) carry out of expert multi-criterial analysis of SLM technologies that were chosen from the general list; (ii) ranging of the most priority practices on the basis of key criteria and indicators, and (iii) selection of most acceptable technologies and approaches for wide adaption and scaling out.

Experts groups were divided into the following focal areas: assessment of SLM, agroforestry technologies, water resources managements/ water saving, etc. The general list of SLM technologies and approaches, criteria for selection, and WOCAT Inventory sheet prepared by DS-SLM teams for assessment of collected technologies were used by expert groups for evaluations (**Tables 3, 4 and 5**).

Results of expert evaluations were reported for workshop participants and final list of priority technologies and approaches are generated in **Annex 6.** It's included T&A from WOCAT database, and a new low-cost and mean-cost technologies, adapted in Uzbekistan's environment. These technologies and approaches are most environmental safety and economically accepted for end land and water users, and agricultural production systems.

Selected T&A for integration into WOCAT knowledge database is presented in Table 2.

**Table 2.** Selected SLM Technologies and Approaches for Integration into WOCAT Database and Scaling out in Uzbekistan

2-A) National T&A from the WOCA	T Database th	at Required	Updating ir	n Accordance	e with
new SLM QT&QA $(2016)^1$					

N	WOCAT Code	Approach/Technology
1	A_UZB003ru	Field Farm Schools in the irrigated zone (approach)
2	T_UZB001ru	Improvement of lands in arid conditions through creation of pistachio varietal plantations
3	T_UZB004ru	Agroforestry melioration of degraded irrigated lands
4	T_UZB002ru	Rotation of pastures in desert regions of Uzbekistan
5	A_UZB002ru	Communal forestry in Karakalpakstan
6	T_UZB003ru	Use of the artesian mineralized waters for the organization of irrigation agriculture in Kyzylkum desert

#### 2-B) New T&A for Documenting and Integration into WOCAT

Ν	Code	Selected Approach/Technology
1	T_UZB	Diversification of crops on salt-affected soils with introduction legumes and siderats
2	T_UZB	Cotton irrigation on the lands subjected to irrigation erosion, with straw mulching of furrows
3	T_UZB	Use of wastes of biogas production for increase in fertility of soils
4	T_UZB	Laser land leveling of fields for increase in efficiency of on-farm use of irrigation water
5	T_UZB	Planting of almonds on small terraces for increase in efficiency of rainfed lands and prevention of erosion (FAO/GEF DS-SLM project)
6	T_UZB	Every other furrow irrigation (alternating dry and watering furrows)
7	T_UZB	Counter irrigation on furrows on lands with small slopes.

Note: Details of data sources and authors/institutions are given in Table 3.

The rest technologies that gathered in General list of SLM T&A (Table 3) require additional work on the economic assessment and cost-benefits analysis, etc.

The photo album illustrates group work and discussions in the framework of SLM Delivery Capacity Building Workshop.

<sup>&</sup>lt;sup>1</sup><sub>1</sub>WOCAT: Questionnaire on Sustainable Land Management (SLM) Technology. Version: Core (2016)

NN	WOCAT code	Technology	Data source/ Technology Author				
Targ	Target Area 1: Integrated soil fertility management						
1.	A_UZB003ru	Field schools of farmers in the irrigated zone (approach)	Project: FAO TCP/ UZB/2903,WOCAT				
2.	T_UZB	Diversification of crops on salt-affected soils with introduction legumes and siderats.	FAO/TCP/UZB/2901 Project, FAO/GEF DS-SLM				
3.	T_UZB	Diversification of crops on salt-affected and gypsiferous soils with introduction legumes and siderats and using deep ripping of soils.	FAO/TCP/UZB/2901 Project, FAO/GEF DS-SLM				
4.	T_UZB	Prevention of secondary salinization on the slightly salinized irrigated lands.	M. Tashkuziev, A. Sherbekov, Zh. Reymbaev, T. Berdiev, SRI of soil science and agrochemistry				
5.	T_UZB	Use of wastes of biogas production for increase in fertility of soils.	M. Tashkuziev,, SRI of Soil Science and Agrochemistry.				
6.	T_UZB	Use of organo-mineral fertilizers on the basis of secondary resources for restoration of low fertile soils.	M. Tashkuziev, S. Ochilov, T. Berdiev, A. Sherbekov, SRI of Soil Science and Agrochemistry.				
7.	T_UZB	Cotton irrigation on the lands subjected to irrigation erosion, with straw mulching of furrows	N. Bezborodov, UzSRICB				
8.	T_UZB	Use of anti-erosive specimen for increase in resistance of soils to erosion	O. Khakberdieva, SRI of Soil Science and Agrochemistry.				
9.	T_UZB	Mulching of soil surface by transparent polyethylene film (crops under film)	I. Turapov, TashSAU				
10.	T_UZB	Technology of field-seeded cultivation of solanaceous crops	UzSRI of Vegetable-melon Cultures a Potatoes				
11.	T_UZB	Sowing of winter wheat in cotton row-spacing	Practices of Uzbekistan farmers				
12.	T_UZB	Melioration of waterlogged lands by bio-drainage	Traditional land- and water use knowledge. Info-collection., Dushanbe, 2006				
13.	T_UZB	Zero tillage	SGPGEF				
14.	T_UZB	Cultivation of cotton in the combined crops with mung bean and with mulching at ridge planting system of furrows.	CACILM: SLM – Research. ICARDA				
15.	T_UZB	Land melioration by cultivation of liquorice root.	Technologies and approaches, CACILM, ICARDA				
16.	T_UZB	Cultivation of indigofer for the purpose of restoration of saline degraded lands	A. Ergashev, ZEF/UNESCO project				
Targ	Target Area 2: Agroforestry/ forest belt						
17.	T_UZB001ru	Improvement of lands in arid conditions through creation of pistachio varietal plantations	WOCAT, SGP				
18.	T_UZB004ru	Agroforestry melioration of degraded irrigated lands	WOCAT, Project ZEF/UNESCO.				
19.	A_UZB002ru	Communal forestry in Karakalpakstan (approach).	UNDP Project, WOCAT				
20.	T_UZB	Planting of almonds on small terraces for increase in efficiency of rainfed lands and prevention of erosion.	FAO/GEF DS-SLM project				

# Table 3. List of selected SLM technologies and approaches for scaling out

# GCP/GLO/337/GFF, Decision Support for Mainstreaming and Scaling up of Sustainable Land Management - DS-SLM

NN	WOCAT code	Technology	Data source/ Technology Author			
21.	T_UZB	Development of wind break belts at the irrigated lands	E. Botman, Agroforestry SRI			
22.	T_UZB	Stamp plantations of hybrid poplars with forestry short rotation.	E. Botman, Agroforestry SRI			
Targ	get Area 3: <i>Manag</i>	gement of irrigation/ water saving				
23.	T_UZB	Drip irrigation.	State Program on meliorative improvement of irrigated lands			
24.	T_UZB	Furrow irrigation of cotton with using of screened black punched polyethylene film.	G. Bezborodov, N. Bezborodov, UzSRIC			
25.	T_UZB	Laser land leveling of fields for increase in efficiency of on-farm use of irrigation water	SGP GEF, WB, FAO project			
26.	T_UZB	Increase in efficiency of intra-farm use of irrigating water on the compacted and gypsiferous soils by deep loosening.	SANIIRI researches, WB, FAO projects			
27.	T_UZB	Adaptation to salinization and drought by introduction of perspective drought- and salt - resistant varieties of crops ("Gulistan" cotton variety as example).	S.Alikhodjaeva, UzSRIC, FAO/GEF DS-SLM project, UZGIP			
28.	T_UZB	Every other furrow irrigation (alternating dry and watering furrows)	SANIIRI. G. Paluashova, E. Kurbanbaev.( 2004-2005)			
29.	T_UZB	Counter irrigation on furrows on lands with small slopes.	SANIIRI. G. Paluashova, A. Novikova			
30.	T_UZB	Discrete irrigation with using flexible and rigid pipelines	M. Khorst. SANIIRI, Department of irrigation technique			
31.	T_UZB	Multi-layered irrigation on furrows	M. Khorst, S. Nerozin"IWRM - Ferghana" Tashkent, 2009.			
32.	T_UZB	Irrigation by variable stream.	M. Khorst, SANIIRI Irrigation Technique Department			
Targ	et Area 4: Surfac	e runoff collection				
33.	T_UZB	Collection of rainwater from roofs	Traditional knowledge,UNDP project			
34.	T_UZB	Collection and storage of water from marginal mountain streams	UNDP project, S. Zagrebin			
Targ	Target Area 4: Cattle breeding / Management of pastures					
35.	T_UZB	Increase in forage production by sowing of desert drought- resistant herbs on rainfed lands.	FAO/GEF DS-SLM project			
36.	T_UZB002ru	Rotation of pastures in desert regions of Uzbekistan.	WOCAT, UNDP Project			
37.	T_UZB003ru	Use of the artesian mineralized waters for the organization of irrigation agriculture in Kyzylkum desert.	WOCAT, UNDP Project			
38.	T_UZB	Creation of pasture - protective belts in desert area	Karakul sheep farming and Desort			
39.	T_UZB	Creation of autumn and winter pastures in foothill zone.	Ecology SRI, Samarkand			

# Table 4.

# Criteria

	Criteria	Point	Characteristic value
	Analysis of expenses/ benefits:	3	Low expensive
1.	cost of introduction of	2	Moderately expensive
	technology	1	Highly expensive
		3	It is included in the state plans, strategy, or it is financed
		5	from the state Fund, or widely applied in production.
2	Readiness for introduction	2	Is at a stage of approval and preparation of governmental
۷.	Readiness for introduction	Z	decrees for inclusion in state plans.
		1	It is adapted within the project, causes interest of farmers,
		1	and partially takes root by farmers.
	Ecological benefits:	3	11-20
3.	increase in efficiency of use of	2	5-10
	water.	1	Less than 5%
4.	Economic benefits:	3	11-20
	increase in productivities /	2	5-10
	income of farmers.	1	Less than 5%
		3	High
5	Resource availability	2	Medium
		1	Low
		3	High
6*)	Stability	2	Medium
		1	Low
		3	High
7*)	Tradability	2	Medium
		1	Low

# Of selection and ranging of SLM technologies according to priority ranking

\*) Note: **Stability** – ability of technology to keep positive impacts at influence/change of external factors;

Tradability – degree of easiness with which the technology can be introduced.

# Table 5.Inventory Sheet on SLM Technologies

Name of technology: Diversification of crops on salt-affected and gypsiferous soils with inclusion bean and green manure

Author/ supplier of information o	n the technology: Project of	GEF/FAO/WOCAT, UZGIF	MAWR, uzgip@buzton.com
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SLM Группа	Land use type	Location	Extent/Area	Main types of lands degradation	Preserving measures	Agroclimate zone	Slope
Integrated soil fertility management	Tillage	Kashkadrya, Syrdarya, KKR, Djizak, and others.	It is applied in concrete places	Water erosion, salinization, compaction, biological degradation	Agronomical	Semi-arid and arid	From flattened (0-2%) up to reasonable slopes (6-10%)

Short description of Technology: The technology for diversification of crops improves the existing crop rotation by repeated sowing of bean plants after cleaning of winter wheat and cultures-green manure as green fertilizer. Sequence of crops cultivation is following:

«winter wheat - legumes(mung bean, bean) -green manure(winter ruttishness and others) - cotton»(Chart 1). Further the cycle is repeated.

Chart 1. Calendar of crops cultivation

April	May	June	July	August	September	October	November	December	January	February	March	April	May
Winter wheat Rep		Repeated le	eated legumes (mung bean)			Green manure (winter ruttishness and others)					с	cotton	
On gypsifero consolidation	avy on me of water ph	chanical str ysical prope	ucture soils rties of the	(heavy loam soil and effect	and clays) tive use of it	once in 4-6 rrigation wate	years deep l r	oosening (c	lown to 60-	-70 cm) is	carried ou	it to decrease	
Impact:													
Socio-econon	nic		Increas	Increase in productivity on <b>10%</b> owing to bean cultures cultivation and a sideration for 8% in 5 years									
Ecologic		Improv proces disease	Improvement of soils (decrease in consolidation, improvement of structure, increase in content of nitrogen), decrease in processes of secondary salinization, improvement of the habitat of useful soil organisms, increase in biological control over diseases/wreckers, water saving by 10-15% (due to deep loosening)										
Socio-cultural			The te	The technology promotes ensuring food security, diversification of sources of income									
Expenses/Be	Expenses/Benefits:												
Short-term		Expen	Expenses 1 584 thous. Sum/ha, income 1 916 thous. Sum/ha. Benefits exceed expenses by 1,21-1,25 times										
Long-term			Very p	Very positive									
Potential for scaling out			Very h	Very high: the technology is low expensive, not requires additional deposits and sophisticated techniques									

**Table 6.** Technologies and Approaches Selected for Documenting and Entry into WOCAT and for Scaling out

NN	Code	Technologies and Approaches	Note
1.	A_UZB 003ru	Field Farm Schools in the irrigated zone (approach). WOCAT, Project FAO TCP/ UZB/2903	T&A require updating in accordance with new
2.	T_UZB 004ru	Improvement of lands in arid conditions through creation of pistachio high- quality plantations. WOCAT, SGP	
3.	T_UZB 001ru	UZB Agroforectry melioration of degraded irrigated lands.WOCAT, ZEF/UNESCO 1ru	
4.	A_UZB 002ru	Rotation of pastures in desert regions of Uzbekistan. WOCAT, UNDP Project	(2016)
5.		Diversification of crops on salt-affected and gypsiferous soils with introduction legumes and siderats and using deep ripping of soils.GEF/FAO DS-SLM and modification of M. Tashkuziev A. Sherbekov, Zh. Reymbaev, T. Berdiev (Soil Science and AgrochemistryInstitute)	
6.		Cotton irrigation on the lands subjected to irrigation erosion, with strawmulching of furrows. N. Bezborodov, UzSRICB	New Te Afen
7.		Use of wastes of biogas production for increase in fertility of soils. M. Tashkuziev, SRI of Soil Science and Agrochemistry	documenting and
8.		Planting of almonds on small terraces for increase in efficiency of rainfed lands and prevention of erosion (FAO/GEF DS-SLM project)	intoWOCAT
9.		Laser land leveling of fields for increase in efficiency of on-farm use of irrigation water. SGP GEF, WB, FAO project	
10.		Every other furrow irrigation (alternating dry and watering furrows). G. Paluashova, SANIIRI.	
11.		Counter irrigation on furrows on lands with small slopes. SANIIRI. G. Paluashova, B.Novikova	

# a) T&A for documenting and inputting into WOCAT

# b) T&A, require additional work for documenting and uploading into WOCAT Platform

12.	Sowing of winter wheat in cotton row-spacings (practices of Uzbekistan farmers)	
13.	Mulching of soil surface by transparent polyethylene film (crops under film). I. Turapov, TashSAU	Require economic
14.	Melioration of waterlogged lands by bio-drainage (Traditional land and water use knowledge)	assessment (cost-benefit
15.	Development of wind break belts at the irrigated lands. E. Botman, Agroforestry SRI	analysis)
16.	Increase in forage production by sowing of desert drought-resistant herbs on rainfed lands (Karakul sheep farming and Desert Ecology SRI, GEF/FAO DS-SLM)	



Photo Album of «National SLM Delivery Capacity Building Workshop»

Session 2. Technologies and approaches on SLM and Land use management



# 4.3. National Expert Meeting on Adaptation of Climate SMART technologies in Agricultural Sector

5 July 2017

# Agenda of National Expert Meeting on Adaptation of Climate Smart Technologies in Agricultural Sector

City Palace Hotel

Time	Subject	Speaker
9.30 - 10.00	Participants registration	
10.00-10.15	Workshop opening. Introduction of experts	
10.15-10.55	Accumulation of efforts on climate change control. Adaptation of agriculture in the context of the Parisian agreement and the defined deposits at the national level on <b>UNFCCC (INDC)</b>	<b>R. Taryannikova,</b> National Secretariat of CACILM, Uzgidromet
10.55-11.15	Assessment of potential of emissions of greenhouse gases on prospect	Yu.Kovalevskaya,Uzgidromet
11.15-11.30	Coffee-break	
11.30-11.50	Role of global and regional initiatives of SLM in support of adaptation of agriculture to climate change	<b>G. Khasankhanova,</b> FAO/GEF DS-SLM Project
11.50-12.10	Contribution of FAO/GEF DS-SLM Project to adaptation and scaling up of SLM technologies	<b>T. Khamzina,</b> FAO/GEF DS- SLM Project
12.10-12.30	Assessment of economic efficiency of SLM technologies for wide circulation as an example of the FAO/GEF DS-SLM Project.	<b>A. Shkineva,</b> FAO/GEF DS- SLM Project
12.30-12.50	Multi-purpose use of marginal land and water resources in the conditions of salinization in Aral Sea coastal area.	K. Toderich, ICBA-CAC Regional coordinator
	General discussion:	
12.50-13.30	Criteria for evaluation of the acceptability for formation of national base and the requirement for integration of technologies into the global WOCAT database	
13.30	Lunch	

# Annex 4.4. Summary Report on Consultative meetings and FAO FFS stakeholder trainings at local level

### Background

Consultative meetings, trainings and discussions with local target groups for building partnerships and decision making for SLM implementation were conducted regularly within project areas in line with Work Plan 2017.

Round tables and consultative meetings with local authorities, WUAs and local communities, training of students of agricultural college and target discussions the outputs and advantages of SLM activities during 2-nd crop season were provided on October 23-27, 2017 in Zarbdar and Kamashi project areas.

# Objective

<u>The objective of round tables meeting</u>: discussion of project results and benefits of  $2^{nd}$  season of 2017 and future activities for SLM scaling up in 2018.

<u>The objective of training</u>: improve knowledge of agricultural college students on the SLM technology in Kamashi.

Table 1. Schedule of Fieldwork in Zarbdar (Djizak) and Kamashi (Kashkadarya) Project Areas

#	Action	Date
1	Departure to Zarbdar project area. To conduct consultative discussions with local authorities, WUA members and farmers about results and benefits in 2017 and further activities on scaling out of SLM practices during next crop season. Gathering of economic data (crop yields, crop pattern change, and total area under secondary crops, water use and meliorative conditions of irrigated salt affected lands at the WUA and district levels.	October 23, 2017
2	Departure to Kamashi district in Kashkadarya project area. To conduct meetings with local authorities, representatives of Citizens Assemble (CA) and local facilitators to discuss details of workshop agenda, field training, etc, and organizing of logistic issues stakeholder meeting in Kyzyltepa CA.	October 24, 2017
3	Implementation of the local stakeholder meeting on progress and outputs of SLM scaling up during 2-nd season in Kyzyltepa CA of Kamashi district.	October 25, 2017
4	Monitoring and evaluation of the 2-nd crop season results in the demo site. Data collection and discussion the progress in the institutional transformation and providing rapid survey of land use system and SLM practices scaling out during 2 <sup>nd</sup> season within Kyzyltepa CA.	October 26, 2017
5	Field meetings and discussions with local team and representative of the CA about the further activities for scaling out of SLM technologies during next crop season. Departure to Tashkent	October 27, 2017

	Name	Position	Discussion		
1	Bobojanov I.	Khokim of Zarbdar district	Discussion of the project		
2	Rakhmonov U.	Head of district agriculture department of MAWR	activities for the dissemination		
3	Ortikov U.	Expert of district agriculture department of MAWR	of SLM technology last		
4	Kattabaev B. Chairman of Keriz WUA		season and event planning in		
5	Ilashev A.	Head of the Djizak scientific agricultural center	the year 2018		
6	Umirov A.	Farmer of «Mirishkor Azim» farm			

### Table 2. List of Participants of the Round Table Meeting in Zarbdar Project Area

# Table 3. Agenda of Local Stakeholders Meeting in Kamashi Project Area

	Items	Reporter
8.30-9.00	Registration of participants.	
9.00 - 9.15	Workshop Opening. General project review, target tasks and achievements.	<b>Deputy Khokim,</b> Kamashi tuman/ local administration.
9.15-9.45	General review on progress of the project outputs on demonstration and scaling up of SLM technologies during 2 <sup>nd</sup> crop season in Kamashi project area.	Ibadulla Saidov, NC
9.45-10.15	Results of the demonstrations the selected SLM practices agroforestry technologies in rainfed demo sites.	<b>T. Mukimov,</b> NC.Karakul sheep farming and Desert Ecology Institute
10.15-10.30	Coffee break	
10.30-11.00	Results of implementation SLM practices and land use planning, based on the FAO PLUP, and contribution of selected rural communities in scaling up of SLM in Kyzyltepa CA.	<ul><li>Z. Sidik-Khodjaev, NC</li><li>A. Tursunov, NC</li></ul>
11.00-13.00	Field training on the demo site to demonstrate and discussion the outputs and advantages of SLM practices during 2-nd crop season in Kyzyltepa CA.	I. Saidov, NC Z.Elmuradov, facilitator, Kamashi
13.00-14:30	Lunch	
14.30-16.00	Q&A session. Discussion of the field Work Plan 2018 and further scaling out activities at all levels. Workshop closing	Moderator tbd

### **Participants**

- 10 local stakeholders, including 10 local authorities (Hokim of the district and Director of RSC, WUA, Rural Citizens Assemble), took part in the Djizak project area

- 20 local stakeholders together with chairmen of 4 Village Community Assemblies (VCA) participated in the round table discussions in Kamashi project area.

- 48 students of agricultural college (36 girls among them) involved into workshop on the open lesson of technologies and practices of SLM in Kamashi district.

## Results

- 1) High importance and requirement of SLM actions for increase in efficiency of lands and revenues of local community is noted as a result of discussions. Further activities of SLM scaling up and ways to overcome barriers by efforts of local communities and WUAs were discussed.
- 2) 3 thematic lectures were presented by DS-SLM consultants and FFS facilitators, including: "Technologies and the best practices of SLM for increase in efficiency of rainfed lands", "Agrotechnology methods of increase in productivity of the irrigated lands" and "Benefits and advantages of the technologies shown on the DS-SLM project sites". Students showed high interest and activity in the discussion of the participatory planning of land use and scaling out of SLM practices.

# **Photo Album**



Round table discussion on the results of the project activities of the year 2017

