GLOSSARY OF DARI TERMS USED

Ab	Water
Abi	Irrigated land
Ajruk - Kabal	Roots of bushes
Alafpuli	Annual payment for pasture
Alufa (Ulufa)	Grass, also generic term for animal fodder
Arbab	Village head
Asp	Horse
Aylaq	Summer pasture
Bahor	Spring
Bây	Large Landowner, rich person
Beel	Shovel
Bogh	Garden/orchard
Boozkashi	Horse competition
Bor	load
Buja	Sack (jute bag)
Bukhari	Oven
Buqa	Bull
Buz	Goat
Char kot	Sharecropping 1:4
Charogoh	Pasture
Chirman	Place prepared for threshing
Choh	Well
Chub-e-sukht	Fuel (Firewood bushes)
Dara	Valley
Darakht	tree
Dashtak	Timber
Dehqan	Farmer Sharecropping 7:1
Dos	Sickle
Gharibkar	Poor sharecropper housed by landowner
Gilim	Woven carpet
Giraw	Pawning or Mortgage of land 1:10
Giraw Dar	Person to whom land is pawned
Gov	Cow
Gurpada	Goat wool
Guspand	sheep
Hamvor	Flat

Hashar	Communal reciprocal work
Hayoti	Traditional fenced plot for wheat cultivation
Ijara	Leased land, usually lasts a number of years
Jangal	Wild forest
Jawal	Donkey bag , 1/ 2 of kanor
Jawal	4 jeribs
Jerib	0.2 ha. 5 jerib=1 ha
Jirga	Tribal council
Kahdon (Somonkhona)	Fodder bank/fodder storage
Kahgul	Plastering the roof; Kahgul season Sept/Oct
Kambaghal	Peasant
Kanor	Big bag
Karochi	Wheel barrow
Khar bor	Donkey load
Kharkhor	Paid donkey load
Khati sabs (qamarbandi sabz)	Hedgerow
Khistmand	
Khok (surkh, siyah, safed)	Soil (red, dark, white/light)
Koh	Wheat straw
Korcha	Bush for fuel to light the tandoor
Korogh Mal	Community worker in charge of crops
Kuchi	Tribe of nomadic livestock breeders
Kud	Fertilizer
Laksha	Hot ashes from the tandoor used to heat the Sandali
Lalmi	Rain fed land
Lomolik	Government land
Maharram	Male chaperone
Maldar	Livestock owner
Mâlek , Nawad	Landlord, Powerful village leader
Manteqa	Village cluster, neighbourhood, area
Mardiqar /Muzdakar	Daily labourer
Markab	Donkey
Mashk	“Batteur” mixer

Madrassa	Quran school
Maulawi	Religious teacher
Mawad-e-sukht	Fuel (Firewood bushes, animal dung, etc.)
Meva	fruit
Mirob	Community worker in charge of water
Morgh	Chicken
Muloim	Gentle
Muzdur	Daily labour also used for seasonal labour
Naan	Bred
Namad	Felt carpet
Namaz	Set of structured prayers
Nawruz	New year on 21st of March
Nisfa	Sharecropping 50/50
Orfi	Customary documents
Padawan	Community worker in charge of livestock
Pakhal	Flax straw
Pâkul	Local hat for men
Palbandi	Terrace
Panj Kot	Sharecropping where farmer gets 1:5
Paysa	Money
Poru	Animal manure
Posira	In a sharecropping agreement the sharecropper gets additional seeds, which he can plant for himself
Puli Nakht	Cash
Qariya	Village
Qarluq	Distinct ethnic group, Uzbek speaking
Qarz-i-hasna	Credit on good terms – without interests
Qawm	Solidarity based on kinship
Qawwallah	Legal ownership title deed
Qishloq	Village
Qit'a	Plot of land
Qo Gulba	Sharing of oxen
Qorandaqar	Sharecropping 50/50
Qotan	Amount of pasture needed for 1 rama (sheep or goat)
Quarz-i-khodadad	A loan given to be paid back when God provides the opportunity
Quduq	Well
Rismon	Rope
Sandali	Ember-based heating source with blanket cover
Sang	Stone
Sarad	Lit. "cold land", land fed by springs, neither by rain nor irrigation from

	rivers
Sargin	Dried and loose animal dung from animal shelters
Ser	Approx 7 kg
Sharaqaat	Sharecropping with ½ parts
Sheedgar	Land under fallow
Shewas	High altitude summer pastures
Shir	Milk
Shirdoni	Silo
Shokhin	Pitchfork
Shura	Traditional council
Sudh	Credit with interest
Sudhghor	Person who gives credit with interest
Suflah / Bala	Upper
Tabela (oghil)	Livestock shed/stable
Tandoor	Circular bred baking oven
Tapak	Dried animal dung collected in the field
Tashqurghani	Hand washing set used before meals
Tepa	Hill
Tiramoh	Autumn
Tobison	Summer
Tukhm	Seed
Tund	Steep
Tushak	Sheep wool
Watan/watani	Home area/local
Yakhdan	Traditional snow water storage
Zakat	Islamic charity sharing your wealth with poor
Zamini kisht	Arable land
Zimiston	Winter

Glossary of fruits, crops and plants

Akasi	False acacia	*Robinia pseudoacacia*
Alafe gandomi	Agropyron	
Angur	Grape	
Anjeer	Figue	
Ar-ar	Black poplar	*Populus* sp. prob
Archa	Juniper	*Juniperus excelsa*
Arghawal /Bashal	Willow	*Salix wallichiana*
Arguwan	Adapted specie for reforestation	
Badam	Almond	
Beed	Willow	*Salix wallichiana*

Beed-e-roosee	Russian willow	*Ailanthus* sp
Bihi	Quince	
Buimadoro	Medicinal plant	
Chawory	Corn, Maize	
Chinar	Oriental plane fuel plant	*Platanus orientalis*
Chormaghz	Walnut	*Juglans regia*
Chub-e-khar	Capers	
Daitop	Wild grapes	
Darmanh	Artemesia	*Bio pesticide*
Diktat Angur-e-washi	Wild grape	*Vitis silvestris*
Dolona	Tree with red fruits	
Drowna		*Bio pesticide*
Gandum	Wheat	
Ghamo	Vetch	*Vicia sativa*
Hing (Anjodan)	Devils dung	*Ferula asafoetida*
Irghai	Hawthorn, cotoneaster	*Crataegus* sp
Jaw	Barley	
Jaw beed	White willow	*Salix afghanica*
Kawel	Desert volute	*Convovulus spinosa*
Kharbuza	Melon	
Khar-e-Jantaq	Berbery	*Berberis Vulgaris*
Khorja	Bush to light tandoor	
Khurmoi Tojiki	Persimmon	
Konjet	Sesam	
Matraq	Ephedra	*Ephedra* spp.
Murpon	Adapted specie for reforestation	
Nakhot	Chick peas	
Nashputi	Pear (round)	
Nask	Lentil	
Nihol	Seedling	
Nok	Pear (long one)	
Noor/Anor	Pomegranate	
Pasha Khana	Elm	*Ulmus* spp.
Pistah	Pistachio	
Piyoz	Onion	
Poosh	Artemesia Bush for fuel	*Artemesia spp*
Pudina	Mint	
Qatraboron	Sinfoin	
Rishqa	Alfalfa/Lucerne	*Medicago sativa*
Sabzgul / Mawul	Great Blue	*Lobelia inflate*

Safedar	White Poplar	
Sarhburut	Traditional wheat variety	
Shaftoli	Peach	
Shapash	Bush used for fuel	
Sheter khar	Camel bush - winter fodder for camels and goats, the steams used as fuel	*Alhagi camelorum*
Shirankhor	Fuel & fodder	
Shirinbuya	Liquorice	
Shulmak	Poplar	*Populus* sp.
Shurak	Artiplex	
Srkhoha	Traditional wheat variety drought resistant	
Talkha	Bush for fuel	
Tarbuz	Watermelon	
Toot	White Mulberry	*Morus alba*
Toron	Wild and sour vegetable found in mountain areas	
Tughdona	Tree with brown fruits	
Tukhm	Seed	
Tupa	Ghamo Straw	
Zagher	Flaxseed	
Zarang	Maple	*Acer semenovii*
Zardak	Carrot	*Daucus carota*
Zardaloo	Abricot	
Zardona	Traditional wheat variety	
Zira	Cumin	*Cuminum*

AFGHAN CALENDAR

Hamal	21.03 – 20.04	Meezân	24.09 – 23.10
Sawr	21.04 – 20.05	Aqrab	24.10 – 22.11
Jawzâ	22.05 – 22.06	Qaws	23.11 – 22.12
Saratân	23.06 – 23.07	Jadi	23.12 – 21.01
Asad	24.07– 23.08	Dalwa	21.01 – 20.02
Sumbula	27.08 – 23.09	Hoot	20.02 – 20.03

OUTCOME MAPPING GLOSSARY

Boundary Partners: Those individuals, groups, or organizations with whom the program interacts directly and on whom the program can anticipate some opportunities for influence.

Development Impact: Significant and lasting changes in the well-being of large numbers of intended beneficiaries.

Inputs: Resources which are incorporated into a program in order to encourage results through the relevant activities.

Intentional Design: The planning stage of Outcome Mapping where a program reaches consensus on the macro level changes it would like to help bring about and plan strategies to provide that support.

Mission: An ideal description of how the program intends to support the achievement of the vision. It states the areas in which the program will work but does not list all the activities in which the program will engage.

Monitoring: A process by which data is systematically and regularly collected on a program over time.

Organizational Practices: A set of separate practices by which a program remains relevant, innovative, sustainable, or connected to its environment.

Outcome: Changes in the behaviour, relationships, activities, and/or actions of a boundary partner that can be logically linked, although are not necessarily directly caused by, a program.

Outcome Challenge: Description of the ideal changes in the behaviour, relationship, activities, and/or actions of a boundary partner.

Monitoring Stage: The second stage of Outcome Mapping which provides a framework for the on-going monitoring of the program's actions in support of the outcomes and the boundary partners' progress towards the achievement of outcomes. It is based largely on systematized self-assessment.

Outputs: Directly observable, though not necessarily short-term, products of the program.

Vision: A description of the large-scale development changes (economic, political, social, or environmental) that the program hopes to encourage.

LIVELIHOOD GLOSSARY

THE SL DISTANT LEARNING GUIDE DFID

Asset Pentagon

The Asset Pentagon is an important component in the SL Framework. It is a visual representation of information about people's livelihood assets. It brings to life important inter-relationships between the various assets.

Asset Status

This refers to an individual's or group's access to livelihood assets. A change in Asset Status may involve an increase or decrease in access to livelihood assets or a change in the composition of the livelihood assets to which there is access.

Capital

In the sustainable livelihoods framework it is best understood with reference to the following five categories: human capital, natural capital, financial capital, social capital, and physical capital. These are also known as livelihood assets.

Core Principles of Livelihood Analysis

The Core Principles of Livelihoods Analysis are as follows:

- Effort should be devoted to identifying and understanding the livelihood circumstances of marginalised and excluded groups
- Analysis should take into account important social divides that make a difference to people's livelihoods. For example, it is often appropriate to consider men, women, different age groups, etc. separately. It is not sufficient to take the household as the sole unit of analysis.
- The SL approach seeks to build upon people's strengths and resourcefulness. When conducting analysis it is important to avoid thinking only about need.
- The SL approach embraces the idea of dynamism. Avoid taking one-off snap shots and instead think about change over time, including concerns about sustainability.
- There will never be a set recipe for which method to use under which circumstances. Flexibility is key. Equally, it is not necessary to produce one definitive 'map' of livelihoods. Different 'maps' may be appropriately used for different purposes.

The Core Principles of Livelihood Analysis should not be confused with the core principles of the sustainable livelihoods approach which are much broader.

Core Principles of the Sustainable Livelihoods Approach

These are that poverty-focused development activity should be:

- **People-centred**: sustainable poverty elimination will be achieved only if external support focuses on what matters to people, understands the differences between groups of people and works with them in a way that fits in with their current livelihood strategies, social environment and ability to adapt.
- **Responsive and participatory**: poor people must be key actors in identifying and addressing livelihood priorities. Outsiders need processes that enable them to listen and respond to the poor.
- **Multi-level**: poverty elimination is an enormous challenge that will only be overcome by working at multiple levels, ensuring that local-level activity informs the development of policy and an effective enabling environment, and that higher-level policies and institutions support people to build upon their own strengths.
- **Conducted in partnership**: with both the public and the private sector.
- **Sustainable**: there are four key dimensions to sustainability - economic, institutional, social and environmental sustainability. All are important - a balance must be found between them.
- **Dynamic**: external support must recognise the dynamic nature of livelihood strategies, respond flexibly to changes in people's situation, and develop longer-term commitments.

The Core Principles of the Sustainable Livelihoods Approach should not be confused with the core principles of livelihood analysis which relate more specifically to the activities involved in investigating livelihoods.

Economic Sustainability

It is usually associated with the ability to maintain a given level of income and expenditure over time. In the context of the livelihoods of the poor, economic sustainability is achieved if a minimum level of economic welfare can be achieved and sustained.

Empowerment

Occurs where people take greater control over the decisions, assets and Policy, Institutions and Processes that affect their livelihoods.

Environmental Sustainability

Achieved when the productivity of life-supporting natural resources is conserved or enhanced for use by future generations. By productivity we mean its ability to produce a wide range of environmental services, such as the supply of food and water, flood protection, waste management etc.
It's includes to bring the poor to gain a better understanding of the relationship between the livelihoods and their environment

External Environment

A very general term that refers to the environment outside a person's immediate influence. Within the SL framework trends, shocks, and seasonality are part of the External Environment. Many policies, institutions and processes (PIPs) may also be treated as part of the external environment, although people may have more influence over some of these than over trends, shocks and seasonality.

External Shocks

Shocks emanating from the external environment.

External Support

Support provided from outside, e.g. government support for a village community, or donor support for a government department etc.

Financial Capital

Financial Capital is a category of livelihood assets. Within the SL framework, it is defined as the financial resources that people use to achieve their livelihood objectives. These resources include:

- **Available stocks**: Savings are the preferred type of financial capital because they do not have liabilities attached and usually do not entail reliance on others. They can be held in several forms: cash, bank deposits or liquid assets such as livestock and jewellery. Financial resources can also be obtained through credit-providing institutions in which case liabilities are attached.
- **Regular inflows of money**: Excluding earned income, the most common types of inflows are pensions, or other transfers from the state, and remittances

Human Capital

Human Capital is a category of livelihood assets. It represents the skills, knowledge, capacity to work, and good health that together enable people to pursue different livelihood strategies and achieve their livelihood outcomes. At a household level human capital is a factor of the amount and quality of labour available. This varies according to household size, skill levels, education, leadership potential, health status, etc. Human capital is necessary to be able to make use of the other four types of livelihood assets.

Institutional Sustainability

Achieved when institutions, structures and processes have the capacity to continue to perform their functions over the long term. One of a number of dimensions of sustainability that also include economic sustainability, environmental sustainability and social sustainability.

Livelihood(s)

The One could describe a livelihood as a combination of the resources used and the activities undertaken in order to live. The resources might consist of individual skills and abilities (human capital), land, savings and equipment (natural, financial and physical capital, respectively) and formal support groups or informal networks that assist in the activities being undertaken (social capital).

Livelihood Assets

A key component in the SL framework, they are the assets on which livelihoods are built, and can be divided into five core categories (or types of capital). These are: human capital, natural capital, financial capital, social capital, and physical capital.

People's choice of livelihood strategies, as well as the degree of influence they have over policy, institutions and processes, depends partly upon the nature and mix of the assets they have available to them (see Livelihoods Asset Pentagon). Some combination of them is required by people to achieve positive livelihood outcomes - that is, to improve their quality of life significantly on a sustainable basis.

No single category of assets on its own is sufficient to achieve this, but not all assets may be required in equal measure. It is important to note that a single asset can generate multiple benefits. For example, if someone has secure access to land (natural capital) they may also be able to get better access to financial capital, as they can use the land both for productive uses and as security for a loan.

Livelihood Goals

The objectives pursued by people through their livelihood strategies. Closely related to livelihood outcomes.

Livelihood Outcomes

Livelihood Outcomes are the achievements - the results - of livelihood strategies. Outcome categories can be examined in relation to the following categories:

- more income
- increased well-being
- reduced vulnerability
- improved food security
- more sustainable us of the natural resource base
- social relations and status
- dignity and (self)respect

The term 'outcome' is used - as opposed to 'objectives' - to focus attention on two key issues. These are:

- Sustainability: Problems can occur because people very often have objectives that lead them to 'unsustainable livelihoods'. The word 'outcome' is used to indicate that the programme is not concerned entirely with people's own objectives but also with the sustainability objective.
- Orientation to achievement: The word 'outcomes' helps focus attention on results and the progress that is made towards poverty elimination rather than thinking only about what people are trying to achieve.

Livelihood Strategies

The term used to denote the range and combination of activities and choices that people make in order to achieve their livelihood goals. Livelihood Strategies include: how people combine their income generating activities; the way in which they use their assets; which assets they chose to invest in; and how they manage to preserve existing assets and income. Strategies may reflect underlying priorities, such as to diversify risk. Livelihood Strategies are diverse at every level. For example, members of a household may live and work in different places, engaging in various activities, either temporarily or permanently. Individuals themselves may rely on a range of different income-generating activities at the same time, and are likely to be pursuing a variety of goals.

Livelihoods Review

A Livelihoods Review is an exercise targeted at an existing project or programme with the aim of understanding both how well the project/programme is doing in meeting stated objectives and its impact on the broader livelihoods of various stakeholder groups. The review adopts a sustainable livelihoods approach and can be used in any existing project/programme, even if it was not originally designed using an SL approach. It can help bring a new perspective to the project/programme and provides an opportunity to stand back and explore how the project/programme is affecting the livelihoods of the poor, and to see how positive impacts can be enhanced.

Natural Capital

Natural Capital is a category of livelihood assets. It is the term used for the natural resource stocks (e.g. trees, land, clean air, coastal resources) upon which people rely. The benefits of these stocks are both direct and indirect. For example, land and trees provide direct benefits by contributing to income and people's sense of well-being. The indirect benefits that they provide include nutrient cycling and protection from erosion and storms.

Outputs

Typically used in relation to the Outputs of a project or programme and linked to measurable indicators of project/programme impact, such as agricultural yields, number of visits by health workers, area of land brought under irrigation, number of teachers trained, legislation revised, trade agreements implemented, etc. Outputs are an important element in the Logical Framework.

Participatory

The quality of an approach to development and/or government in which the underlying principle is that the key stakeholders (and especially the proposed beneficiaries) of a policy or intervention are closely involved in the process of identifying problems and priorities and have considerable control over the related activities of analysis, planning and the implementation of solutions.

Partnerships

Refers, in the SL Approach, to Partnerships in the development process. The SL approach stresses the importance of partnerships at all levels including:

- Partnerships with poor people;
- Partnerships with both public sector and private sector implementing agencies and stakeholders in developing countries (the SL approach explicitly recognises the important role that the private sector plays in development);
- Partnerships between different departments within DFID · Partnerships with other donors;
- Partnerships with research organisations.

Such partnerships will only be possible if care is taken to ensure that the approach builds on the accumulated experience of all partners and is not imposed on any partner.

Physical Capital

Physical Capital is a category of livelihood assets. It comprises the basic infrastructure and physical goods that support livelihoods. Infrastructure consists of changes to the physical environment that help people to meet their basic needs and to be more productive.

Key components of infrastructure include affordable transport systems, water supply and sanitation (of adequate quantity and quality), energy (that is both clean and affordable), good communications and access to information. Shelter (of adequate quality and durability) is considered by some to be infrastructure, while others would consider it to be a private physical asset and somewhat different from infrastructure.

Other components of physical capital include productive capital that enhances income (e.g. bicycles, rickshaws, sewing machines, agricultural equipment), household goods and utensils and personal consumption items such as radios and refrigerators. Most of these are owned by individuals or groups. Some, such as larger agricultural equipment or processing units, can be accessed through rental or by paying a fee for the services used.

Policy

One of the components of Policy, Institutions and Processes (PIPs), Policy can be thought of as a course or principle of action designed to achieve particular goals or targets. These tend to be broader and less specific than those of the programmes and projects used to implement Policy. The idea of policy is usually associated with government bodies, but other types of organisation also make policies (for example a local NGO's policy about who is eligible for its programmes).
Policy can be divided into macro policy (affecting the whole country) or micro policy (affecting particular sectors, districts, neighbourhoods or groups. Also meso policy). It can also be strategic (designed to create a long-term framework for action) or quite short-term and temporary.

Policy, Institutions and Processes (PIPs)

A key component in the Sustainable Livelihoods Framework combines Policies, Institutions and Processes (PIPs) because the three are closely inter-related contextual factors that have a great effect on all aspects of livelihoods.
The Pips dimension of the SL framework comprises the social and institutional context within which individuals and families construct and adapt their livelihoods. As such it embraces quite a complex range of issues associated with power, authority, governance, laws, policies, public service delivery, social relations (gender, caste, ethnicity), institutions (laws, markets, land tenure arrangements) and organisations (NGOs, government agencies, private sector).
The common theme is that it relates to the bigger picture and the complex array of political and institutional factors affecting livelihoods. It is different from the vulnerability context because policies, institutions and processes are not 'given' but are continually shaped by people - although the direct influence exerted by the poor is often limited. They effectively determine:

- access (to various types of capital, to livelihood strategies and to decision-making bodies and sources of influence);
- the returns to different types of capital, and to any given livelihood strategy.

Processes

One of the components of Policy, Institutions and Processes (PIPs). "Processes" attempts to capture the dynamic element of policies and institutions and avoid a 'snapshot' approach. It refers to how things are done rather than what is done. It also refers to the ways policies and institutions change and/or interact with broader processes of change. Change may happen as a result of policies or due to other factors such as:

- the nature of authority and decision-making structures;
- the form and quality of government systems (governance);
- the extent and nature of public participation in policy and other processes;
- the effect of this participation; and
- other factors behind change (for example, external shocks that form part of the vulnerability context).

Programme

A programme is a set of activities designed to achieve a specific purpose. The term may describe a mix of projects, training and capacity building, budgetary support and policy dialogue. A programme may focus on a region (such as southern Africa), a country, or an area within a country. It may be multi-sectoral or focus on a single sector.

Project

A project is a discrete funding package, comprising an activity or set of activities that can contribute to - but not necessarily achieve on its own - a particular development objective.

Project Scope

The range of activities and issues addressed by a project.

Remittances

Money that is sent home by family/household members living and working away from home.

Seasonality

Seasonality is a key element in the vulnerability context. It refers to seasonal changes, such as those affecting: assets, activities, prices, production, health, employment opportunities etc. Vulnerability arising from seasonality is often due to seasonal changes in the value and productivity of natural capital and human capital (through sickness, hunger etc). The poor are often more vulnerable to these changes than wealthier groups.

Sharecropping

A tenancy arrangement whereby a landowner allows a tenant (the sharecropper) to farm a piece of land in exchange for a share of the crop harvested from that land.

Shocks

Shocks are a key element in the vulnerability context. They are usually sudden events that have a significant impact (usually negative) on livelihoods. They are irregular and vary in intensity and include events such as natural disasters, civil conflict, losing one's job, a collapse in crop prices for farmers etc. They can be classified into the following categories:

- Human shocks (e.g. illness, accidents);
- Natural shocks (e.g. floods, earthquakes);
- Economic shocks (e.g. job losses, sudden price changes);
- Conflict (e.g. war, violent disputes); and
- Crop/livestock health shocks.

Shocks and trends may be linked. For example some changes that appear as trends at a national or even regional level (such as increased infection rate for diseases such as AIDS and malaria) can impact upon a household or individual as severe shocks (i.e. death in the family).

Social Analysis/Appraisal

Investigation of social structures and relations. In the SL Approach it is used to provide information on the relevant characteristics of poverty, vulnerability and social exclusion. It can help to understand:

- the social positioning of individuals or families (distinguished by kinship, age, gender, ethnicity, religion, caste, etc.);
- which social characteristics (e.g. standard of living or extent of poverty, gender, age, ethnicity) are important in defining groups for more detailed livelihoods analysis;
- what the dimensions and effects of exclusion of various groups are (e.g. lack of access to assets, to services, to household or community-level social institutions, or lack of voice);
- the existence and cause of conflicts within communities;
- power and authority as manifested by traditional authority (e.g. village chiefs, community leaders) and the authority of the state and its agencies;
- non-market, social institutions such as customary tenure, common property; and
- the way policy, institutions and processes affect different social groups.

Social Capital

Social Capital is a category of livelihood assets. It relates to the formal and informal social relationships (or social resources) from which various opportunities and benefits can be drawn by people in their pursuit of livelihoods. These social resources are developed through investment in:

- interactions (through work or shared interests) that increase people's ability to work together;
- membership of more formal groups in which relationships are governed by accepted rules and norms; and
- relationships of trust that facilitate co-operation, reduce transactions costs and sometimes help in the development of informal safety nets amongst the poor.

Critical benefits of social capital are access to information, to influence or power, and to claims or obligation for support from others.

Social Sustainability

An initiative is socially sustainable if it rests on a particular set of social relations and institutions, which can be maintained or adapted over time. One of a number of dimensions of

sustainability that also include economic sustainability, institutional sustainability and environmental sustainability. Top

Sustainable Livelihoods

A livelihood is sustainable when it is capable of continuously maintaining or enhancing the current standard of living without undermining the natural resource base. For this to happen it should be able to overcome and recover from stresses and shocks (e.g. natural disasters or economic upsets).

Sustainable Livelihoods Approach

An approach to development in which people's livelihoods are the focus of attention and which adopts the core principles of the sustainable livelihoods approach.

Sustainable Livelihoods Framework

The sustainable livelihoods (SL) framework is a visualisation tool that has been developed to help understand livelihoods. It is intended to help users think through the different aspects of livelihoods, and particularly those factors that cause problems or create opportunities.
The SL framework can be divided into five key components: the Vulnerability Context, Livelihood Assets, Policy, Institutions and Processes, Livelihood Strategies and Livelihood Outcomes.
The SL framework gives an impression of how these factors relate to each other. Indeed the links between them (arrows in the framework) are also critical, reflecting how people convert assets to activities, or how policies, institutions and process affect the key components.
The framework aims to stimulate debate and reflection, which should result in more effective poverty reduction. The framework does not attempt to provide an exact representation of reality. It is a simplification and it should be adapted for use in any given circumstance. Real livelihoods are complex and varied, and can only be properly understood through direct experience.

Trends

Trends are a key element in the vulnerability context. They can have either a positive or a negative effect on livelihoods and involve changes that take place over a longer period of time than is the case with changes brought about by shocks or seasonality. Examples of trends include the following:

* Population trends (e.g. increasing population pressure);
* Resource trends (e.g. soil erosion, deforestation);
* Economic trends (e.g. declining commodity prices, development of new markets);
* Trends in governance/politics (e.g. increasing accountability); and
* Technological trends (e.g. the development of more efficient production techniques)

Vulnerability Context

A key component in the SL framework, the Vulnerability Context refers to the shocks, trends and seasonality that affect people's livelihoods (often, but not always, negatively). The key feature of all the factors within the Vulnerability Context is that they are not controllable by local people in the immediate or medium-term. Vulnerability or livelihood insecurity resulting from these factors is a constant reality for many poor people.

Watershed

A watershed is an area of land whose boundaries are defined by the way water drains from it. All water within the boundaries of an individual watershed flows to the same point. Small watersheds can therefore exist inside larger watersheds. Because of the physical inter-linkages within a watershed, watersheds are useful units for managing soil and water resources.

AGRARIAN SYSTEM ANALYSIS GLOSSARY

Agrarian system:

A historically constituted mode of exploitation of the environment durably adapted to the bioclimatic conditions of a given area and corresponding to social conditions and needs at that moment

Agricultural production system:

Is the whole structured set of plants, animals and other productions or activities selected by a farmer for his production unit to assure his livelihood.

Agro-ecosystem:

Ecological system partly modified by man to produce food, fiber, and/or other agricultural products. It is an agricultural-socio-economic- ecological system

Animal husbandry system (or "livestock system"):

Techniques and practices applied by a community in a given space, for the exploitation of plant resources by animals, in conditions that are compatible with the community's objectives and adapted to the constraints of its environment.

Biodiversity:

The total diversity of plants and animals living in the same area.

Capacity building:

The term capacity is defined as the ability of individuals and organizations to perform functions effectively, efficiently and in a sustainable manner. Capacity building is the process by which individuals, groups, organisations and institutions strengthen their ability to carry out their functions and achieve desired results over time. It is a process of improving the ability of organisations and sytems to perform their assigned tasks in an effective, efficient and sustainable manner. It involves strengthening the capabilities of individuals, organisations and linkages among them.

Cropping system:

Is a sub-system of the whole Agricultural Production System, defined for a given cultivated area and treated homogeneously with regard to the crops and their successions, and the itineraries of techniques.

Ecosystem:

The communities of plants and animals (including humans) living in a given area and their physical and chemical environment (e.g. air, water, soil), including the interactions between them and with their environment. It is a system which includes all the organisms of an area and the environment in which they live.

Cultural practices:

Elementary action of an itinerary of techniques. Action of farmers on the environment and/or on crops in a process of plant production.

Experiential learning:

Learning related to or derived from experience.

Extension:

Agricultural extension is a process for which the primary goal is to assist farming families in adapting their production and marketing strategies to rapidly changing social, political and economic conditions so they can, in the long term, shape their lives according to their personal preferences and those of the community. The task of extension is, thus, to improve interactions among actors involved in agricultural knowledge so that farmers have optimum access to any information that could help them enhance their economic and social situation.

Fallow period:

Is a shifting cultivation cycle, it is the duration during which a field is left to plant regrowth,

from harvesting to replanting.

Farming system:

Farming is defined as the practice of cultivating the land or raising stock. A system is a set of elements contained within a boundary such that they have strong functional relationships with each other. A farming system is thus an agricultural system composed of various sub-systems and various categories of farming systems could be defined according to the relative importance of each sub- system.

Focus groups:

People who share particular sets of interests or have common characteristics, i.e. single mothers, dry rice farmers. Groups of people are convened to discuss topics or answer questions prepared by researcher.

Food security:

The concept of producing enough food for the whole household to live healthily, whatever the weather or situation. Food security could be studied at different levels (household, village, district, province and national levels). It includes access to sufficient food, culturally acceptable, sustainable, without environmental damages and external dependence.
Hedrows

Household:

Is a group of people who live and eat together and typically engage in joint economic actitivity. This group is usually based on kinship and may comprise several the nuclear families. Nuclear family is father, mother and children.

Indigenous knowledge:

is the local knowledge that is unique to a given culture or society. It contrasts with the international knowledge system generated by universities, research institutions and private firms. It is the basis for local-level decision making in agriculture, health care, food preparation, education, natural resource management, and a host of other activities in rural communities.

Integrated Pest Management (IPM):

IPM is an ecosystem-based management strategy used in plant protection that focuses on long-term prevention of pests and their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant cultivars. In IPM pesticides are used only when needed as determined by established guidelines.

Intercropping:

Growing two or more crops in the same field at the same time in a mixture (Also known as "mixed cropping" or "multiple cropping", as opposed to "monocropping" where only one crop is grown).

Land allocation:

A process that provides land tenure entitlements to families.

Land-use plan:

"Land Use Plan" could be defined as a spatial arrangement of land uses and a proposed course of government action to influence land use. It is also defined as a collection of policies and maps that serve as a community's blueprint for growth.

Land-use planning:

A systematic attempt to minimise the adverse effects land changes have on society and environments and to maximise human benefits. Alternate definition: the systematic assessment of land and water potential, alternative patterns of land use and other physical, social and economic conditions, for the purpose of selecting and adapting land-use options which are most beneficial to land users without degrading the resources or the environment.

Rotational cropping:

Repeated cultivation of a succession of crops (also known as "crop rotations"), possibly in combination with fallow, on the same field.

Transect walks:

A combination of interview and observation as researchers walk through an area with their interviewee and ask about what is seen.

Chek dam

Check dam is usually built in a gully to hold back the water and sediment, and the height of the dam often lower than 5m. Because check dams can elevate river bed, prevent a gully from widening and deepening, hold back the water and sediment, and then gradually form the gullies into pieces of flat land, it has been used for many years in China. People can build check dams easily and cheaply with stones, earth or willows by common tools.

Rotational grazing

Is one approach of pasture management. Basic aim of the approach is to rest a certain part of pasture by rotational grazing helped with seeding, fertilizing and area closure to enable the new types and higher amount of herbacous plant cover

Participatory Watershed Development

Livelihood asset base development through participatory watershed developemnt keeping people at the center stage of development and promoting village level institutions.
Livelihoods improvement through asset building; Capacity building, Enabling environment, Village level institutions building, Natural resource management. Participatory tools are used to do situational analysis and planning. Self Help Groups and User Groups are promoted for taking up micro enterprise and land based activities respectively,

Farmer Field Schools (FFS)

FFS are held to fill farmer's gaps in knowledge on the use of sustainable agricultural technologies, efficient irrigation water use and prevention of land degradation using trials tailored to local conditions.

Catchment

An area of land and what is on it (such as woodlands, farms, or towns) which drains water to the same lowest point such as a river or swamp; small catchments move into larger catchments, and upper catchments flow into lower ones.

Cohesive groups

Formal or informal groups in a community organised and united by a common purpose or goal

Community-based management approach.

An approach to rural development that lets communities take charge of managing forest, rangelands, and other natural resources

Conservation areas

Tracts of land that have been awarded protected status in order to ensure their natural features, cultural heritage or biota; in conservation areas, the cutting and use of resources is often restricted, if not totally banned

Crop rotation

The practice of growing a series of dissimilar types of crops in the same area in sequential seasons for various benefits, such as to avoid the build up of pathogens and pests that often occurs when one species is continuously cropped, to balance the fertility demands of various crops, and to avoid excessive depletion of soil nutrients

Ecosystems

Natural unit consisting of all plants, animals and micro-organisms (biotic factors) in an area, functioning together with all of the non-living physical (abiotic) factors of the environment

Environmental sustainability

The ability to renew resources and keep environmental conditions in good condition.

Feasibility assessment/feasibility study

The study or appraisal of whether a project or an enterprise is workable and will earn economic and social benefits and requires identifying its technical, financial, and socioeconomic impacts and drawing conclusions about the project's viability

Indigenous knowledge

Refers to the matured long-standing traditions and practices of certain regional, indigenous, or local communities; traditional knowledge also encompasses the wisdom, knowledge, and teachings of these communities and, in many cases, orally passed for generations from person to person through stories, legends, folklore, rituals, songs, and even laws.

Mulch

A protective covering of rotting vegetable matter spread to reduce evaporation and soil erosion and conservation of soil moisture and the moderation of soil temperature

Natural hazards

Natural process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Soil conservation

The set of management strategies for the prevention of soil being eroded from the earth's surface or becoming chemically altered by overuse

Soil erosion

The washing away of soil by currents of either water, wind, or snow.

Sustainable energy solutions

Solutions to providing energy that are wise, efficient, and mostly use renewable sources and technologies that provide little or no harm to the environment

Value addition/ value added

Refers to the additional value of a commodity over the cost of commodities used to produce it from the previous stage of production; the contribution of the factors of production, i.e., land, labour, and capital goods, to raising the value of a product and corresponds to the incomes received by the owners of these factors vegetation – plants in an area including trees, shrubs, grasses, and herbs

Biomass

Fuelwood, grass, manure and plant matter recently dead and can be used as fuel or for industrial production

Biomass-deficient soils

Soil with not enough essential biomass that enrich soil quality

Biopesticides

Pesticides made of natural biological materials such as plants with natural insect repellent qualities

Grafting

Horticultural technique whereby tissues from one plant are inserted into those of another so that the two sets of vascular tissues may join together.

Guidelines for facilitators

Focus group discussion (FGD) with the NRMC

Aims of the FGD: To discuss the experiences and knowledge of implementing SLM practices, in order to support other communities in decision making on SLM practices.

Preparation: Prepare short FGD program on flipchart;
prepare photographs of each SLM practice,
prepare a technical drawing of each SLM practice (see *WOCAT-T section 4.1*).

Background materials: WOCAT Questionnaire on SLM Technologies, Version Core 2016. (WOCAT-T)

How to introduce:

Plenary session:

1. The facilitator welcomes all participants. He explains the aim of the FGD.
2. He introduces himself and asks each participant to tell his/her name and how he/she is involved in the NRMC.
3. Then the facilitator asks the leader of the NRMC to introduce the work of the committee and LIPT SLM practices implemented, and on the number of plots where SLM implementation took place. The facilitator will put pictures of each SLM practice listed by NRMC leader on a flipchart.
4. The facilitator shows photographs of the implemented SLM practices to participants and asks if **any other good (traditional) agricultural practices** are available in the village. Here it is important to explain the meaning of "good agricultural practice", because they may not know what WOCAT is referring to. An example might be the intensively managed wheat plots near houses, which are used every year, but still give good yield. Facilitator writes or draws the good traditional practices on the bottom of the list of SLM practices.
5. Then the facilitator asks participants which SLM practice is implemented on which type of the land use. Here it is important to consider 3 land use types: ***(1) cropland; (2) grazing land; and (3) orchards/forests.*** The term forest/orchards we use for all land use types that include tree production (fruit and non-fruit) and at the same time is used as grazing land, either for herding animals or for haymaking. It corresponds to the WOCAT land use type category "Mixed". For details on the classification see *WOCAT Section 3.2*.
6. The facilitator introduces the program of the day (short version of the program from page 2)
7. Then the facilitator proposes to agree on workshop rules. Participants will propose rules; facilitator writes them down on flipchart.

Output:

- Consolidated list of SLM practices differentiating practices implemented on (1) cropland, (2) grazing land and (3) orchards/forests.
- Two land use maps are ready:
  - **1st with**: i) good and bad quality of land marked, this may be based on the types of soil (for example: red, white and dark soil);
  - **2nd with** i) locations of LIPT SLM practices implemented; ii) any plots with replications of the SLM practices; iii) plots with other existing SLM practices
- Multi-criteria matrix with ratings for SLM practices
- List of participants for FGD days 2, 3, and 4 (and 5) (including LIPT supported farmers and farmers who conducted replications).
- Notes taken from the plenary discussions

FGD Program

DAY 1: Land resources mapping with NRMC			
Time (tentative)	**Topic**	**Description**	**Output**
10.00 – 10.30	Introduction	• Introduction to the Rustaq NRM study and the agro-ecological component • Introduction to the work of the NRMC	– Consolidated list of LIPT SLM practices implemented in the village – Identifying any other existing SLM practices (e.g. traditional, good practices)
10.30 – 12.30	Land resources mapping	Participatory land use mapping based on a recent high resolution satellite imagery showing the study village	– Verified/corrected land use map – Map showing land / soil condition – Map with location of - LIPT SLM practices implemented, - replications, as well as - plots with other good SLM practices.
12.30 - 13.30	lunch		
13.30- 14.30	Knowledge for good decisions on SLM practices	• Cost-benefit ratio, short-term and long-term • Vulnerability to climate extremes, especially drought and extreme rainfalls • Compatibility with the household strategy	– Filled in multi-criteria matrix
14.30- 15.00	Organizational issues	Clarification of organizational issues regarding the FGD on SLM practices implemented on cropland, grazing land and orchards/forests.	– Agreement on participants for days 2, 3, 4, 5 (LIPT supported farmers and farmers with replication)

Exercise 1: Land resource mapping

Aim

A jointly prepared map with SLM practices marked on it.

Preparation

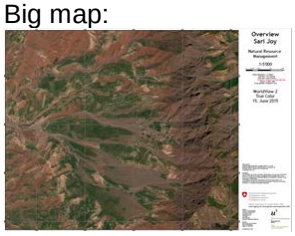
Prepare a satellite image as a base map for village land resource mapping; prepare a copy of the map for capturing information from the NRMC; and provide the participants with markers, and different color pins.

Procedure

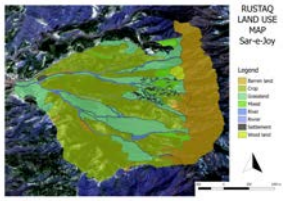
Plenary session:

1. The facilitator puts the map in the middle and explains to the participants what type of "map" this is. Then he asks some participants to show where are settlement, cropland, grassland, river and etc. to be sure that everybody can read the map. For the exercise, he asks each participant to find his house and land on the map. Here an important part is that each participant can recognize where ***cropland, grazing land and orchards/forests land*** are located. This is done by comparison with the "small land use map".

Big map:



Small land use map:



2. Then the facilitator asks the participants, where according to them, the **good and bad quality lands** are determined and asks for the reason why it is good and bad. Does good and bad land coincide with different soil types and local soil type classifications? The facilitator marks the border of the good and bad land on the big map. Please use the following legend:
   - light / white soils: O
   - red soils: ///
   - dark soils: #

Group work:

3. The facilitator takes the flipchart with the pictures of the LIPT SLM practices from the introduction session and divides the participants into 3 groups representing land use types: cropland (yellow), grazing land (green) and orchards/forests (red). Pins with assigned color to land use types will be distributed to the groups. The facilitator asks groups to use the pins to indicate on the map the locations where SLM practices have been implemented. They also show: i) where is SLM practice replicated by farmer ii) is there any additional existing good SLM practice.

Plenary session to summarize

4. **Plenary session**: One participant from each group will **present the result of the group work**.

:

Output:

On the "big map" the following information is indicated:

- **1st with**: i) good and bad quality of land marked or types of soil marked (for example: red, white and dark). Please use the following legend:
  - light / white soils: O
  - red soils: ///
  - dark soils: #
- **2nd with** i) LIPT SLM practices implemented; ii) any replication of the SLM practices; iii) plots with other existing good SLM practices. Use different colored pins according to the land use types: cropland (yellow), grazing land (green) and orchard/forest (red).

=> Please carefully take photographs of the maps, and make use that all information is well visible. The map itself shall remain with the NRMC.

Exercise 2: Knowledge on the implementation of SLM practices and future plans

Aim Rating the 10 SLM technologies regarding benefits and compatibility with household activities.

Preparation: 3 tables (cropland, grazing and orchards/forest) for SLM multi-criteria assessment

Procedure:
Plenary session:

1. The facilitator shows once more the map with SLM practices to the participants and says: Well, you have implemented such kind of technologies. Now let's analyze the impact of each technology.
2. Then he introduces the below table, also called a multi-criteria matrix. The table should be introduced and analyzed column by column: first the different technology and the short-term / long-term returns are discussed, then climate resilience of the different technologies and then the compatibility with other household activities. This is to keep things as simple as possible for the participants during analysis. ***Analysis should be done column by column, not row by row.***

#	Land use type: - Cropland - Grazing land - Forest/ orchard	Returns (cost-benefit ratio)		Does the SLM technology decrease the vulnerability to climate extremes?		Is the SLM technology compatible with other household activities? with the work load for children, women and men?	
	Technology	**Short-term (1-3 years)**	**Long-term (10 years)**	**Dry conditions**	**Rainstorms (extreme rainfall)**	**During the establishment phase in the first year?**	**During a normal agricultural year?**
1							
2							
3							
4							

Marks will be the following:

High	*Medium*	*Low*
Green 3	*Yellow 2*	*Red 1*

Group work:

3. The participants are provided with SLM practice picture and cards with different colors. They discuss within the group (cropland, grazing land and orchards/forests) and **fill in the table**. Points are added up for each row (technology). After completion, one participant from each group will present the result.

   Returns, short-term: From your own experience and the exchange with other farmers, If you consider all the households efforts (labour and cost) to establish the SLM technology and you compare it to the benefit that a household gets from the plot, do you think the overall result is positive?

   Returns, long-term: What do you expect over the long-term will the benefits be positive, zero, or negative compared with the implementation costs?

   Vulnerability to climate extremes: Have you observed how the SLM technologies are affected in dry conditions, or in rainstorms (e.g. can terraces harvest runoff and increase soil moisture on cropland, or are terraces easily affected by rainstorms)? Can this SLM technology decrease the vulnerability to dry conditions or rainstorms?

   Compatibility with other household activities: The establishment work on the SLM plot, does it affect other on-going work on the fields, in the household, or when going for labour migration? The seasonal work that takes place on the SLM plot every year to maintain productivity, does it fit in with other household activities (e.g. labor migration to the lowlands during the planting / harvesting time there?)

Example of the multi-criteria matrix filled in for SLM technologies (first column) implemented on cropland:

Plenary session:

1. The facilitator asks the NRMC members:
   Compare the resulting points adding up for each row (for each technology) **Do the points reflect their personal preferences?**
2. Do you recommend any **adaptations on the SLM practices**? In case if there is any change/adaptation of the SLM practice, this should be documented, using the technical drawing available. Changes should be added on the technical drawings.
3. **Outlook:** What would you **recommend to other communities**? What SLM practices should be implemented, by what types of families, where, when, and what type of impact can be expected?
4. And what is the **outlook for your own community**: Are farmers planning to replicate SLM technologies on more plots of land? Which SLM technologies raise most interest? Are SLM technologies spreading? If not, why not?

Output:

- Multi-criteria matrixes filled in: one for cropland, one for grazing land, one for orchards/forests and photographed.
- If relevant, adapted technical drawings of SLM practices
- Notes taken from the discussion on recommendations and future plans

⇨ Please take photographs of the filled in multi-criteria matrixes, as well as of the technical drawings, where changes are indicated.

Exercise 3: Preparation for the next day's FGD

Aim To agree on participants for days 2, 3, 4 and 5

Preparation Prepare the LIPT list of those who implemented SLM practices on cropland, grazing land and forest/orchards.

Procedure The facilitator reads out the names of those on the LIPT list for cropland, grazing land and forest/orchards and checks those who are available to participate. If possible the facilitator asks about the size of land and number of livestock the selected participant has. Also he asks the participants: (i) who were not on the list; and (ii) who replicated the SLM practice to participate in the next FGDs. Facilitator then writes the names of the participants to be invited.
We are aiming at involving everyone in the village who has implemented SLM technologies on the land that they are using. It can be farmers LIPT supported farmers and farmers who replicated SLM technologies.
Day 2 – SLM practices on cropland
Day 3 – SLM practices on grazing land
Day 4 - SLM practices on orchards/forests
Day 5 – SLM practices from women perspectives

Output:
- The list of participants ready for each day of FGD

To be completed back in Tdh office in Rustaq:
- The list of participants should be compared with the list of households in the community and their wealth ranking, as prepared by the socio-economic team.

Organizational issues: **Prepare the list of participants ready for each day of FGD.**

Focus group discussion guideline for the discussions with SLM farmers

Aims of the FGD: To discuss the knowledge and experience of implementing and maintain good agriculture practices with the farmers.

Preparation: Prepare short FGD program on flipchart,
Prepare enough copies of the *Protocol for land users* for each participant.

How to introduce: ***Note: It is important for facilitators not to use much writing, instead of writing use pictograms etc. Protocols have been prepared in advance and participants only need marking the right answer.***

8. The facilitator welcomes all participants. He explains the aim of the FGD. To do this he shows the flipchart with the SLM Technologies prepared during the FGD with the NRMC and briefly presents the overview of SLM technologies. At the end he says that on day 2 we will analyze only cropland SLM technologies, on day 3 only grazing land SLM technologies, and on day 4 only orchards/forest land SLM technologies. It will be good to mention that in order to help other farmers from other districts decide on the implementation of SLM technologies; each participants experience is valuable, on implementing and using the specific SLM technologies.
9. Then he introduces himself and asks each participant to tell his/her name and to mention which SLM technology he has implemented.
10. The facilitator introduces the program of the day (short version of the program from page 2)
11. Then the facilitator proposes to accept the workshop rules. Participants will propose rules, and the facilitator writes them down on flipchart.

Output:

- *Protocol for land users* completed by each participant
- Map with SLM plots verified and if needed revised
- Data for WOCAT section 4 is gathered
- Notes of the plenary discussions are prepared

FGD Plan

DAY 2: Knowledge for decision making concerning SLM practices on cropland			
Time (tentative)	**Topic**	**Description**	**Output**
10.00 – 10.30	Introduction	- Introduction to the Rustaq NRM study and the agro-ecological component - Introduction of participants	
10.30 – 12.30	Individual evaluation of the SLM technology	- Household situation - Plot location, environmental and human environment (wocat section 5) - SLM implementation activities and inputs (wocat 4) - Overall recommendations	Individual questionnaire: Evaluation reflecting individuals specific conditions, inputs and impacts Group discussion for comparing the different experiences to elaborate recommendations for different type of households.
	Location of the SLM plot (mapping)	Plot location and environmental condition (land use type and soil condition).	Group discussion: - Revised map with SLM plots indicated - List of participants names linked to the SLM plots on the map
12.30 - 13.30	Lunch		
13:30-14:30	Knowledge for good decisions on SLM practices	- Cost-benefit ratio, short-term and long-term - Vulnerability to climate extremes, especially drought and extreme rainfalls - Compatibility with the household strategy	- Filled in multi-criteria matrix
14:30-15:00	Organizational issues	- Clarification of organizational issues regarding the FGD on SLM practices implemented on cropland, grazing land and orchards/forests.	- Agreement on participants for days 2, 3, 4, 5 (LIPT supported farmers and farmers with replication) -

Exercise 1: Individual and group evaluation of the SLM technologies

Aim

To record the experiences of individual farmers when implementing and using SLM practices, and to discuss differences among farmers' experiences in the group.

Preparation

Bring with you: 1) the *protocol for land user*, one copy for each participant; 2) photographs and 3)technical drawings of SLM technologies; 4) a ready list of establishment activities for each SLM practice (*see WOCAT-T section 4.4*); 5) cost of inputs needed for establishment (*see WOCAT-T section 4.5*).

Procedure

This exercise has several tasks:

I. Individual evaluation of the SLM technology

1. The facilitator distributes the *protocol for land users* to each participant according to the numbering of the protocol for land users. This means Protocol №1 corresponds to Participant №1. If possible write down the type of technology on top of the Protocol if the list of participants for each Technology is available. The protocol includes different paragraphs: (1) General household data; (2) SLM plot; (3) Private contribution and project support for implementation of the technology; (4) Benefits for productivity as well as ecological benefits.

The facilitator goes through the protocol paragraph by paragraph: he explains each row of in information and participants mark in the cell the answer fitting their household and their experiences. Sometimes numbers are needed (for example, number of livestock; labor days for establishment etc.), that's why facilitator should always point out when numbers/figures are needed.

II. Evaluation of differences of experiences within the whole group

2. After each paragraph, the group discusses their experiences regarding the particular topic, and discusses the differences among the different households' experiences.

Individual evaluation:

Protocol paragraph 1. General household data

a) The facilitator asks participants to fill the part „general household data". Here it is important to first mark the relevant land use right categories, and then to indicate in numbers how much land each participant is using. Do the same for the livestock: indicate number of animals for each livestock type.

Discussion in plenary:

b) Group discussion on the following questions:

=> Note taker please take minutes of the key issues of the discussion!

- ✓ **Regarding land use rights:** On which land do you usually implement SLM technologies (private, leased or mortgaged) and why? What are your recommendations, what type of land user rights are best when implementing a specific SLM technology (terracing, orchards, pasture improvement etc.)?
- ✓ **Regarding livestock:** Is owning certain livestock (e.g. bulls, donkeys) an advantage when implementing the technology? Or on the contrary, is the implementation of certain SLM practices a disadvantage for livestock owners (e.g. when grazing animals on the cropland)?

Individual evaluation:

Protocol paragraph 2. SLM plot

a) Here filling of the protocol is enough. Important to remember: we are interested in the land use type as it was on the plot before implementation of the SLM technology.

Group work:

WOCAT section 4: Technical specifications, activities and costs

=> Facilitator compare with existing activity and input list and mark any changes!

a) **Participants split in groups according to the SLM technologies** they have implemented.
b) Each facilitator supports one group and reads out the list of establishment activities and input costs. With regard to their experience, is any thing

missing? Are the costs estimated correct?

c) The discussion now turns to maintenance activities and costs. Questions for discussion could be:

✓ What is in general the activities needed for the maintenance of the plot, when, frequency and costs of inputs. Discussion should be around preparation of the land, sowing, crop maintenance and harvesting.

Plenary discussion:
=> Note taker please take minutes of the key issues of the discussion!

Do you recommend any **adaptations on the SLM practices**? In case if there is any change/adaptation of the SLM practice, this should be documented, using the technical drawing prepared according to instructions in WOCAT-T section 4.1. Changes should be added on the technical drawings.

Protocol paragraph 3. Inputs: Private contribution and project support

Group work continues:

a) The groups focusing on one specific technology are continuing working together. They are now working on the paragraphs on inputs needed: private contribution and project support. Ask the participants to first tick the box of each input made through their private contribution and inputs supported by the project. Then ask participants to indicate the most important input (crucial for successful establishment) with 3 ticks, and the second most important input with 2 ticks. If these two important inputs came from their own contribution, the ticks are added under "private contribution", otherwise under "project support". Labour can also be rated as most or second most important input. In any case, it is important to indicate the number of labor days.

Plenary discussion:

b) Plenary discussion questions (for each technology separately):

✓ Are there inputs that cannot be covered by an individual farmer, but project support is needed?

Individual evaluation:

Protocol paragraph 4. Benefits

a) What benefits do you see after having implemented the SLM technology? Please tick the benefits that you see in terms of production, as well as the on-site and off-site ecological benefits.

b) What benefit do you value most? Please indicate with 3 ticks

c) What benefit do you value second most? Please indicate with 2 ticks.

Plenary discussion:

=> Note taker please take minutes of the key issues of the discussion!

What benefit has exceeded your expectation? What expectation has not been met (yet)?

Now *land users protocols* are collected. The facilitators make sure that on each protocol the land users' key data is noted down: Please help to write down the **name of the participant, the SLM practice that they have implemented, and the data of implementation (month and year)**.

Outputs:

- Protocol for land users is completed and collected from all participants
- If relevant, adapted technical drawings of SLM practices

Exercise 2: Location of SLM Plot

Aim	To discuss where to implement an SLM technology
Preparation	Make sure the map elaborated on FGD Day1 together with the NRMC is available.
Procedure	The facilitator takes a map from NRMC's FGD and introduces the work which was done with the NRMC. Here the main idea is to confirm the location of the participants' SLM plots; indicate if the SLM plot was established on good or bad land. To do this facilitator should do some exercise with participants first, ask them to find their home and land. Use post-it to indicate the land users name next to his SLM plot.
Plenary discussion: *=> Note taker please take minutes of the key issues of the discussion!*	Where do you recommend implementing the SLM technology? On bad lands (for mitigating and rehabilitating the land)? On good lands (for conserving the land)?

Outputs:

- Revised map with the location of SLM plots indicated, names of land users marked on post-its and map photographed
- Notes taken on the plenary discussion.
-

Exercise 3: Knowledge on the implementation of SLM practices and future plans

Aim	Rating the 10 SLM technologies regarding benefits and compatibility with household activities.
Preparation:	3 tables (cropland, grazing and orchards/forest) for SLM multi-criteria assessment

1. The facilitator introduces the below table, also called a multi-criteria matrix. The table should be introduced and analyzed turn by turn: first the different technology and the short-term / long-term returns are discussed, then climate resilience of the different technologies and then the compatibility with other household activities. This is to keep things as simple as possible for the participants during analysis. ***Analyze should be done column by column, not row by row.***

#	Land use type: - Cropland - Grazing land - Forest/ orchard	Returns (cost-benefit ratio)		Does the SLM technology decrease the vulnerability to climate extremes?		Is the SLM technology compatible with other household activities? with the work load for children, women and men?	
	Technology	**Short-term (1-3 years)**	**Long-term (10 years)**	**Dry conditions**	**Rainstorms (extreme rainfall)**	**During the establishment phase in the first year?**	**During a normal agricultural year?**
1							
2							
3							
4							

Ma

Ranking will be the following:	***High***	***Medium***	***Lowe***
	Green 3	*Yellow 2*	*Red 1*

Simple question on the different columns:

Returns:

Short-term: If you consider all your households efforts (labour and cost) to establish the SLM technology and you compare it to the benefit that you get from the plot, do you think the overall result is now positive?

Long-term: What do you expect over the long-term (10 years) will the benefits be positive, zero, or negative compared with the implementation costs?

- **Vulnerability to climate extremes:** Have you observed how the SLM technology is affected in dry conditions, or in rainstorms (e.g. can terraces harvest runoff and increase soil moisture on cropland, or are terraces easily affected by rainstorms)? Can this SLM technology decrease the vulnerability to dry conditions or rainstorms?

- **Compatibility with other household activities**: The establishment work on the SLM plot, does it affect your other on-going work on the fields, in the household, or when going for labour migration?

  The seasonal work that you have to do on the SLM plot every year to maintain productivity, does it fit in with your other household activities (e.g. labor migration to the lowlands during the planting / harvesting time there?)

The participants are provided with SLM practice pictures and cards with different colors. They discuss and fill in the table. In the end, points are added up for each row (technology).

Discussion ir plenary:

2. The facilitator asks the participants: Compare the resulting points adding up for each row (for each technology) **Do the points reflect their personal preferences?**

3. What would you **recommend to other farmers**? What SLM practices should be implemented, by what types of families, where, when, and what type of impact can be expected?

=> Note taker please take minutes of the key issues of the discussion!

4. And what is the **outlook for your own farm, and your own community**: Do you plan to replicate the same SLM technologies on another plot of your land? Or do you plan to replicate any other SLM technologies? Are your neighbors planning to implement SLM technologies? If no, why not?

Outputs:

- Multi-criteria matrix filled in for cropland, one for grazing land, one for orchards/forests and photographed.
- Notes taken from the discussion on recommendations and future plans

⇨ Please take photographs of the filled in multi-criteria matrixes, as well as of the technical drawings, where changes are indicated

Focus group discussion with women (WFGD) – family members of SLM implementers
Guidelines for facilitator[1]

Aim of the FGD: To discuss the experiences and knowledge of implementing SLM practices,
in order to learn about the level of women's engagement in SLM implementation and the impact of SLM practices on female family members.

Participants Female family members of SLM implementers[2]

Preparation:
- Prepare photographs of each SLM practice,
- Prepare the Multi-criteria Matrix adapted for WFGD.

Background materials: WOCAT Questionnaire on SLM Technologies, Version Core 2016. (WOCAT-T)

How to introduce:

1. Introduction

a) The facilitator welcomes all participants. She explains the aim of the FGD with women. She introduces herself and asks each participant to tell her name and the name of the husband or another male family member involved in SLM implementation. The family members of the NRMC members are noted down as well.

b) Then the facilitator stresses the importance of open discussion and invites all participants to express their views and actively participate in the exercise and the discussions. Every opinion counts! No right or wrong answer!

Output:
- List of names of all the participants

[1] These WFGD Guidelines were tailored for working with participants with no literacy or very poor level of literacy. They differ from the original guidelines used during the WFGD in Rustaq. Changes were made to improve the structure and content of the Guidelines.

[2] These WFGD Guidelines were aimed only at women whose household implemented the SLM practice. It is advised, where possible, to include women, whose family did not implement the SLM practice. Their perspective will be an added value for the data analysis.

Exercise 1: Knowledge of SLM practices and future plans

Aim Rating SLM technologies regarding benefits and compatibility with household activities.

Preparation:
- Prepare photographs of each SLM practice
- Prepare the Multi-criteria Matrix

Procedure:

1. The facilitator introduces the below Multi-criteria matrix. The table should be introduced and analyzed column by column. First starting with Awareness, moving to the sections about SLM practices increase/decrease the daily workload of women, and finally asking about how costly it is to establish the SLM practice and how are the benefits rated.

2. To start the exercise the facilitator shows the picture of the first SLM practice (Technology) on the Matrix and asks the participants guiding questions related to each question in the respective columns. It is better to ask simple but specific questions for the participants understanding. ***Analysis should be done column by column, not row by row. Very important to take notes of all the discussion!***

3. After the facilitator finishes the questions related to each column, he marks the response of the group on the Multi-criteria Matrix using the colour cards.

	Technology	**Awareness**	**Increased workload**	**Decreased workload**	**Costs**	**Benefits**
1						
2						
3						
4						

Marks will be the following:

High	***Medium***	***Low***
Green 3	*Yellow 2*	*Red 1*

Notes: Important to take notes of the discussion.

Awareness: Do you know what this picture is? What is this SLM practice about? Where have you seen it? Is this SLM practice implemented in your village? Did your household implement the SLM practice? Have you been part of implementing the SLM practice?

➔ **If yes,** what type of work did you do? For example, preparation of the land, sawing/planting, maintenance activities (watering, weeding, protecting, etc.), harvesting, etc.

Notes: Important to take notes of the discussion.

➔ **If yes,** what inputs were used? For example, tools, fertilizers? What plant material was used? For example, wheat seeds, tree seedlings, etc.

Notes: Important to take notes of the discussion.

Compatibility with other household activities: How does the SLM implementation (establishment and maintenance) affect your other on-going work in the household or in the field? Does it add (increase) to your routine household work or does it decrease it? In your family what work/tasks are considered most important: if men have to decide between work on the land and going for seasonal jobs? Or does it depend on the seasonal work? And for your children, you decide to work with them on SLM practices or you send them to school?

Notes: Important to take notes of the discussion.

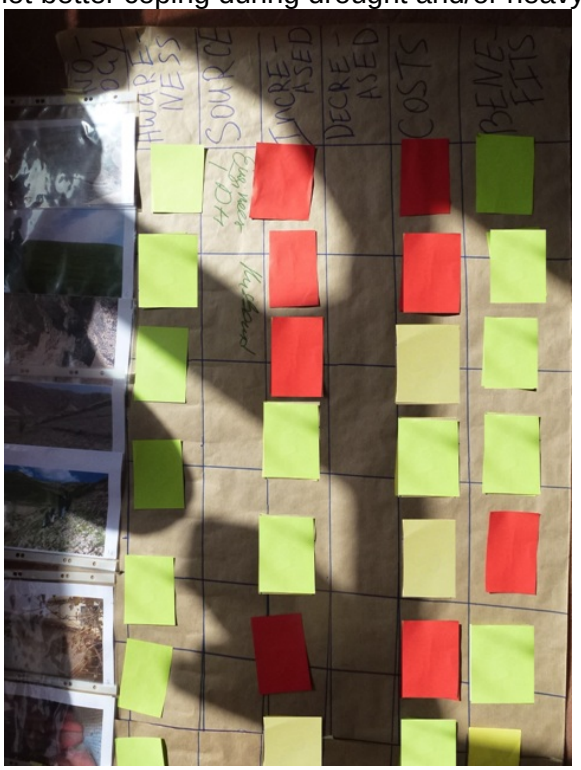
Establishment costs of the SLM practices: In your personal opinion how much were the costs for implementing the SLM practice? Were these costs compatible with your family income? Did your family receive support to cover the costs?

➔ **If yes,** from where you received support? What type of support was

received? For example, money for work, tools, seeds/seedlings, fertilizer?
The benefits achieved or expected benefits from the SLM practices. Do you observe the benefits from the SLM practice?

➔ **If yes,** what type of benefits do you mean? For example, do you have better crop yield than before the SLM practice? Do you have more fodder? Is your land on SLM plot better coping during drought and/or heavy rainfall?

Example of the multi-criteria matrix filled in for SLM technologies.



Notes: Important to take notes of the discussion.

4. What is the **outlook for your own community**: The facilitator asks the participants are they **interested in any additional SLM practices?**
   - ➔ **If yes**, why?
   - ➔ **If no**, why not?

   Would you like your household to **be active in SLM practices in the future**?
   - To replicate elsewhere what has been done, or
   - To invest in a new SLM practice

   Would you **recommend the SLM practices to your neighbors and other villages**?
   - ➔ **If yes,** which SLM practices? Why specifically these practices?
   - ➔ **If no,** why not?

Output:
- Multi-criteria matrix filled in with the different cards for ranking.
- Notes taken from the discussion, including recommendations and future plans

⇨ Please, take photographs of the filled in multi-criteria matrixes

Focus Group Discussion Notes

FGD 1 NRMC - Sari Joy
October 17, 2016

Aim of the meeting: Pilot discussion about the knowledge and experience of implementing SLM practices in Sari Joy village, Chokar watershed.

Participants: 11 Members of the Natural Resource Management Committee (NRMC) in Sari Joy village, Chokar watershed.

Morning Session: 1) Introduction to the Rustaq NRM Study
The CDE research team received a warm welcome by the members of the NRMC Sari Joy. Mirzo, the session moderator welcomed all the participants and in his opening remarks explained the purpose of the FGD and the program for the whole day. It was stressed that the only purpose of the study is learning about the experience of local land users about the SLM practices they are carrying out and help new communities to make a decision about implementing these practices.

During the introduction Habibullah, Deputy of the NRMC provided a good overview of all the SLM practices implemented by LIPT in Sari Joy. These include: Terraces, hedgerows, ferula on cropland; establishing gullies, implementing rotational grazing plans, construction of fodder bank and renovation of animal shed on grazing land; and reforestation, establishing orchards and vineyards, alfa-alfa sawing on forest land. Other participants were also helping Habibullah with reminding him the different practices and on which land they have been implemented.

There was an impression that some of the participants were not fully understanding and taking part in the discussion, although both Mirzo and myself were speaking Tajik. All the participants were Uzbek, but were speaking Dari rather good. Due to slight language differences in Tajik and Dari we were checking every time whether everything is clear for the participants and also Mia Jan and Hekmat were helping to explain with the locally used names.

Morning Session: 2) Participatory land use mapping
The second exercise involved two types of maps: A large map of Sari Joy village and a small map, which shows different land use types in Sari Joy using different colors.

Right after the participants learned that the large map shows their village Sari Joy, all of them looked very pleased and excited to look closer at their map. Despite our expectations that it will take some time and effort for the participants to read the map, most of them found it quite an easy task and located the village roads, separate houses and own land very easily. They also pointed to the borders where the village land finishes and these borders were delimitated accordingly. Most of the land is referred to as crop land and grazing land. There were very small plots of forest land. The LU types were easily found on the map and marked with a marker. Four types of soil in Sari Joy were identified on the map: - Dark soil is good and best for agriculture;

- Light or white soil is of average quality;
- Red soil is considered as a bad soil and is not good for agriculture.
- Mixed soil is referred to a mixture of sand and small rocks or gravel. It is also considered as average quality soil.

The group work of identifying and marking with a pin all the SLM plots on the map gave a way to a very lively discussion among the group. Each group consisting of SLM practices on cropland (yellow), grazing land (green) and forest/orchards (red) was searching for the plots on the map and pin pointing them. The exercise was done with a great interest and curiosity of the participants. They managed to identify not only their own SLM plots, but also all the SLM practices that have been implemented in the village so far. In addition to that they could tell the names of each land user who implemented a certain practice. Therefore, besides locating the SLM plots on each LU type, it was possible to attach names of the specific land owner of each SLM practice. Yellow stickers for cropland, red stickers for forest/orchard and orange stickers for grazing land.

Pic. 1. Land use mapping with FGD participants.

As the mapping exercise revealed, great majority of the SLM plots have been carried out on crop land, second comes forest/orchard and fewer practices are implemented on grazing land. However, during land use mapping, forest/orchard land was occupying smaller area than grazing land. It might be due to the fact that most orchards and reforestation have been undertaking on a land that was previously a cropland.

The mapping exercise also revealed some replications of the SLM practices. Few terraces were identified on the map using blue color pins. When asked about other traditional good practices of land use in the village, the participants referred to “Hayota”, which is the method of putting a fence from stone and mud around the field. Mostly wheat and other fodder crops are cultivated in this field. Such plots are usually located outside the village on a rainfed land. Hayota is considered rather beneficial in terms of high crop yields, but also requires resources such as erecting the fence, cultivating the land, etc.

The three groups were not working separately from each other, but constantly exchanging, correcting this or that SLM plot location and some were even arguing to support their opinion. There were about three participants who were reading the map very well and thereby helping others to find a specific land on the map. Particularly Qudratullah was very well aware about all land locations within the village and could identify the land and its owner quickly. He and Habibullah were the only literate in the group who could read and write, which made it easier to carry out the exercise.

Going to the field. After the mapping exercise within the groups was completed, all went outside to see the area. It was difficult to bring the map outside since it had all the pins and stickers on it, which were falling off from the map when it was lifted. It was decided to take the spare clean map to the field to continue the exercise. It took about 10 minutes to walk to a location with an overview of the village. However in addition to the SLM plots that were identified during the mapping exercise, no additional plots were pointed.

The big map with all the SLM pins and stickers was placed on the wall of the NRMC room. The map will be used for further mapping exercise with other FGDs in the village. The participants gladly accepted the proposal to keep the map there after the completion of the FGDs and all the land users can use the map to locate their lands and SLM plots.

Afternoon Session: 1) Knowledge on the implementation of SLM practices and future plans (Multi-criteria matrix)

The purpose of the exercise in the afternoon session was to rate all the SLM practices based on the multi-criteria matrix with six categories. The ranking is done with the use of three colors: Green (Positive- +1),

Yellow (No effect-0), Red (Negative- -1).

It required some time to explain to the participants how to do the exercise. Compared to the mapping exercise this exercise seemed more challenging for the group. It had to be done slowly and confirming whether the group understood the question the moderator asks. Working with a table of several categories and assigning a certain rank to the technology was not very clear. Particularly the three ranking system - Green (Positive- +1), Yellow (No effect-0), Red (Negative- -1) was difficult to comprehend for many participants. For example, it was hard to differentiate between "No effect" and "Negative" effect. The questions for the specific column had to be formulated in a very simple way, according to the perception of the land user, the way he does in practice how each SLM practice is established, managed and what resources are needed for it. Gradually, moving from one column to the next the process went smoother.

Pic.2. Example of exercise using the Multi-criteria Matrix.

Plenary discussion:
After the exercise was completed, the groups presented their results. Some participants did not agree with the overall points that certain SLM practices achieved. For example, there were participants who did not agree that orchards are resisting to droughts, while others were against this view. Each group was checking the outcome of the other group work and commented on the way they assigned different colors to the technologies. Minor adjustments were made then based on the general consent by the participants. In general, the group seemed very proud to have completed the exercise and see the outcome of their work.

Adaptations to the SLM practices. No adaptations have been made in any of the technologies implemented. The group members were stressing that they always follow the guidelines of the LIPT engineers for establishing the practices. Nevertheless, there was a feeling that the participants were reluctant to reveal any changes even if such changes were made because it is something wrong. The presence of LIPT staff in the FGD could have been the reason for giving only positive feedback for the SLM practices and not openly talking about the adaptations. Although it was repeated continuously that the purpose of the FGD is not assessing the LIPT project and the research will not affect the activities of LIPT in Sari Joy, but on the contrary, the aim is to try to help the project work, it was explained.
The group recommended all SLM practices for implementation in other areas. They mentioned that the neighboring villages (e.g. Chashmakon) already saw their work and have started some practices in their own village.

When the group saw the picture from China depicting the terraced hills, they were extremely impressed. It was expressed that in their own village should be also like this. They would like to increase the orchards, create more terraces. Farmers, who received project support at the beginning, have replicated the SLM practices on another plot without project support. There are also those who did not work with the project, but replicated the SLM practices learning from their neighbors in the village.

To sum both exercises and the discussions among the participants, most well known and popular among the group were terraces, hedgerows and orchards.

Focus group discussion Notes
FGD 2- Cropland in Sari Joy, 18.10.2016

Exercise 1: Individual and group evaluation of the SLM technologies

About half of the total 16 participants were NRMC members, who took part at the FGD with NRMC. Prior to starting the FGD we checked the list of participants to see who showed up from our list of people. All the names of the participants and the technology they have done were noted down. Afterwards the Protocols for Land users (PLUs) were numbered according to the list of participants. Also the name of the technology was written on top of the PLU to make sure that the participant will talk only about this specific technology and not another. Many land users usually are involved in more than one SLM practice implementation and tend to talk in general about all practices or move from one to another without specifying the type of the technology. Such measures allowed us to track the land user PLU when entering the data and collecting the notes. It was stressed for the participants that they will talk only about SLM practices, which are established on cropland and that each participant talks only about the technology he is establishing on cropland, e.g. hedgerow (local *khati sabz*), terrace (*palbandi*) or medicinal plants (licorice (*shirinbia*) or ferula (*hing*)). Important point to remember is that although on the pictures one person has no number because he came late, but his number is No16 (Jumakhan). Habibullah has No16 on the pictures, but it was changed to No6. On the actual list and PLUs Jumakhan No16 and Habibullah No6. This is just in case if someone compares the pictures and not to get confused.

Pic.1. Badges with participants' number, which corresponds to their PLU number

When all the PLUs and the pens were distributed to the participants and the FGD started with the first exercise, we noticed that almost none of the participants knows how to use a pen. This caused some changes in the work flow. Instead of asking each participant to fill in the space on their own, each of the facilitators had to approach a participant to help him fill in the answer according to the question asked by the moderator. Since there were three facilitators and one moderator, the process went rather fast.

Discussion in plenary:

=> Note taker please take

a) Group discussion on the following questions:

- ✓ **Regarding land use rights: On which land do you usually implement SLM technologies (private, leased or mortgaged) and why? What are your recommendations what type of land user rights are best when implementing a specific SLM technology (terracing, orchards, pasture improvement etc.) ?**

minutes of the key issues of the discussion!

All participants own a private land only and the SLM practices have been implemented exclusively on private land. They stated that **P12**: there is no use to implement the technology on a leased land. Better to implement the practice on a private land. Concerning other land use type such as leased or mortgaged, it was noted that: **P14** there are those who did the technology on someone else's land, but largely, there is no use of doing it on other's land than private land if the result of your work is taken by others.

None of the participants supported the option of implementing a certain technology on leased or mortgaged land considering it as a waste of time and work.

The average area of the SLM plot on cropland is about 1-3 jirib.

- ✓ **Regarding livestock: Is owning certain livestock (e.g. bulls, donkeys) an advantage when implementing the technology? Or on the contrary, is the implementation of certain SLM practices a disadvantage for livestock owners (e.g. when grazing animals on the cropland)?**

There was an impression that the participants did not want to disclose the number of the livestock they own. Every time asked about their cows, chicken, etc. there was a long thinking before they replied. Similar observation was about the land ownership. The number of livestock and land are key for determining the wellbeing of a household in the village. The more land and livestock you own the richer you are and vice versa. Could it be that revealing their actual wealth status might have some kind of implications? Nevertheless, this might be a question for the Socio-economic survey to answer.

In my opinion, linking owning a livestock and implementation of the technologies, such as terraces, hedgerows and medicinal plants, was not fully understood by the participants. Although there were remarks that **P14:** livestock is not used for establishing terraces and there is no advantage from owning it. While, another participant stated **P2:** the negative impact of livestock, such as cattle can destroy the crops planted in hedgerows.

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

Protocol paragraph 2. SLM Plot: **Do you recommend any adaptations on the SLM practices?**

Nothing was said about any adaptations on the technology. First, it was understood that they really don't have anything to say on this. Then there was an impression that the participants were not willing to say openly about any changes they have done or would like to do in the presence of MiaJan and Hekmat. Because they were from the Project and changing something would not be something they approve. Despite the clarification about the purpose of adaptations, no comments were made at all.

During group work on WOCAT Section 4. – technical specifications, activities and costs, it was observed how one of the facilitators tried to lead the group towards the exact costs that have been filled in advance. The costs for certain inputs that the participants provided were slightly lower than project estimations. It had to be explained to both facilitators again that the information provided by the farmers about their activities for establishment, inputs and costs is important and should be used to make corrections in Section 4 pages.

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

Protocol paragraph 3. Inputs: Private contribution and project support

b) Plenary discussion questions (for each technology separately):

- ✓ **Are there inputs that cannot be covered by an individual farmer, but project support is needed?**

To decide which input is more important than others by marking 3 ticks for most important and 2 tick for second most important, presented a difficult task for the participants. Understandably, for the farmers all the inputs required for agricultural work are equally important. Nevertheless, **P6**fertilizers and seeds were identified as most important inputs for establishing the technologies. These were also the inputs that the farmers themselves cannot afford to buy because of the high prices which results in high costs for establishment. And they need external support to obtain them.

It was pointed that **P6**if the farmers had money, they would provide all the inputs themselves without depending on someone's help.

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

Protocol paragraph 4. Benefits

What advice can you give to other farmers that are deciding on implementing an SLM technology: What benefit has exceeded your expectation? What expectation has not been met (yet)?

The plenary discussion on benefits of the SLM practice was perhaps the liveliest discussion in the group. The participants suggested that **P12&P6:** all the technologies such as terraces, hedgerows, planting licorice and ferula should be implemented by others also because of all the benefits that they can provide.

Regarding their expectations about implementing the SLM practices there were different opinions. **P2**: that all the expectations that had about the technology were met. Without terraces 10 ser of wheat was harvested, after establishing the terraces 20 ser can be harvest from the land. Another said **P8**: It was expected that the farmers will harvest 30 ser from 1 jirib of land, but this expectation was not fulfilled. If there is more cooperation to establish these technologies, it is even better. Same opinion was also expressed by **P12** that his expectations of receiving higher yields were not met.

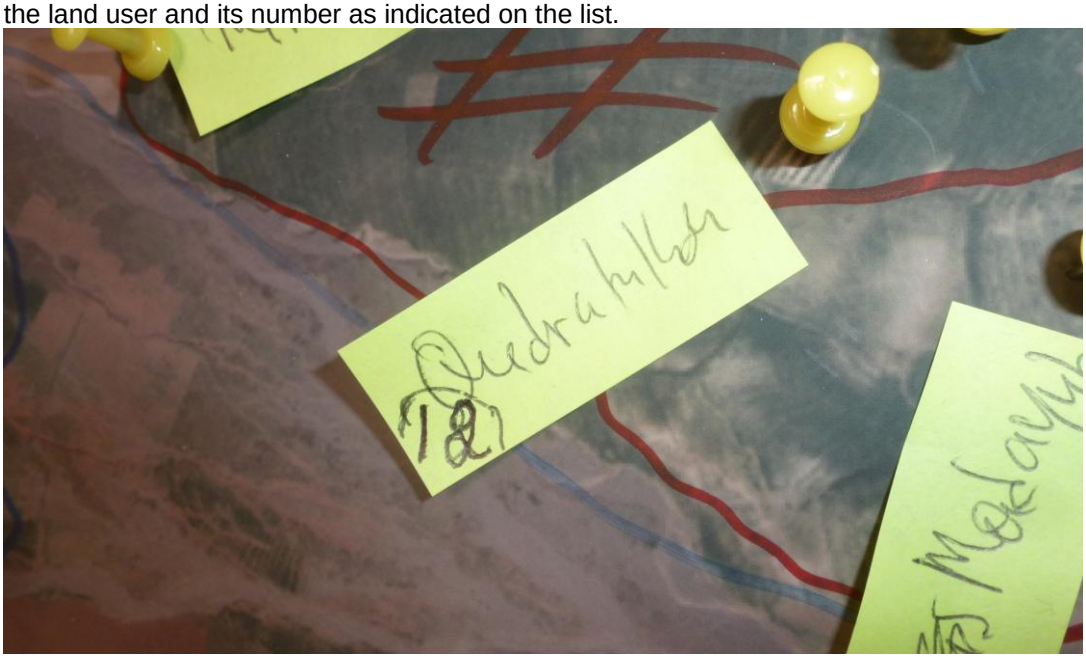
When working on Off-site ecological benefits, the participant were surprised to learn that the work they are doing on their own plot might have impact on surrounding area as well. Some **P13** claimed that their neighbor's land will not have anything from their practices, because all the benefits remain within the plot.

After the exercise with the PLU was completed, the facilitators wrote down the name of the participants and date of implementation on the PLUs before collecting them.

Exercise 2: **Location of SLM plot**

Plenary discussion: **Where do you recommend implementing the SLM technology?**
On bad lands (for mitigating and rehabilitating the land)?
On good lands (for conserving the land)?

During the first day FGD with NRMC the plots of all the technologies were marked on the map with pins of three colors and a sticker was attached to each plot with the name of the owner/land user. This map from the previous FGD was used for this exercise to allocate or confirm the plots of all the participants, who established technologies on cropland. Since many plots for cropland were already marked during NRMC and the map was covered with stickers, it was suggested to follow the list of participants and mark the plot of the SLM technology on cropland with a yellow pin and yellow sticker, which has the name of the land user and its number as indicated on the list.



Pic. 2. Example of marking a terrace plot on cropland owned by No12 Qudratullah.

Many had difficult to detect their land or simply follow the map. Only few members of the group could easily read the map. They were able to help with identifying the plots of other participants as well. All the plots of the FGD participants were marked with a pin and sticker.

The SLM technologies are mostly established on **P6** good lands with higher fertility. Bad lands those which have red soil and mixed type of rocks and sand are used mainly for grazing the cattle. Nothing can be grown there.

After completing the exercise with the map, it was explained to the group that the map will stay in the room of the NRMC to be used for the following FGD. After all the FGDs are completed the map will not be removed and all the land users can continue to use it and allocate their new SLM plots in the future. It was the only map in the NRMC room.

Exercise 3: Knowledge on the implementation of SLM practices and future plans

Plenary discussion:

1. **Compare the resulting points adding up for each row (for each technology)**
   - **Do the points reflect their personal preferences?**

For the exercise with the Multi-criteria matrix for cropland the participants were asked to rank each technology based on the six categories and using three types of color cards. It was observed during the exercise, that the participants wanted to say only positive things about the technologies without revealing its weak sides. After completing the exercise, the results of the group work was discussed in the plenary. When each technology was analyzed, some didn't agree with the overall scores. For example, it was argued by **P6** that total 10 points that ferula received is lower than the points for Hayota (traditional fenced field) and it is not correct. The reason for this is that even though now ferula has not been beneficial because it can't be harvested yet (only in 5 years), but it has much higher long-term perspectives than hayota. Thus, the benefits of ferula are perceived to be potentially higher. After some discussion, the total points were revised. Overall, the participants wanted to give only high points to the technologies, particularly to terraces, so their overall ranking is high. Although it was explained that the ranking is important it will not have any influence on the way each technology will be analyzed.

Pic.3. Ranking of technologies on Cropland using the Multi-criteria matrix.

There was some difficulty for the participants to differentiate between the meaning of each colour, i.e. Green (Positive- +1), Yellow (No effect-0), Red (Negative- -1).The confusion of how to be specific with defining "No effect" and "Negative effect" was slowing down the group work. For them it was black and white and there is no middle ground. The moderator made some effort to clarify these differences for the participants to have better understand of how to assign the colors.

2. **What would you recommend to other farmers? What SLM practices should be implemented, by what types of families, where, when, and what type of impact can be expected?**

This question has been answered above, under Protocol. Paragraph.4 Benefits.

It was mentioned **P2**: that other farmers in the village around Sari Joy already doing the same SLM practices in the villages. They saw it in Sari Joy and decided to implement them without getting any support.

3. **And what is the outlook for their own community? The facilitator may show a picture from terraced slopes in China as an example.**

The participants were rather fascinated with the fully terraced slopes of China and commented that one day Sari Joy could be like this in years to come. **P12** expressed that

they will try to continue the SLM practices in the future, such as terraces. It was said that **P6** many villagers are also very interested in working with the project. Some are already doing the SLM practices themselves without any support.

Focus group discussion Notes
FGD4 Forests/Orchards in Sari Joy, 22.11.2016

Exercise 1: Individual and group evaluation of the SLM technologies

General notes

At the FGD4 on Forest and Orchards there were total of 14 participants. The following SLM technologies were discussed: Reforestation (local name: *bunyodi jangal*), orchard (*bogh*) and vineyard (*boghi angur*), gully (*cheekdam*). Same as in the previous FGDs, each participant received the Protocol for Land Users (PLU) with his number on it and the type of technology implemented. It was stressed to the participants that they will fill in the PLU exclusively for the type of technology indicated on their PLU and not any other.

After completing the SLM plotting exercise and before Lunch, several video clips were shown to the participants. These were WOCAT videos on various SLM practices implemented in Tajikistan, such as, gully treatment, rotational grazing, orchards (agroforestry) and watershed management. All the videos were in Tajik and allowed for the participants directly learn from the experience of Tajik land users with similar SLM practices. They were very excited. Most of them for the first time saw the farmers from their neighboring country. Although, there were several in the group who have travelled to Tajikistan for seasonal work to harvest ferula and other work. The participants were pleased to see the work that is done by the farmers on the video. Thus, it could be said that such videos are very helpful to showcase the results of the SLM practices and also provide a visualization of what the land users could expect from their own work.

Pic.1. The participants watching WOCAT SLM videos from Tajikistan.

Compared to the FGD NRMC, FGD2&3, the present FGD4, which was the last one in Sari Joy village (with the men), there was even more open atmosphere, where all the participants seemed more relaxed and free to talk. It could be because some of the participants have already attended one or more than one FGD and they were well familiar with the purpose and process of the FGD. At the end of the FGD they were expressing very positive views about the benefit of such meeting and they way it was organized. Good words of appreciation were also said about the FGD moderator and facilitators.

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

b) Group discussion on the following questions:

- ✓ **Regarding land use rights: On which land do you usually implement SLM technologies (private, leased or mortgaged) and why? What are your recommendations what type of land user rights are best when implementing a specific SLM technology (terracing, orchards, pasture improvement etc.) ?**

All of the technologies have been implemented on private land, except the gullies, which were built on common land. Reforestation, orchard and vineyards are **P12:** always established on private land, because **P4:** working on someone else's land, e.g. on a mortgaged land does not bring much benefit.

The exercise revealed that the great majority of the technologies are implemented on a cropland. Only few plots for reforestation were identified as forest land. The reason for this might be that in Afghanistan, there is no a clear division of land into different land use types. The land use system in the country despite many efforts to introduce the Land Code and land cadastre, remains very unorganized and largely the traditional land ownership are prevalent throughout the country.

- ✓ **Regarding livestock: Is owning certain livestock (e.g. bulls, donkeys) an advantage when implementing the technology? Or on the contrary, is the implementation of certain SLM practices a disadvantage for livestock owners (e.g. when grazing animals on the cropland)?**

The advantages of owning a livestock for the SLM technology comes from **P8:** the animal dung that is used as fertilizer for forest, orchards and vineyards. However, **P8:** livestock can damage the trees. **P9&P7:** Chickens can damage the orchard. In general, **P3:** all animals if left open can cause damage to the forest and orchard. **P9:** In spring and summer livestock can cause damage, in autumn it benefits from the advantages that the trees and grass provide.

The SLM technologies are regarded as beneficial for the land users. Apart from the trees/fruit trees that are planted on the plot, they also saw alfa-alfa in between the trees, which used for feeding the livestock. **P12:** The animals can also eat the leaves when they fall in autumn.

Protocol paragraph 2. SLM Plot: **Do you recommend any adaptations on the SLM practices?**

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

The participants provided many comments in this plenary, but they were not strictly adaptations. Adaptations are made based on the type of plot and what is planted there. It was noted that P3: depending on the observations there could be adjustments done to the design that was used initially. The farmers P8 would like to increase the area of the plot under SLM and P8&P9: use fertilizers such as animal dung to improve the growth of trees. Also they P14&P9: saw alfa-alfa seeds under the trees, both fruit and non-fruit trees

Protocol paragraph 3. Inputs: Private contribution and project support

b) Plenary discussion questions (for each technology separately):

- ✓ **Are there inputs that cannot be covered by an individual farmer, but project support is needed?**

The costs that are difficult to pay by the farmers are **P9:** labour costs, **P8**: costs for building a wall around the orchard and building the irrigation channel. Also **P9:** purchasing the seedling is costly for some, while others noted that **P1&P8:** they can provide tree seedlings themselves.

Overall, hand tools, fertilizers and seedlings were identified as most important inputs needed for the land users to implement the technologies. For gullies it is also construction materials for establishing the gullies.

Protocol paragraph 4. Benefits

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

What advice can you give to other farmers that are deciding on implementing an SLM technology: What benefit has exceeded your expectation? What expectation has not been met (yet)?

The plenary showed that the participants were not providing much feedback on reforestation. This was also seen in other exercises with the PLU. Although not openly said, however it could be inferred from the general talks and field observation, that reforestation measures within the project are less successful. The forest didn't survive because of lack of water, poor protection of the plot from livestock or simply poor maintenance.

P1: All SLM practices are recommended for implementation, especially **P8:** orchards and could even share seedlings with those who would like to establish orchards. However **P8:** some expectations were not in terms of variety of the trees. They expected to plant different types of fruit trees, but couldn't find the seedlings.

Orchards were highly appreciated among the group. There were few participants who have established big gardens without project support and are quite successful in it. They are also giving their fruit tree seedlings to others in the village.

Exercise 2: **Location of SLM plot**

Plenary discussion:

Where do you recommend implementing the SLM technology?
On bad lands (for mitigating and rehabilitating the land)?
On good lands (for conserving the land)?

P1: Forests and orchards are established where there is red and white soil. This type of soil is located in the more hilly areas with steeper slopes. White and red soil is less fertile than dark soil, which is good for cultivating cereals. At the same time good lands are preferred for the SLM practice over bad lands **P10:** because nothing grows on the bad lands.

The SLM plots of all the participants were located on the Overview map with red pins. Their names and numbers indicated on the pink stickers. All other stickers and pins for forest/orchard, grazing land and cropland that were not confirmed during the FGDs were removed from the map. The FGD4 map is the final map of the FGDs in Sari Joy and this map is advised to be used for further activities of the research project, e.g. new mapping of SLM plots for Sari Joy. The map itself is placed in the NRMC office in Sari Joy. The images of the Overview map as well as images of separate plots are taken and saved in the folder "Field Data" -> "Sari Joy"-> "Pictures".

Exercise 3: Knowledge on the implementation of SLM practices and future plans

Plenary discussion:

4. **Compare the resulting points adding up for each row (for each technology)**
   - **Do the points reflect their personal preferences?**

The exercise provides a nice opportunity for the participants to analyze the different technologies based on the categories presented in the Multi-Criteria matrix. However, the number of points that are given to each technology using the different colour cards influenced the perception of the participants. They tried to give higher points to the technology regardless of the actual benefits/costs or impacts it had. It was done in a way to avoid lower total points for the technology as it is understood as a negative feedback. It was explained at the beginning of the exercise that lower points do not imply that the technology is worse than others, and assigning points is solely for the purpose of analysis.

Nevertheless, during the plenary session some of the participants argued that **P9:** it is not correct, "Orchard" should receive higher points than "Gully". This is due to the higher benefits that orchards provide both for the household and the environment. In terms of establishment, **P1:** Reforestation and establishment of orchards is the same level of difficulty of establishment. They require a lot of water. On red soil forests are watered three years in a row so they survive and grow.

Pic. 2. Final results of the Multi-criteria ranking in Forest land/Orchards.

5. **What would you recommend to other farmers? What SLM practices should be implemented, by what types of families, where, when, and what type of impact can be expected?**

(Some of the recommendations are provided in Exercise 1. Protocol paragraph4. Benefits).

It was recommended that **P9:** even those families that don't have a big land or the inputs, they can work with these technologies. Maybe they can't do exactly the same as it is done with the support of the project, but a little different way.

6. **And what is the outlook for their own community? The facilitator may show a picture from terraced slopes in China as an example.**

As usual, the question about the vision of the participants about how their would like to see their village in the future, brings many aspirations. The participants are full of good plans and intentions for their village. Among the most common replies were that: **P1:** the land users would like to increase the SLM plots, because **P8:** a lot was learned from the project about how to establish forest, orchard and gullies. Although, it was noted that **P1&P9:** without any support, some of the work is difficult to do and there are only few families who can do it on their own.

Focus group discussion Notes
FGD 3 Grazing Land, Sari Joy, 20.10.2016

Exercise 1: Individual and group evaluation of the SLM technologies

General notes

The FGD on Grazing land was conducted following the same procedure as for the FGD Cropland. The list of participants (12 in total) was rechecked again and the PLUs were numbered based on the list. The type of technology was noted on top of the PLUs. There were total of four technologies: Grazing plan (local name: *molchar*), Fodder bank (*kahdon/somonkhona*), Stable (*tabela/oghil*), Pasture rehabilitation with alf-alfa (*koridani rishqa dar charogoh*). The list of land users names and their technology is also helpful for identifying the SLM plots of the land users.

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

c) Group discussion on the following questions:

✓ **Regarding land use rights: On which land do you usually implement SLM technologies (private, leased or mortgaged) and why? What are your recommendations what type of land user rights are best when implementing a specific SLM technology (terracing, orchards, pasture improvement etc.) ?**

Such technologies as Stable and Alfa-alfa sawing have been established on private land. The Fodder bank which is only one in the village was built on a common land. Regarding the land use rights for Grazing plan, there was lack of clarity during the discussion whether the technology is established on private land or on common land. It can been seen on the PLUs that those who indicated grazing plans on common land, have been changed to private land.

The project responsible person for grazing and livestock explained that there are those who have grazing plans for private land and there is also a common land where grazing plan has been introduced.

The participants themselves stated that **P3&P5:** it is better to establish the technology on a private land. **P1**: If it is a mortgaged land, the owner takes everything for himself.

Important to remember is that alfa-alfa is used not only for pasture rehabilitation, both private and common land, but also for intercropping in forests and orchards. However, during the FGD, alfa-alfa was documented only for pasture rehabilitation on grazing land.

✓ **Regarding livestock: Is owning certain livestock (e.g. bulls, donkeys) an advantage when implementing the technology? Or on the contrary, is the implementation of certain SLM practices a disadvantage for livestock owners (e.g. when grazing animals on the cropland)?**

All households strongly rely on their livestock for living, for agricultural work, fetching water and transporting hay and fuel wood. Most common are donkeys, goats and cows. Very few own horses.

The implementation of all technologies was understood beneficial for livestock keeping in general, because it provides better fodder for the animals. **P10&P1**: The animals become stronger and fat when they are fed with alfa-alfa. Also it was mentioned that such animal as **P4&P6:** donkeys, cows and horses can uproot and damage the alfa-alfa which was sawed.

Discussion in plenary:

Protocol paragraph 2. SLM Plot: **Do you recommend any adaptations on the SLM practices?**

=> Note taker please take minutes of the key issues of the

During the exercise on WOCAT Section 4. for Grazing plan, it took some efforts to identify all the establishment steps with the group. They did not know very well how the rotation of cattle grazing is done, but mostly spoke about sawing alfa-alfa and hay making. Therefore it was questioned whether grazing plan is

discussion!

actually implemented in practice or not. It revealed that either the participants don't fully understand what a grazing plan is or they are simply not that interested in this type of technology. They were mixing it with pasture rehabilitation using alfa-alfa.

There were some concerns that **P5:** in five years alfa-alfa will be gone and they will have to start the same work again. **P6:** If fertilizer will be given for alfa-alfa, then it will be better.

Same as during the FGD on Cropland, there were no open statements regarding adaptations that have been made or any suggestions to introduce adaptations on these SLM practices.

Protocol paragraph 3. Inputs: Private contribution and project support

b) Plenary discussion questions (for each technology separately):

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

- ✓ **Are there inputs that cannot be covered by an individual farmer, but project support is needed?**

For many participants it was difficult to decide between the most important (3 ticks) and second most important (2 ticks) inputs, either from own contribution or from the project.

Farmers mentioned that for the establishment activities they **P5:** can only plough the land with animal traction, but cannot afford to pay for labour costs and equipment needed**. P4:** Fodder bank is difficult to do without support because there are too many costs for establishment. In general, without any help, the farmers themselves would not have the capacity to carry the technologies alone. Even for some technologies where not so many resources need, it was said that **P3:** Stable is easier to do, but still need some project support for the main costs. This participant also added that they would like to get more seeds, build a bigger stable and another fodder bank.

Discussion in plenary:

While filling Paragraph 3, many participants reported that they received chemical fertilizer from the project for alfa-alfa, which was then marked under "Project contribution". However the project staff who was helping with the FGD said that the land users did not receive chemical fertilizer from the project for their work. For some reason, the project staff was not willing to admit that it distributed chemical fertilizer for establishing the technologies. Claiming that only organic fertilizer is used. Perhaps they have been informed from somewhere that chemicals are not used at all for natural resource management.

Protocol paragraph 4. Benefits

What advice can you give to other farmers that are deciding on implementing an SLM technology: What benefit has exceeded your expectation? What expectation has not been met (yet)?

Concerning their expectations, from the overall discussion it could be concluded that they are not that satisfied with the results yet. As expressed by the land users, **P4**: it was expected that the size of the plots will be bigger, about 4-5 jiribs. But now the work is only on 1 jirib of land. Also **P4:** the Fodder bank has not been completely filled with hay so far, although it was expected to be full. Some noted that **P3:** Nothing exceeded their expectations.

Once all the sections of the PLUs were filled in, the facilitators wrote the name of the land user and the date of technology implementation on top of each PLU.

Exercise 2: **Location of SLM plot**

Plenary discussion:	**Where do you recommend implementing the SLM technology?** **On bad lands (for mitigating and rehabilitating the land)?** **On good lands (for conserving the land)?** The Sari Joy Overview map that was used for FGD NRMC and FGD Cropland, was used for this FGD. The procedure of SLM plotting was also the same as for the previous days. Since some of the SLM plots for grazing land were already identified and marked during the FGD NRMC, it was decided to confirm the location of participants' plots and add new plots if any plot is missing on the map. The SLM plots for grazing land were marked using green pins and green stickers. The name and number of the participants were noted on the sticker as provided in the list of participants. The remaining stickers that were not confirmed by the participants were removed from the map to ensure its consistency with the FGD work.  *Pic.1. Example of marking and SLM plot on grazing land.* The technologies for grazing land, such as grazing plan and alfa-alfa sawing are implemented mostly on bad land for its rehabilitation. **P4:** The good lands are used for cultivating crops, the bad lands for technologies to improve it. However, in case of alfa-alfa, it is also sawn in good lands, including orchards (comment by Qudratullah, who was an observer, but very helpful with mapping). At the end of the SLM plotting exercise the participants were told that the map is remaining in the NRMC room for the next FGD and for using in the future for all land users in Sari Joy.

Exercise 3: Knowledge on the implementation of SLM practices and future plans

Plenary discussion:	**7. Compare the resulting points adding up for each row (for each technology)** - **Do the points reflect their personal preferences?** During the evaluation of the pilot FGD NRMC and FGD Cropland, it was decided to alter the ranking system which is used for the Multi-criteria matrix. The reason was that during the pilot FGDs the participants had difficult to understand and differentiate between the proposed ranking. The new ranking of colours is explained as: Green-High (3), Yellow-Medium (2), Red – Low (1). Although it does take some time for the participants to grasp the idea of working with such method, the new ranking made easier and faster for them to understand. At the plenary, when the points given to each technology were discussed, there were some arguments among the members concerning the benefits of Stable and Fodder bank for climate vulnerability. Mostly these two technologies were found almost useless or playing no role for increasing/decreasing resistance to extreme rainfalls or droughts. When asked why? There was no answer. In general, the participants were struggling to rank these two technologies on the Matrix and compare them with the other technologies. It was hard to fit them all together. After all the questions were cleared the participants agreed on the total points for each technology and mentioned **P4:** that now all the technologies are well represented with the points and should remain as it is.  *Pic.2. Final result of Exercise 3 using the Multi-criteria matrix.*
	8. What would you recommend to other farmers? What SLM practices should be implemented, by what types of families, where, when, and what type of impact can be expected? It was suggested that all the technologies implemented on grazing land linked to each other and complement each other nicely. Thus they should be all implemented together. For example: **P4:** implementation of rotational grazing is recommended during spring time, while alfa-alfa is good for winter. Some expressed that **P4**: there are farmers who are interested in the rotational grazing plan and would like to do it on their own land.
	9. And what is the outlook for their own community? The facilitator may show a picture from terraced slopes in China as an example. The participants had very positive outlook for the future of their village. They hope **P10:** to increase the area of the technologies that they are currently implementing. Although already **P4:** there are people who are doing the technologies themselves and some have the plans for implementation of certain technologies in the future.

Women Focus Group Discussion (WFGD)

Notes

- Sari Joy -
October 23, 2016

Aim of the meeting:	Group discussion with women to assess the costs and benefits of the SLM practices in Sari Joy village, Chakar watershed.
Participants:	29 female members from households, which implement SLM practices in Sari Joy village, Chakar watershed.
Brief background information about the WFGD	The FGDs with the women in rural Afghanistan was intended to bring forward the female perspective on the SLM activities that the LIPT project has been implementing in their respective villages. Any measures taken in the field are directly or indirectly affecting the daily life of women and it was important to learn from their perspective the overall impacts they have observed from these activities: how they have been involved in implementing SLM practices; how these SLM practices have influenced the family budget; what benefits are visible to women with regard to their own tasks in the house and in the field, as well as their leisure time; what is the impact on the children in the household. The program (guidelines) for the FGD with the women was prepared in a different fashion than those with the men. The guiding questions excluded the specifications and technical details about the technologies, calculations of the financial costs and inputs, etc. Initially, a simplified Draft Protocol was developed to serve as a basis for collecting individual inputs from each participant. However after extensive discussions with Aqila Heidery, SES team and Masuma, Tdh staff responsible for women projects, it was decided not to use the protocols during the WFGDs. The reason for this was the low level of literacy of women in the rural areas and the language barrier – great majority speak Uzbek only. Despite these hindering factors this Draft Protocol was used together with the WFGD Guidelines to tap into women's knowledge about the SLMs and understand their level of involvement in the implementation process, the impacts on their daily work, and the evaluation of the costs and benefits related to the SLM practices. Moreover, the Multi-Criteria Matrix was adapted for the Women FGD to obtain more systematized and in-depth data based on the table with various categories and the existing ranking system.

Session: 1) Introduction to the Rustaq NRM Study

The Focus Group Discussion with Women was organized in the house of the Sari Joy Deputy NRMC as proposed by the men during the previous FGDs and also by the Head and Deputy Head of the NRMC. While there were some fears that very few women will show up at the meeting due to a number of reasons, to our pleasant surprise 29 women in total attended the meeting. About less than half of them were not on time, but they were allowed to participate also. Such events involving only women are rare in the village and once they happen, all local women, apparently, are interested to attend even if not invited.
The list of names of all the participants was prepared together with the name of their male family member. Those who had close relatives in the NRMC were also marked on the list.

Once the list (of those present) was finalized, the moderator thanked all the participants for joining the FGD and introduced them with the purpose of the research, the reason behind involving the village women in the research and at the end presented the program for the day.

All the participants were Uzbek speaking and only 4-5 participants could speak Dari, few others said that they understand but cannot speak, the majority spoke Uzbek only. Masuma from Tdh Office helped with the translation from Dari to Uzbek. Not having a big experience in translating, she had to be told and reminded to translate everything that is being said by the moderator, by the participants and to translate on time and accurately. Masuma has visited Sari Joy village before and all men and women know her well.

Session: 2) Knowledge about SLM practices

Awareness about SLM practices. The first exercise of the WFGD was devoted to learn about the level of awareness of the participants about the SLM practices that have been introduced in the village by the LIPT project. The adapted Multi-Criteria Matrix and the relevant pictures of the technologies were used for this

exercise. Once the moderator was showing the picture of each technology and naming it, the participants could easily name and recognize all the technologies, namely: Terraces, hedgerows, ferula, gully treatment, rotational grazing plans, fodder bank and animal shed, reforestation, establishing orchards and vineyards, and alfa-alfa.
The participants learned about the SLM practices from their male family members, mostly husband or father in law. They also mentioned the staff of the LIPT projects that they referred to as engineers, who told them about the new practices.

Involvement in the implementation of the SLM practices. The women are taking part in the work process of all the practices, more active involvement in some and less in others, but they are involved in all the work. In addition to the field work as such, the women said that they have to prepare food and water and bring it to the site.

- *Reforestation: Women help to dig the holes, planting the trees, taking care of the trees, checking the forest to protect it from animals.*
- *Orchard and vineyards:* In orchards women help also with digging the holes, planting the trees and doing the maintenance work. They do the harvesting, hay making (the grass that grows under the trees) in summer-autumn season as well.
- *Terraces and hedgerows*: The women do the sawing of the seeds, weeding, hay making, carrying the hay sacks from the field. In addition to that the women should make sure that there is always food and water ready, which they also prepare and bring to the field with them.
- *Gully treatment:* For the work on gully treatment they help sometimes to fill in the sacks with sand, which are then used to build the gully treatment. They mostly help to provide food and water to the men who work. Usually the women have to walk long distances to reach the area where the work on the gully is carried out.
- *Rotational grazing*: Although it was expected that women are not that actively involved in cattle grazing and other work related to grazing land, however, during the discussion it was noted that on pastures, women do the same work as the men. They bring the animals to the grazing site, take part in sawing alfa-alfa on grazing land, help with hay making, collecting the hay and bringing it to the house.
- *Alfa-alfa sawing* is done both in orchards and on the grazing land and also involves women work, be it sawing, watering or haymaking in summer/autumn.
- *Stable (animal shed):* Almost all the work in the animal shed is done by women. They mentioned that men rarely enter the shed and they are the ones who take care of the animals, bring water and hay, and clean the shed from animal dung. They also dry the dung themselves with the help of their children. Every autumn they repair the roof of the shed by putting layers of clay, which is also done all by hand, but the men might do this work also.
- *Fodder bank:* Women help to bring the hay to the fodder bank and take it out when they needed for their cattle. This can be also a heavy work considering that there is only one fodder bank in the village and it might take a long walking distance to reach the fodder bank.
- *Ferula:* The input from women in ferula plantations involves planting the seeds, maintaining the field plot, watering, weeding.
- *Hayota:* The hayota plot can be either next to the house or located in other part of the village. Together with the men, women help to build/repair the wall around the plot, saw the crop seeds for wheat, alfa-alfa, etc and carry out maintenance activities.

Compatibility of the SLM practices with other household work for women and children.
It was already seen from the earlier questions that women and their children are very actively taking part in the work of almost all technologies, be it in the cropland, in the orchards or on pastures. The women noted they always have a lot of work to do and with the technologies it has changed. In fact since the start of the work they have to work more, but they see that this is for the benefit of their family. The only season that there is less work for them is in winter time, when there is no field work and only the usual house work.

The establishment costs for the SLM practices.
Such SLM practices as reforestation, orchards, alfa-alfa for animal fodder, gullies and animal shed were identified as requiring the highest expenditures among the rest of the technologies. While costs were relatively lower for terraces, ferula plantations and hayota. Hedgerows were ranked as least resource intensive and there were no costs resulting from the fodder bank construction, because they were fully covered by the LIPT project. At the same time some of the participants were aware that their family covered only a share of the expenses for the SLM practices and they received support from the project in the form of seeds, saplings/seedlings, fertilizer, equipment, construction material (for the animal shed).

The benefits achieved or expected benefits from the SLM practices.

The primary benefit that was attributed to the new technologies is the opportunity to get higher yields from their agricultural land, orchards or pastures. Better yield means that the family can also sell surplus produce and make some revenues for the family. In this regard such SLM practices as orchards and vineyards, forests, pastures and ferula are found most promising to increase the family income. Some participants mentioned that they haven't seen any difference from the work yet and the harvest has been the same as before the SLMs were introduced. While others mentioned that it can be seen that the crops grow better now and it also needs more work and longer time and in the future their yield will get better. There are very high expectations from ferula crops among the women. In few years, they said, the plants can be harvested and sold very expensive on the market.

How is the money spent in the household? Do you decide how to spend the money? Do you buy items you want for yourself?

A large share of the money in the household is spent on buying food products, such as wheat, oil, tea. Another large share is saved and spent for wedding preparations. When asked whether the women get to spend some money also for their own use, some women said that they are free to buy fabric for making own dresses, also buy jewelry and even gold. But men mostly go to the market and buy all the required stuff, including the women belongings. Other women mentioned that they go to the market together with their husbands and buy together what is needed for the house and for them also. Women always tend to know better what is needed in the house, unlike men, therefore the women have to decide also what should be bought in the market.

Are you interested in implementing additional SLM practices?
The participants expressed the interest in increasing the area of their current orchards, make a bigger stable and if new practices will be introduced in the village, they would like their family to get involved in these as well. It was mentioned that now they realized and saw that the project work is very useful for them. Although they know that the work will increase even more, however, this will bring them with more benefits and they are accepting it.

Would you recommend the SLM practices to your neighbors and other villages?
Many mentioned that they certainly would tell others also to take over the SLM practices that they have done, although there are already villagers who are doing orchards and terraces without Project support. Same is true for the neighboring villages, which have begun to work on some SLM practices after they saw it in Sari Joy. People already know that they shouldn't let the livestock in the orchards, because it will damage it.

Concluding remarks

Overall the FGD with the women in Sari Joy exceeded the expectations and refuted the fear of failure to conduct such type of activities with the local women. It was already mentioned in the beginning that there were several hindering factors for women to voice their opinion about the NRM activities in Sari Joy and for the female perspective to be reflected in the general assessment of the work. Perhaps the approach used to talk to the women was appropriate and more flexible, which allows gathering the required information, but at the same time provides the group with the opportunity to speak up freely. It is very crucial to look at the social status of the women in the rural settings. Women are responsible to do the daily household work, which is very demanding and difficult because of lack of electricity, shortage of water and fuel wood. Women have many children normally. From the 29 female participants five were pregnant and this was seen just by observation. Therefore the new work that the SLM practices involve means also more work for the women and more challenges to reconcile their household and family duties with the work of the SLM practices.

Having completed the FGD with the women in Sari Joy, it could be said that the tools used for the FGD exercises could be altered slightly to add more categories/questions and at the same time keep the rules simple and easy to comprehend for the target group. For example, they could be also divided in groups of land use type, or depending on the level of their involvement in the implementation, etc. The approach and tools used for WFGD have to be elaborated further.
Certainly, from the many participants who were eager to take part in the discussions, only several women were very actively talking throughout the exercises. The names of these participants were highlighted in yellow in the participants' lists. Some of them were the wives or close relatives of the NRMC members and also of those land users who took part in the previous FGDs in the village. This factor might have already influenced their perceptions and they might have come to the FGDs already "prepared", knowing what to say and how to take part in the FGD in general. Some of the participants themselves said that for the recent few days their families have been talking a lot about the FGD meetings held in the NRMC room,

which again points that such active exchanges have both positive and negative side to them. For the large part only good feedback was provided about all the SLMs and no shortcomings were point out, except the comments about more workload for women and the children in the family. Another key point, which was highlighted for the previous FGD with the men as well, is that the presence of project staff members does have an influencing factor during the discussions and in times openly helping the participants to answer in certain form or for example, support a particular technology during the ranking.

Focus Group Discussion Notes

FGD 1 NRMC – Jawaz Khana
October 24, 2016

Aim of the meeting: Discussion about the knowledge and experience of implementing SLM practices in Jawaz Khana village, Chakar watershed.

Participants: 11 Members of the Natural Resource Management Committee (NRMC) in Jawaz Khana village, Chakar watershed.

Morning Session: 1) Introduction to the Rustaq NRM Study

The research team was welcomed by the members of the NRMC Jawaz Khana in the village NRMC room. All members were present at the meeting, although many came with some delay. Mia Jan – as the moderator for the focus group discussion, welcomed all the participants. He explained the purpose of the FGD and the program for the whole day. It was stressed that the only purpose of the study is learning about the experience of local land users about the SLM practices they are implementing. This knowledge is important to help new communities to make the right decision about what practices to implement, how and where to implement them.

All of the participants were Uzbek-speaking and almost all spoke rather good Dari as well. To make sure that they don't have any difficult of understand, we stressed the importance of asking questions of clarification.

The Head of the NRMC, Abdul Jamil (he lives in Rustaq himself and is not permanently based in Jawazkhana) and the NRMC Secretary - Ishaq listed the SLM practices that have been implemented by LIPT in the village. The SLM practices that were named by them are: reforestation, orchards and vineyards, terraces, hedgerows, medicinal herbs (ferula), gullies, grazing plans, fodder bank, animal shed and alfa-alfa sawing.

Pic. 1. Identifying the SLM practices in Jawazkhana.

In addition to the SLM practices, the participants also named *Yakhdon* and *Hayota*, which are practices that have been used in the village as a form of local traditional land use. Hayota was already mentioned during the FGD in Sari Joy, where the community is also using this method of cultivating crops (fodder, wheat, etc.) on a plot fenced with a stone and clay wall. Yakhdon is a water reservoir built by the local people to collect snow during the winter season and use it for drinking and irrigation water in spring and summer. It is an average size (~2mx1mx2m) pool or ditch that is digged on the mountain top above the

village. In winter the people fill it in with the snow and cover it with hay or tree branches to protect from stones and rocks. No other construction materials are used and that is why every year yakhdons need maintenance. Many yakhdons in the village are out of use because the people have no capacity to restore them or build more sturdy yakhdons with cement and piped streams to carry the water to the village. Currently there are only 3-4 yakhdons in the village which is not enough to provide water to the whole village. It takes about 1-1,5 hrs to fetch water. It was mentioned that about 10 yakhdons would provide sufficient water to the community.

Morning Session: 2) Participatory land use mapping

It was pleasant to see how excited the participants are to see the map of their village and hurry to find their house or their land on it. At first it was not clear for them how locate the village on the map, but gradually with finding the roads it became more clear for them. Also the small land use map with different colors was helpful to show them the different land use types in the village. As we started identifying the borders of the village, the participants noticed that the map we provided is not accurate. Unfortunately, a large share of the village, mostly north-eastern and south-eastern parts have not been included in our map and the south-western part of the map does not belong to the actual area of Jawazkhana. The new village borders were drawn on the small map with the red marker.

Pic. 2. Locating SLM plots on the village map.

Compared to Sari Joy, Jawazkhana is extremely dry and has huge water shortage problem. The land is less fertile for cultivating agricultural corps. Despite this, people are growing crops and plant fruit trees. Most of the soil is identified as white soil that has average fertility and some areas of dark good soil. Very few areas of red soil in the village. Mixed soil (*gadwad*) – mixture of sand and gravel occupies some areas.

During the group work the participants were asked to identify the SLM plots on the map and mark them with the assigned colors of: yellow – cropland, green - grazing land and red – forests and orchards. Unfortunately the exercise revealed that many plots of orchards and forests implemented with the support of the LIPT project did not appear on the current map. These are the lands which are to the north and north-east of Jawazkhana. The plots of cultivating ferula and some other replication areas are also outside the actual map. As a result the actual map that was used for the SLM plotting exercise does not reflect all the activities that have been carried out in Jawazkhana by the project and the replications that the villagers have done. Nevertheless, the participants used the color pins to specify the locations of all those SLM plots that could be found on the current map. In addition to the LIPT plots, hayota and yakhdon locations were identified on the map with blue and white pins respectively.

For this exercise with the NRMC in Jawazkhana, it was decided not to put the stickers with the land users' names on the big map. Initially this was done in Sari Joy, which was useful to have an overview of all the plots of the land users in the village, however, at the following FGD's not all the land users participated and it caused confusion to determine to whom the plot belongs and requires time clear up the map. Therefore, in Jawazkhana only the pins were used to mark the SLM plots. The stickers with the respective names of the land owner will be attached during the next FGDs with the village farmers.

Although the final map of the exercise shows mostly yellow pins, i.e. most technologies implemented on cropland, however, it was already mentioned earlier that many forests, orchards and grazing areas are left outside of the actual map. It was clarified to the group that based on this participatory land use mapping exercise, an effort will be made to correct the map and create a new map of Jawaz Khana, where all existing SLM plots of the village can be identified. This clarification was made, in order to avoid any misunderstanding within the group and assure that all their work is equally important.

Overall, the group work went rather well. Certainly, not all of the participants were equally well familiar with how to read a map. There were 3-4 participants, which could read the map and identify the different village lands and their owners. These are also usually the land users, who are relatively active in the LIPT activities in the village.

At the end of the exercise the overview map with all the SLM plots marked with pins was placed on the NRMC wall. The map will be used during the following FGDs for cropland, grazing land and forest/orchards. The NRMC members were also informed that the map may stay in the NRMC room after all the FGDs are completed and can be used by the villagers for various purposes, e.g. working with the LIPT project.

Afternoon Session: 1) Knowledge on the implementation of SLM practices and future plans (Multi-criteria matrix)

For this exercise to assess the knowledge of the participants on the different technologies in Jawaz Khana, we used the adapted ranking system for the Multi-crateria matrix. While the six categories of the Matrix remained the same, the ranking system was changed to: Green (High - 3), Yellow (Medium - 2), Red (Low - 1). These adaptations were made based on the pilot FGDs with the NRMC and FGD Cropland in Sari Joy.

Pic.3. Group work on assessing SLM knowledge, using the Multi-criteria Matrix.

As usual at the first FGD in the village, the participants are not familiar with such type of activities and they have difficulty to grasp the idea of the exercise and the methods used in it. Therefore, at the beginning of the exercise it takes some time to allow the group to understand the meaning of the Matrix and each category in it, as well as the meaning of the three colours used to assign the technologies a specific rank.
It is very important to formulate the questions for each category in a clear and simple form. Even though

pictures are used for the certain category, e.g. floods, droughts, etc., however for the participants it is not clear. Each technology has to be linked with each category separately and vice versa, each category has to be linked to each technology to double check whether the group understood the question being asked.

Plenary discussion:
During the plenary session all the groups had the opportunity to look at each others' group work and discuss the points that have been given to a certain technology. Mostly actively were discussed orchards terraces and ferula. Since the work with ferula have just started in the village, the expectation about the revenues from it are quite high. This will need few more years of work. As for orchards, the farmers started planting new variety of fruit trees, such as pistachios and are very excited to see whether the harvest will be good or not. It also takes several years (about eight years) for pistachios to give yields.

Adaptations to the SLM practices.
The discussion on adaptations did not reveal any adaptations made by the land users. They stated that most of the time they work on the technologies the way they were shown by the Project and so far it is working this way. Some mentioned that it will need time to see whether they need to make any changes, for example with ferula and new fruit trees that they have planted.
All the technologies discussed during the FGD were positively evaluated by all and were recommended to be implemented in other places. Particular high interest was in ferula, establishing terraces and forest/orchards. It was mentioned that there are already some households who are planting fruit trees on their own after they saw it done by the project.

In Jawaz Khana a special interest was shown during the discussion about yakhdons and ferula cultivation. An immense shortage of water might be the reason for such high interest in these practices. Yakhdon will bring water to the community and ferula doesn't require irrigation. People have no interest to invest efforts and resources in the work, which eventually will not provide the expected benefit because of low harvest or complete lack of it. Therefore every SLM practice that is offered to the village must take into account the issue of water resources.

Focus group discussion Notes

FGD Crop Land -Jawazkhana

Exercise 1: Individual and group evaluation of the SLM technologies

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

a) Group discussion on the following questions:

- ✓ **Regarding land use rights: On which land do you usually implement SLM technologies (private, leased or mortgaged) and why? What are your recommendations what type of land user rights are best when implementing a specific SLM technology (terracing, orchards, pasture improvement etc.)?**

P15: In the private land terracing, hedgerows and medicinal herbs is good because all benefits go to the farmer. On leased and mortgaged land it is not good because the benefits are very low

P12: The leased land is not good for this technology since famers do not receive all benefits and income.

P1: The specific technology on the private land management is useful. We recommend it on the private land for income support. On the leased land it is not good

P4: The private land is good and useful for the cultivation of plants.

- ✓ **Regarding livestock: Is owning certain livestock (e.g. bulls, donkeys) an advantage when implementing the technology? Or on the contrary, is the implementation of certain SLM practices a disadvantage for livestock owners (e.g. when grazing animals on the cropland)?**

P16: The donkey and poultry damage and destroy the sustainable land management plots.

P2: The donkey and poultry damage and destroy the sustainable land management plots, but the cow, sheep and goat manure is benefit for soil fertility

P1, Animal manure is useful for agriculture land to improve the soil and fertility and to have good results

P9, The cow, sheep and goat manure is beneficial for soil fertility to increase the harvest

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

Protocol paragraph 2. SLM Plot: **Do you recommend any adaptations on the SLM practices?**

P15: We recommend to use animal traction and organic manure for these technologies for better results and to improve the production.

P4: Bring some changes to increase SLM practice. For example the stable is well constructed and now advice to farmers to have more such stables

P12: We want to increase the SLM technology on our own land to improve the village, to change its vegetation cover

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

Protocol paragraph 3. Inputs: Private contribution and project support

b) Plenary discussion questions (for each technology separately):

- ✓ **Are there inputs that cannot be covered by an individual farmer, but project support is needed?**

P1: The terracing technology cannot be done by farmer because it needs machinery and a lot of money as well hard work.

P10: The fertilizer and seeds of ferula cannot be covered by individual farmer so he needs project support.

P9: Land preparation can be done by famer like seed bad, animal traction, daily wage

P4: Increase ferula on their own land because it has good results**.**

Protocol paragraph 4. Benefits

What advice can you give to other farmers that are deciding on implementing an SLM technology: What benefit has exceeded your expectation? What expectation has not been met (yet)?

Discussion in plenary:

P10: Expectation is not met so far because all people in the village don't have economic capacity and have no access to seed and fertilizer.

P15: Expectation is almost met because under terracing harvesting result is good. We advise to the other farmers to start terraces on their private land.

P12: The production of cereal crops increased through terracing. Last year our harvesting was not good when we established the terracing technology on our private land the harvesting increased from 20 seers to 40 seers per jireb.

P4: Expectation is met because the farmers received more benefit from the terracing land. Also they replicated the technology on other land to control soil erosion.

Exercise 2: **Location of SLM plot**

Plenary discussion:	**Where do you recommend implementing the SLM technology?** **On bad lands (for mitigating and rehabilitating the land)?** **On good lands (for conserving the land)?** **P1:** On the good land and dark soil it is better because farmer is spending his time and gets results. If we use these technologies on the bad land our time is spent without of any results. **P4:** On the bad land it is good because the bad land will be changed to good land in the future.

Exercise 3: Knowledge on the implementation of SLM practices and future plans

Plenary discussion:	**1. Compare the resulting points adding up for each row (for each technology)** - **Do the points reflect their personal preferences?** **P12:** The resulting points are good for all technologies. All need hard work like reforestation and orchard establishment. **P15:** Medicinal herbs such as ferula need hard work. It has high economic benefit. **P3:** All resulting points are good. All the technologies provide a lot of benefit for us
	2. What would you recommend to other farmers? What SLM practices should be implemented, by what types of families, where, when, and what type of impact can be expected? **P10:** We recommended reforestation, orchard establishment and terracing technologies as well as alfalfa cultivation in orchard**s** **P11:** We advise to all farmers to do the SLM technology on their private land. **P4:** For all village families we recommend to establish SLM technology on their land to improve the village and decrease soil erosion. **P1:** Establish terraces on their own land because it has good results
	3. And what is the outlook for their own community? The facilitator may show a picture from terraced slopes in China as an example. **P7:** Increase the area of the technologies on own land to change the village to become prosperous and have good vegetation. **P1: C**ontinue the SLM technologies and establish gullies to change our village, improve the vegetation area and decrease soil erosion, like the example in the picture from china with terraces. **P13**: We will advise to other farmers to do the SLM practices on their land and keep it from soil erosion

Additional remarks by the note taker

The people are illiterate during the use of protocol to fill them the protocols but facilitate and notes taker help them during fill of protocols, so it was very difficult for two persons

Moreover, the participants are very active during the FDG they attend on time to the

Center in NRMCs room

Focus group discussion Notes

FGD Forest and Orchard – Jawazkhana

Exercise 1: Individual and group evaluation of the SLM technologies

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

b) Group discussion on the following questions:

- ✓ **Regarding land use rights: On which land do you usually implement SLM technologies (private, leased or mortgaged) and why? What are your recommendations what type of land user rights are best when implementing a specific SLM technology (terracing, orchards, pasture improvement etc.)?**

P3: In the private land and dark soil it is good because reforestation and orchard technology need maintenance. Also all benefits relate to the farmer. On leased land and mortgaged land is not good for these technologies, because these are long term technologies.

P2: The leased land is not good for the implementation of the technology because famers are not receiving the complete and high benefit.

P8: The specific technology on the private land is useful. We recommend these technologies to all farmers to establish on the private land.

- ✓ **Regarding livestock: Is owning certain livestock (e.g. bulls, donkeys) an advantage when implementing the technology? Or on the contrary, is the implementation of certain SLM practices a disadvantage for livestock owners (e.g. when grazing animals on the cropland)?**

P3: Animals damage the SLM but the manure has a benefit and useful for agriculture land to improve the soil structure and increase the soil fertility and productivity.

P10: The goat and donkey damage and destroy the sustainable land management plots trees and plants. The cow, sheep and goat manure has benefits for soil fertility

P1: The poultry damages the SLM plot but its manure for the agriculture land is very effective.

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

Protocol paragraph 2. SLM Plot: **Do you recommend any adaptations on the SLM practices?**

P1: No changes for adaptation. These technologies are good designed. We recommend to increase these technologies on private and common land to decrease soil erosion and achieve better results from forest and orchard.

P2: No need for changes to the SLM plot but we will extend the orchard and forest from one jirib to six jiribs

P3: More people are interested in the SLM technologies. They want to increase SLM technology on their own land to improve the village to change its vegetation and make it greener area.

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

Protocol paragraph 3. Inputs: Private contribution and project support

b) Plenary discussion questions (for each technology separately):

- ✓ **Are there inputs that cannot be covered by an individual farmer, but project support is needed?**

P6: Pits and digging for orchard and reforestation farmer can cover but the saplings and wall around cannot be covered by the farmer.

P7: The plantation of trees in orchard and reforestation areas can be covered by farmer but the chemical fertilizer and saplings for reforestation individual farmers cannot do, so he needs project support.

P1: Land preparation can be done by the famer like seed bed, animal traction

Protocol paragraph 4. Benefits

What advice can you give to other farmers that are deciding on implementing an SLM technology: What benefit has exceeded your expectation? What expectation has not been met (yet)?

P2: Expectation is met because the fruit quality is improved. Have good results from the previous years. Orchard fruit harvesting is increased and the village residents are very happy from the implementation of SLM plots.

P3: Increased alfa-alfa cultivation in the orchard to improve the soil structure as well use it for animal in winter season for better health.

Discussion in plenary:

P7: Expectation is not met so far because the village economic capacity is low. They have no access to the reforestation firewood and wood for construction.

Exercise 2: **Location of SLM plot**

Plenary discussion:	**Where do you recommend implementing the SLM technology?** **On bad lands (for mitigating and rehabilitating the land)?** **On good lands (for conserving the land)?** **P3:** On the good land and dark soil it is good. We recommended to the farmer to increase and implement it on the good land to achieved more harvesting**.** **P7:** On the bad land it is good because we want to change the bad land on the good land for next years. **P10:** If we establish forest on the good land other cultivation plant will be decreased in the village. We advise to farmers increase the forest and to change the bad land to good land for the next years.

Exercise 3: Knowledge on the implementation of SLM practices and future plans

Plenary discussion:	**4. Compare the resulting points adding up for each row (for each technology)** - **Do the points reflect their personal preferences?** **P3:** The resulting point is good and correct for all SLM technologies. Reforestation needs hard work. **P5:** The vineyard and fruit orchard result points are correct. We agree with this results it is Ok . It needs hard work to have good results. **P10:** The vineyard and orchards have benefits.
	5. What would you recommend to other farmers? What SLM practices should be implemented, by what types of families, where, when, and what type of impact can be expected? **P3:** We recommended the SLM technologies to develop our village in the future. **P1:** Advice to other farmer to do the SLM technology on their private land to decrease the soil erosion. **P10:** To all village families we recommend to implement the SLM technology on their land.
	6. And what is the outlook for their own community? The facilitator may show a picture from terraced slopes in China as an example. **P4:** Increase the technologies in the village to develop the village like in china and become a prosperous and greener area **P1:** We will continue the SLM technology to change our village to greener area and increase the forests and orchards for the control of soil erosion. **P3:** We advise to other farmers to do the SLM technology in the private land to prevent soil erosion and produce a good quality fruit for the market.

Additional remarks by the note taker

The people are illiterate during the use of protocol to fill them the protocols but facilitate and notes taker help them during fill of protocols, so it was very difficult for two persons

Moreover, the participants are very active during the FDG they attend on time to the Center in NRMCs room.

Focus group discussion Notes

FGD3 Grazing land - Jawazkhana

Exercise 1: Individual and group evaluation of the SLM technologies

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

c) Group discussion on the following questions:

- ✓ **Regarding land use rights: On which land do you usually implement SLM technologies (private, leased or mortgaged) and why? What are your recommendations what type of land user rights are best when implementing a specific SLM technology (terracing, orchards, pasture improvement etc.)?**

P3: On private land pasture rehabilitation, alfa-alfa cultivation, fodder bank, and stable is good because they benefit the farmer. Leased land and mortgaged land are not good for this technology.

P2: Leased land is not good for the implementation of the technology because famers do not receive the complete benefit.

P8: The specific technologies on the private land are useful. We recommended them on private land and dark soil for the support of famers' income.

- ✓ **Regarding livestock: Is owning certain livestock (e.g. bulls, donkeys) an advantage when implementing the technology? Or on the contrary, is the implementation of certain SLM practices a disadvantage for livestock owners (e.g. when grazing animals on the cropland)?**

P5: Animals damage the SLM, but its manure has benefits and useful for agriculture land to improve the soil structure and increase the soil fertility.

P2: Goats and donkey damage and destroy the sustainable land management plots but cow, sheep and goat manure has benefits for soil fertility

P1: Poultry damages the SLM plot but its manure for the agriculture land is very effective.

Protocol paragraph 2. SLM Plot: **Do you recommend any adaptations on the SLM practices?**

P2; We recommend changes to these technologies for better results to increase the production and harvesting.

P4: Make some changes, for example, stable is good. It was made bigger to 6m -8m

P8, We will increase the SLM technologies on the private land to improve the village, to change its vegetation.

Protocol paragraph 3. Inputs: Private contribution and project support

b) Plenary discussion questions (for each technology separately):

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

- ✓ **Are there inputs that cannot be covered by an individual farmer, but project support is needed?**

P2: All inputs for the technology can be covered by farmer, just daily wage cannot cover because of the low financial income.

P5: The construction material for stable and fodder bank cannot covered by

individual farmer and for this he needs project support.

P1: Land preparation can be covered, like seed bad, animal traction, reseeding the pasture for animal grazing

P9: The seeds and chemical fertilizer cannot be covered through farmer because they don't have access to the market.

Protocol paragraph 4. Benefits

What advice can you give to other farmers that are deciding on implementing an SLM technology: What benefit has exceeded your expectation? What expectation has not been met (yet)?

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

P7: Improved stable expectation is met by having good result for animal health we know about the effectiveness of the stable. Previous years the village residents faced with deferent animal diseases. Now the challenges are removed from our village.

P5: Alfa-alfa fodder increased for animals in the village. We collect it in summer and store it in the fodder bank. It is used for animal in winter season. Now our animal increased from 2 to 4 and the animal health is better than last years.

P10: Expectation is not met so far because the village economic capacity is low. There is no access to construction material to construct and improve the stable for animal and the fodder storage.

Exercise 2: **Location of SLM plot**

Plenary discussion:	**Where do you recommend implementing the SLM technology?** **On bad lands (for mitigating and rehabilitating the land)?** **On good lands (for conserving the land)?** **P2:** We recommended on the good land and dark soil because farmer spends his time and achieves good results. If we use this technology on the bad land our time will be spent without any results. **P5:** On the bad land it is good because the bad land will be change to the good land in the coming years. If we establish pasture on the good land other cultivation plant will be decreased in the village.

Exercise 3: Knowledge on the implementation of SLM practices and future plans

Plenary discussion:	**7. Compare the resulting points adding up for each row (for each technology)** - **Do the points reflect their personal preferences?** **P2:** The resulting point is good for all SLM technology. They need hard work like for fodder bank construction **P1:** Stable construction needs hard work because it has great benefit for animal. During rainstorm it is good for sheltering animals**.** **P5:** The fodder bank result points is good because during the winter season and drought year all fodder storage will be useful for animal to prevent the loss of animals
	8. What would you recommend to other farmers? What SLM practices should be implemented, by what types of families, where, when, and what type of impact can be expected? **P2:** Recommend SLM technology pasture rehabilitation, improved stable, fodder bank and alfa-alfa cultivation for animals to implement on their own land **P1:** Advice to other farmer to do the SLM technology in their land and improve stable for better animal's health. **P5:** For all village families we recommend the SLM technology to do it on their land
	9. And what is the outlook for their own community? The facilitator may show a picture from terraced slopes in China as an example. **P7:** Increase the technologies in the village, to developed the village like China and become a prosperous and greener area **P1:** We continue the SLM technology to change our village map and increase the SLM village level for control of soil erosion. **P3:** We advise other farmers to do the SLM technology in the private land to prevent soil erosion

Additional remarks by the note taker

The people are illiterate during the use of protocol to fill them the protocols but facilitate and notes taker help them during fill of protocols, so it was very difficult for two persons

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Center in NRMCs room

Women Focus Group Discussion (WFGD)

Notes

- Jawaz Khana-
October 26, 2016

Aim of the meeting:	Group discussion with women to assess the costs and benefits of the SLM practices in Jawaz Khana village, Chakar watershed.
Participants:	19 female members from households, which implement SLM practices in Jawaz Khana village, Chakar watershed.

Session: 1) Introduction to the Rustaq NRM Study

In Jawaz Khana the Focus Group Discussion with Women was organized in the NRMC room because it is located right in the middle of the village and not far for women to get there by walking. We had to wait about 30 minute for the group to come together. On that day there was a wedding in the village, but nevertheless total of 19 participants attended the FGD and many of them joined the discussion late. Same as in Sari Joy, the list of names of all the participants was prepared also noting the name of their male relative who is involved in the project activities. Those who had close relatives in the NRMC were also marked on the list.

In Jawaz Khana there were even less female FGD participants who could speak Dari and all of them spoke Uzbek only. There were two women who spoke some Dari. I had to rely on Masuma from Tdh Office for translation and on the few women who understand Dari to capture everything that is being said during the discussions.

Session: 2) Knowledge about SLM practices

Awareness about SLM practices. Using pictures of the technologies made it much easier for the work process and for the participants to know which technology is being discussed. Once they see the picture of a certain technology, the participants could easily name and recognize the technologies. In Jawaz Khana for the first time the women learned about the SLM practices from their husbands or father in law, because they attend the village meetings and meet with the project staff.

Involvement in the implementation of the SLM practices. The women said that same as men they work very hard on the technologies from the very beginning until now. Everything that the men do, the women also do or maybe even more then the men because women are in charge of cooking food and making tea. This means that they have to carry water on donkeys to cook food, bake bread and make tea. They also go to the hills to collect fuel wood and bring it on donkeys to their house.

- *Reforestation:* The SLM was not so well recognized by the women and it seemed that they didn't know much about tree plantations in the village. However, they wanted to show that they know it and work on it is well.
- *Orchards and vineyards:* Orchards were rather popular among the group. Women work very actively on fruit trees. They take care of the seedlings, dig the holes for planting the trees and water the trees. They also know what is mulching and do it in their orchards. New varieties of fruits such as almonds and persimmons have been introduced to the village by the project and the women were happy about it.
- *Terraces and hedgerows*: Although women mentioned that they knew terraces and hedgerows but they were having difficulties to name what they are doing. They know better terraces where some women help with sawing and harvesting. Some didn't recognized hedgerows at all.
- *Gully treatment:* For establishing the gully treatments women help to bring the construction material to the sight. They fill in the sacks with sand and bring it with a donkey. Also they bring the rocks to the construction site on a donkey.
- *Rotational grazing*: The grazing of cattle is also something that women do quite often. They bring the animals to the grazing area. However, they didn't know what is the rotational grazing about and how the areas have to be rotated.
- *Alfa-alfa sawing* was not identified by the women very well. They also could not explain very well where it is implemented and what work is involved.
- *Stable (animal shed):* In the animal shed women do almost all the work. They water and feed the

livestock, clean the shed from animal manure and make animal dung by drying it. To protect the shed from rain and snow, they repair the roof once or twice a year.

- *Fodder bank:* The participants new about the fodder bank in the village, but were not involved in the work related to it.
- *Ferula:* Ferula plots are located a bit far from the village and the women have to walk quite far to get there.
- *Hayota:* There are not so many hayota plots in the village because there is no water and crops don't grow very well. They require a lot of hard work to grow a good crop.
- *Yakhdon:* The yakhdons are out of use, but when they were working it helped a lot to make women's work easier and they didn't have to spend so much time to bring water.

Compatibility of the SLM practices with other household work for women and children.
Almost all the women in the group said that they work much more than the women on a daily basis. They always have to find time to do their household chores, such as cooking, cleaning, taking care of the children, looking after the livestock. Most of the young men are in Iran for work and there are only women and older men left in the village. This means most of the burden is on the women and their younger children, because the men cannot do all the work alone. With the new SLM practices their work increased even more, however, they women said that despite the hard work and inability to have some rest, they see that the SLM practices bring more wood and fruits for their household and for that they are ready to work.

The establishment costs for the SLM practices.
High establishment costs were identified for terraces, gullies, alfa-alfa, animal shed, reforestation, orchard and hayota. Although the women could not tell what are the costs/inputs provided by the project and what their household input is. They claimed that most of the costs they are paying themselves and they are very high. In general it was difficult to talk to them about the inputs.

The benefits achieved or expected benefits from the SLM practices.
The greatest benefit is seen in orchards, alfa-alfa sawing, animal shed and terraces. The mentioned that now on terraces they have higher yields of wheat and the hedgerows supposed to protect the soil from washing off by heavy rain. No benefits are seen so far from ferula. Some already harvest their grapes and fruit trees, but others are still waiting when it will be possible to get the harvest.

Are you interested in implementing additional SLM practices?
Overall the group reported that they would continue to work on the SLM practices that they have started. They will work on terraces and orchards and will try to increase them even without any support they might get. Although it is very hard work and sometimes difficult to do, they said, but they are used to it and will do it in the future also.

Would you recommend the SLM practices to your neighbors and other villages?
As it appeared the neighboring village has done the SLM practices ahead of them and even achieved much better results. They saw their work and also learned from them to do it. The participants expressed interest to learn new SLMs of how to improve their harvest in the cropland and in the orchard so they can produce more than it is now.

Concluding remarks

In Jawaz Khana the FGD with the women was not as active and the women talked less. This might be due first of all to language barrier, secondly to the fact that they are not used to participate in such type of activities and were hesitant to speak openly in a group. Also it might be because the project is not active in the village and the SLMs have not been very popular among the people. The participants did not know very much about all the SLM practices, however they could very well describe those SLM practices that they have implemented. It was a bit hard to make them talk and only 5-6 women talked from the whole group. Obviously, this means that the notes here represent the opinion not all of the participants but reflect the views of those who spoke out. If compared to Sari Joy Women FGD, the FGD with women in Jawaz Khana was conducted right after the FGD with the NRMC, which means that the men themselves were not still very well ware about what the discussions are and the word has not spread in the village yet. Perhaps if the WFGD was also held at the end, the women would have been more aware and open to discussions.

Interesting topic that came up in Jawaz Khana was that many women expressed their concern about

families without male head of the family. There are many families that have only a mother without a father, grandfather or any other adult male relative and they are not involved in the project activities because of that. These female-headed families are left out of such activities and have no other way of getting involved in them. So the women were asking whether the project could come up with activities that are either specifically targeted for women or should include both women and men. They were asking for the provision of sawing machine for women, who could use them to make dresses, etc. and by that provide income for the family.

Since the FGD was held in the NRMC room, the two NRMC members were helping with making the tea and the lunch, but at the beginning they would sit in the next room and listen to the discussions and answer to the question form the room. This made the women feel uncomfortable and not willing to talk. And when asked to close the door to the men's room, so we could talk in private, the women were not willing to close. At last we closed the door and were able to carry on with the exercises. Behind the closed door the women were lively talking with each other.

During the talks some women asked about the life in Tajikistan. They said that women in Tajikistan have a good life; Tajik women, they said, are free to walk and do what they want, they have very nice dresses and wear a small scarf with their faces open. I had to tell them that many women in Tajikistan also work very hard for their family. Same as Afghan women, they work very hard every day in the fields to grow wheat, cotton and vegetable and they take care of their cattle and household plots to grow fruit trees. I showed them the picture of my mother while she is sitting in the garden and cutting apples for drying. They were happy to see the picture and expressed that they would like to visit Tajikistan in order to see the life there.

Focus Group Discussion Notes

FGD 1 NRMC – Dashti Mirzai
October 25, 2016

Aim of the meeting: Discussion about the knowledge and experience of implementing SLM practices in Dashti Mirzai village, Chokar watershed.

Participants: 11 Members of the Natural Resource Management Committee (NRMC) in Dashti Mirzai village, Chokar watershed.

Morning Session: 1) Introduction to the Rustaq NRM Study

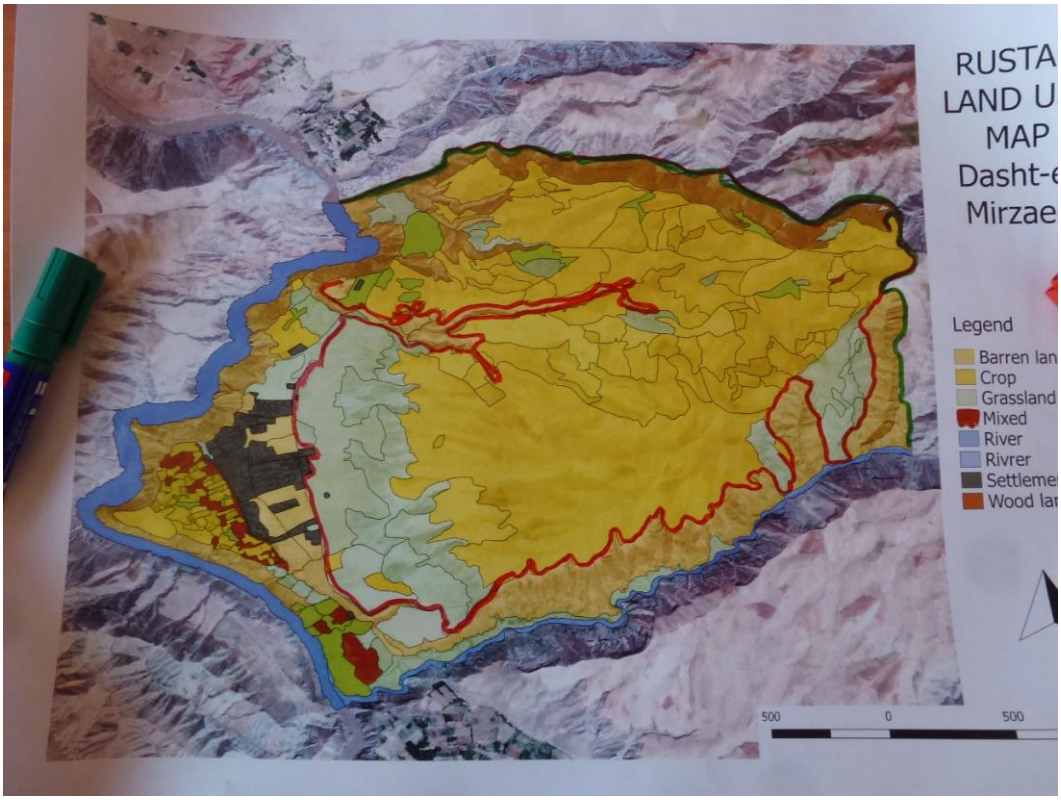
Dashti Mirzai was a special case to conduct the Focus Group Discussions. The majority of the men in the village are working for the Labour-based Road Construction Project (LBRC) implemented by Tdh. All 10 NRMC members were also working for the LBRC project and when asked to join the FGD, they were afraid to lose their daily wage or even lose their job if they will skip their work at the road construction site. The payments are made on a daily basis. To ensure the participation of all villagers involved in the LIPT project at all the FGDs planned in Dashti Mirzai, a meeting was held with Roger Markic, Head of the LBRC Project. Mr. Markic expressed his support to the NRM Study activities and allowed for his workers to take part in the FGDs as a special circumstance and also as part of cooperation with the LIPT project. The list of all FGD participants, who are working for the LBRC project was prepared and provided to the Head and Supervisors of the LBRC project. All the arrangements worked well and all the NRMC members were present at the first meeting. Before starting the introductory party, the participants were again informed about the agreement reached with the LBRC project. It was stressed that those people who are not on the FGD list, but have not gone to their work will not receive their payment from LBRC. At the same time those who skipped their work and were also not present at the FGD will also not receive their payment.

Mia Jan introduced to the participants the research team and talked about the purpose of the meeting, what is a focus group discussion and what activities will be accomplished during the day with the NRMC. It was stressed that the only purpose of the study is learning about the experience of local land users about the SLM practices they are implementing within the LIPT project. Their knowledge and experience is important to help new communities to make the right decision about what practices to implement, how and where to implement them.

As informed by Abdul Wasiy, Head of the NRMC Dashti Mirzai, there are total of eight type of technologies that have been implemented in the village, such as: terraces, - medicinal herbs (ferula and licorice), - orchards and vineyards, - reforestation, nursery, - fodder bank, - animal shed and alfa-alfa sawing for fodder.
Dashti Mirzai is the only village where pilot fruit nurseries have been established. Through the nurseries new variety of fruit trees were introduced in the village that were not planted there before, such as persimmons or Tajik khurma as they are called in Dashti Mirzai. . There are no hedgerows, gullies and grazing plans implemented in the village by the project. The traditional practice Hayota is also widely spread in the village.

Morning Session: 2) Participatory land use mapping

Most of the land in Dashti Mirzai is identified as cropland. The areas that have been marked on the land use map as grazing land were pointed as lands used primarily for cultivating agricultural crops. Hence, the large part of the previously identified grazing land/grassland was changed to a cropland on the small land use map and marked with the red color. The village borders in the North were marked using green marker (See. Pic.1). The village has mainly dark and light soils. Both soil types are considered good for agricultural use.



Pic. 1. Dashti Mirzai land use map adapted during the participatory land use mapping.

Most of SLM practices are implemented on cropland, e.g. terraces and ferula. Ferula is very popular among the participants and many aspire to plant ferula as well. There are also many SLM practices that involve establishing orchards, vineyards and some reforestation plots. Least technologies are implemented on grazing land, which is also explained that there are almost no grazing lands identified in the village. All the SLM plots were marked on the overview map using the color pins.

At the end of the exercise the overview map with all the SLM plots marked with pins, was placed on the NRMC wall. The map will be used during the following FGDs for cropland, grazing land and forest/orchards. The NRMC members were also informed that the map may stay in the NRMC room after all the FGDs are completed and can be used by the villagers for various purposes, e.g. working with the LIPT project.

Afternoon Session: 1) Knowledge on the implementation of SLM practices and future plans (Multi-criteria matrix)

The exercise on assessing the knowledge and experience of the land users about the SLM practices in Dashti Mirzai was held according to the same procedures used in Jawaz Khana. The group work with the Multi-criteria matrix requires more concentration and effort from the participants. Nevertheless, with some extra time and better explanation, they easily manage accomplishing the exercise. The group also engages in interesting discussion when someone wants to support or reject an opinion. The exercise does provide a good opportunity for the land users to exchange openly about the practices that all of them are involved in through the project. Obviously such discussions are something new and unusual for the group and they hardly get the chance to discuss about these issues.

Plenary discussion:
Orchards, terraces, nurseries and ferula were discussed the most among the group. It was mentioned that prior to the LIPT activities the village hardly had any fruit trees. There were mainly non-fruit trees such as willow and acacia. They also learned about the practice of mulching, which is viewed as a great help to grow better trees. It was also discussed that there is an obvious difference between the terraced and non-terraced plots in terms of the yield size. The terraced plots give higher yields than those without terraces. However, it is difficult to check the accuracy of such statements when it is claimed that before the harvest of wheat from 4 jiribs was about 22 ser and now 4 jirib terraced land can give about 100 ser.

Adaptations to the SLM practices.

In terms of any adaptations made, there have not been any big changes. Some reported that on their ferula plots the distance between the rows have been decreased to have more rows on the plot. This will, actually, make it harder to work on the plot if there is no enough space to step in between the rows. Most participants noted that they plan to increase their current SLM plots to have bigger land and higher yields.

Dashti Mirzai has not been very active in the LIPT project, judging by the fewer technologies implemented and less people involved in the project activities. This might be due to the fact that unlike the other villages in the watershed, the community has additional sources of income and not fully relying on their land resources. Besides the LBRC project, which provides employment to basically all the able men in the village, many men are also engaged in gold washing. However, gold washing is only a seasonal work, mainly in autumn. Another important factor to be considered in Dashti Mirzai is that the community is very religious and the religious leaders have a strong influence in the village. Not always the religious leaders are supporting the activities of outsiders who come to the village and their support is required to carry out any work in Dashti Mirzai.

Focus group discussion Notes

FGD Cropland land - Dashte Mirzai

Exercise 1: Individual and group evaluation of the SLM technologies

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

a) Group discussion on the following questions:

- ✓ **Regarding land use rights: On which land do you usually implement SLM technologies (private, leased or mortgaged) and why? What are your recommendations what type of land user rights are best when implementing a specific SLM technology (terracing, orchards, pasture improvement etc.)?**

P3: In the private land terracing, hedgerows and medicinal herbs are good to implement because the benefits are for farmers. On other leased and mortgaged land it is not good to implement them because the benefits are very low

P16: Leased land is not good for this technology because famers do not receive all the benefits and the income.

P6: The specific technologies are useful on privately managed land. We recommend it in the private land for income support. On the leased land it is not good

- ✓ **Regarding livestock: Is owning certain livestock (e.g. bulls, donkeys) an advantage when implementing the technology? Or on the contrary, is the implementation of certain SLM practices a disadvantage for livestock owners (e.g. when grazing animals on the cropland)?**

P11: The donkey and poultry damage and destroy the sustainable land management plots

P1: Goat can damage and destroy the sustainable land management plots but the cow, sheep and goat manure has benefits for soil fertility

P2: Animal manure is useful for agriculture land to improve the soil structure and fertility and have good results

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

Protocol paragraph 2. SLM Plot: **Do you recommend any adaptations on the SLM practices?**

P7: We recommended the use of animal traction and use of organic manure for these technologies on the SLM plot for better results to improve and increase the production.

P4: Bring changes to increase the SLM plot.. Advice to farmers to increase SLM

P11: We increase the SLM technology on own land to improve the village, to change it's the vegetation.

Protocol paragraph 3. Inputs: Private contribution and project support

b) Plenary discussion questions (for each technology separately):

- ✓ **Are there inputs that cannot be covered by an individual farmer, but project support is needed?**

P10: The terracing technology cannot be covered by farmer because it needs machinery and a lot of money as well as hard working.

Discussion in plenary:

P2: The fertilizer and seed of the ferula cannot be covered by individual farmer so he needs project support.

=> Note taker please take

P8: Land preparation can be covered by famer like seed bad, animal traction, daily wage

minutes of the key issues of the discussion!

Discussion in plenary:

Protocol paragraph 4. Benefits

What advice can you give to other farmers that are deciding on implementing an SLM technology: What benefit has exceeded your expectation? What expectation has not been met (yet)?

P11: Expectation is met.

P9: Water irrigation and land expectation is not met

P5: Advice to farmers to continue the technology on their land

P15: Harvesting expectation is exceed

Exercise 2: **Location of SLM plot**

Plenary discussion:	**Where do you recommend implementing the SLM technology?** **On bad lands (for mitigating and rehabilitating the land)?** **On good lands (for conserving the land)?** **P1:** On the good land. **P11:** On the bad land we recommend it to change it to good land.

Exercise 3: Knowledge on the implementation of SLM practices and future plans

Plenary discussion:	**1. Compare the resulting points adding up for each row (for each technology)** - **Do the points reflect their personal preferences?** **P15:** The resulting point is correct. **P3**: The resulting point is good.
	2. What would you recommend to other farmers? What SLM practices should be implemented, by what types of families, where, when, and what type of impact can be expected? **P4:** We recommended the technologies to other farmers **P3:** Cannot do terracing, because it requires hard work **P12:** We recommend all the technologies to village farmers
	3. And what is the outlook for their own community? The facilitator may show a picture from terraced slopes in China as an example. **P1:** Increase terracing on own land **P6:** Improve the vegetation in the village

Additional remarks by the note taker

The people are illiterate and during the use of protocols needed help to fill them in. It was very difficult for two persons to do it.

Moreover, the participants are very active during the FDG and they attend on time at the NRMC room

Focus group discussion Notes

FGD Forests/Orchard - Dashti Mirzai

Exercise 1: Individual and group evaluation of the SLM technologies

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

b) Group discussion on the following questions:

- ✓ **Regarding land use rights: On which land do you usually implement SLM technologies (private, leased or mortgaged) and why? What are your recommendations what type of land user rights are best when implementing a specific SLM technology (terracing, orchards, pasture improvement etc.)?**

P3: On the private land it is good.

P5: The SLM technologies reforestation and orchard in the private land is good.

P1: Implementing the technologies on leased and mortgaged land is not good.

- ✓ **Regarding livestock: Is owning certain livestock (e.g. bulls, donkeys) an advantage when implementing the technology? Or on the contrary, is the implementation of certain SLM practices a disadvantage for livestock owners (e.g. when grazing animals on the cropland)?**

P3: The animal manure has advantage for the soil fertility and increase the harvesting.

P4: The donkey and goat are not good for the SLM plot because they damage the SLM plots.

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

Protocol paragraph 2. SLM Plot: **Do you recommend any adaptations on the SLM practices?**

P3: We will bring changes in the SLM technologies for better results and to increase the SLM technology at the village level

P1: We just want to change the distance between rows and plants

Protocol paragraph 3. Inputs: Private contribution and project support

b) Plenary discussion questions (for each technology separately):

- ✓ **Are there inputs that cannot be covered by an individual farmer, but project support is needed?**

P5: Everything can be covered by the farmer

P1: Nursery seeds and fertilizer cannot be covered by the farmer

P4: Seed bad preparation and irrigation can be done by the farmers

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

Discussion in plenary:

Protocol paragraph 4. Benefits

What advice can you give to other farmers that are deciding on implementing an SLM technology: What benefit has exceeded your expectation? What expectation has not been met (yet)?

P5: Expectation is met about improving the soil structure to decrease soil erosion in the village.

P3: Expectation is met about the harvesting.

P2: Good harvesting. Production increased from the land

Exercise 2: **Location of SLM plot**

Plenary discussion:	**Where do you recommend implementing the SLM technology?** **On bad lands (for mitigating and rehabilitating the land)?** **On good lands (for conserving the land)?**
	P4: On the good land we implement the SLM technology. It is good to achieve high production.
	P8: On the bad land implement SLM technology to change bad land to good land.
	P3: The dork soil and good for the SLM technologies. Red and white soil is not good because the harvest is very low

Exercise 3: Knowledge on the implementation of SLM practices and future plans

Plenary discussion:	**4. Compare the resulting points adding up for each row (for each technology)** - **Do the points reflect their personal preferences?** **P3**: All resulting points are good **P4:** The nursery technology needs hard work. **P9:** Reforestation and orchard result points are good. They have more benefits for us like the use of wood for construction and wood for heating, cooking and firewood.
	5. What would you recommend to other farmers? What SLM practices should be implemented, by what types of families, where, when, and what type of impact can be expected? **P4:** Recommend to the other farmers to implement the SLM technologies. **P6:** Advise to farmers to start the technology on their land **P3:** Suggest reforestation to other farmers to continue this technology in the village level.
	6. And what is the outlook for their own community? The facilitator may show a picture from terraced slopes in China as an example. **P8:** Increase these technologies on their land for the improvement and development of the village. **P9:** We will develop the village to improve the village vegetation area

Additional remarks by the note taker

The FGD was good and farmers were interested in the FDG. They were very active during the participatory working.

Focus group discussion Notes

FGD Grazing land - Dashti Mirzai

Exercise 1: Individual and group evaluation of the SLM technologies

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

c) Group discussion on the following questions:

- ✓ **Regarding land use rights: On which land do you usually implement SLM technologies (private, leased or mortgaged) and why? What are your recommendations what type of land user rights are best when implementing a specific SLM technology (terracing, orchards, pasture improvement etc.)?**

P4: In the private land pasture rehabilitation, fodder bank, stable is good because all provide benefits to farmer. Leased land and mortgaged land are not good for this technology.

P5: Leased land is not good for these technologies since famers do not receive all the production and the benefits.

P3: The specific technologies are good on the private land.

- ✓ **Regarding livestock: Is owning certain livestock (e.g. bulls, donkeys) an advantage when implementing the technology? Or on the contrary, is the implementation of certain SLM practices a disadvantage for livestock owners (e.g. when grazing animals on the cropland)?**

P3: Animal manure has benefits and is useful for agriculture land to improve the soil structure and keep fertility for good result.

P2: The donkey and poultry damage and destroy the sustainable land management plots but the cow, sheep and goat manure has benefits for soil fertility

Protocol paragraph 2. SLM Plot: **Do you recommend any adaptations on the SLM practices?**

P1: We recommend these technologies to change the SLM plot for better results to increase the production.

P5: No changes to the SLM plot. Stable is good

P3: We increase the SLM technology on own land to improve the village, to change its vegetation.

Discussion in plenary:

=> Note taker please take minutes of the key issues of the discussion!

Protocol paragraph 3. Inputs: Private contribution and project support

b) Plenary discussion questions (for each technology separately):

- ✓ **Are there inputs that cannot be covered by an individual farmer, but project support is needed?**

P1: All technologies can be covered by farmer because he learned the practice and received the methods of technology implementation.

P2: The construction material for stable and fodder bank cannot be covered by individual farmer so he needs project support.

Protocol paragraph 4. Benefits

Discussion in plenary:

What advice can you give to other farmers that are deciding on implementing an SLM technology: What benefit has exceeded your expectation? What expectation has not been met (yet)?

=> Note taker please take minutes of the key issues of the discussion!

P5: Expectation is not met so far because the villager economic capacity is low. They have no access to the construction material to construct the improved stable for animal.

P1: Improved stable expectation is met because by having good result for the animal health we know about the effectiveness of the stable. In previous years the village resident faced with deferent animal diseases, now these challenges are removed from our village

P4: Alfalfa fodder increase for animal in the village. We collect it in summer and store it in the fodder bank. We use it for animal in the winter season. Now our animal increased from 2 to 4 and the animal health is better than last years.

Exercise 2: **Location of SLM plot**

Plenary discussion:	**Where do you recommend implementing the SLM technology?** **On bad lands (for mitigating and rehabilitating the land)?** **On good lands (for conserving the land)?** **P1:** On the good land and dark soil it is better. If we use these technologies on the bad land our time is spent without any results. **P4:** On the bad land it is good because the bad land will be changed to good land in the future. If we establish pasture in the good land our other cultivation land will be decrease and the land will be not used for other cultivation.

Exercise 3: Knowledge on the implementation of SLM practices and future plans

Plenary discussion:	**7. Compare the resulting points adding up for each row (for each technology)** - **Do the points reflect their personal preferences?** **P4:** The resulting point is good for all technologies. **P3:** Stable construction needs hard working because it has benefits for animal. During rainstorm it is good for sheltering animals. **P1:** The fodder bank results point is good. During the winter season and drought year all fodder storage will be useful for animal to prevent the loss of animals **P2:** All technologies have good results for the farmer.
	8. What would you recommend to other farmers? What SLM practices should be implemented, by what types of families, where, when, and what type of impact can be expected? **P4:** Recommend the SLM technology pasture rehabilitation, improved stable, fodder bank and alfalfa cultivation for animals to farmers. They should implement them on their owner land **P1:** Advice to other farmers to do the SLM technology and learn from us to implement it on their private land and make improved stable for better keeping of animals **P5:** For all village families we recommend the SLM technology to do it on their land
	9. And what is the outlook for their own community? The facilitator may show a picture from terraced slopes in China as an example. **P1:** Increase the technology on their land to changes village to be prosperous and good vegetation. **P4:** We continue the SLM technology to change our village like you showed us the example picture in China during the focus group discussion. **P3:** We advise to other farmers to do the technologies on their land and keep soil from erosion

Additional remarks by the note taker

The people are illiterate to fill the protocols but facilitator and notes taker help them filling of protocols. It was very difficult for two persons.

Moreover, the participants are very active during the FDG they attend on time in NRMCs room

Women Focus Group Discussion (WFGD)

Notes

- Dashti Mirzai - October 27, 2016

Aim of the meeting:	Group discussion with women to assess the costs and benefits of the SLM practices in Dashti Mirzai village, Chokar watershed.
Participants:	25 female members from households, which implement SLM practices in Dashti Mirzai village, Chokar watershed.

Session: 1) Introduction to the Rustaq NRM Study

The Focus Group Discussion (FGD) with Women in Dashti Mirzai was held in the house of Faizul Haq, Deputy Head of the NRMC. The NRMC building in Dashti Mirzai is located right across the village mosque and during the FGD with the NRMC members, it was suggested that it will be better and more comfortable for all to meet in a private house of one of the NRMC members.

24 women attended the FGD in Dashti Mirzai. Many participants came later, after the discussion started, but it was decided to include them as well. Later on some of them were speaking actively and sharing interesting opinion, therefore, it was worthwhile to allow all interested women to join the FGD.

We started as usual from noting the names of the participants and their male relative involved in the project, while waiting for others to come. Since this time also Masuma joined me in Dashti Mirzai, the women seemed happy to see her in their village again. Straight away they were asking about the purpose of our visit and whether we are going to give something to the women. It appeared that the last time Masuma was in Dashti Mirzai about 1-1,5 year ago to distribute buckets and soap to female villagers. Hence, there was some expectation among the women from our visit to the village as well. In introducing our project purpose to the group, we had to stress that it is only a field research to learn about the knowledge and experience of men and women in the village and how it can help for planning the activities in the future. Also we had to stress that no one will receive from us any kind of items by participating in the FGDs, but we are gladly inviting all participants for lunch.

In Dashti Mirzai more women were speaking Dari fairly good. This made it easier to communicate with the group, although we made sure that Masuma translates into/from Uzbek to assure that all have equal understanding of the issue under discussion.

Session: 2) Knowledge about SLM practices

Awareness about SLM practices. The first exercises with the Multi-criteria Matrix revealed that the participants easily recognize the technologies that have been implemented in the village. They found out about these technologies from their husbands mainly, but also from their father in law and their brother. Some participants also mentioned Mia Jan from the LIPT project, who have been in the village quite often before. The group listed the following SLM practices that have been done in Dashti Mirzai: Terraces, ferula, fodder bank, animal shed, reforestation, establishing orchards and vineyards, alfa-alfa for pasture rehabilitation and hayota.

Involvement in the implementation of the SLM practices.

- *Terraces*: On terraces women are working for preparing the terraces for cultivation, such as clearing the soil from stones and preparing the bed for sawing. For maintenance work, such as weeding, women also take active part. Harvesting and bringing the harvest to the house is also done by women and men together.
- *Ferula*: So far women are not working too much on ferula, because it is too early for the actual work to start. Later they might have more work on ferula plantations.
- *Reforestation:* Women mentioned that mainly they help to protect the plantations plots from animals so that the trees grow better.
- *Orchard and vineyards:* Most of the work in the orchards and vineyards is done by women. There is

always a lot of work. But since the vineyards are quite young, there is not much work yet. Later there will be more work also on vineyards.

- *Pasture rehabilitation with alfa-alfa:* Women bring the animals to the grazing land for grazing and also collect fuel wood there. Alfa-alfa is sawn also under trees in the orchards. It was mentioned that the grazing land is becoming smaller because many grazing lands are turned into orchards or forests.
- *Animal shed:* The women clean the animal shed, bring water to the cattle and dry the dung, which is sued for cooking.
- *Fodder bank:* Mostly women work on their own fodder house, but they do bring the hay to the village fodder bank as well for reserves. When there is no fodder left, then they take their reserved fodder from the fodder bank. In case if there is more fodder surplus, it is sold by the household to make money.
- *Nursery:* The nursery produces seedlings for apricots, apples, walnuts, almonds and persimmons. Such work as weeding, watering, collecting the seedlings is done by women. The work is nursery is almost the same as in orchards and requires a lot of time.

Compatibility of the SLM practices with other household work for women and children.
When asked about how much work the women do on carrying out these SLM practices, almost all women replied that all the work is done by them and their children, who always help them. Except for fodder bank, reforestation and ferula, the remaining practices require hard work and a lot of time. Every day they have to take care of the whole family, the house and also do the work in the orchard, on the wheat plot, take care of the animals, etc. The men mainly do the harvesting. Now that all the men in the village work on the road all day long and have no time to work on the land. In autumn, the men go for gold washing and are not in the village for three months and all the work is left to the women. When there is no work in the field, for example in winter, the women weave carpets, make thread from cotton and are also quite busy in winter.

The establishment costs for the SLM practices.
The highest costs are required for terraces, reforestation plots, orchards, pasture rehabilitation and hayota plots. For irrigation of their plots, they have to pay the *mirob* (person responsible for distributing the water in the village) for his work. It costs around 400 Afghani for 4 hours of irrigation (1 hr costs 50-100 Afghani). In addition, they buy fertilizers, such as urea for alfa-alfa.
Lower costs were pointed for the animal shed and the least costs are identified for fodder bank and ferula. It was mentioned that these practices are either fully (fodder bank) or partially covered by the project.

The benefits achieved or expected benefits from the SLM practices.
Orchards and nurseries were mentioned as providing highest benefits. People can already see it from the variety of fruits that they harvest and also the fact that more people want to establish own orchards and nurseries. Animal shed, fodder bank and alfa-alfa were also noted as having benefits for the households, however, considering that there is not much grazing land in the village, it was noted that the benefit from these practices is not as high as it could be. Hayota is also mentioned as a highly beneficial practice. The women were having difficult to talk about reforestation works This might be due to low results of these activities in the village and it is understandable that they could not say much about it either. There are quite many households in the village who are involved in vineyards and ferula planting, however still they do not harvest their plots. They are very hopeful that once their crops and grape trees will be harvested, these practices will be the most beneficial along with orchards and nurseries.

How is the money spent in the household? Do you decide how to spend the money? Do you buy items you want for yourself?

They money is used to buy main items for the family, such as food and clothes. The men are in charge of the money in the family and they decide how to spend it. Very few women stated that they also decide what to buy on the family money. The majority said that they don't take part in spending the money. Some said that they work hard and make money, but cannot take part in buying different stuff. It seemed that they were almost disappointed about the fact that they are not in charge of the money they make.

Are you interested in implementing additional SLM practices?
The participants noted that they are always ready to work on anything new which will be started in their village. It was also said that they want to continue and also increase what they are doing right now, despite the fact that it is a hard work for them. Some mentioned that they are working on orchards even without the project support.

Would you recommend the SLM practices to your neighbors and other villages?
The group replied that they share with their neighbors about the work that they do because they find it useful. It was noted that the families which don't have a land are also interested in these SLM practices, but because they can't do it themselves, they help other families with the work and this way learn also.

Concluding remarks

The female group in Dashti Mirzai appeared on average younger then the groups in Sari Joy and Jawaz Khana. There were more participants under 50. However, this is only private opinion not based on formal questioning about the participants' age. The estimation of the age might also not be very accurate because Afghan women tend to look older than their actual age. There were few women aged 35-45 (own estimation) with children under 3 years old.

The overall impression from the FGD in Dashti Mirzai is that most women were not talking openly, as if though they had some hesitation to talk about the subject or to talk openly in a group. Mostly the participants were not very specific about the work that they are doing on certain practices. Although they seem to contribute to all activities involved in each practice and expressed their big role in doing all the work. Women seemed to work even more on the SLM practices than men, because the men are either away for seasonal work or they are in the village but work on the road project full day. All the women were happy that the men in the village are now working on the road construction project and are staying in the village. Usually they would look for a job in other villages or even far away and be absent for a long time. Now that they are staying in the village because of the road project, at least they can do the hard work, such as ploughing and haymaking.

There was a woman who said that their family is not involved in the project activity, because her husband is disabled and cannot work and she doesn't have children. This makes it very difficult for her to find any work and sustain her family. This echoed to similar remarks that were made in Jawaz Khana, where female-headed households have no opportunity to work on SLM practices because there is no adult male family member.

All the women were happy that the men in the village are now working on the road construction project and are staying in the village. Usually they would look for a job in other villages or even far away and be absent for a long time. Now that they are staying in the village because of the road project, at least they can do the hard work, such as ploughing and haymaking.

Throughout the discussion it was observed that there is some kind of tension among the group. Various remarks were made to the wife of the NRMC Head and she was defending by saying that their family did not get anything additional from the project and that they also work hard same as other families in the village. This seemed like a usual situation when those who work closer with the project people, in this case it is the Head and Deputy Head of the NRMC, the rest of the villagers suspect or accuse of benefiting more than the rest. In general, it was mentioned before doing the FGDs that the community in Dashti Mirzai often has conflicts emerging based on some dissatisfaction among the people. Certainly, this might also influence the willingness of the people to work with external projects and have an impact on the outcome of this work too.

QGIS guide for working with GIS data in the frame of the Rustaq NRM study

Contents

Abbreviations

GIS	Geo Information System
NIR	Near Infrared
NRM	Natural Resources Management
UTM	Universal Transverse Mercator (a global coordinate system)
WV	World View is a private enterprise providing satellite imagery (http://worldview.space)
RS	Remote Sensing
QGIS	Quantum GIS (https://www.qgis.org/)
DEM	Digital elevation model

Definitions:

GIS - A geographic information system or geographical information system (GIS) is a system designed to capture, store, manipulate, analyze, manage, and present all types of spatial or geographical data.

Shapefile - A shapefile is a simple, non-topological format for storing the geometric location and attribute information of geographic features. Geographic features in a shapefile can be represented by points, lines, or polygons (areas)

Raster Data - In its simplest form, a raster consists of a matrix of cells (or pixels) organized into rows and columns (or a grid) where each cell contains a value representing information, such as temperature. Rasters are digital aerial photographs, imagery from satellites, digital pictures, or even scanned maps.

Digital Elevation Model - A digital elevation model (DEM) is a digital model or 3D representation of a terrain's surface — commonly for a planet (including Earth), moon, or asteroid — created from terrain elevation data (https://en.wikipedia.org/wiki/Digital_elevation_model).

Introduction

The purpose of this guide is to provide guidance to viewing, updating and printing GIS data prepared for the Rustaq NRM study. The guide focuses entierely on the work steps carried out in the frame of the Rustaq NRM study using QGIS software. It does not intend to provide GIS training or be a QGIS software manual.

QGIS is an open-source software that is available for all platforms and is used to create, edit, visualize, analyze, and publish geospatial information. The software can be downloaded from www.qgis.org website. Training materials and other documentation of QGIS are also available on the website. Therefore, for more detail technical information and general guidance please visit the QGIS website (http://docs.qgis.org/2.14/en/docs/training_manual/index.html) and see the QGIS User Manual.

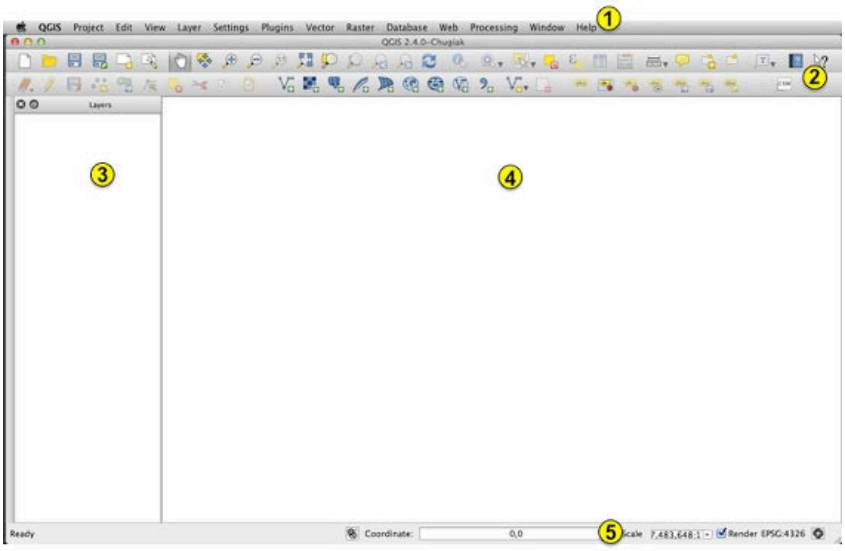
QGIS software and GIS data

1. *Working with the QGIS software*

   Use the Start menu or desktop shortcut to open the software.

2. *The QGIS interface*

   The interface of QGIS is divided into several parts as explained in the graph below. The numbers 1 through 5 in yellow circles refer to the five major areas of the interface:



1. Menu bar: provides access to various QGIS tools.
2. Toolbar: provides direct access to most of the same tools as the menus.
3. This area lists all the layers used in the current QGIS project.
4. Map view: maps are displayed in this area.
5. Status Bar: The status bar shows you your current position in map coordinates as the mouse pointer is moved across the map view.

3. Rustaq GIS data

For an overview on thematic GIS datasets obtained for the Rustaq NRM study see Annex 1. All Rustaq GIS are located in the folder **RustaqGISdata**. The structure and content of the folder are the following:

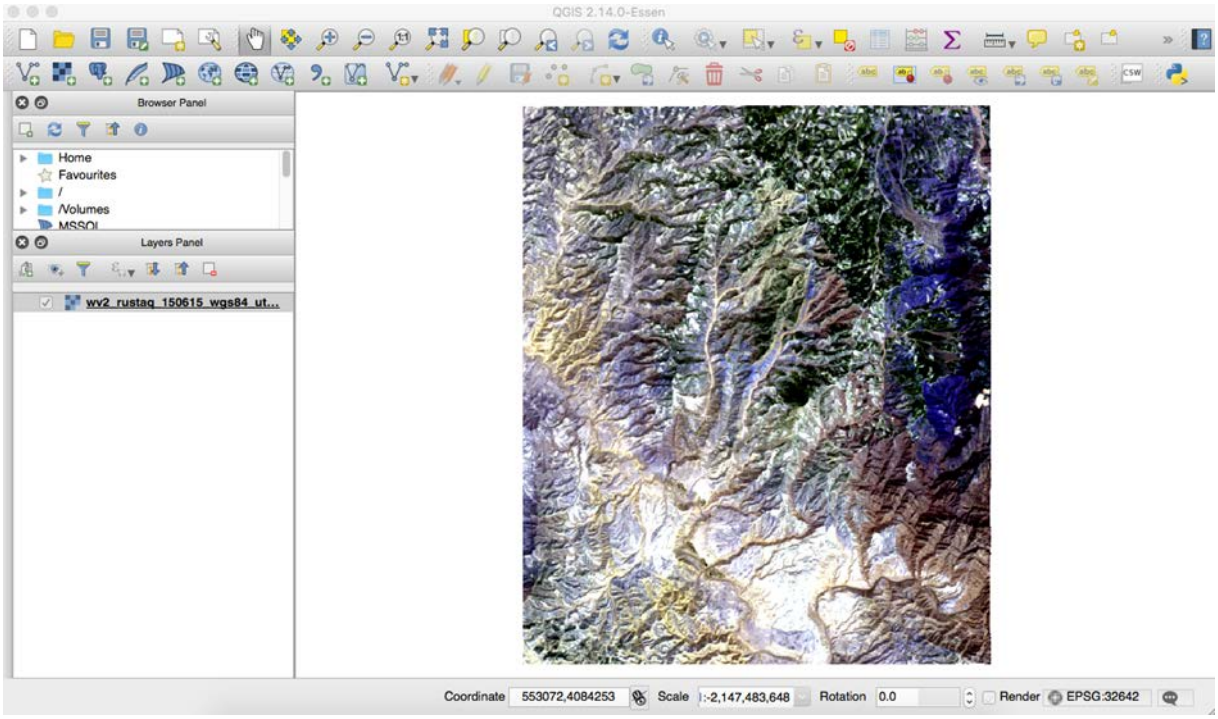
Folder	Subfolder	Subfolder	File name	Comment
Raster	DEM		afg_aster_gdem_30m.rrd rustaq_aster_gdem_30m.tif	Digital elevation model
	RussianMaps	j42_104 j42_116	ru—gs—050k—j42-104-3… .map ru—gs—050k—j42-104-4… .map ru--gs--050k--j42-116-1… .map ru--gs--050k--j42-116-2… .map	Russian topographic maps 1:50:000
	RS	Corona	corona_rustaq_300570_wgs84_utm42s corona_rustaq_300570_wgs84_utm42s.rrd corona_rustaq_300570_wgs84_utm42s.tiff	Rectified Corona imagery from 30 May 1970
		WV2	wv2_rustaq_150615_wgs84_utm42s.img (Red band = Band 3, Green band= Band 2, Blue band = 1, NIR band = Band 4)	World View 2 imagery from 15 June 2015
Shapefile			LU_Rustaq.shp LU_Rustaq.dbf LU_Rustaq.shp.xml LU_Rustaq.sbn LU_Rustaq.shx LU_Rustaq.prj LU_Rustaq.sbx LU_Rustaq.cpg	Land use map of the three study villages.
QGIS	Manual		QGIS-User-Guide.pdf QGIS_Training_Manual.pdf	
	Software		QGIS-OSGeo4W-2.16.0-3-Setup-x86	QGIS installation software for windows
	Files		Rustaq_project.qgs LU_Type LU_WaterAccess LU_SWC rustaq_maps_template	QGIS project and style files
Prints			OverviewRustaqRegion_FalseColor.pdf OverviewRustaqRegion_TrueColor.pdf OverviewVillages5k_DashtiMirzai.pdf OverviewVillages5k_JawazKhana.pdf OverviewVillages5k_SariJoy.pdf	WV2 satellite imagery ready for print at scales 1:20:000 and 1:5000.

Copy the folder **RustaqGISdata** to your hard disk (C://RustaqGISdata/). When you start working on your QGIS project, QGIS will create links to your layers; these links will be lost if you move files from their original place, or rename these files. So, before starting, decide where to store your GIS data.

Viewing GIS data

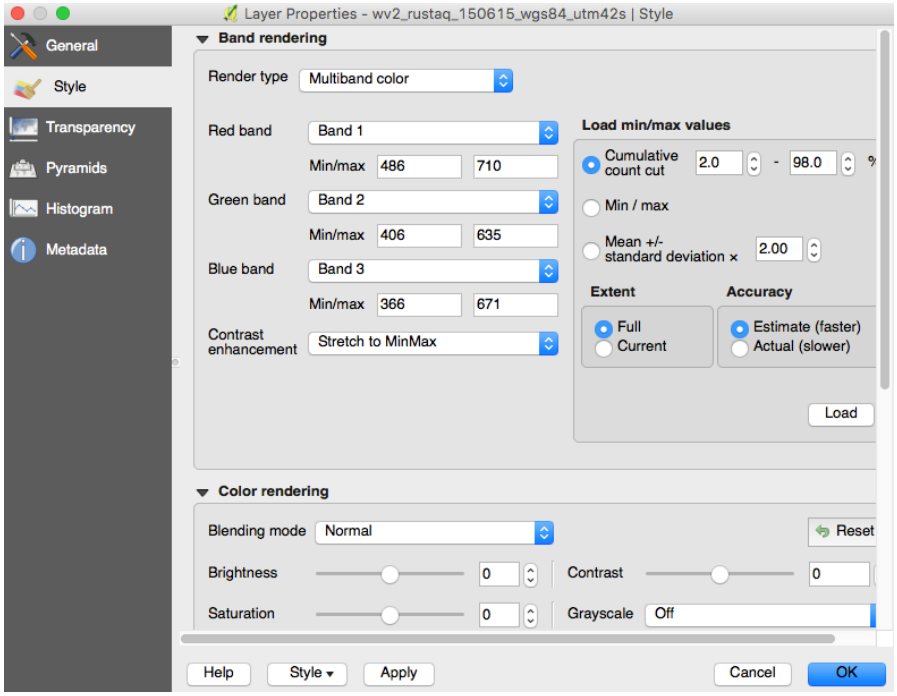
4. Loading raster data (satellite imagery)

The Remote Sensing (RS) subfolder contains three types of satellite images: Corona, Landsat, and WV2 imagery. To load an image you need to click on the Add Raster Layer icon on the toolbar or select this icon from the menu bar **Layer →Add Layer… →** **Add Raster Layer**. The raster file showing the full study area is wv2_rustaq_150615_wgs84_utm42s.tif. It is located in the RS/WV2/ folder. Browse to the RS folder and click the [Open] button. You might be asked to select the correct projection for this layer; in this case, select UTM 42N projection system, and click [OK]. Now, on the Map view area, you should see a WV2 image of Rustaq area.



5. Changing the band combination and other properties of the image layer

The WV2 image has four bands, meaning that the image consist of four separate layers. Viewing different bad combinations helps when interpreting a satellite image. In order to change the band combination double click on the wv2_rustaq_150615_wgs84_utm42s layer under the Layer Panel on the left side, or right click on the wv2_rustaq_150615_wgs84_utm42s layer and select properties from the drop down menu. The following window will open:

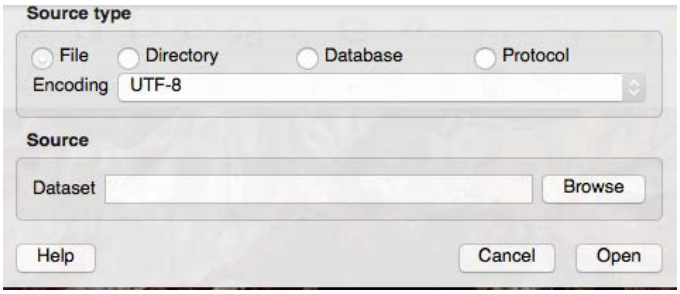


By default the combination of the bands is as it shown in the above figure which is showing the true image color view. To see vegetation cover or false color image the band combination should be Red band = Band 4, Green band= Band 3, Blue band = 2. You can change the brightness, Contract, Saturation of the image for best visibility on your monitor.

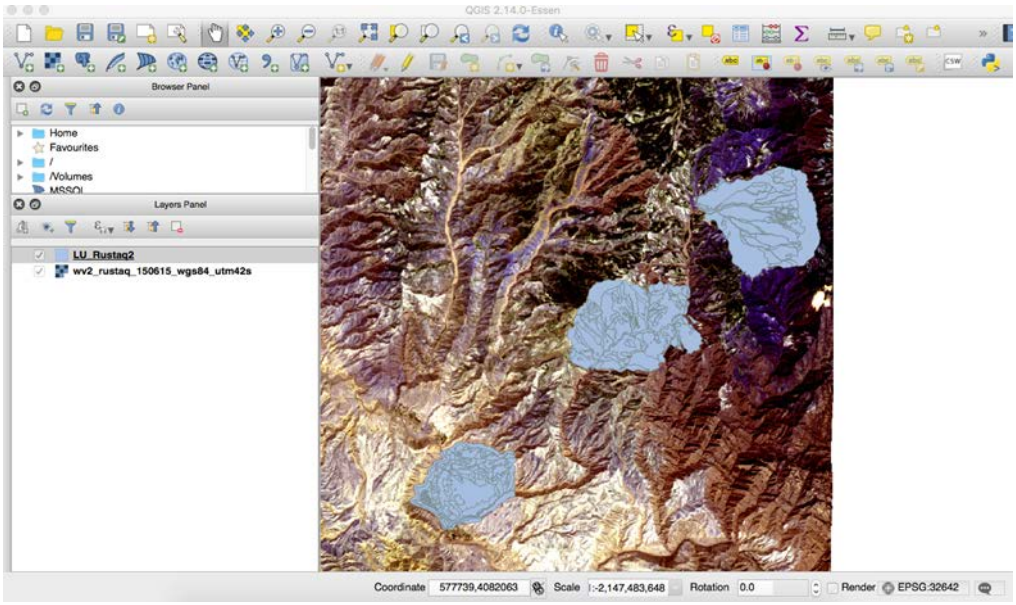
6. Loading shapefiles

A shapefile, is a file that was digitized, and shows points (e.g.single trees), lines (e.g. rivers or roads) or polygons (e.g. field plots).

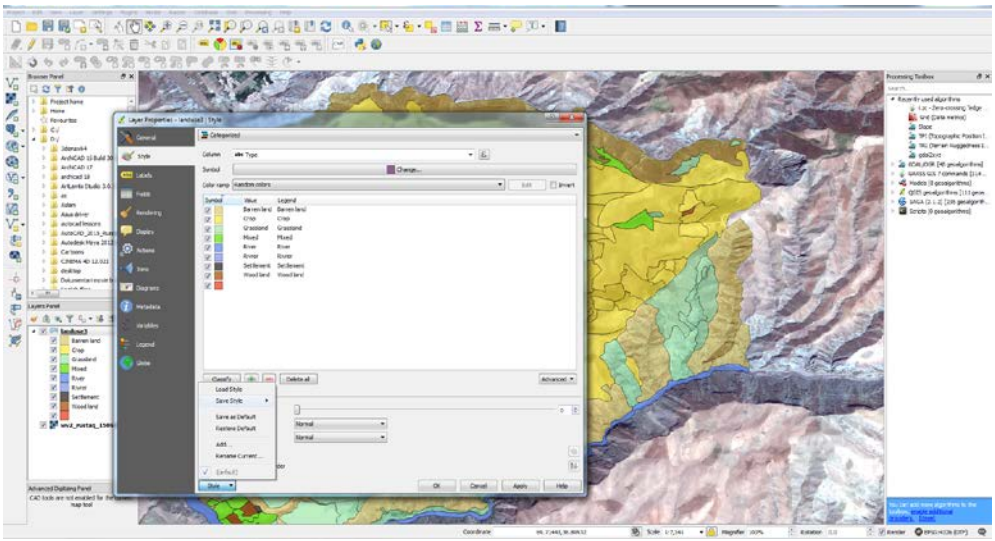
To load a shapefile, click on the  Add Vector Layer toolbar button or, on the menu, select the option Layer →  Add Vector Layer. This will bring up a new window.

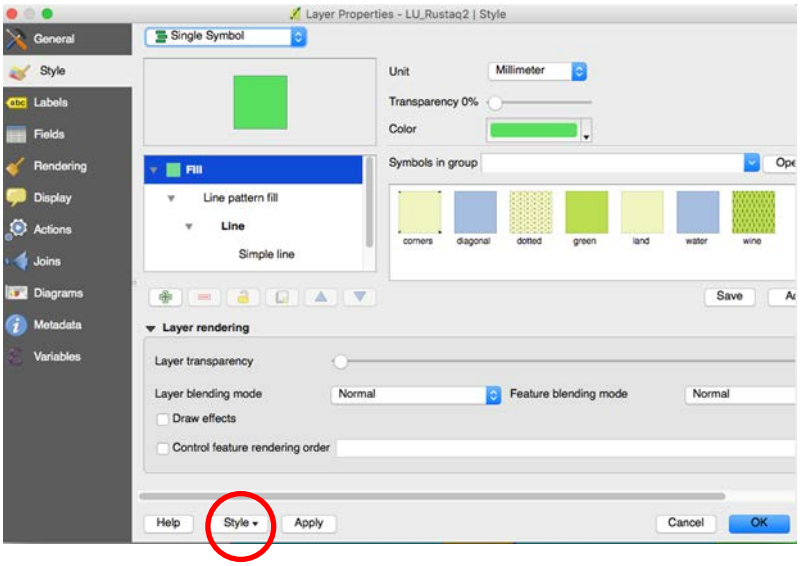


From the available options check File. Click on button **[Browse]** to navigate the file system and select the shapefile located in /RustaqGISdata/Shapefile/ LU_Rustaq.shp. You might be asked to select the correct projection for this layer; in this case, select UTM 42N projection system, and click **[OK]**.



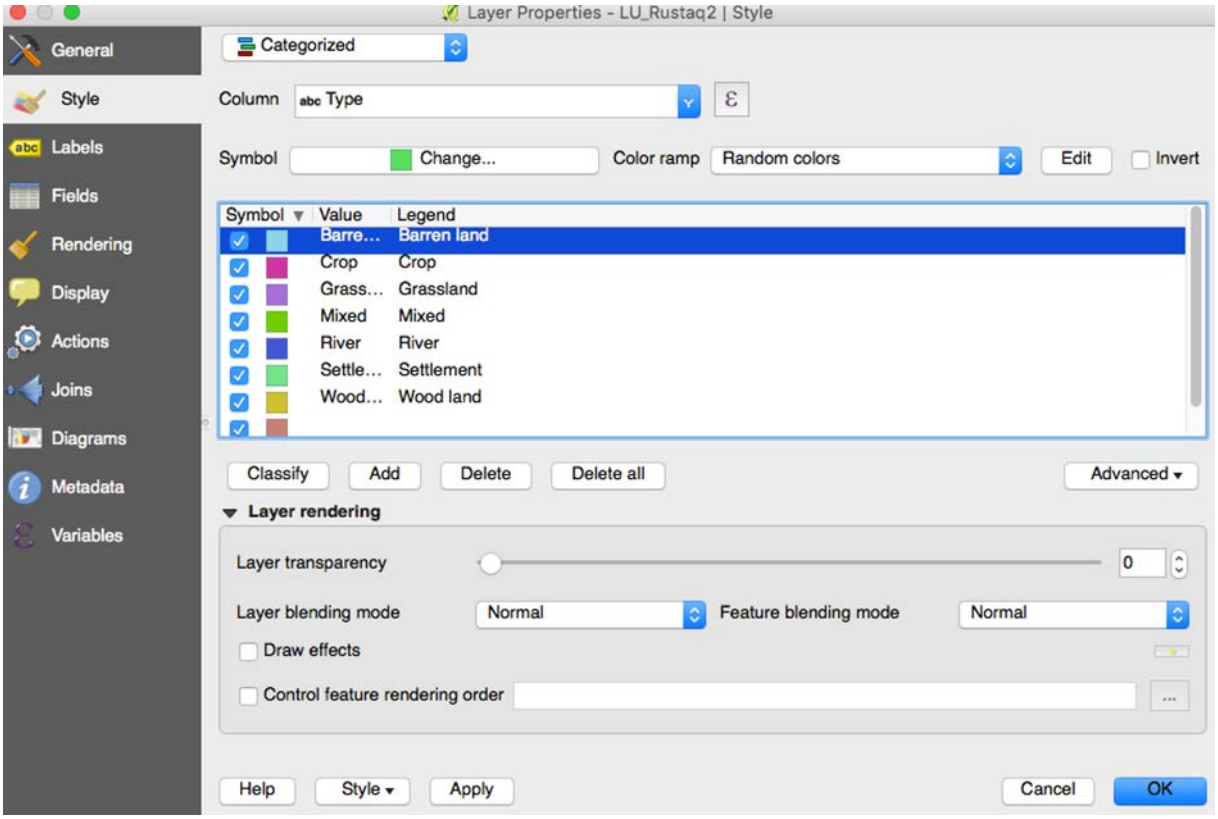
A random color is assigned to every layer you add. To change the style of a layer (for instance, to make it more transparent), open the Layer Properties dialog by double clicking on the layer name or by right-clicking on the name in the legend and choosing Properties from the popup menu. Under Style you can change colors and patterns.



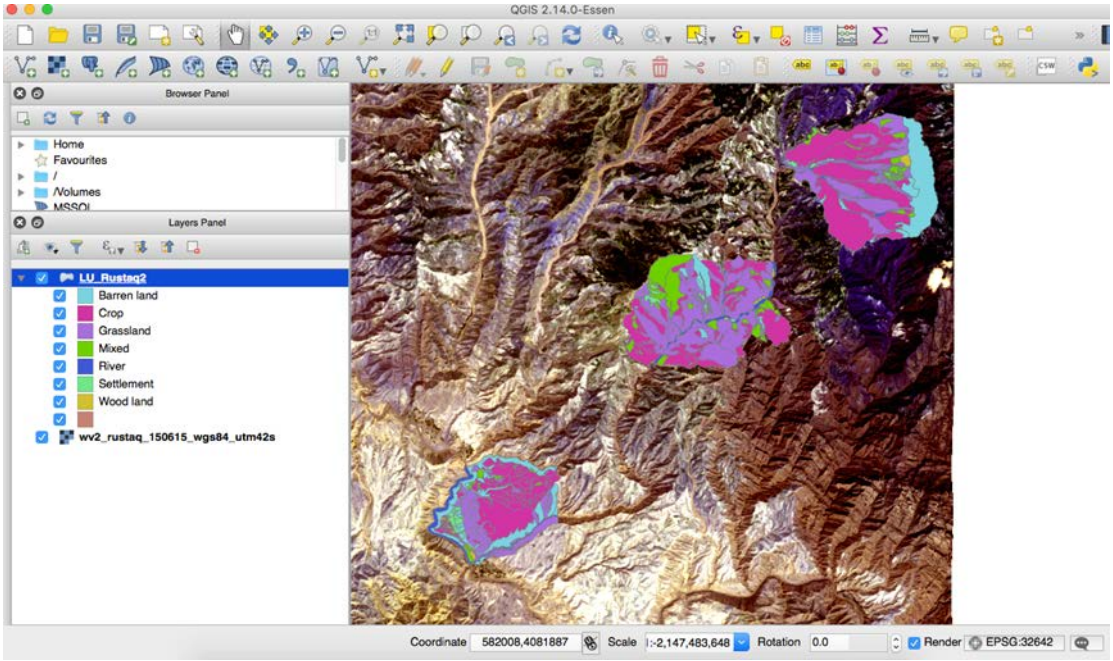


In QGIS there is an option allowing saving a style as a Layer File (template). Thus, when you change the color of the layers of the project and you want to assign the previous colors of the project you just need to load the saved template. In this case you don't need to assign the colors for shapefile layers manually because the program assigns them automatically. To load the style template go to the drop down table "Style", then choose "Load Style" and select "LU_Type".

To assign specific colors to the different land use types, change the Single Symbol to Categorized form the drop down menu in the upper part of the window. In the column select Type from the list and click Classify button. The color will be assign to the land use type.



You can change the color clicking on the color next to the Land use type. After finishing the color selection click on OK button. The selecting color for different land use type will apply to the shapefile as in the following windows.

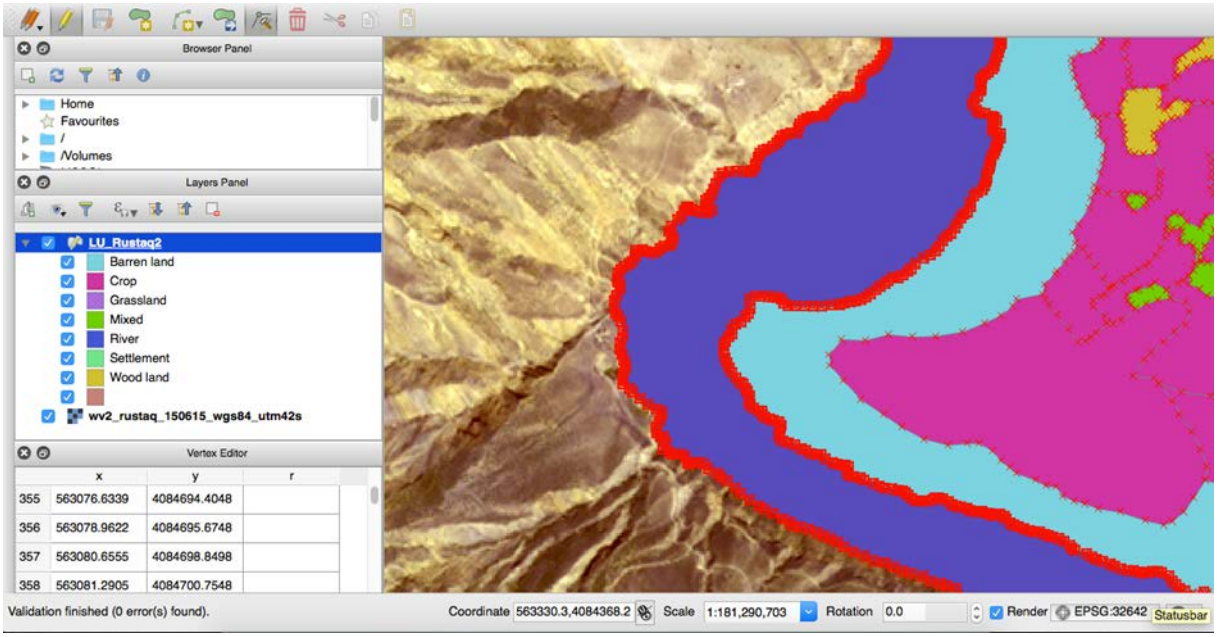


Editing Land Use Layers

7. *Editing existing shapefile*

The Digitizing Toolbar will help to edit the existing shapefile.

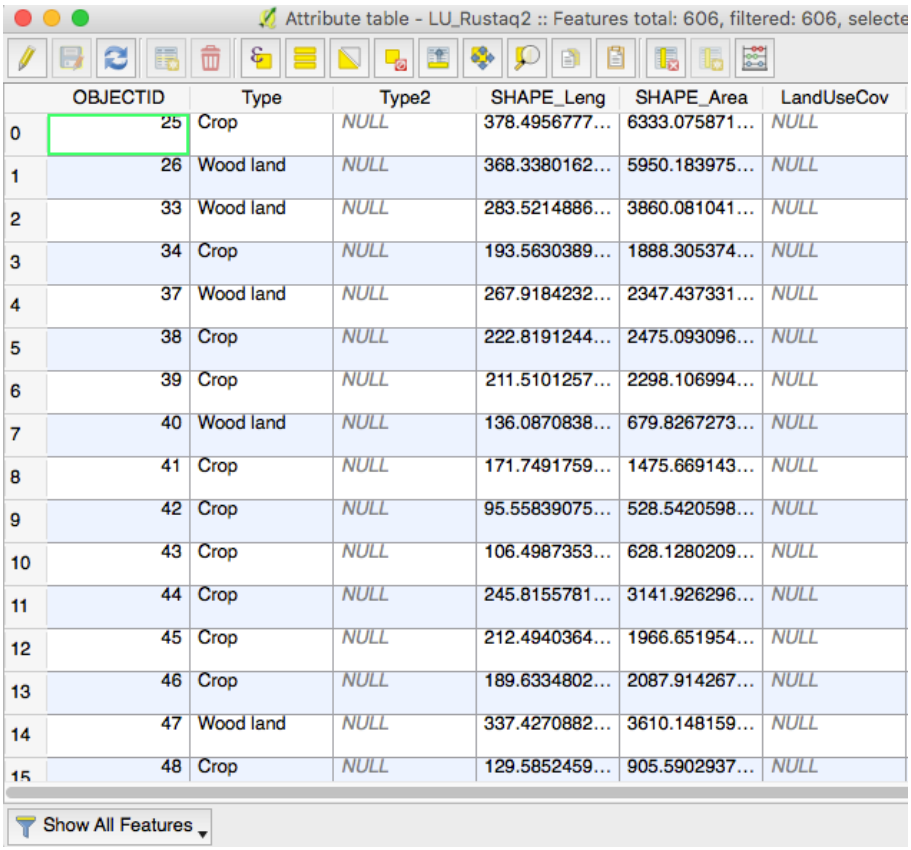
Before starting editing select the symbol pencil -Toggle Editing. You can edit the shape of a polygon with the Node tool. First, click on the icon on the toolbar, and select "Select Single Feature". Then, click on the polygon you want to reshape; the change of color of the polygon boundaries indicates this feature is now selected. Next, on the toolbar, click on the Node tool to make the vertices editable; then click on one of the vertices of your polygon. Move the vertices until you reach the desired shape. When you are done editing, unselect the Node Tool, and save your changes.



8. *Editing attribute table*

GIS data has two parts - features and attributes. Attributes are structured data about each feature.To open attribute table of the Land Use shapefile right click on the

LU_Rustaq layer on the layer panel and from the drop down list select Open Attribute Table. The following window will open:



	OBJECTID	Type	Type2	SHAPE_Leng	SHAPE_Area	LandUseCov
0	25	Crop	NULL	378.4956777...	6333.075871...	NULL
1	26	Wood land	NULL	368.3380162...	5950.183975...	NULL
2	33	Wood land	NULL	283.5214886...	3860.081041...	NULL
3	34	Crop	NULL	193.5630389...	1888.305374...	NULL
4	37	Wood land	NULL	267.9184232...	2347.437331...	NULL
5	38	Crop	NULL	222.8191244...	2475.093096...	NULL
6	39	Crop	NULL	211.5101257...	2298.106994...	NULL
7	40	Wood land	NULL	136.0870838...	679.8267273...	NULL
8	41	Crop	NULL	171.7491759...	1475.669143...	NULL
9	42	Crop	NULL	95.55839075...	528.5420598...	NULL
10	43	Crop	NULL	106.4987353...	628.1280209...	NULL
11	44	Crop	NULL	245.8155781...	3141.926296...	NULL
12	45	Crop	NULL	212.4940364...	1966.651954...	NULL
13	46	Crop	NULL	189.6334802...	2087.914267...	NULL
14	47	Wood land	NULL	337.4270882...	3610.148159...	NULL
15	48	Crop	NULL	129.5852459...	905.5902937...	NULL

The LU_Rustaq attribute table shows 5 columns: the OBJECTID, providing an automatically generated object count; the general land use type according to the classification system choosen for the Rustaq NRM study; the land use sub-type; the SHAPE_length, providing the length of the object border in meters; the SHAPE_Area indicating the area of the object in squaremeters;

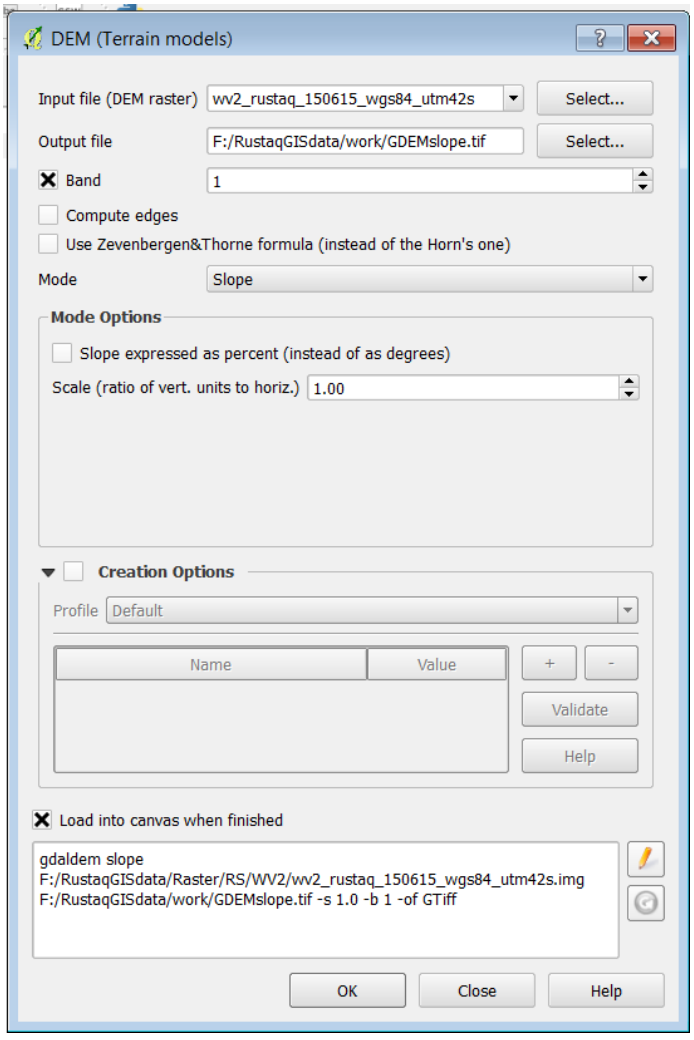
To change and edit the attribute of the polygon click on the Toggle Editing Mode icon  . Make any changes to the attribute table and push the save button to save the changes. You can also delete, add, sort and other action on the attribute table using the same windows.

Terrain analysis

A digital elevation model (DEM) provides us with information on the terrain elevation. In our data collection you find an extract of the ASTER global digital elevation model (GDEM) Version 2, which has a 30m pixel resolution.

The file was reprojected to WGS84 UTM42N. This is done using the menu item **Raster>Projections>Warp (Reproject).**

Different products might be calculated based on the ASTER DEM: the slope, the aspect, or the hillshade. We best use the tool available in QGIS **Raster >Analysis>DEM (Terrain Models)…**The following window will open:

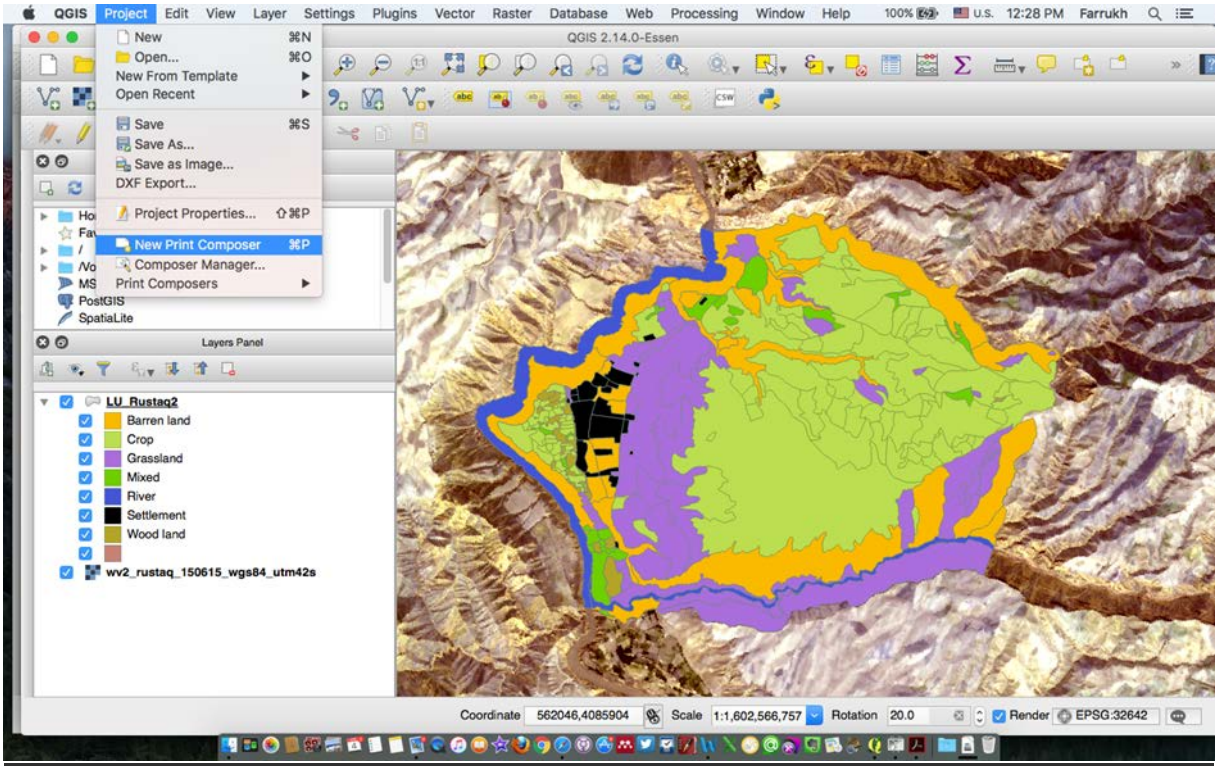


Choose the GDEM2 as input file, then specify the location and name for saving the output file. If you calculate a slope layer you might call it GDEMslope.tif. The Mode is chosen as “Slope”. Under Mode Options you might specify that the slope is expresses as percent instead of as degrees.

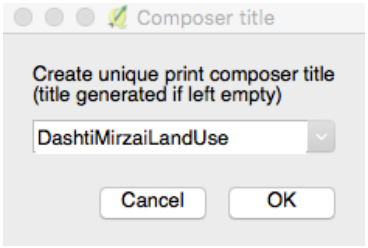
Composing and printing maps

9. *Printing*

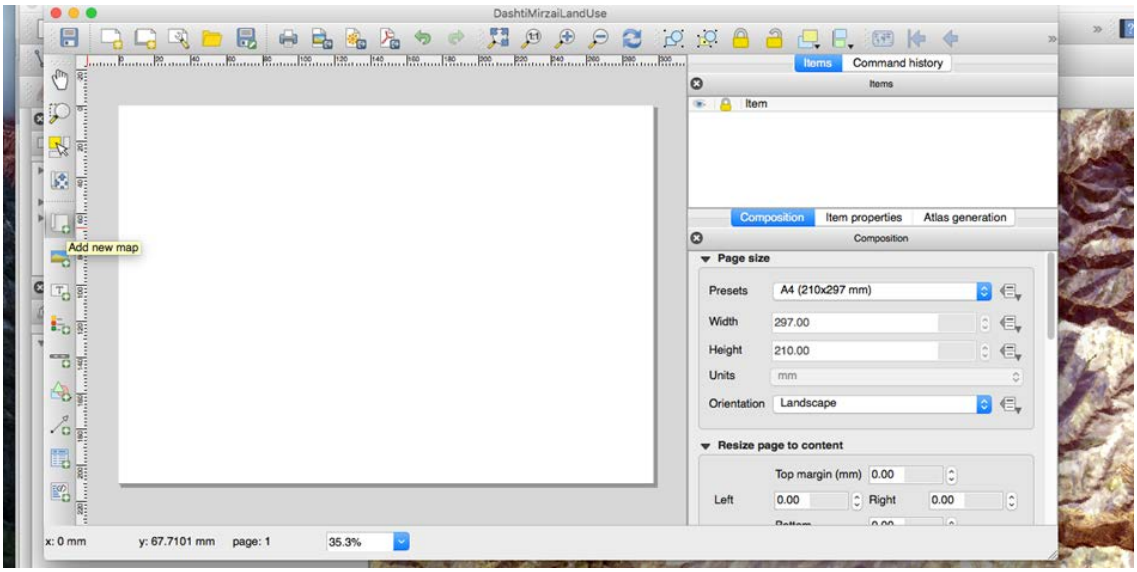
To prepare map for printing select Project from the main menu and click on the New Print Composer.



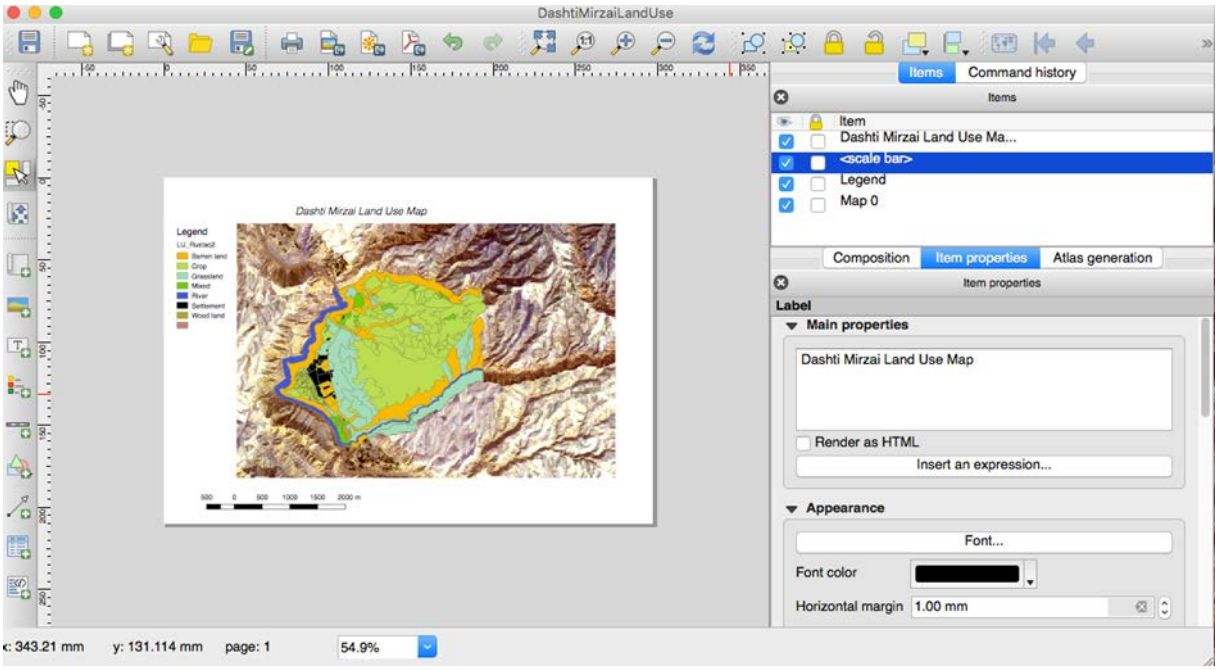
You need to select the title for your map composition:



In the composer map view click on the icon add map and with your cursor select the area on the paper where you would like to allocate the map:



From the left side of the window you can select the tools like Legend, Scalebar, Title to add to your map. The size of the paper and brightness of the map prints can be adjusted in the same step.



After finalizing the design of your map click to save your map in different formats imag, SVG, pdf or directly send to print. You can save also the template of the map for further use.

10.Save the Rustaq Land Use project

Click on the Project in the main menu and from the dropdown list click Save. Give a name (RustaqLandUse.qgs) to the project file and save it under the RustaqGISdata/project folder. You can continue your work next time clicking on the RustaqLandUse.qgs file or Open QGIS and from the Project menu by browsing the file in your file system to open it.

Annex 1

Overview on thematic GIS datasets obtained for the Rustaq NRM study:

Topic	Dataset	Spatial resolution	Source
Topographic information	SRTM	90 m	http://seamless.usgs.gov
	Aster GDEM2	30m	https://gdex.cr.usgs.gov/gdex/
	Russian topographic maps	1:50'000	https://mapstor.com/map-sets/country-maps/afghanistan.html
Precipitation data	worldclim	1000 m	www.worldclim.org
Land cover information at medium resolution	Landsat ETM+	30 (15) m	https://lta.cr.usgs.gov/LETMP
Current land cover information at high resolution	World View	0.46 m	Purchased from http://www.e-geos.it/worldview-2.html
Historic land cover information at high resolution	Corona	2.6 m	www.eros.usgs.gov

An overview on other currently available satellite imagery can be found here:

http://eros.usgs.gov/satellite-imagery

WOCAT - World Overview of Conservation Approaches and Technologies

Questionnaire on Sustainable Land Management (SLM) Technologies

Version: Core (2016)

A tool to help document, assess, and disseminate SLM practices

Contents

Introduction to the questionnaire

Definitions

Sustainable Land Management (SLM) *in the context of WOCAT is defined as the use of land resources – including soils, water, vegetation, and animals – to produce goods and provide services to meet changing human needs, while simultaneously ensuring the long-term productive potential of these resources and the maintenance of their environmental functions.*

*An **SLM Technology** is a physical practice on the land that controls land degradation, enhances productivity, and/ or other ecosystem services. A Technology consists of one or several measures, such as agronomic, vegetative, structural, and management measures.*

*An **SLM Approach** defines the ways and means used to implement one or several SLM Technologies. It includes technical and material support, involvement and roles of different stakeholders, etc. An Approach can refer to a project/ programme or to activities initiated by land users themselves.*

A modular framework for the documentation and assessment of SLM practices

The ultimate goal of documenting and assessing land management practices is to share and spread valuable knowledge in land management, support evidence-based decision-making, and scale up identified good/ best practices. To achieve this, it is important to analyse field experiences and gain a better understanding of the reasons behind successful SLM practices, regardless of whether they were introduced by projects or whether they are found in traditional systems.

*WOCAT focuses on efforts to prevent and reduce land degradation and restore degraded land through improved **land management technologies** and **approaches to implement these**. All practices may be considered, whether they are traditional or indigenous, newly introduced through projects or programmes, adopted and/ or adapted by land users, or recent innovations.*

*The **Core Questionnaire on SLM Technologies (QT)** helps to describe and understand the land management practice by addressing the following questions: **what** are the specifications of the Technology, what are the inputs and costs, **where** is it used (natural and human environment), and what **impact** does it have?*

*The **Core Questionnaire on SLM Approaches (QA)** addresses the questions of **how** implementation was achieved (including capacity building, decision-making, technical and material support, change of legal framework and policies) and **who** achieved it (including all stakeholders involved and their roles). **In the case of projects, WOCAT asks you to document only those components or activities of the project that are relevant to SLM.***

The Core questionnaires on SLM Technologies (QT Core) and on SLM Approaches (QA Core) contain the key questions on sustainable land management. They are the foundation of the WOCAT knowledge base. They are shorter and less time-consuming to fill in than the formerly used "basic" questionnaires.

***The WOCAT framework is flexible and open.** It enables users to include specific topics, depending on their interests and needs, to expand the standardized WOCAT Core questionnaires. Development of the following **modules** has been completed or initiated: **Climate change adaptation** (QC), **Climate Change Mitigation**/ Carbon Benefits, **Economics of SLM,** and **Biodiversity**. The realization of additional modules depends on the initiative of interested partners and the mobilization of resources. WOCAT is open for collaboration, joint projects, and further development of the knowledge base. All modules will be docked onto the core version of QT and QA.*

*A further tool, the **questionnaire on SLM Mapping (QM),** has been developed to analyse and depict the spatial distribution of SLM and land degradation processes, causes, and impacts.*

*The questionnaires mentioned above complement each other. All information documented through WOCAT questionnaires is made available in an open-access **online database** and can be used to disseminate SLM knowledge and improve decision-making for further implementation and spreading of SLM practices.*

Please read the following notes before filling in the questionnaire:

- *It is recommended that the questionnaire be filled in by a **team of SLM specialists – including land users –** with different backgrounds and experience, who are familiar with the details of the SLM Technology (technical, financial, socio-economic).*
- ***Answer all questions.** If hard or precise data are not available, we ask you to provide a best estimate based on your professional judgement. If certain questions are not applicable or not relevant, indicate "n/a". Remember that the quality of the results depends entirely on the quality of your answers.*
- *Questions with the icon  must be answered in consultation with land users. Depending on the Technology, it may be advantageous to answer all questions in consultation with land users.*
- *Questions with the icon  require measurements or observations in the field.*

- *Instructions, explanations, definitions, and examples are indicated in italics. Use the definitions given in this document, even if they deviate from your own/ national definitions (e.g. land use, slope classes, etc.).*
- ***Square boxes must be ticked!** If "Several answers possible" is not indicated, tick only one box**!***
- ***Make use of existing documents and seek advice from other SLM specialists and land users as much as possible in order to improve the quality of the data.***
- *If you do not have enough space for answers, use the empty pages at the end of the questionnaire for additional information. Please always make proper reference to particular questions and page numbers!*
- *Attach good technical **drawings, photographs (including descriptions)**, references, etc.*
- *Please fill in a separate questionnaire for each Approach and each Technology (i.e. one questionnaire per Approach; one questionnaire per Technology). An Approach should be linked with one or several Technologies. Together, the two questionnaires (on SLM Technologies and on SLM Approaches) describe a case study within a selected area.*
- *The questionnaire was designed to document SLM Technologies. However, it can also be used for any land use management practice which is considered **non**-sustainable. If the objective is to compare situation 1 (before or without SLM measures) with situation 2 (after or with SLM measures), or to assess two different technologies and compare their impacts within the same land use system, fill in two separate questionnaires. Questionnaire 1 has to be filled in completely. In Questionnaire 2, it is sufficient to fill in the answers that differ from those given in Questionnaire 1. Indicate reference/ link between questionnaires in question 1.6.*
- *Fill in the questionnaire **carefully and legibly**.*
- ***Please enter the information in the WOCAT online database,** see qcat.wocat.net.*

1. General information

1.1 Name of the SLM Technology (hereafter referred to as the Technology)

Name: .....

Locally used name:…… .....

Country: .....

1.2 Contact details of resource persons and institutions involved in the assessment and documentation of the Technology

Compiler

The person who conducted the interviews, compiled the information, and filled in the questionnaire.

Last name: ..... First name(s): ..... ☐ female ☐ male

Name of institution: .....

Address of institution: .....

Postal Code: ..... City: .....

State or District: ..... Country: .....

Phone no. 1: ..... Phone no. 2 (mobile) .....

E-mail 1: ..... E-mail 2: .....

Optional: Add a photo of the compiler and indicate filename here: .....

Key resource person(s)

Person(s) who provided most of the information documented in this questionnaire. These can be land users, SLM specialists (e.g. technical advisers, researchers), or any other persons.

Specify the key resource person: ☐ land user[1] ☐ SLM specialist/ technical adviser ☐ other (specify):

…….

Last name: ..... First name(s): ..... ☐ female ☐ male

Name of institution: .....

Address of institution: .....

Postal Code: ..... City: .....

State or District: ..... Country: .....

Phone no. 1: ..... Phone no. 2 (mobile) .....

E-mail 1: ..... E-mail 2: .....

Optional: Provide a photo of the key resource person(s) and indicate filename here: .....

[1] ***Land user****: the person/ entity who implements/ maintains the Technology. The term land user may refer to individual small- or large-scale farmers, groups (gender, age, status, interest), cooperatives, industrial companies (e.g. mining), government institutions (e.g. state forest), etc.*

Name of the institution(s) which facilitated the documentation/ evaluation of the Technology (if relevant): .....

Name of project which facilitated the documentation/ evaluation of the Technology (if relevant): .....

Note: You may upload the logo(s) of your institution/ project to the WOCAT database.

Indicate further resource persons who have provided information on the Technology (if relevant):

Resource person 2: ☐ land user ☐ SLM specialist/ technical adviser ☐ other (specify): ……..

Last name: ..... First name(s): ..... female ☐ male ☐

Name of institution: .....

Address: .....

..... Country: .....

Phone no. 1: ..... Phone no. 2 (mobile) .....

E-mail 1: ..... E-mail 2: .....

Resource person 3: ☐ land user ☐ SLM specialist/ technical adviser ☐ other (specify): ……..

Last name: ..... First name(s): ..... female ☐ male ☐

Name of institution: .....

Address: .....

..... Country: .....

Phone no. 1: ..... Phone no. 2 (mobile) .....

E-mail 1: ..... E-mail 2: .....

Resource person 4: ☐ land user ☐ SLM specialist/ technical adviser ☐ other (specify): ……..

Last name: ..... First name(s): ..... female ☐ male ☐

Name of institution: .....

Address: .....

..... Country: .....

Phone no. 1: ..... Phone no. 2 (mobile) .....

E-mail 1: ..... E-mail 2: .....

1.3 Conditions regarding the use of data documented through WOCAT

When were the data compiled (in the field)?: ……

The compiler and key resource person(s) accept the conditions regarding the use of data documented through WOCAT:
☐ yes ☐ no

Note: If you do not accept the conditions regarding the use of data documented through WOCAT, you will not be able to enter and edit data in the WOCAT database.

Conditions regarding the use of data documented through WOCAT

- *Data captured through WOCAT questionnaires will be entered, edited, and stored in the WOCAT online database by the compiler or a data entry person assigned by the compiler. Overall responsibility for compilation and data quality lies with the compiler. The compiler, resource persons, and data entry person will be recorded and given credit for the data in the database as well as in any compilation or publication of the documented Technology.*
- *Data stored in the WOCAT database are open access.*
- *Data are made available for users under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.*

You are free to:

- ***Share** — copy and redistribute the material in any medium or format*
- ***Adapt** — remix, transform, and build upon the material*

The licensor cannot revoke these freedoms as long as you follow the following license terms:

- ***Attribution** — You must give appropriate credit, provide a link to the license, and indicate if changes were made.*
- ***Non-commercial** — You may not use the material for commercial purposes.*
- ***ShareAlike** — If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original.*
- ***No additional restrictions** — You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.*

***Full license terms**: http://creativecommons.org/licenses/by-nc-sa/3.0/legalcode*

1.4 Declaration on sustainability of the described Technology

Note that WOCAT questionnaires focus on the documentation and assessment of SLM practices. However, this questionnaire can also be used to describe a non-sustainable land management practice if you wish to compare this practice with specific SLM Technologies. In this case, indicate reference to those SLM Technologies in question 1.6.

Is the Technology described here problematic with regard to land degradation, so that it cannot be declared a *sustainable* land management technology?

☐ yes ☐ no

Comments: .....

.....

1.5 Reference to Questionnaire(s) on SLM Approaches

To understand properly the implementation of the Technology, the associated SLM Approach must be described. Name the corresponding Approach and its compiler below, and make sure that a link is created in the database.

Name of SLM Approach:	Compiler:
.....	.....

1.6 Reference to/ comparison with other Technologies

If the Technology described in this questionnaire is part of a comparative assessment of different Technologies/ situations, please indicate details.

Name of other SLM Technology/Technologies:	Compiler:
.....	.....
.....	.....

2. Description of the SLM Technology

An SLM Technology *is a practice applied in the field that controls land degradation and/ or enhances productivity. A Technology consists of one or several measures, such as agronomic, vegetative, structural, and management measures.*

A single SLM Technology should cover a homogeneous set of natural (biophysical) and human (socio-economic) conditions. This means that the Technology is not applied or applicable to different, very dissimilar climatic or altitudinal zones or slope categories, or under very dissimilar land tenure arrangements. A Technology may consist of one or several ***SLM measures*** *(agronomic, vegetative, structural, and management measures); e.g. terraces combined with grass strips and contour ploughing.*

Site-specific information*: Information provided in this questionnaire should strictly refer to the sites that were assessed/ analysed during the documentation of the Technology (e.g. through interviews with land users, field surveys, etc.), although the Technology might be applied or be applicable in a wider area.*

2.1 Short description of the Technology

Summarize the Technology in 1-2 sentences. Make sure this short description is precise and contains relevant keywords. It is the lead text of this documentation and provides an important basis for searching the database.

.....

.....

2.2 Detailed description of the Technology

The detailed description should provide a concise but comprehensive picture of the Technology to outsiders. It should therefore address key questions such as: (1) Where is the Technology applied (natural and human environment)? (2) What are the main characteristics/ elements of the Technology (including technical specifications)? (3) What are the purposes/ functions of the Technology? (4) What major activities/ inputs are needed to establish/ maintain the Technology? (5) What are the benefits/ impacts of the Technology? (6) What do land users like / dislike about the Technology? The description should ideally be 2,500-3,000 characters in length; the absolute maximum is 3,500 characters. Additional, more detailed descriptions may be uploaded to the database as separate documents. Fill in the description at the beginning, but revise it when you have completed the questionnaire.

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2.3 Photos of the Technology

Provide photos showing an overview and details of the Technology.

Provide at least two digital files (JPG, PNG, GIF), i.e. files from a digital camera or scans from prints, negative films or slide films. Photos should be of high quality/ high resolution and not manipulated or distorted.
An explanation (description) is required for each photo submitted! Photos should match the description given in 2.2 and help illustrate the technical drawing in 4.1.
Where appropriate, photos should depict the situation before and after or with and without SLM measures.
Good photos are crucial for understanding and illustrating the main features of the Technology.

Filename of photo	Caption, explanation of photo	Date and location	Name of photographer

General remarks regarding photos: .....
.....

Example


Overview *(left): Fanya juu terraces with grass strips on the risers developed into bench terraces*
Detail *(right): Fanya juu bund in a maize field after harvest: Napier grass on the upper part of the bund, and maize residues in the ditch below. (Photos: Machakos, Kenya; H.P. Liniger)*

2.4 Videos of the Technology

If video files presenting the Technology are available, upload them to a public platform (e.g. vimeo.com, youtube.com) and indicate a link and a short description for each file in the table below.

Link	Comments, short description	Date and location	Name of videographer

2.5 Country/ region/ locations where the Technology has been applied and which are covered by this assessment

The described Technology might be applied in various sites. However, restrict information given in this questionnaire to only those sites that have been assessed/ analysed in the documentation process (through field visits, interviews with respective land users, reports, etc.). Do not include other sites where the same Technology is applied but no data have been collected.

Country: ..... Region/ State/ Province: .....

Further specification of location (e.g. municipality, town, etc.), if relevant:: .....

Number of sites considered/ analysed in the documentation of this Technology:

☐ single site ☐ 2-10 sites ☐ 10-100 sites ☐ 100-1,000 sites ☐ > 1,000 sites

***Site**: A site can be a single plot or a larger area managed by individuals or a community, or a place where specific infrastructure has been implemented (e.g. dam).*

Geo-referenced information (coordinates) of the sites where the Technology was documented (reference sites):

Name of location, name of land user, etc.	Longitude	Latitude

Comments: .....

.....

2.6 Date of implementation

Indicate year of implementation: ……

If precise year is not known, indicate approximate date:

☐ less than 10 years ago (recently) ☐ 10-50 years ago ☐ more than 50 years ago (traditional)

2.7 Introduction of the Technology

Specify how the Technology was introduced:

☐ through land users' innovation

☐ as part of a traditional system (> 50 years)

☐ during experiments/ research

☐ through projects/ external interventions

☐ other (specify): ……..

Comments (type of project, etc.) .....

.....

.....

.....

*The terms **traditional** and **innovation** refer to the land users' own technologies. They cover technologies that have been in use for generations, as well as those developed more recently by innovative land users in response to changing circumstances. Use "other" when the Technology does not fit any of the given categories and specify why it does not fit.*

3. Classification of the SLM Technology

3.1 Main purpose(s) of the Technology

Several answers possible.

- ☐ improve production (crop, fodder, wood/ fibre, water, energy)
- ☐ reduce, prevent, restore land degradation (soil, water, vegetation)
- ☐ conserve ecosystem
- ☐ protect a watershed/ downstream areas – in combination with other Technologies
- ☐ preserve/ improve biodiversity
- ☐ reduce risk of disasters (e.g. droughts, floods, landslides)
- ☐ adapt to climate change/ extremes and its impacts (e.g. resilience to droughts, storms)
- ☐ mitigate climate change and its impacts (e.g. through carbon sequestration)
- ☐ create beneficial economic impact (e.g. increase income/ employment opportunities)
- ☐ create beneficial social impact (e.g. reduce conflicts on natural resources, support marginalized groups)
- ☐ other purpose (specify): ……

3.2 Current land use type(s) where the Technology is applied

See definitions of land use, land use types, and subcategories below.

Select land use type *Usually one, max. two ticks*	***Select one or more subcategories*** *Several answers possible*	***Specify major products/ services/ remarks***
☐ cropland	☐ Annual cropping ☐ Perennial cropping ☐ Tree and shrub cropping ☐ Other (specify): ……	Main crops (cash and food crops): ....
☐ grazing land	***Extensive grazing*** ☐ Nomadism ☐ Semi-nomadism/ pastoralism ☐ Ranching ***Intensive grazing*** ☐ Cut-and-carry/ zero grazing ☐ Improved pasture ☐ Other (specify): …….	Main animal species and products: …..... …..... ….. …..... …..... ….....
☐ forest/ woodlands	***(Semi-)natural forests/ woodlands*** ☐ Selective felling ☐ Clear felling ☐ Shifting cultivation ☐ Dead wood/ prunings removal ☐ Non-wood forest use ***Tree plantation, afforestation*** ☐ Monoculture local variety ☐ Monoculture exotic variety ☐ Mixed varieties ☐ Other (specify):……....	Products and services: ☐ Timber ☐ Fuelwood ☐ Fruits and nuts ☐ Other forest products (honey, medicinal plants, etc.) ☐ Grazing/ browsing ☐ Nature conservation/protection ☐ Recreation/ tourism ☐ Protection against natural hazards ☐ Other (specify): .....

☐ mixed (crops/ grazing/ trees), incl. agroforestry	☐ Agroforestry ☐ Agro-pastoralism ☐ Agro-silvopastoralism ☐ Silvo-pastoralism ☐ Other (specify): ……..	Main products/ services: ....
☐ settlements, infrastructure	☐ Settlements, buildings ☐ Traffic: roads, railways ☐ Energy: pipelines, power lines ☐ Other (specify):	Remarks: ....
☐ waterways, waterbodies, wetlands	☐ Drainage lines, waterways ☐ Ponds, dams ☐ Swamps, wetlands..... ☐ Other (specify):	Main products/ services: ....
☐ mines, extractive industries	Specify:	Main products:.....
☐ unproductive land	Specify:	Remarks: .....
☐ other (specify):	Specify:	Remarks: .....

Comments: .....

.....

If land use has changed due to the implementation of the Technology, indicate land use before implementation of the Technology: .....

Choose from the land use types and subcategories listed below.

Land use: *human activities which are directly related to land, making use of its resources or having an impact on it.*

Land cover: *vegetation (natural or planted) or man-made structures (buildings, etc.) that cover the earth's surface.*

Land use types

Main categories	***Subcategories***
Cropland: *land used for cultivation of crops (field crops, orchards)*	• ***Ca: Annual cropping:*** *land under temporary/ annual crops usually harvested within one, maximally two years (e.g. maize, paddy rice, wheat, vegetables, fodder crops)* • ***Cp: Perennial (non-woody) cropping:*** *land under permanent (not woody) crops that may be harvested after 2 or more years, or where only part of the plants are harvested (e.g. sugar cane, banana, sisal, pineapple)* • ***Ct: Tree and shrub cropping:*** *permanent woody plants with crops harvested more than once after planting and usually lasting for more than 5 years (e.g. orchard/ fruit trees, coffee, tea, grapevines, oil palm, cacao, coconut, fodder trees)*

Grazing land: *land used for animal production*	• ***Ge: Extensive grazing land:*** *grazing on natural or semi-natural grasslands, grasslands with trees/ shrubs (savannah vegetation) or open woodlands for livestock and wildlife. Includes the following subcategories:*
	  ◦ ***Nomadism****: people move with animals*
	  ◦ ***Semi-nomadism/ pastoralism****: animal owners have a permanent place of residence where supplementary cultivation is practiced. Herds are moved to distant grazing grounds.*
	  ◦ ***Ranching****: grazing within well-defined boundaries, movements cover smaller distances and management inputs are higher compared to semi-nomadism.*
	• ***Gi: Intensive grazing/ fodder production:*** *improved or planted pastures for grazing/ production of fodder (for cutting and carrying: hay, leguminous species, silage etc.) not including fodder crops such as maize, cereals. These are classified as annual crops (see above). Intensive grazing can be subclassified into:*
	  ◦ ***Cut-and-carry/ zero grazing****: carrying fodder to animals confined to a stall/ shed or another restricted area; in zero-grazing systems the livestock are not permitted to graze at any time*
	  ◦ ***Improved pastures****: pasture that is sown with a mixture of introduced grasses and legumes (can be fertilized and/ or inoculated with rhizobia to fix nitrogen).*

Forests/ woodlands: *land used mainly for wood production, other forest products, recreation, protection.*	• ***Fn: Natural or semi-natural:*** *forests mainly composed of indigenous trees, not planted by man*
	  • *Selective felling*
	  • *Clear felling: felling the whole forest at one time*
	  • *Shifting cultivation: felling (harvesting) only certain valuable trees within a forest*
	  • *Dead wood/ prunings removal (no cutting of trees)*
	  • *Non-wood forest use (e.g. fruit, nuts, mushrooms, honey, medicinal plants, etc.)*
	• ***Fp: Plantations, afforestations:*** *forest stands established by planting or/ and seeding in the process of afforestation or reforestation*
	  • *Monoculture local variety*
	  • *Monoculture exotic variety*
	  • *Mixed varieties*
	• ***Fo: Other:*** *e.g. selective cutting of natural forests and incorporating planted species*

Mixed: *mixture of land use types within the same land unit (includes agroforestry)*	• ***Mf: Agroforestry:*** *cropland and trees* • ***Mp: Agro-pastoralism****: cropland and grazing land (including seasonal change between crops and livestock)* • ***Ma: Agro-silvopastoralism:*** *cropland, grazing land and trees (including seasonal change between crops and livestock)* • ***Ms: Silvo-pastoralism:*** *forest and grazing land* • ***Mo: Other:*** *other mixed land*
Settlements, infrastructure	• ***Ss:*** *Settlements, buildings* • ***St:*** *Traffic lines: roads, railways* • ***Se****: Energy lines: pipe lines, power lines* • ***So****: Other infrastructure*
Waterways, waterbodies, wetlands	• ***Wd****: Drainage lines waterways* • ***Wp****: Ponds, dams* • ***Ws****: Swamps, wetlands* • ***Wo****: Other waterways*
Mines, extractive industries	• ***I****: Mines, extractive industries*
Unproductive land	• ***U****: Wastelands, deserts, glaciers, etc.*

3.3 Further information about land use

Water supply for the land on which the Technology is applied:

☐ rainfed ☐ mixed rainfed–irrigated ☐ full irrigation ☐ other (e.g. post-flooding): ……

Comment: .....

Rainfed: *crop(s) establishment and development is completely determined by rainfall.*
Mixed rainfed–irrigated: *the application of a limited amount of water to the crop when rainfall fails to provide sufficient water for plant growth, to increase and stabilize yield; the additional water alone is inadequate for crop production.*
Full irrigation: *any of several means of an artificial regular supply of water, in addition to rain, to the crop(s).*
Post-flooding: *after rainwater has naturally flooded the field (e.g. in Wadis, riverbanks), the water infiltrated into the soil is used intentionally as a water reserve for crop cultivation. The crop(s) use(s) this water reserve for establishment.*

Number of growing seasons per year: ☐ 1 ☐ 2 ☐ 3 Specify: .....

Livestock density (if relevant): .....

3.4 SLM group to which the Technology belongs

Assign the described Technology to one of the following SLM groups. If this is not possible, select several (max. 3) groups to represent the Technology:

☐ natural and semi-natural forest management
☐ forest plantation management
☐ agroforestry
☐ windbreak/ shelterbelt
☐ area closure (stop use, support restoration)
☐ rotational system (crop rotation, fallows, shifting cultivation)
☐ pastoralism and grazing land management
☐ integrated crop–livestock management
☐ improved ground/ vegetation cover

- ☐ minimal soil disturbance
- ☐ integrated soil fertility management
- ☐ cross-slope measure
- ☐ integrated pest and disease management (incl. organic agriculture)
- ☐ improved plant varieties/ animal breeds
- ☐ water harvesting
- ☐ irrigation management (incl. water supply, drainage)
- ☐ water diversion and drainage
- ☐ surface water management (spring, river, lakes, sea)
- ☐ groundwater management
- ☐ wetland protection/ management
- ☐ waste management/ waste water management
- ☐ energy efficiency
- ☐ beekeeping, aquaculture, poultry, rabbit farming, silkworm farming, etc.
- ☐ home gardens
- ☐ ecosystem-based disaster risk reduction
- ☐ post-harvest measures
- ☐ other (specify): .....

***Natural and semi-natural forest management**: encompasses administrative, legal, technical, economic, social, and environmental aspects of the conservation and use of forests.*

***Forest plantation management**: plantation forests comprise even-aged monocultures and are established primarily for wood and fibre production. They are usually intensively managed and have relatively high growth rates and productivity.*

***Agroforestry**: integrates the use of woody perennials with agricultural crops and/ or animals for a variety of benefits and services including better use of soil and water resources; multiple fuel, fodder, and food products; and habitat for associated species.*

***Windbreak**: or shelterbelt is a plantation usually made up of one or more rows of trees or shrubs planted in such a manner as to provide shelter from the wind and to protect soil from erosion. They are commonly planted around the edges of fields on farms.*

***Area closure (stop use, support restoration)**: enclosing and protecting an area of degraded land from human use and animal interference, to permit natural rehabilitation, enhanced by additional vegetative and structural conservation measures.*

***Rotational systems (crop rotation, fallows, shifting cultivation)**: is the practice of growing a series of dissimilar/ different types of crops/ plants in the same area in sequenced season, letting it fallow for a period of time, shifting cultivation is an agricultural system in which plots of land are cultivated temporarily, then abandoned and allowed to revert to their natural vegetation while the cultivator moves on to another plot.*

***Pastoralism and grazing land management**: is the grazing of animals on natural or semi-natural grassland, grassland with trees, and/ or open woodlands. Animal owners may have a permanent residence while livestock is moved to distant grazing areas, according to the availability of resources*

***Integrated crop–livestock management**: optimizes the uses of crop and livestock resources through interaction and the creation of synergies.*

***Improved ground/ vegetation cover**: any measures that aim to improve the ground cover be it by dead material/ mulch or vegetation*

***Minimal soil disturbance** refers to no-tillage or low soil disturbance only in small strips and/ or shallow depth and direct seeding.*

***Integrated soil fertility management** (IFSM) aims at managing*

***Improved plant varieties/ animal breeds**: refers to the development of new plant varieties or animal breeds that offer benefits such as improved production, resistance to pests and diseases, or drought tolerance, in response to changing environmental conditions and land users' needs.*

***Water harvesting**: is the collection and management of floodwater or rainwater runoff to increase water availability for domestic and agricultural use as well as ecosystem sustenance.*

***Irrigation management (incl. water supply, drainage)** aims to achieve higher water use efficiency through more efficient water collection and abstraction, water storage, distribution, and water application.*

***Water diversion and drainage**: is the natural or artificial diversion or removal of surface and sub-surface water from an area*

***Surface water management (spring, river, lakes, sea)**: involves the protection of springs, rivers, and lakes from pollution, high water flows(floods), or over-abstraction of water, as well as protection measures against damage from waterbodies (e.g. river bank erosion, floods, tidal erosion)*

***Groundwater management**: involves securing the recharge of groundwater reserves and their protection from pollution, overexploitation/ overuse, and rising groundwater levels leading to salinization.*

***Wetland protection/ management**: managing wetland typically involves manipulating water levels and vegetation in the wetland, and providing an upland buffer.*

***Waste management/ waste water management**: is a set of activities that include collection, transport, treatment and disposal of waste, prevention of waste production, and modification and reuse/ recycling of waste.*

***Energy efficiency technologies**: reduce the amount of energy required to provide products and services, e.g. for cooking and heating, reducing the demand for fuel (fossil, wood).*

***Beekeeping, aquaculture, poultry, rabbit farming, silkworm farming, etc.**: allow food production and agricultural products requiring small surfaces of the land.*

***Home gardens** (also called backyard or kitchen gardens): are a traditional multifunctional farming system applied on a small area of land around the family home. They have the potential*

soil by combining different methods of soil fertility amendment together with soil and water conservation. ISFM is based on three principles: maximizing the use of organic sources of fertilizer (e.g. manure and compost application, nitrogen-fixing green manure and cover crops); minimizing the loss of nutrients; and judiciously using inorganic fertilizer according to needs and economic availability.

***Cross-slope measures**: are constructed on sloping lands in the form of earth or soil bunds, stone lines, or vegetative strips, etc. for reducing runoff velocity and soil erosion.*

***Integrated pest and disease management (incl. organic agriculture)**: Integrated pest and disease management is a process to solve pest and disease problems while minimizing risks to people and the environment.*

to supply most of the non-staple foods (including vegetables, fruits, herbs, animals and fish). They also provide a space for recreation, leisure, and relaxation.

***Ecosystem-based Disaster Risk Reduction**: is the sustainable management, conservation, and restoration of ecosystems with the aim of enabling these ecosystems to provide services that mitigate hazards, reduce vulnerability, and increase livelihood resilience.*

***Post-harvest measures**: encompasses activities to deliver a crop from harvest to consumption with minimum loss, maximum efficiency, and maximum return for all involved – such as drying, storage, cooling, cleaning, sorting, and packing.*

3.5 Spread of the Technology

Specify the spread of the Technology:

☐ evenly spread over an area (e.g. mulching, series of terraces, afforestation, micro-catchments)

☐ applied at specific points/ concentrated on a small area (e.g. water points, dams, compost production pits, smallstock stables, hydropower stations)

If the Technology is evenly spread over an area, indicate approximate area covered:

☐ < 0.1 km^2 (10 ha)
☐ 0.1-1 km^2
☐ 1-10 km^2
☐ 10-100 km^2
☐ 100-1,000 km^2
☐ 1,000-10,000 km^2
☐ > 10,000 km^2

Comments: .....

.....

3.6 SLM measures comprising the Technology

Use the SLM measures and subcategories listed below. Several answers possible.

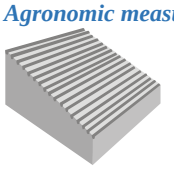
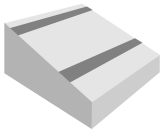
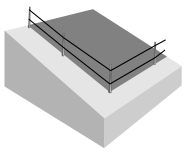
Select SLM measure	Select one or more subcategories/ codes (see definitions below)
☐ agronomic measures	.....
☐ vegetative measures	.....
☐ structural measures	.....
☐ management measures	.....
☐ other measures	.....

Comments/ remarks: .....

.....

SLM measures – the constituents of a Technology

SLM measures fall into five categories: agronomic, vegetative, structural, management, and other. Measures are components of Technologies. Each Technology is made up of one or – very commonly – a combination of measures: For instance, terraces – a typical structural measure – are often combined with other measures, such as grass on the risers for stabilization and fodder (vegetative measure), or contour ploughing (agronomic measure).

Type of measure	*Subcategories*	*Examples*
Agronomic measures  • *are usually associated with annual crops* • *are repeated routinely each season or in a rotational sequence* • *are of short duration and not permanent* • *do not lead to changes in slope profile* • *are normally independent of slope*	**A1:** Vegetation/ soil cover	*Mixed cropping, intercropping, relay cropping, cover cropping*
	A2: Organic matter/ soil fertility	*Conservation agriculture, production and application of compost/ manure, mulching, trash lines, green manure, crop rotations*
	A3: Soil surface treatment	*Zero tillage (no-till), minimum tillage, contour tillage*
	A4: Subsurface treatment	*Breaking compacted subsoil (hard pans), deep ripping, double digging*
	A5: Seed management, improved varieties	*Production of seeds and seedlings, seed selection, seed banks, development/ production of improved varieties*
	A6: Others	
Vegetative measures  • *involve the use of perennial grasses, shrubs, or trees* • *are of long duration* • *often lead to a change in slope profile* • *are often aligned along the contour or against the prevailing wind direction* • *are often spaced according to slope*	**V1:** Tree and shrub cover	*Agroforestry, windbreaks, afforestation, hedges, live fences*
	V2: Grasses and perennial herbaceous plants	*Grass strips along the contour, vegetation strips along riverbanks*
	V3: Clearing of vegetation	*Fire breaks, reduced fuel for forest fires*
	V4: Replacement or removal of alien/ invasive species	*Cutting of undesired trees and bushes*
	V5: *Others*	*Tree nurseries*
Structural measures  • *are of long duration or permanent* • *often require substantial inputs of labour or money when first installed* • *involve major earth movements and/ or construction with wood, stone, concrete, etc. are often carried out to control runoff, erosion, and wind velocity, and to harvest rainwater* • *often lead to a change in slope profile* • *are often aligned along the contour/ against prevailing wind direction* • *are often spaced according to slope* *If structures are stabilized by means of vegetation, also select relevant vegetative measures!*	**S1:** Terraces	*Bench terraces (slope of terrace bed <6%); Forward-sloping terraces (slope of terrace bed >6%*
	S2: Bunds, banks	*Earth bunds, stone bunds (along the contour or graded), semi-circular bunds ("demi-lunes")*
	S3: Graded ditches, channels, waterways	*Diversion/ drainage ditch, waterways to drain and convey water*
	S4: Level ditches, pits	*Retention / infiltration ditches, planting holes, micro-catchments*
	S5: Dams, pans, ponds	*Dams for flood control, dams for irrigation, sand dams*
	S6: Walls, barriers, palisades, fences	*Sand dune stabilization, rotational grazing (using fences), area closure, gully plugs (check dams)*
	S7: Water harvesting/ supply/ irrigation equipment	*Rooftop water harvesting, water intakes, pipes, tanks, etc.*
	S8: Sanitation/ waste water structures	*Compost toilet, septic tanks, constructed treatment wetlands*
	S9: Shelters for plants and animals	*Greenhouses, stables, shelters for plant nurseries*
	S10: Energy saving measures	*Wood-saving stoves, insulation of buildings, renewable energy sources (solar, biogas, wind, hydropower)*
	S11: Others	*Compost production pits; reshaping of surface (slope reduction)*
Management measures  • *involve a fundamental change in land use* • *usually involve no agronomic and structural measures* • *often result in improved vegetative*	**M1:** Change of land use type	*Area closure/ resting, protection, change from cropland to grazing land, from forest to agroforestry, afforestation*
	M2: Change of management/ intensity level	*Change from grazing to cutting (for stall feeding), farm enterprise selection (degree of mechanization, inputs, commercialization), vegetable production in greenhouses, irrigation; from mono-cropping to rotational cropping; from continuous cropping to managed fallow; from open access to controlled access (grazing land, forests); from herding to fencing, adjusting stocking rates, rotational grazing*
	M3: Layout according to natural and human environment	*Exclusion of natural waterways and hazardous areas, separation of grazing types, distribution of water*

cover • *often reduce the intensity of use*	**M4:** Major change in timing of activities **M5:** Control/ change of species composition (if annually or in a rotational sequence as done e.g. on cropland → A1) **M6:** Waste management (recycling, re-use or reduce) **M7:** Others	*points, salt licks, livestock pens, dips (grazing land); increase of landscape diversity, forest aisle* *Land preparation, planting, cutting of vegetation* *Reduction of invasive species, selective clearing, encouragement of desired/ introduction of new species, controlled burning (e.g. prescribed fires in forests/ on grazing land)/ residue burning* *Includes both artificial and natural methods for waste management*
Other measures • *comprises any measures which do not fit into the above categories*		*Beekeeping, smallstock farming (e.g. poultry, rabbits), fish ponds; food storage and processing (including post-harvest loss reduction)*
Combinations • *occur where different measures complement each other and thus enhance each other's effectiveness* • *may comprise any two or more of the above measures*		*Terrace (S1) + Grass strips and trees along riser (V2, V1) + Contour tillage (A3)* *Zero grazing/ stall feeding (M2) + Construction of stables and fence (S10) + Compost/ manure production pits (S12) + Application of manure and compost on cropland (A2)*

3.7 Main types of land degradation addressed by the Technology

***Land degradation**: Degradation of land resources, including soils, water, vegetation, and animals.*

Use the degradation types and subcategories listed below. Several answers possible. Detailed information on the causes of land degradation may be documented using the WOCAT Mapping Tool.

Select degradation type	Select one or more subcategories/ codes (see definitions below)
☐ soil erosion by water	.....
☐ soil erosion by wind	.....
☐ chemical soil deterioration	.....
☐ physical soil deterioration	.....
☐ biological degradation	.....
☐ water degradation	.....
☐ other	.....

Comments/ remarks (e.g. human-induced and natural causes of degradation): ……...

……...

Degradation types

W: Soil erosion by water

- *Wt* — *Loss of topsoil/ surface erosion: even removal of top soil, sheet and interrill erosion*
- *Wg* — *Gully erosion/ gullying*
- *Wm* — *Mass movements/ landslides*
- *Wr* — *Riverbank erosion*
- *Wc* — *Coastal erosion*
- *Wo* — *Offsite degradation effects: deposition of sediments, downstream flooding, siltation of reservoirs and waterways, and pollution of water bodies with eroded sediments*

E: Soil erosion by wind

- *Et* — *Loss of topsoil: uniform displacement*
- *Ed* — *Deflation and deposition: uneven removal of soil material*
- *Eo* — *Offsite degradation effects: covering of the terrain with windborne sand particles from distant sources ("overblowing")*

C: Chemical soil deterioration

- *Cn* — *Fertility decline and reduced soil organic matter content (not caused by erosion): e.g. leaching, soil fertility mining, nutrient oxidation and volatilization (N)*
- *Ca* — *Acidification: lowering of the soil pH*
- *Cp* — *Soil pollution: contamination of the soil with toxic materials*
- *Cs* — *Salinization/ alkalinization: a net increase of the salt content of the (top) soil leading to a productivity decline*

P: Physical soil deterioration

- *Pc* — *Compaction: deterioration of soil structure by trampling or the weight and/ or frequent use of machinery*

Pk *Slaking and crusting: clogging of pores with fine soil material and development of a thin impervious layer at the soil surface obstructing the infiltration of rainwater*
Pi *Soil sealing: covering of the ground by an impermeable material (e.g. construction, mining, roads, etc.)*
Pw *Waterlogging: effects of human-induced water saturation of soils (excluding paddy fields)*
Ps *Subsidence of organic soils, settling of soil*
Pu *Loss of bio-productive function due to other activities*

B: Biological degradation

Bc *Reduction of vegetation cover: increase of bare/ unprotected soil*
Bh *Loss of habitats: decreasing vegetation diversity (fallow land, mixed systems, field borders), increased fragmentation of habitats*
Bq *Quantity/ biomass decline: reduced vegetative production for different land use*
Bf *Detrimental effects of fires (includes low/ high severity of fires): on forest (e.g. slash and burn), bushland, grazing land, and cropland (burning of residues)*
Bs *Quality and species composition/ diversity decline: loss of natural species, land races, palatable perennial grasses; spreading of invasive, salt-tolerant, unpalatable, species/ weeds*
Bl *Loss of soil life: decline of soil macro-organisms and micro-organisms in quantity and quality*
Bp *Increase of pests/ diseases, loss of predators: reduction of biological control*

H: Water degradation

Ha *Aridification: decrease of average soil moisture content*
Hs *Change in quantity of surface water: change of the flow regime (flood, peak flow, low flow, drying up of rivers and lakes)*
Hg *Change in groundwater/ aquifer level: lowering of groundwater table due to over-exploitation or reduced recharge of groundwater; or increase of groundwater table resulting in waterlogging and/ or salinization*
Hp *Decline of surface water quality: increased sediments and pollutants in fresh water bodies due to point pollution and land-based pollution*
Hq *Decline of groundwater quality: due to pollutants infiltrating into the aquifers*
Hw *Reduction of the buffering capacity of wetland areas to cope with flooding and pollution*

3.8 Prevention, reduction, or restoration of land degradation

Tick max. two answers.

Specify the goal of the Technology with regard to land degradation:

☐ prevent land degradation

☐ reduce land degradation

☐ restore/ rehabilitate severely degraded land

☐ adapt to land degradation

☐ not applicable

Comments/ remarks: .....

.....

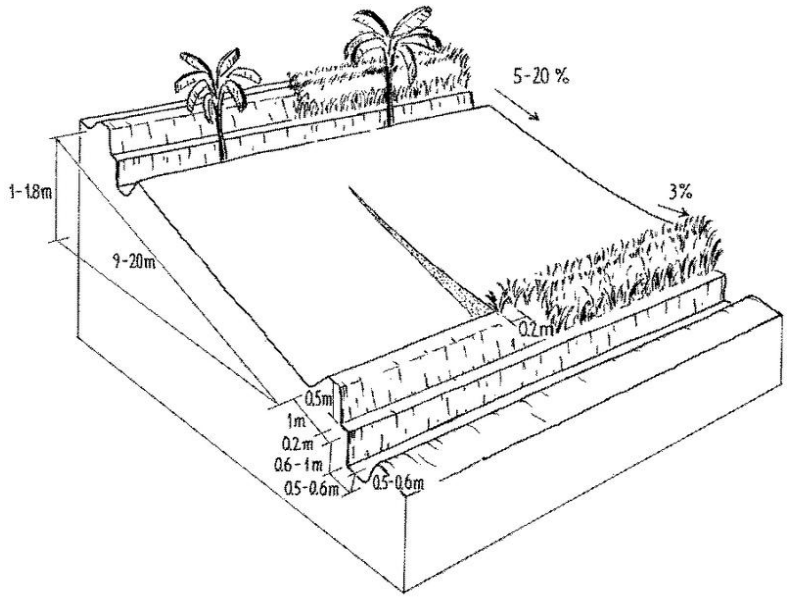
Prevention*: good land management practices that are already in place on land that may be prone to land degradation. They maintain natural resources and their environmental and productive functions.*
Reduction*: interventions intended to reduce ongoing degradation and/ or halt further degradation. They start improving natural resources and their functions. Impacts tend to be noticeable in the short to medium term.*
Rehabilitation/ restoration*: required when the land is already degraded to such an extent that the original use is no longer possible, and land has become practically unproductive. Here, longer-term and more costly investments are needed to show any impact.*
Adaptation*: applied when rehabilitation/ restoration of the original state of the land is no longer possible or requires resources beyond the means of land users. This means the state of land degradation is "accepted", but land management is adapted to suit land degradation (e.g. adapting to soil salinity by introducing salt-tolerant plants).*

4. Technical specifications, implementation activities, inputs, and costs

4.1 Technical drawing of the Technology

Please provide a comprehensive and detailed drawing (including dimensions) of the Technology and indicate technical specifications, measurements, spacing, gradient, etc. You can also provide several drawings showing (a) a temporal sequence of operations or (b) different elements or details of the Technology. Alternatively you can also provide one or several photographs with technical specifications drawn and/ or written onto the photograph(s). Include as much technical information as possible on the drawings (or photographs).
Keep the drawing simple and schematic. The technical drawing is crucial for understanding the Technology! Scan the drawing and upload the scan.

Author: .... Date: .....



***Example**: Technical drawing indicating technical specifications, dimensions, spacing*

4.2 Technical specifications/ explanations of technical drawing

Summarize technical specifications, e.g.:

- *Dimensions (height, depth, width, length) of structures or vegetative elements*
- *Spacing between structures or plants/ vegetative measures*
- *Vertical intervals structures or vegetative measures*
- *Slope angle (before and after implementation of the Technology)*
- *Lateral gradient of structures*
- *Capacity of dams, ponds, etc.*
- *Catchment area and beneficial area of dams, ponds, other water harvesting systems*
- *Construction material used*
- *Species used*
- *Quantity/ density of plants (per ha)*

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

4.3 General information regarding the calculation of inputs and costs

Notes on implementation activities, inputs, and costs:

- *It may be very difficult to determine the costs of a Technology. Nevertheless, we ask you to give your best estimate!*
- *A distinction is made between initial establishment (construction, initiation) and maintenance/ recurrent annual activities.*
- *All costs should be calculated based on market prices. If labour is provided by land users themselves, indicate equivalent cost of hired labour. If inputs are provided/ produced by land users themselves, indicate equivalent market price.*
- *Exclude costs of awareness creation, planning, training, research, and financial/ material support (these will be addressed in the Approach questionnaire).*
  If the objective is to compare two situations, i.e. the situation after/ with SLM measures (e.g. conservation agriculture) and the situation before/ without SLM measures (e.g. conventional agriculture), fill in two questionnaires.
- *Preferably, activities, inputs, and costs should be calculated per area on which the Technology is applied. If you use a local area unit, indicate conversion factor between local unit and hectares. Include not only the area which is immediately covered by SLM measures (e.g. the area covered by stone walls, tree lines, ditches) but also the area that is affected/ protected by the SLM measures (e.g. the area between stone walls, tree lines, ditches).*
- *Alternatively, if it is not possible to calculate activities, inputs, and costs per area, they may be calculated per unit (e.g. dam, animal watering point, energy saving stove) or per length (e.g. metre of stone line)*

Specify how costs and inputs were calculated:

☐ per Technology area → indicate size and area unit: …… (e.g. 24 acres, 4.5 hectares)
If using a local area unit, indicate conversion factor: 1 hectare =……

☐ per Technology unit: → specify unit: …….. (e.g. watering point, energy saving stove, stone line)
specify volume, length, etc. (if relevant): …….. (e.g. stone lines: 250 m, dam: 20,000 m^3)

Specify currency used for cost calculations: ☐ US Dollars ☐ other/ national currency (specify): .....

You can use US dollars (USD) or any other national currency. Indicate all costs using the same currency.

Indicate exchange rate from USD to local currency (if relevant): 1 USD =.....

Indicate average wage cost of hired labour per day: …….

4.4 Establishment activities

List establishment activities for the Technology (in sequence) and indicate timing

Activity	***Type of measure***[1] (A/V/S/M/O)	***Timing***[2]
1.	.....	.....
2.	.....	.....
3.	.....	.....
4.	.....	.....
5.	.....	.....
6.	.....	.....
7.	.....	.....
8.	.....	.....
9.	.....	.....
10.	.....	.....

Comments: .....

[1] ***Type of measure:*** *A = Agronomic; V = Vegetative; S = Structural; M = Management; O = Other measures; refer to 3.6*

[2] ***Timing:*** *time during which activity is carried out, e.g. month or season, or "after harvest of crops", "before onset of rains", etc.*

4.5 Costs of inputs needed for establishment

Note: *Costs and inputs specified below should refer to the Technology area/ Technology unit defined in 4.3 and to the activities listed in 4.4. Use the currency indicated in 4.3.*

If possible, break down the costs of establishment according to the following table, specifying inputs and costs per input. If you are unable to break down the costs, give an estimation of the total costs of establishing the Technology:
……...

Input	Specify input[3]	Unit[4]	Quantity	Costs per unit	Total costs per input	% of costs borne by land users
Labour						
Equipment						
Plant material						
Fertilizers and biocides						
Construction material						
Others						
				Total costs of establishment of the Technology		

[3] ***Specify inputs:***
- ***Labour*** *includes total person-days, be they paid or unpaid (e.g. contributed by family members). Under "Costs per unit", indicate daily wage for hired labour. If relevant, differentiate between skilled and unskilled labour.*
- ***Equipment*** *includes tools, machine hours, animal traction, etc. Cost calculation for machine hours and animal traction should be based on hiring costs – even if the machinery/ animals are owned by the land user.*
- ***Plant material*** *includes seeds, seedling, cuttings, etc.*
- ***Fertilizers and biocides****: compost/ manure, inorganic fertilizer, herbicides, pesticides, etc.*
- ***Construction material*** *includes timber, stones, earth, cement, pipes, tanks, etc.*

[4] ***Units:*** *person-days, kg, litres, pieces, etc.*

If land user bore less than 100% of costs, indicate who covered the remaining costs: .....

Remarks/ comments: .....

.....

4.6 Maintenance/ recurrent activities

List maintenance/ recurrent activities for the Technology (in sequence) and indicate timing

Activity	***Type of measure***[1] (A/V/S/M/O)	***Timing***[2]/ ***frequency***[3]
1.	.....	.....
2.	.....	.....
3.	.....	.....
4.	.....	.....
5.	.....	.....
6.	.....	.....
7.	.....	.....
8.	.....	.....
9.	.....	.....
10.	.....	.....

Comments: .....

[1] ***Type of measure:*** *A = Agronomic; V = Vegetative; S = Structural; M = Management; O = Other measures; refer to 3.6*
[2] ***Timing:*** *time during which activity is carried out, e.g. month or season, or "after harvest of crops", "before onset of rains", etc.*
[3] ***Frequency:*** *e.g. annually, each cropping season, etc.*

4.7 Costs of inputs and recurrent activities needed for maintenance (per year)

Note: *Costs and inputs specified below should refer to the Technology area/ Technology unit defined in 4.3 and to the activities listed in 4.6. Use the currency indicated in 4.3.*

If possible, break down the costs of maintenance according to the following table, specifying inputs and costs per input.

If you are unable to break down the costs, give an estimation of the total costs of maintaining the Technology:
……

Input	Specify input[4]	Unit[5]	Quantity	Costs per Unit	Total costs per input	% of costs borne by land users
Labour						
Equipment						
Plant material						

Fertilizers and biocides						
Construction material						
Others						
				Total costs of maintenance of the Technology		

[4] ***Specify inputs:***

- ***Labour*** *includes total person-days, be they paid or unpaid (e.g. contributed by family members). Under "Costs per unit", indicate daily wage for hired labour. If relevant, differentiate between skilled and unskilled labour.*
- ***Equipment*** *includes tools, machine hours, animal traction, etc. Cost calculation for machine hours and animal traction should be based on hiring costs – even if the machinery/ animals are owned by the land user.*
- ***Plant material*** *includes seeds, seedling, cuttings, etc.*
- ***Fertilizers and biocides****: compost/ manure, inorganic fertilizer, herbicides, pesticides, etc.*
- ***Construction material*** *includes timber, stones, earth, cement, pipes, tanks, etc.*

[5] ***Units:*** *person-days, kg, litres, pieces, etc.*

If land user bore less than 100% of costs, indicate who covered the remaining costs: .....

Remarks/ comments: .....

.....

4.8 Most important factors affecting costs

.....

.....

5. Natural and human environment

Give details of the natural (biophysical) conditions where the Technology is applied. Make specific reference to the sites where the documented Technology has been assessed and analysed. Tick one box per question only, except for slope and soil parameters (see indications below). Use comment sections to specify your answers and provide additional information.
***Note**: Some of the environmental conditions (e.g. slope angle, soil characteristics, water quality/ availability, etc.) may change as a result of the Technology! However, you are requested to **describe the conditions as they were without any impact of sustainable land management!** In exceptional cases, certain questions might not be relevant for the Technology. In such cases, skip the question but use the comment sections to explain why you are skipping it.*

5.1 Climate

***Annual rainfall** (max. 2 ticks)*

- ☐ < 250 mm
- ☐ 251-500 mm
- ☐ 501-750 mm
- ☐ 751-1,000 mm
- ☐ 1,001-1,500 mm
- ☐ 1,501-2,000 mm
- ☐ 2,001-3,000 mm
- ☐ 3,001-4,000 mm
- ☐ > 4,000 mm

Specify average annual rainfall (if known): …….. mm

Other specifications/ comments on rainfall distribution, seasonality (e.g. monsoon, winter/ summer rains), number/ length/ months of rainy seasons, occurrence of heavy rains, length of dry periods: .....

.....

.....

.....

.....

Indicate the name of the reference meteorological station considered: .....

.....

Agro-climatic zone

- ☐ humid
- ☐ sub-humid
- ☐ semi-arid
- ☐ arid

Specifications/ comments on climate: .....

.....

.....

Agro-climatic zone

- *Humid: length of growing period (LGP) > 270 days*
- *Sub-humid: LGP 180-269 days*
- *Semi-arid: LGP 75-179 days*
- *Arid: LGP < 74 days*

Length of growing period (LGP) is defined as the period during which precipitation is more than half of the potential evapotranspiration (PET) and the temperature is higher than 6.5° C.

5.2 Topography

***Slopes on average** (max. 2 ticks)*

- ☐ flat (0-2%)
- ☐ gentle (3-5%)
- ☐ moderate (6-10%)
- ☐ rolling (11-15%)
- ☐ hilly (16-30%)
- ☐ steep (31-60%)
- ☐ very steep (> 60%)

***Landforms** (max. 2 ticks)*

- ☐ plateau/ plains
- ☐ ridges
- ☐ mountain slopes
- ☐ hill slopes
- ☐ footslopes
- ☐ valley floors

***Altitudinal zone** (max. 2 ticks)*

- ☐ < 100 m a.s.l.
- ☐ 101-500 m a.s.l.
- ☐ 501-1,000 m a.s.l.
- ☐ 1,001-1,500 m a.s.l.
- ☐ 1,501-2,000 m a.s.l.
- ☐ 2,001-2,500 m a.s.l.
- ☐ 2,501-3,000 m a.s.l.
- ☐ 3,001-4,000 m a.s.l.
- ☐ > 4,000 m a.s.l.

Slope gradient conversion table:

Slope in degrees	→ Slope in percent
1°	→ 2%
3°	→ 5%
5°	→ 8%
9°	→ 16%
17°	→ 30%
31°	→ 60%

***Landforms** (modified from ISRIC 1993):*

- ***Plateau/ plains:** extended level land (slopes less than 8%).*
- ***Ridges:** narrow elongated area rising above the surrounding area, often hilltops or mountaintops.*
- ***Mountain slopes** (including major escarpments): extended area with altitude differences of more than 600 m per 2 km and slopes greater than 15%*
- ***Hill slopes** (including valley and minor escarpment slopes): altitude difference of less than 600 m per 2 km and slopes greater than 8%*

45° → 100%

- ***Footslopes:*** *zone bordering steeper mountain/ hill slopes on one side and valley floors/ plains/ plateaus on the other side*
- ***Valley floors:*** *elongated strips of level land (less than 8% slope), flanked by sloping or steep land on both sides*

Indicate if the Technology is specifically applied in ☐ convex situations:
☐ concave situations
☐ not relevant

convex: *ridge (diversion of water flow)*
concave*: depression (conversion of water flow)*

Comments and further specifications on topography (e.g. exact altitude and slope angles of the evaluated sites): .....
.....
.....

5.3 Soils

Max. 2 ticks per question.

Soil depth on average

☐ very shallow (0-20 cm)
☐ shallow (21-50 cm)
☐ moderately deep (51-80 cm)
☐ deep (81-120 cm)
☐ very deep (> 120 cm)

Soil texture (topsoil)

☐ coarse/ light (sandy)
☐ medium (loamy, silty)
☐ fine/ heavy (clay)

Soil texture (> 20 cm below surface)

☐ coarse/ light (sandy)
☐ medium (loamy, silty)
☐ fine/ heavy (clay)

Topsoil organic matter

☐ high (> 3%)
☐ medium (1-3%)
☐ low (< 1%)

If available, attach full soil description or specify the available information, e.g. soil type, soil PH/ acidity, Cation Exchange Capacity, nitrogen, salinity etc.): .....
.....
.....

5.4 Water availability and quality

One tick per question.

Groundwater table

☐ on surface
☐ < 5 m
☐ 5-50 m
☐ > 50 m

Availability of surface water

☐ excess (e.g. frequent waterlogging, high runoff)
☐ good (e.g. available year-round)
☐ medium (e.g. not available year-round)
☐ poor/ none

Water quality (untreated)

☐ good drinking water
☐ poor drinking water (treatment required)
☐ for agricultural use only (irrigation)
☐ unusable

Is water salinity a problem? no ☐ yes ☐ Specify: ……....

Is flooding of the area occurring? no ☐ yes ☐ If yes: frequently ☐ episodically ☐

Comments and further specifications on water quality and quantity (e.g. seasonal fluctuations, source of pollution) .....
.....

5.5 Biodiversity

Indicate the state of biodiversity in the analysed sites relative to your region/ country standards. Tick one option per question.

Species diversity

☐ high
☐ medium
☐ low

Habitat diversity

☐ high
☐ medium
☐ low

Comments and further specifications on biodiversity: .....

.....

***Species diversity**: a measure of diversity within an ecological community that incorporates both species richness (the number of species in a community) and the evenness of species' abundance; species include all fauna and flora above ground and in the soil (modified from eoearth.org)*

***Habitat diversity**: refers to the variety or range of habitats in a given region, landscape, or ecosystem (modified from oecd.org)*

5.6 Characteristics of land users applying the Technology

Specify the characteristics of the average/ typical land users who apply the Technology. Tick max. two answers per question. Indicate characteristics relative to your region/ country standards.

Sedentary or nomadic

☐ Sedentary
☐ Semi-nomadic
☐ Nomadic
☐ Other (specify): ……..

Market orientation of production system

☐ subsistence (self-supply)
☐ mixed (subsistence/ commercial)
☐ commercial/ market

Off-farm income[1]

☐ < 10% of all income
☐ 10-50% of all income
☐ > 50% of all income

Relative level of wealth[2]

☐ very poor
☐ poor
☐ average
☐ rich
☐ very rich

Individuals or groups

☐ individual/ household
☐ groups/ community
☐ cooperative
☐ employee (company, government)

Level of mechanization

☐ manual work
☐ animal traction
☐ mechanized/ motorized

Gender[3]

☐ women
☐ men

***Age of land users** (several answers possible)*

☐ children
☐ youth
☐ middle-aged
☐ elderly

[1] ***Off-farm income:** income other than from the use of cropland, grazing land, forest, and mixed land (e.g. from business, trade, manufacturing, industry, pension, remittances)*

[2] ***Relative level of wealth:** use local instead of international standards*

[3] *Indicate gender of persons using the land*

Indicate other relevant characteristics of the land users: .....

.....

5.7 Average area of land owned or leased by land users applying the Technology

Indicate the total area owned or leased by land users, including the land where no Technology is applied. Tick max. two answers.

- ☐ < 0.5 ha
- ☐ 0.5-1 ha
- ☐ 1-2 ha
- ☐ 2-5 ha
- ☐ 5-15 ha
- ☐ 15-50 ha
- ☐ 50-100 ha
- ☐ 100-500 ha
- ☐ 500-1,000 ha
- ☐ 1,000-10,000 ha
- ☐ > 10,000 ha

Is this considered small-, medium- or large-scale (referring to local context)?

☐ small-scale ☐ medium-scale ☐ large-scale

Comments: .....

.....

.....

5.8 Land ownership, land use rights, and water use rights

Tick max two options per question

Land ownership	***Land use rights***	***Water use rights*** *(if relevant)*
☐ state	☐ open access (unorganized)	☐ open access (unorganized)
☐ company	☐ communal (organized)	☐ communal (organized)
☐ communal/ village	☐ leased	☐ leased
☐ group	☐ individual	☐ individual
☐ individual, not titled	☐ other (specify):	☐ other (specify): .....
☐ individual, titled		
☐ other (specify):		

Comments: .....

.....

Land ownership *refers to the type of entity possessing the land, whereas* ***land use rights*** *refer to the type of entity having a right to access the land*

Land use rights/ water use rights:

- *Open access: means free for all*
- *Communal (organized): means subject to community-agreed management rules*
- *Leased: right to use land for a limited period of time against payment (contract)*
- *Individual: right of use pertains to single user*

5.9 Access to services and infrastructure

	poor	moderate	good
health	☐	☐	☐
education	☐	☐	☐
technical assistance	☐	☐	☐
employment (e.g. off-farm)	☐	☐	☐
markets	☐	☐	☐
energy	☐	☐	☐
roads and transport	☐	☐	☐
drinking water and sanitation	☐	☐	☐
financial services	☐	☐	☐
other (specify): ……..	☐	☐	☐

6. Impacts and concluding statements

Assess relevant impacts in the table below. If data based on measurements are not available, give your best estimate. Negligible means "no significant benefit nor disadvantage". Make use of the "Quantify before SLM/ after SLM" and "Comments/ specify" columns to show evidence and justify your selection as far as possible. Choose adequate indicators to quantify impacts (e.g. t/ha for crop production, coliform measurement for water quality, etc.). Even if a 10% increase (e.g. in yield) might be judged as a great improvement, please nonetheless tick the category "Slightly positive (+5-20%)", and use "Comments" to explain. Only indicate "Quantify (before/ after)" if impacts were measured in the field or determined by means of a survey. Impacts that are not ticked are considered "not relevant" or "not applicable".

On-site: *concerns the area where the Technology is applied.*
Off-site: *concerns adjacent areas or areas further away from the area where the Technology is applied.*

6.1 On-site impacts the Technology has shown

First, tick relevant impacts (tick boxes on the left, several answers possible). Then, for each selected impact, tick the extent and specify/ quantify if possible.

		Very negative (– 50-100%)	Negative (– 20-50%)	Slightly negative (– 5-20%)	Negligible impact	Slightly positive (+5-20%)	Positive (+20-50%)	Very positive (+50-100%)		If possible, quantify before SLM	after SLM	Comments/ specify
Socio-economic impacts												
Production												
☐ crop production	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
☐ crop quality	decreased	☐	☐	☐	☐	☐	☐	☐	increased			
☐ fodder production	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
☐ fodder quality	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
☐ animal production	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
☐ wood production	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
☐ forest/ woodland quality	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
☐ non-wood forest production	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
☐ risk of production failure	increased	☐	☐	☐	☐	☐	☐	☐	decreased	.....	.....	.....
☐ product diversity	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
☐ production area (new land under cultivation/ use)	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
☐ land management:	hindered	☐	☐	☐	☐	☐	☐	☐	simplified	.....	.....	.....
☐ energy generation (e.g. hydro, bio)	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
Water availability and quality												
☐ drinking water availability	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
☐ drinking water quality	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
☐ water availability for livestock	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
☐ water quality for livestock	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
☐ irrigation water availability	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
☐ irrigation water quality	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
☐ demand for irrigation water	increased	☐	☐	☐	☐	☐	☐	☐	decreased	.....	.....	.....
Income and costs												
☐ expenses on agricultural inputs	incr.	☐	☐	☐	☐	☐	☐	☐	reduced	.....	.....	.....
☐ farm income	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....
☐ diversity of income sources	decreased	☐	☐	☐	☐	☐	☐	☐	increased	.....	.....	.....

☐ economic disparities	increased	☐☐☐☐☐☐☐	decreased	....	
☐ workload	increased	☐☐☐☐☐☐☐	decreased	....	
Other socio-economic impacts					
☐ (specify):	……..	☐☐☐☐☐☐☐	.....	....	
☐ (specify):	……..	☐☐☐☐☐☐☐	.....	....	
☐ (specify):	……..	☐☐☐☐☐☐☐	.....	....	

Sociocultural impacts

☐ food security/ self-sufficiency	reduced	☐☐☐☐☐☐☐	improved	....	
☐ health situation	worsened	☐☐☐☐☐☐☐	improved	....	
☐ land use/ water rights	worsened	☐☐☐☐☐☐☐	improved	....	
☐ cultural opportunities (spiritual, religious, aesthetic etc.)	reduced	☐☐☐☐☐☐☐	improved	....	
☐ recreational opportunities	reduced	☐☐☐☐☐☐☐	increased	....	
☐ community institutions	weakened	☐☐☐☐☐☐☐	strengthened	....	
☐ national institutions	weakened	☐☐☐☐☐☐☐	strengthened	....	
☐ SLM/ land degradation knowledge	reduced	☐☐☐☐☐☐☐	improved	....	
☐ conflict mitigation	worsened	☐☐☐☐☐☐☐	improved	....	
☐ situation of socially and economically disadvantaged groups (gender, age, status, ethnicity etc.)	worsened	☐☐☐☐☐☐☐	improved	....	
Other sociocultural impacts					
☐ (specify):	.....	☐☐☐☐☐☐☐	.....	....	
☐ (specify):	.....	☐☐☐☐☐☐☐	.....	....	
☐ (specify):	.....	☐☐☐☐☐☐☐	.....	....	

Ecological impacts

Water cycle/ runoff

☐ water quantity	decreased	☐☐☐☐☐☐☐	increased	....	
☐ water quality	decreased	☐☐☐☐☐☐☐	increased	....	
☐ harvesting/ collection of water (runoff, dew, snow, etc.)	reduced	☐☐☐☐☐☐☐	improved	....	
☐ surface runoff	increased	☐☐☐☐☐☐☐	decreased	....	
☐ excess water drainage	reduced	☐☐☐☐☐☐☐	improved	....	
☐ groundwater table/ aquifer	lowered	☐☐☐☐☐☐☐	recharge	....	
☐ evaporation	increased	☐☐☐☐☐☐☐	decreased	....	

Soil

☐ soil moisture	decreased	☐☐☐☐☐☐☐	increased	....	
☐ Soil cover	reduced	☐☐☐☐☐☐☐	improved	....	
☐ soil loss	increased	☐☐☐☐☐☐☐	decreased	....	
☐ soil accumulation	decreased	☐☐☐☐☐☐☐	increased	....	
☐ soil crusting/ sealing	increased	☐☐☐☐☐☐☐	reduced	....	
☐ soil compaction	increased	☐☐☐☐☐☐☐	reduced	....	
☐ nutrient cycling/ recharge	decreased	☐☐☐☐☐☐☐	increased	....	
☐ salinity	increased	☐☐☐☐☐☐☐	reduced	....	
☐ soil organic matter/ below ground C	decreased	☐☐☐☐☐☐☐	increased	....	

☐ acidity	increased	☐ ☐ ☐ ☐ ☐ ☐ ☐	reduced	....
Biodiversity: vegetation, animals				
☐ vegetation cover	decreased	☐ ☐ ☐ ☐ ☐ ☐ ☐	increased	....
☐ biomass/ above ground C	decreased	☐ ☐ ☐ ☐ ☐ ☐ ☐	increased	....
☐ plant diversity	decreased	☐ ☐ ☐ ☐ ☐ ☐ ☐	increased	....
☐ invasive alien species	increased	☐ ☐ ☐ ☐ ☐ ☐ ☐	reduced	....
☐ animal diversity	decreased	☐ ☐ ☐ ☐ ☐ ☐ ☐	increased	....
☐ beneficial species (predators, earthworms, pollinators)	decreased	☐ ☐ ☐ ☐ ☐ ☐ ☐	increased	....
☐ harmful species (e.g. mosquitoes)	decr.	☐ ☐ ☐ ☐ ☐ ☐ ☐	increased	
☐ habitat diversity	decreased	☐ ☐ ☐ ☐ ☐ ☐ ☐	increased	....
☐ pests/ diseases	decreased	☐ ☐ ☐ ☐ ☐ ☐ ☐	increased	....
Climate and disaster risk reduction				
☐ flood impacts	increased	☐ ☐ ☐ ☐ ☐ ☐ ☐	decreased	....
☐ landslides/ debris flows	increased	☐ ☐ ☐ ☐ ☐ ☐ ☐	decreased	
☐ drought impacts	increased	☐ ☐ ☐ ☐ ☐ ☐ ☐	decreased	....
☐ impacts of cyclones, rain storms	incr.	☐ ☐ ☐ ☐ ☐ ☐ ☐	decreased	....
☐ emission of carbon and greenhouse gases	increased	☐ ☐ ☐ ☐ ☐ ☐ ☐	reduced	....
☐ fire risk	increased	☐ ☐ ☐ ☐ ☐ ☐ ☐	reduced	....
☐ wind velocity	increased	☐ ☐ ☐ ☐ ☐ ☐ ☐	decreased	....
☐ micro-climate	worsened	☐ ☐ ☐ ☐ ☐ ☐ ☐	improved	....
Other ecological impacts				
☐ (specify):	……..	☐ ☐ ☐ ☐ ☐ ☐ ☐	……..	....
☐ (specify):	……..	☐ ☐ ☐ ☐ ☐ ☐ ☐	……..	....
☐ (specify):	……..	☐ ☐ ☐ ☐ ☐ ☐ ☐	……..	....

6.2 Off-site impacts the Technology has shown

☐ water availability (groundwater, springs)	decreased	☐ ☐ ☐ ☐ ☐ ☐ ☐	increased	....
☐ reliable and stable stream flows in dry season (incl. low flows)	reduced	☐ ☐ ☐ ☐ ☐ ☐ ☐	increased	....
☐ downstream flooding[1]	……...	☐ ☐ ☐ ☐ ☐ ☐ ☐	……..	....
☐ downstream siltation[1]	……...	☐ ☐ ☐ ☐ ☐ ☐ ☐	……..	....
☐ groundwater/ river pollution	increased	☐ ☐ ☐ ☐ ☐ ☐ ☐	reduced	....
☐ buffering/ filtering capacity (by soil, vegetation, wetlands)	reduced	☐ ☐ ☐ ☐ ☐ ☐ ☐	improved	....
☐ wind transported sediments	increased	☐ ☐ ☐ ☐ ☐ ☐ ☐	reduced	....
☐ damage on neighbours' fields	increased	☐ ☐ ☐ ☐ ☐ ☐ ☐	reduced	....
☐ damage on public/ private infrastructure	increased	☐ ☐ ☐ ☐ ☐ ☐ ☐	reduced	....
☐ impact of greenhouse gases	increased	☐ ☐ ☐ ☐ ☐ ☐ ☐	reduced	....
Other off-site impacts				
☐ (specify):	.....	☐ ☐ ☐ ☐ ☐ ☐ ☐	.....	....
☐ (specify):	.....	☐ ☐ ☐ ☐ ☐ ☐ ☐	.....	....
☐ (specify):	.....	☐ ☐ ☐ ☐ ☐ ☐ ☐	.....	....

[1] *Downstream flooding and downstream siltation can be desired or undesired. Please specify in comments column and indicate whether an increase is positive or negative.*

Comments regarding impact assessment: .....

.....

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:								
☐ tropical storm (cyclone, typhoon, hurricane)			☐	☐	☐	☐	☐	☐
☐ extra-tropical cyclone (winter storm)			☐	☐	☐	☐	☐	☐
☐ local rainstorm			☐	☐	☐	☐	☐	☐
☐ local thunderstorm			☐	☐	☐	☐	☐	☐
☐ local hailstorm			☐	☐	☐	☐	☐	☐
☐ local snowstorm			☐	☐	☐	☐	☐	☐
☐ local sandstorm/ duststorm			☐	☐	☐	☐	☐	☐
☐ local windstorm			☐	☐	☐	☐	☐	☐
☐ local tornado			☐	☐	☐	☐	☐	☐

[1] *Source: Disaster Category Classification and Peril Terminology for Operational Purposes. CRED and Munich RE. 2009. Working Paper. 'Rainstorm' was added to replace 'generic (severe) storm', hailstorm was added, and the disaster subtypes 'rockfall', 'subsidence' and 'animal stampede' were left out.*

Climatological 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
short-term returns:	☐	☐	☐	☐	☐	☐	☐
long-term returns:	☐	☐	☐	☐	☐	☐	☐

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

	very negative	negative	slightly negative	neutral/ balanced	slightly positive	positive	very positive
short-term returns:	☐	☐	☐	☐	☐	☐	☐
long-term returns:	☐	☐	☐	☐	☐	☐	☐

***Short term:** 1-3 years; **long term:** 10 years*

Specify/ comments: .....

.....

6.5 Adoption of the Technology

__Note:__ For information on adoption barriers and adoption drivers (motivation of land users to implement the Technology), refer to the WOCAT Questionnaire on SLM Approaches.

How many land users in the area have adopted/ implemented the Technology?
Area: Refer to the country/ region/ locations defined in 2.5 and to the land use types described in 3.2.

☐ single cases/ experimental ☐ 1-10% ☐ 10-50% ☐ more than 50%

If available, quantify (no. of households and/ or area covered): .....

Of all those who have adopted the Technology, how many have did so spontaneously, i.e. without receiving any material incentives/ payments? ☐ 0-10% ☐ 10-50% ☐ 50-90% ..... ☐ 90-100%

Comments: .....
.....

6.6 Adaptation

__Adaptation:__ modifications made by land users to suit local context and changing conditions (Source: WOCAT)

Has the Technology been modified recently to adapt to changing conditions?

☐ no
☐ yes

If yes, indicate to which changing conditions it was adapted:

☐ climatic change/ extremes
☐ changing markets
☐ labour availability (e.g. due to migration)
☐ other (specify): ……

Specify adaptation of the Technology (design, material/ species, etc.)

.....
.....
.....
.....

6.7 Strengths/ advantages/ opportunities of the Technology

Give a concluding statement about the Technology.

In land users' view[1]:

1).....
.....
2).....
.....
3).....
.....
4).....
.....

In the compiler's or other key resource persons' view:

1).....
.....

2).....

.....

3).....

.....

4).....

.....

[1] ***Land user***: *the person/ entity who implements/ maintains the Technology, including individual small- or large-scale farmers, groups (gender, age, status, interest), cooperatives, industrial companies (e.g. mining), government institutions (e.g. state forest), etc.*

6.8 Weaknesses/ disadvantages/ risks of the Technology and ways of overcoming them

Weaknesses/ disadvantages/ risks	***How can they be overcome?***
In land users' view:	
1)	.....
.....	.....
.....	.....
2)	.....
.....	.....
.....	.....
3)	.....
.....	.....
.....	.....
4)	.....
.....	.....
.....	.....
In the compiler's or other key resource persons' view:	
1)	.....
.....	.....
.....	.....
2)	.....
.....	.....
.....	.....
3)	.....
.....	.....
.....	.....
4)	.....
.....	.....
.....	.....

7. References and links

Indicate sources of information used for the compilation of information in this questionnaire.

7.1 Methods/ sources of information

Which of the following methods/ sources of information were used?

	Specify (e.g. number of informants)
☐ field visits, field surveys	.....
☐ interviews with land users	.....
☐ interviews with SLM specialists/ experts	.....
☐ compilation from reports and other existing documentation	.....
☐ other (specify):	.....

7.2 References to available publications

List relevant publications relating to the Technology (reports, manuals, training materials, case studies, etc.). Upload those publications that are available as soft copies to the database.

Title, author, year, ISBN	Available from where? Costs?
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

7.3 Links to relevant information which is available online

Title/ description	URL
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

WOCAT documentations by the Rustaq NRM study: overview, methodology, and reference documents

SLM technologies discussed during the FGDs conducted with SLM implementers in Chokar watershed. Titles on grey background indicate WOCAT documentations included in the Rustaq NRM study final report.

Titles	Number of Land User Protocols
Terraces with improved seed and fertilizer application	26
Hedgerows for improved production of alfalfa on rainfed and hilly slopes	6
Ferula plantations for erosion protection on hill sides	14
Rehabilitation of degraded pasture with alfalfa	15
Rotational grazing plan for restoration of degraded pastures	5
Community fodder bank for sustaining fodder supplies	3
Livestock shed	4
Establishment of improved orchards and vineyards	17
Nursery for the production of fruit and non-fruit saplings	3
Rainfed reforestation for firewood production	12
Rehabilitation of gullies	3

Methodology for compiling WOCAT documentations

A) Code used for this documentation

Bold – WOCAT database text (section titles etc).
Underlined – WOCAT determined categories
Normal – Free Text added in the WOCAT database
Italics – Explanations on the methodology (not inserted into the WOCAT database)

Example:

2.5 Location *The same for all technologies.*	**Country:** Afghanistan; **Region:** Takhar, Rustaq; **Further specification:** Three villages in Chokar watershed, including Sari Joy, Jawaz Khana, Dashti Mirzai **Number of sites:** 2-10 sites ***(****number of SLM implementers participating in the FGDs)* **Coordinates of plots:** *Coordinates of SLM plots owned by SLM implementers who participated in the FGD derived through the Rustaq NRM study QGIS database.* **Comments:** This documentation is based on the experiences of SLM impementers from Sari Joy (8 terraced plots), Jawaz Khana, (7 terraced plots), and Dashti Mirzai (11 terraced plots) as compiled during FGDs. The terraces located in Jawaz Khana have not been digitized yet. Additionally insights were gained through interviews in all three villages on farmers experiences and observations of terraced plots, with both SLM implementers (46) and observers (28).

B) Data source overview per section

Part of WOCAT documentation:	**Data source overview:**
Part 1:	Project reports / project information
Part 2:	Project reports / project information. Detailed description summarizing the information collected for the WOCAT documentation.
Part 3:	Researchers conducted attribution to SLM categories based on LIPT reports and field data.
Part 4:	Field data collected from LIPT SLM experts, NRMC members, and SLM implementers/land users and jointly discussed during the focus group discussions (FGDs).
Part 5:	Based on FGD data and public data available on the natural environment in the study area.
Part 6:	Based on FGD data (land user protocol and multi-criteria matrix).
Part 7:	Reference documents (the same for all Rustaq NRM study technologies)

PART 1: GENERAL INFORMATION

Question	**Method**
Part 1:	Project reports / project information
Image	*CDE selects image. HAFL, Reto Zehnder, Tdh comment.*
1.1	**Name:** *jointly agreed on within the team of the Rustaq NRM study.* **Locally used name:** from the LIPT glossary
1.2 General information: *The same for all SLM technologies.*	**SLM specialist:** Mia Jan Maroofi **Researcher:** Roziya Kirgizbekova **Name of project which facilitated the documentation/ evaluation of the Technology (if relevant):** - Potential and limitations for improved natural resource management (NRM) in mountain communities in the Rustaq district, Afghanistan (Rustaq NRM Study) - Livelihood Improvement Project Takhar (LIPT) **Name of the institution(s) which facilitated the documentation/ evaluation of the Technology (if relevant):** - Terre des hommes (Tdh) – Switzerland

	- Swiss Agency for Development and Cooperation (SDC) - Switzerland - Hochschule für Agrar-, Forst- und Lebensmittelwissenschaften (HAFL) – Switzerland HAFL NEEDS TO REGISTER - Centre for Development and Environment, University of Bern (CDE) - Switzerland
1.3	**Conditions regarding the use of data documented through WOCAT:** YES
1.4 Declaration on sustainability of the described Technology	**Sustainability issues?** No. **Comments**: SLM practices documented in the frame of the Rustaq NRM study were established only recently (1-3 years ago). It is too early for a final judgment on the sustainability of these technologies within the human and natural environment of Chokar watershed.
1.5 Approach	*The approach of the Livelihood Improvement Project Takhar (LIPT) consisted of setting up Natural Resource Management Committees (NRMC) in each village. Per watershed, a "Watershed Association (WSA)" was established, where a NRMC of each village is represented. These institutions were established, trained and expected to work as boundary partners of the LIPT. The NRMC in the different villages vary greatly in being active and serving the whole village. Thus no approach documentation for NRMCs and WSA was elaborated.*
***1.6* Comparison with other Technologies**	*Not yet active in the new WOCAT database. In future:* • *Check Helvetas-Afghanistan documentations* • *Check Tajikistan documentations*

PART 2: DESCRIPTION OF SLM TECHNOLOGY

Question	Comment
Part 2:	Project reports / information
2.1 Short description	CDE proposal, commented on by Rustaq NRM study team.
2.2 Detailed description	CDE proposal elaborated as the last step in documenting the technologies, commented on by Rustaq NRM study team. **Natural and human environment***:* Project supported implementation of [SLM practice] has taken place in the villages Sari Joy, Jawaz Khana and Dashti Mirzai, located in Chokar watershed of Rustaq District in Northern Afghanistan. The Chokar watershed is a mountainous area situated between 600 - 2,500 m above sea level. The climate is semi-arid with harsh and cold weather in winter and hot and dry summers. The annual precipitation in average years is 580mm. Land degradation affects all forms of land use and includes low vegetation cover, heavy top soil erosion from water, and poor soil fertility. Unsustainable agricultural practices, over-exploitation and high pressure on the natural resources are adversely impacting on the socio-economic well-being of local communities as well as contributing to the risk for being adversely affected by drought as well as landslides and flash foods triggered by heavy rainfall. The data used for the documentation of the technology is based on field research conducted in Chokar watershed, namely in the villages: Sari Joy, Jawaz Khana and Dashti Mirzai. These villages represent the upper, the middle and the lower zone of Chokar watershed, respectively. They differ considerably in access to services and infrastructure, but in general are poorly served. The communities depend on land resources for sustaining their livelihoods. In a good year with high yields, wheat-self-sufficiency lasts about 5 months. The three villages are home to ethnic Qarluq communities. Since 2012 the Livelihood Improvement Project Takhar (LIPT) implemented by Terre des hommes (Tdh) Switzerland has initiated a range of NRM interventions.
2.3 photos	Selected pictures of Reto Zehnder, LIPT and Roza Kirgizbekova
2.4 videos	*Videos not available*
2.5 Location *The same for all technologies.*	**Country:** Afghanistan; **Region:** Takhar, Rustaq; **Further specification:** Three villages in Chokar watershed, including Sari Joy, Jawaz Khana, Dashti Mirzai **Number of sites:** 2-10 sites ***(****number of SLM implementers participating in the FGDs)* **Coordinates of plots:** *Coordinates of SLM plots owned by SLM implementers who participated in the FGD derived through the Rustaq NRM study QGIS database.* **Comments:** This documentation is based on the experiences of SLM impementers from Sari Joy (8 terraced plots), Jawaz Khana, (7 terraced plots), and Dashti Mirzai (11 terraced plots) as compiled during FGDs. The terraces located in Jawaz Khana have not

	been digitized yet. Additionally insights were gained through interviews in all three villages on farmers experiences and observations of terraced plots, with both SLM implementers (46) and observers (28).
2.6 Date of implementation	less than 10 years ago (recently)
2.7 Introd. of technology	through projects/ external interventions **Comments**: Livelihood Improvement Project Takhar (LIPT) supported by Swiss Development Cooperation (SDC) from 2012-17

PART 3: CLASSIFICATION OF THE SLM TECHNOLOGY

Question	Comment
Part 3:	Researchers conducted attribution to SLM categories based on LIPT reports and field data
3.1 main purpose	*Researchers attribution, selected from the dropdown list.* Mainly: improve production; reduce, prevent, restore land degradation For specific technologies: create beneficial economic impact, protect a water shed; reduce risk of disasters, improved animal health, other: improved fodder
3.2 LUT	**Current land use:** Researchers attribution for each SLM practice **Comments***: (for plots on cropland:)* Before implementation of the Technology, only the annual crop wheat was cultivated. Plots were ploughed along the contours mostly by animal traction. In recent years land users are starting to use tractors for ploughing, where villages and plots are accessible by machinery. **If land use has changed due to the implementation of the Technology, indicate land use before implementation of the Technology:** *"Land use type before SLM" as indicated in the Land User's Protocol.*
3.3 Further information	**Water supply***:* Land user protocol "water" **Number of growing seasons:** 1 *(for all technologies the same)*, *Specify*: **Livestock density (if relevant):**
3.4 SLM group	*Researchers attribution*
3.5 Spread of the technology	*Researchers attribution*
3.6 SLM measure	*Researchers attribution*
3.7 Main types of land degradation addressed	*Researchers attribution based on researchers observation, plenary discussions during the FGDs and LIPT reports.* **Comments**:
3.8 Prevention, reduction, or restoration of land degradation:	*Researchers attribution* **Comment***:* *Nurseries*: The nurseries provide tree saplings for the establishment of SLM practices, such as orchards and reforestation sites.

PART 4: TECHNICAL SPECIFICATIONS, IMPLEMENTATION ACTIVITIES, INPUTS, AND COSTS

Question	Comment
Part 4:	Field data collected from LIPT SLM experts, NRMC members, and SLM implementers/land users and jointly discussed during the focus group discussions (FGDs).
4.1 Technical drawing	*Drawn by CDE staff, presented and verified during FGDs, and revised by CDE staff.*
4.2 Technical specifications / explanations of technical drawing	*Elaborated by LIPT and CDE staff, presented and verified during FGDs, and revised by CDE staff.*
4.3 General information regarding the calculation of inputs and costs	*Costs and inputs collected and discussed in local units [jirib, ser, AFN] and later recalculated to international units [ha, kg, USD]. For the price list elaborated and used as reference document for all WOCAT documentations see Annex 1: Table of local prices for various inputs in Rustaq, Afghanistan.* **Exchange rate:** October 2016 1 USD = 67AFN

	Average wage cost of hired labor per day: 5.2-5.3 USD
4.4 Establishment activities	*Activities listed by LIPT staff, presented and verified during FGDs, and revised by CDE staff. Agricultural activities listed by men FGDs were discussed one-by-one with women FGDs to understand their participation in agricultural activities.* **Comments:**
4.5 Establishment costs	*Costs listed by LIPT staff, presented and verified during FGDs, and revised by CDE staff.* **Comments**: Costs calculated for a Technology area of 1ha was only done for the purpose of the WOCAT documentation. In reality SLM plots are on average 0.4 ha or 2 jiribs. Costs were simply multiplied by 2.5. The actual costs for a 1ha plot might be slightly different.
4.6 Maintenance activities	*Activities listed by LIPT staff, presented and verified during FGDs, and revised by CDE staff. Agricultural activities listed by men FGDs were discussed one-by-one with women FGDs to understand their participation in agricultural activities.* **Comments**:
4.7 Maintenance costs	*Costs listed by LIPT staff, presented and verified during FGDs, and revised by CDE staff.* **Comments**: Costs calculated for a Technology area of 1ha was only done for the purpose of the WOCAT documentation. In reality SLM plots are on average 0.4 ha or 2 jiribs. Costs were simply multiplied by 2.5. The actual costs for a 1ha plot might be slightly different.
4.8 Most important factors affecting the costs	*Based on FGD plenary discussions.* **Comment**: Due to the remoteness of the villages where the technology has been implemented, all the inputs for establishment, such as agricultural equipment, plant material, fertilizers, etc., are purchased in Rustaq town. The expenses for traveling and delivering the inputs affect the establishment costs.

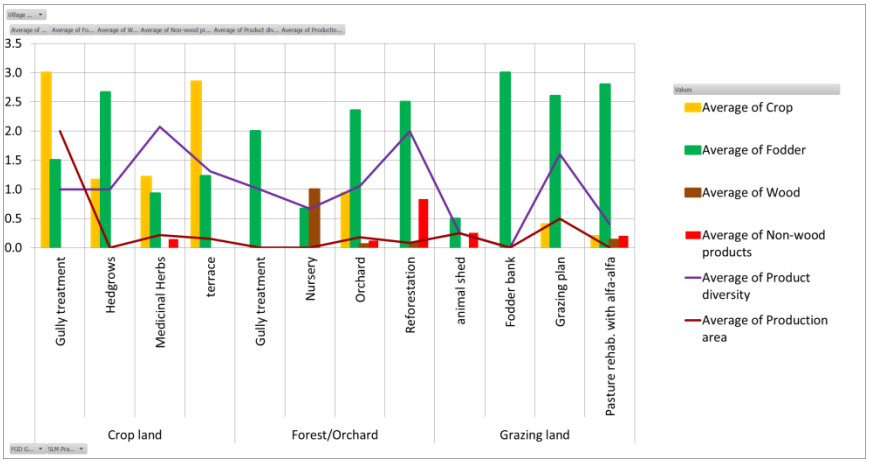
PART 5: NATURAL AND HUMAN ENVIRONMENT

Question	Comment
Part 5:	Based on FGD data and public data available on the natural environment in the study area.
5.1 Climate	**Annual rainfall:** Average annual precipitation for the area is 564 mm, with minimums in dry years (e.g. 2000 and 2001) of 270 mm and maximums in wet years (e.g. 2009 and 2010) of 830 mm. The dataset shows an absolute maximum for annual rainfall for 1986, 1024 mm, and the absolute minimum for 2001, 269 mm. The data series covers the time from 1979 to 2014. **Reference meteorological station considered:** Climate Forecast System Reanalysis (CFSR), http://rda.ucar.edu/pub/cfsr.html **Agro-climatic zone:** Semi-arid. Specifications: Derived from the publicly available dataset on length of growing period (LGP) (Fischer 2009 / IIASA-FAO). Internet link: http://tiles.arcgis.com/tiles/P8Cok4qAP1sTVE59/arcgis/rest/services/Length_of_growing_period/MapServer
5.2 Topography	The information was derived from two different sources: - SLM implementers information provided in the Land User Protocol (LUP) during an FGD - Elevation and slope statistics derived for terraced plots from ASTGTM. ASTGTM is the ASTER Global Digital Elevation Model V002 with a 30 m spatial resolution. More information on ASTGTM is available here: https://lpdaac.usgs.gov/node/1079. The data can be downloaded here: *https://gdex.cr.usgs.gov/gdex/*
5.3 Soil	**Soil depth:** moderately deep *varies for different soil types* **Soil texture (topsoil):** medium (loamy, silty) *own observation. Loess soil is typically of medium texture* **Soil texture (subsoil)** medium (loamy, silty) *Loess soil is typically of medium texture* **Topsoil organic matter:** low, medium *own estimation based on comparable soils in Tajikistan* **Soil description:** Local land users differentiate between the following soil types: - Light soils: moderately deep; texture of topsoil and of subsoil medium (loamy, silty); low topsoil organic matter

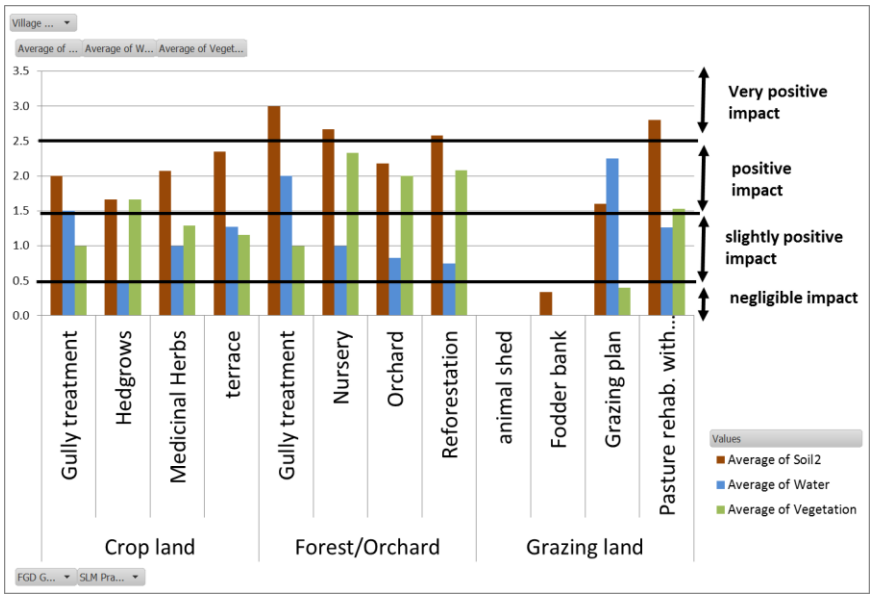
	- Dark soils: moderately deep; texture of topsoil and of subsoil medium (loamy, silty); medium topsoil organic matter - Red: shallow; texture medium, coarse; low organic matter - Mixed: shallow, texture of topsoil and subsoil coarse; low topsoil organic matter
5.4 Water availability	*LUP and own observation* **Comments***:* Floods occur mainly during the rainy seasons in spring and autumn. Availability of surface water differs for the three study villages Sari Joy, Jawaz Khana, and Dashti Mirzai. Sari Joy has sources and good surface water availability. Jawaz Khana has poor water availability as water has to be fetched from a lower laying stream. Dashti Mirzai has good water availability also from an irrigation channel.
5.5 Biodiversity	CDE experts field observation: *Species diversity* low, *Habitat diversity*: low **Comments**:
5.6 Characteristics of land users applying the Technology	*Based on the data collected by CDE, HAFL (wealth ranking, off-farm income)* **Indicate other relevant characteristics of the land users:** The land users in the area where the Technology is applied belong to the Uzbek ethnic minority group Qarluq. Although the men are generally the main land users, however, women and children also take active part in the related work. The functions of men and women are clearly distinguished within the Afghan society. At the same time within the family this division of work and functions also results in men and women working hand-in-hand. An improvement of the family's livelihood situation is expected to positively affect all family members. While, it is recognized that the involvement of women is key in order to secure basic human rights for everyone, to achieve good governance, sustainable development, and to efficiently contribute to poverty reduction (SDC 2004), it is also clear that a context sensitive approach is of high importance. Women in rural Afghanistan are involved in many production and income generating activities that contribute to the overall household income, however, very few women own resources such as land and livestock, and their income generating options are fewer in comparison to that of men.
5.7 average area of land owned	*SLM implementers information provided in the Land User Protocol (LUP) during an FGD*
5.8 Land ownership.	*SLM implementers information provided in the Land User Protocol (LUP) during an FGD.* **Comments**: Those who own land and use water for irrigation are obliged to pay for the water. The payment is made both in kind and in cash to the Mirob, the person in charge of distributing water in the community. The amount of the payment varies from village to village.
5.9 Access to services and infrastructure	*Not inserted as the situation per village differs greatly.*

PART 6: IMPACTS AND CONCLUDING STATEMENTS

Question	Comment
Part 6:	Based on FGD data (land user protocol and multi-criteria matrix).
6.1 On-site impacts	*These comments apply to 6.1 and 6.2:* • **Socio-economic impacts***:* Based on the Land User Protocols: Individual SLM implementers were asked to rate the benefits for their Technology. They were asked to indicate production increase of crops; fodder; animals; wood; non-wood forest products; increase in product diversity; or production area. The most important increase they rated with 3, the second most with 2, others with 1 point. Averages of the points given by all SLM implementers are reflected here.



• **Ecological impacts and off-site impacts**: Based on the Land User Protocols: Individual SLM implementers were asked to rate the on-site and off-site impacts of the Technology on water; soil; and vegetation. They were asked to indicate the strength of impacts with three, two or one points. Averages of the points given by all implementers are reflected here.



• **Socio-cultural impacts:**
This section is answered by the scientists, based on information collected during focus group discussions, and interviews conducted with persons from the 3 villages where the LIPT project implemented the Technology.
  - *SLM/ land degradation knowledge (the same for all technologies)*
  - **Comments**:

	▪ SLM/ land degradation knowledge: Land users learned how to implement SLM practices. ▪ Situation of socially and economically disadvantaged groups : Female headed households are not included. Technology is implemented on private land, therefore people without land are excluded. However, they have the opportunity to earn income as a hired worker for the SLM implementers.
6.2 Off-site impacts	**Comments**: see Ecological impacts above
6.3 Exposure to climate change	**Comments**: Based on the multi-criteria matrix: SLM implementers were asked to jointly discuss and rate how much the SLM technology reduced the lands vulnerability to drought and local rainstorms. Only vulnerability to the most prevalent climate extremes (drought and local rainstorms) was discussed. SLM technologies were rated as reducing vulnerability poorly, well, or very well. The average points reflected here are from multi-criteria matrixes compiled in three villages where the SLM technology had been implemented.
6.4 Cost-benefit	**Comments***:* Based on the multi-criteria matrix: During the FGD with SLM implementers, a multi-criteria matrix was elaborated, and different SLM practices were rated. In the frame of this exercise, SLM implementers were asked to jointly discuss and rate short term (1-3 years) and long-term (10 years) returns. As the SLM technology was only implemented 1-2 years ago, it is too early to compare benefits to maintenance costs. Farmers have little experience so far on the actual benefits of the SLM technology. The ratings are mostly based on expected benefits and not on actual benefits.
6.5 Adoption	Adoption = replication. **Comments:** "10.7 ha has been terraced within the 3 study villages with LIPT project support." **Comments**: Based on the Land User Protocol: Individual SLM implementers were asked whether they received support for implementing the Technology. Each indicated the type of support he received from the proposed options: "Full Support 100%, Some Support, No Support 0%".
6.6 Adaptation	*Based on FGDs with SLM implementers.*
6.7 Strength	**Strengths/ advantages/ opportunities in the land user's view** *Opinions of SLM implementers collected from field data of HAFL and CDE. Points were discussed and agreed on among all team members of the Rustaq NRM study.* **Strengths/ advantages/ opportunities in the compiler's or other key resource person's view** *Researchers point of view were discussed and agreed on among all team members of the Rustaq NRM study.*
6.8 Weaknesses	**Weaknesses/ disadvantages/ risks** *Opinions of SLM implementers collected from field data of HAFL and CDE. Points were discussed and agreed on among all team members of the Rustaq NRM study.* **how to overcome** *Opinions of SLM implementers collected from field data of HAFL and CDE.*

PART 7: REFERENCES AND LINKS

Question	Comment
Part 7:	Reference document the same for all Rustaq NRM study technologies
7.1 Methods and sources of information	**Which of the following methods/ sources of information were used?** **field visits, field surveys***:* no **interviews with land users:** Focus group discussions (FGD) were organized by the CDE team to collect information from SLM implementers. Total of 26 land users who have implemented terraces participated in the FGDs held in the three villages of Sari Joy, Jawaz Khana and Dashti Mirzai. Interviews were conducted by the HAFL team to collect information from persons representing all the three study villages. Very detailed interviews were conducted with 74 persons interested in terrace implementation, of which 46 persons are from households that already have implemented terraces. **interviews with SLM specialists/ experts:** Close collaboration took place during the

	compilation of this material with the technical staff of the LIPT project in Rustaq. **Compilation from reports and other existing documentation:** Information provided in the reports of the LIPT project in Rustaq served as an initial source of information during the preparatory phase and also solidifying the description of the technology and area of implementation. Other background papers on Afghanistan were referred to for general information on agriculture and natural resource management in Afghanistan. **other**:
7.2 References	Guidelines for Focus Groups Discussions Methods section of the Rustaq NRM study

Reference documents

Annex 1: Units

Type of unit	Locally used	Used by WOCAT	Conversion rate	Comment
Area	Jirib	ha	5 jirib = 1 ha 1 jirib = 0.2 ha	
Weight	Ser	kg	1 ser = 7 kg	
Currency	AFN	USD	1AFN = 0.01481 USD	Exchange rate October 2016

Annex 2: Table of local prices for various inputs in Rustaq, Afghanistan

Collected in October 2016.

Input	Unit	Cost per Unit in Afgh	Cost per Unit in USD
Wheat seed	Kg	28.5	0.42
Alfalfa seed	Kg	28.5	0.42
Ferula seed	Kg	429	6.35
Sainfoin seed	Kg	28.5	0.42
Acacia seedling	piece		0.45
Russian willow seedling	piece		0.45
Mulberry	piece		
pear	piece		0.75
DAP	Kg	60	0.9
Urea	Kg	30	0.45
Herbicide	Liter	17	0.25
Average labour cost	Person day	350-400	5.2
A-frame with level	piece	400 Afgh	

Input	ser/jirib piece/jirib	Kg/ha; piece/ha
wheat	4	140
alfalfa	0.5	17.5
pear	125	625

Protocol Rustaq NRM Study, Socio-economic Component, Block A (Sept/Oct 2016)

Final version (21.11.2016)

Authors: Dominic Blaettler, Pia Fehle, Aqila Haidery

Contents

1. Introduction

The protocol at hand aims to make legible the different steps and rules for the preparation and implementation of the survey conducted during Block A of the socioeconomic component of the Rustaq NRM Study. Chapter 2 gives an overview of the project and the questions guiding the research. Chapter 3 elaborates on the research team members and their tasks. Chapter 4 explains how the villages were selected. Chapter 5 gives an overview of the overall and daily schedule and Chapters 6-11 provide details on the different steps involved from data collection to analysis.

2. Overview

2.1. Overall Goal and General Project Setup

The Rustaq NRM Study's **overall goal** is to better understand the social-ecological systems and innovative sustainable land management (SLM) practices in Chokar watershed (CWS) in order to inform future context-sensitive natural resource management (NRM) strategies that contribute to more sustainable livelihoods in Rustaq district and other mountainous regions of Central Asia.

The study has three **components** which are under the lead of different **principal investigators / institutions**:

1. Agroecological component (Bettina Wolfgramm, CDE)
2. Socioeconomic component (Dominic Blaettler, HAFL)
3. Interface with development interventions (Reto Zehnder, ee)

The three principle investigators jointly conducted an **Inception Mission** in May 2015 in order to finalize the study design, to set up the research project and to better understand the research setting. More information on this Mission can be found in the Inception Report.

The study is strongly interlinked with the third phase of the **Livelihood Improvement Project Takhar (LIPT III) of Terre des Hommes Foundation (Thd)**. The research takes place in the project's geographical and topical focus area and is strongly enriched by local staff's expertise. Tdh further supports the principal investigators in the implementation of their research in terms of logistics and entering the field.

2.2. The Socioeconomic Component

The socioeconomic component aims to better understand potentials and limitations for improved NRM in CWS based on the analysis of local people's livelihoods, their experience with innovations in agriculture and SLM as well as the context they are embedded in. This objective is split into the following three **subordinate objectives and corresponding research questions** (which may still be subject to changes):

1.1 Local people's livelihoods and the relative importance of land:

- What are the livelihood outcomes local people are seeking, and why?
- Which strategies do they follow to achieve these outcomes?
- What are the key constraints and opportunities to achieving these outcomes?
- How important is agriculture compared to other livelihood activities?
- What are local people's agricultural and land management practices?
- What are the differences by gender, age, socio-economic position and village context?
- How does fragility influence local people's livelihoods?
- What does this imply in terms of potentials and limitations for improved NRM in CWS?

1.2 Adoption of innovations in agriculture and land management:

- What is local people's experience with innovation (= new or different practice) in agriculture in general?
- Does land degradation trigger change in land management practices? If yes, what kind of change?
- What is local people's perception of introduced SLM practices? What are (perceived) conducive and hindering factors for the adoption of these practices?
- What are the differences by gender, age, socio-economic position and village context?
- How does fragility influence the adoption of innovation?
- What does this imply in terms of potentials and limitations for improved NRM in CWS?

1.3 Context at village level and beyond:

- How and to what extent do village institutions (both customary and newly introduced) affect local people's livelihoods and NRM in CWS?
- How and to what extent do structures and processes beyond village level affect local people's livelihoods and NRM in CWS?
- What does this imply in terms of potentials and limitations for improved NRM in CWS?

The first section is mainly based on the Sustainable Livelihood Framework (DFID 1999), the second section was informed by innovation and diffusion theories and concepts (such as Rogers 2003) and the third section is strongly linked to the village characterization research of the Afghanistan Research and Evaluation Unit (AREU 2014; Pain 2016 etc.).

The socioeconomic research is split into two blocks. The **focus of Block A** of the socioeconomic component is on the perspective of individuals and mainly concentrates on the first two sections. In Block A, data is collected by means of a quantitative household survey while Block B consists of a qualitative follow-up and the analysis of the (village) context involving expert interviews and focus group discussions (FGDs). A mixed-methods approach is therefore followed. The quantitative household survey (hereafter called 'survey') is carried out in September / October 2016 in three villages of CWS.

3. The Team

The following persons are involved in the preparation and implementation of the research:

Name	**Function / Tasks**
Dominic Blaettler (DB)	Lead of the socioeconomic component: planning and coordinating the research (questionnaire, sampling, training of interviewers, data collection, data entry and data analysis) and backstopping during implementation
Aqila Haidari (AH)	Afghan senior research counterpart (see Terms of Reference in Annex 1)
Tdh staff: Dr Emal, Eng. Shaida, Eng. Miajan	Support in terms of logistics and entering the field: contacting local authorities and introducing the research team to them, supporting the sampling process, sharing own knowledge and experience, organizing transport
Fakhriddin Kuziboev & Roger Markic	LIPT & LBRC project leaders – hosting the research team, providing information on security issues, sharing own knowledge and experience
Two women and two men interviewers	Conducting interviews and providing written reflections on each interview, participating in team days with group reflections (see Terms of Reference in Annex 2)
Data entry person (DEP)	Data entry: entering data, asking back (first cleaning), checking logic/consistency (second cleaning), scanning the questionnaires (see Terms of Reference in Annex 2)
Three translators	Translation of questionnaire, training material, text answers in survey and interviewers' written reflections
Tiphaine Leuzinger (TL)	Data cleaning and data analysis (in the frame of her Master's thesis)
Pia Fehle (PF)	Support in organization, reporting, administration and data analysis

4. Village Selection

The Rustaq NRM Study is conducted in the Chokar watershed (CWS) which is one of two watersheds where Tdh is active. The table in Annex 3 shows which types of interventions took place in the three villages on part of Tdh. For data collection three villages were selected during the Inception Mission, namely Dashti Mirzai (downstream), Javaz Khana (midstream) and Sari-Joy (upstream). The villages are shown in Figure 1 and the sampling procedure is described in more detail in chapter 3.5 of the Inception Report.

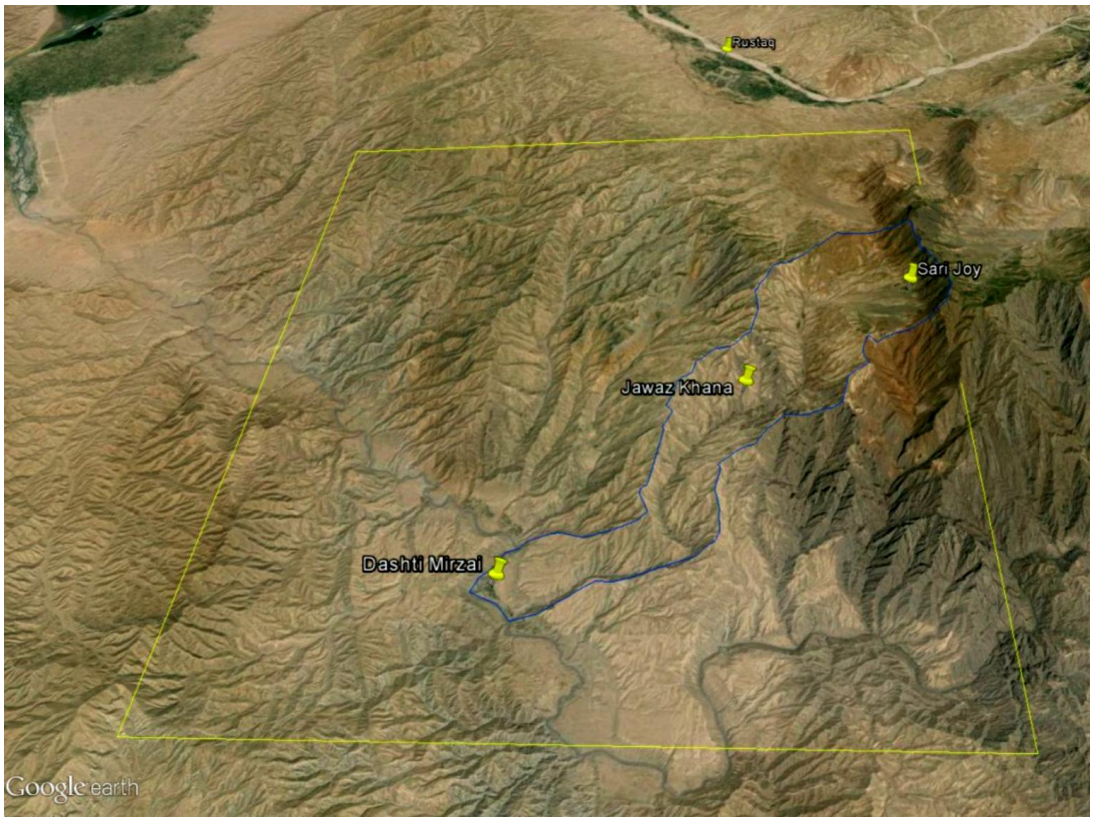


Figure 1: Chokar watershed (blue line) and the three selected villages (Source: Inception Report 2015)

In CWS, surveys regarding household assets based on the Sustainable Livelihoods Framework already took place in 2006 and 2010. Hundreds of local women and men were interviewed at that time. Data can be used for a general understanding of context but will not easily integrate systematically into the research project. The original idea of only 'filling knowledge gaps' regarding the socioeconomic component does not work.

During the Inception Mission the three principal investigators agreed that, looking at the larger research area, the notion of watershed appears to be slightly deceptive. Some of the 'classic' watershed issues – such as a just distribution of water, upstream/downstream conflicts etc. – are largely absent. It is about individual villages (and their use of and access to resources), above all, or 'valleys' at best rather than watersheds at large.

5. Timing

5.1. Overall Schedule

The survey is implemented between 17 September and 20 October 2017. A rough schedule for implementing the survey is given in Table 1. The reserve day is used as a team day for reflection and exchange on the experiences made during data collection.

Table 1: Proposed schedule for the socio economic component, block A

The Rustaq NRM Study, SE-Block A (Sept/Oct 2016)

preparation	• 19.-20.9.:	Study preparation, in Kabul
	• 22.-23.9.:	Study preparation, in Rustaq
	• 24.-27.9.:	Socio-economic training, with interview team
	• 28.-29.9.:	Wealth ranking & sampling, village 1 (1 day)
Village 1	• 1.-5.10.:	Interviews in village 1, and data entry (5 days)
	• 1.-5.10.:	Wealth ranking & sampling, village 2 (1 day)
	• 6.10.:	Reserve day, home office (1 day)
	• 7.10.:	Friday, day off
Village 2	• 8.-12.10.:	Interviews in village 2, and data entry (5 days)
	• 8.-12.10.:	Wealth ranking & sampling, village 3 (1 day)
	• 13.10.:	Reserve day, home office (1 day)
	• 14.10.:	Friday, day off
Village 3	• 15.-19.10.:	Interviews in village 3, and data entry (5 days)
	• 20.10.:	Finalisation, home office (1 day)
	• 20.10.:	Data base ready to be shared with HAFL
	• 21.10.:	End of Block 1

5.2. Daily Schedule

The approximate daily schedule during data collection looks as follows:

07.45	Team meeting at Tdh office
08.00	Leaving Tdh office
09.00	Arrival village, making arrangements
09.30	Start Interview 1
11.30	End Interview 1
12.00	Lunch
13.00	Start Interview 2
15.00	End Interview 2
15.30	Leaving for Rustaq town
16.30	Back to office, questionnaire rework time
17.45	Team meeting at Tdh office
18.00	End of day

DB and AH exchange in the evenings over skype on a daily basis.

6. Sampling Procedure

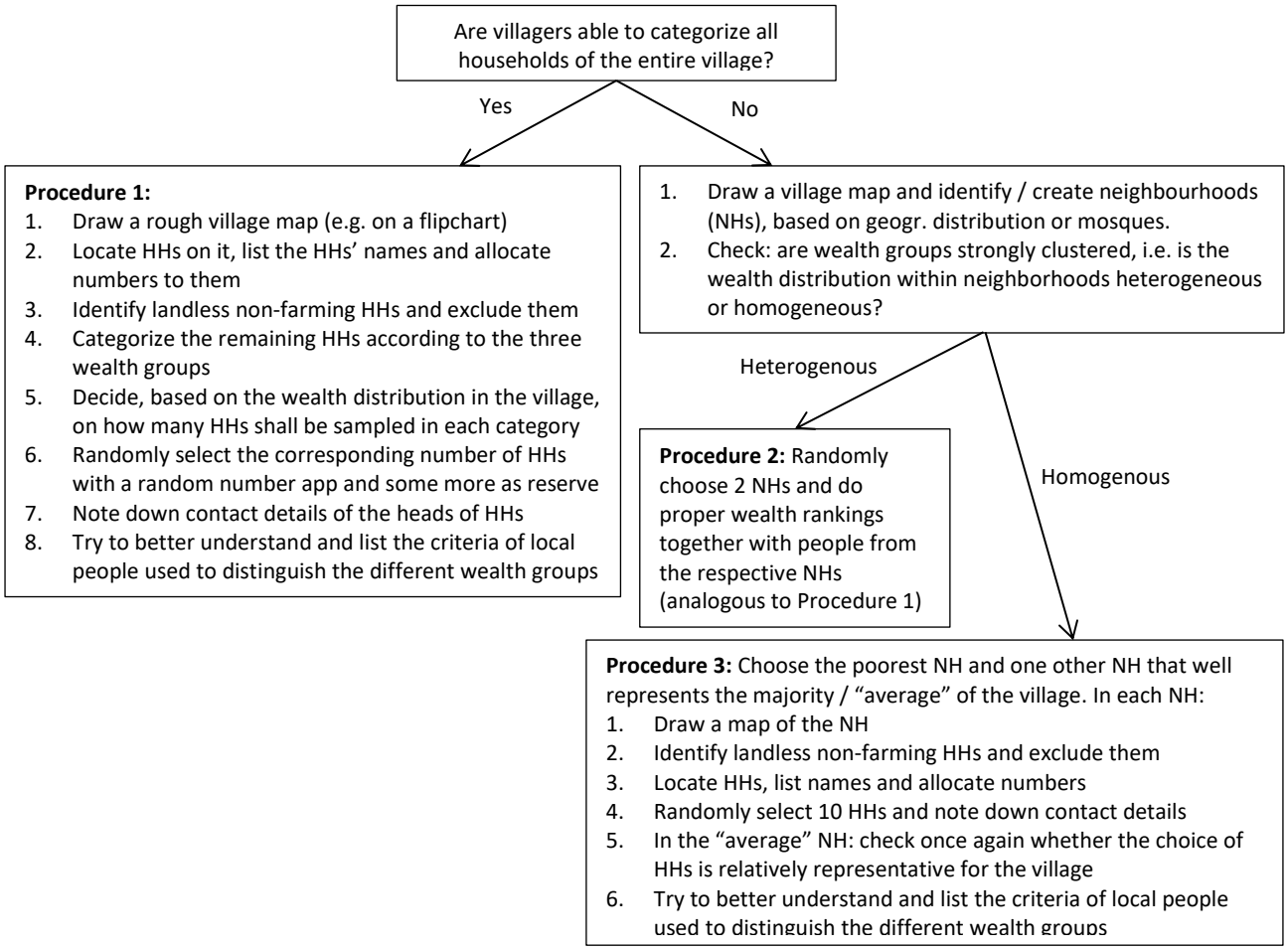
The intention is to sample 20 households (HH) per village. In each HH one woman and one man (ideally husband and wife) are interviewed. This leads to a total of 40 interviews per village and 120 interviews overall.

A **purposeful random sampling** with a **pro-poor and pro-scale approach** shall be applied. The pro-poor approach was chosen due to Tdh's and SDC's focus on poverty alleviation: it is crucial to understand to what extent the introduced SLM practices correspond to their needs and have the potential to improve their livelihoods. The initially intended pro-innovation focus (purposefully selecting adopters and non-adopters of introduced SLM technologies) is omitted due to certain changes in the questionnaire which allow for checking this information within the actual survey interviews.
The chosen approach requires, in a first step, a **wealth ranking** where HHs are categorized according to three different wealth groups – poor, medium and better-off. This wealth ranking is conducted together with two to three well-informed villagers which are identified with the help of the village leadership. Ideally, the process would be repeated several times, but the tight schedule does not allow for this here. Before starting the wealth ranking, the following questions should be asked to the potential participants:

- Do you know the large majority of the HHs in the village?
- Do you consider yourself in the position to make a statement in terms of "wealth groups" of the large majority of the HHs in the village?

This is not to challenge the competence of local informants but to be on the safe side and to avoid putting local people in a difficult situation where they might feel uncomfortable.

Once the wealth ranking is completed, HHs are randomly selected from each wealth group with the poor HHs being slightly overrepresented. Depending on whether villagers know the majority of HHs and are able to categorize them or not, the entire village or only two neighbourhoods of the village are taken as basis for selection. Correspondingly, there are the following possible procedures:



For the **intra-household sampling** the following rules apply:

- Gender: always man and woman, if possible of same generation
- Age: whenever possible, focus on younger generation
- Try to interview people regularly involved in the local livelihood activities, i.e. not a home-coming labour migrant

7. The Questionnaire

A draft questionnaire is developed by DB and PF on the basis of the research questions and the literature mentioned in Chapter 2.2. Attention shall be paid to closely coordinate this process with the agroecological component that follows the WOCAT methodology with the 'Questionnaire on SLM Technologies' and the 'Questionnaire on SLM Approaches'.

It is shared with BW, RZ and TL for a first feedback round. Then, DB and AH discuss and further develop the questionnaire during their preparation time in Kabul. A first translation is done in order to have the questionnaire ready for the training of interviewers. The first mock interviews, feedback from the interviewers and Tdh staff and the pre-test in the field lead to further modifications. The final version of the questionnaire counts 16 pages – both in English as well as Dari – and has the following seven sections:

1. Introduction
2. Livelihood outcomes and strategies
3. Livelihood activities
4. Agricultural Assets: Land & Livestock
5. Changes in Agricultural Practices and Land (Management)
6. Experience with specific SLM interventions
7. Demographic Details of Respondent & Household

8. Training of Interviewers

The training of the interviewers takes place from 25 until 28 September 2016 and is delivered by DB and AH. During the first two days, general inputs on the applied research methodology are given. There, also the Tdh team is invited to participate for capacity building. During the second half of the training, the interviewers are introduced to the questionnaire, develop a shared understanding of the key terms, conduct role plays and first mock interviews and shall grow into a team. The interviewers are provided with the checklist given in Annex 4 and sign a Code of Conduct which is displayed in Annex 5. The trainings shall mainly be conducted in Dari language. At the end of the training all participants receive a certificate.

9. Data Collection

After a pre-test which takes place on 28 September in Tschasch-Maqan village, data collection is foreseen during a period of three weeks starting from 30 until x September. AH, with the support of Tdh staff, conducts the wealth ranking in each of the three villages. One day after the wealth ranking the four interviewers start interviewing the selected households, supported and coordinated by AH. Always one woman and one man interviewer go to one household and conduct interviews with a woman and a man of the household in parallel. Each interviewer conducts two interviews of about 2 hours per day. The questionnaires are filled in with blue color and are complemented with additional field notes in green color after the interview. Every evening, enumerators sign a confirmation that they have conducted the interviews honestly and to their best understanding. If possible, the research team stays in the village overnight in order to save time for travelling. AH and DB exchange on a daily basis.

10. Data Entry, Translation and Data Cleaning

Data entry is done by two persons staying at Tdh office in Rustaq, each entering the data of about half of the questionnaires per village. They receive a detailed briefing by DB regarding the structure of the Excel data base and the code book for categorical data. The data entry persons conduct a first quality check of the data and make notes in red color on the questionnaires in case there are open questions or mistakes.

Data is entered in Dari and sent to the translators who **translate** the text answers into English. AH compiles the separated data sheets in one document and shares it with DB and TL.

Data cleaning is done by TL in Excel where a screening for data entry mistakes, missing values and needs for clarification is done. Color coding helps for keeping the overview and first additional coding of text answers is done. Then, the data is imported into the SPSS Software.

11. Data Analysis

Data analysis of the survey data is done at two levels:

1) Rough data analysis is done by TL and DB based on a graph and a text book which shall allow for a general overview. This shall be finished shortly before Block B starts in order to get qualitative follow up questions ready.

2) Detailed data analysis will be done by TL and DB concerning the initial research questions (mentioned in chapter 2.2) and specific fields of interest. Preliminary results at a more detailed level shall be ready in early spring 2017 in order to be able to integrate them in the overall research, i.e. link with the village context analysis of Block B and the results from the Agroecological component.

References

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Pain A, 2016. Using village context analysis in Afghanistan: methods and wider implications. Working paper 46, 38 p.

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Annex 1: Terms of Reference Aqila Haidari

Research Consultancy mission in Afghanistan on behalf of HAFL in support of the "Rustaq NRM Study"

Objective

Terms of References for a senior research consultant to collaborate in the frame of the research study „Potential and limitations for improved natural resource management (NRM) in mountain communities in the Rustaq district, Afghanistan" (Rustaq NRM study). For this project, HAFL was mandated by the Swiss Agency for Development and Cooperation (SDC).

Background

The Rustaq NRM Study is embedded in the Afghan efforts and efforts of Swiss and other partners to contribute to develop mountainous regions in Afghanistan by strengthening the agricultural sector. The overall aim of the study is to improve the understanding of the social-ecological systems of small watersheds in Rustaq district and evaluate innovative strategies and institutional arrangements for increasing benefits from sustainable land management (SLM) and for securing sustainable livelihoods. The Rustaq NRM study is being conducted in close collaboration with Terre des hommes (Tdh) in Afghanistan as well as CDE, Switzerland (Centre for Development and Environment, University of Bern).

Aqila Haidari possesses the relevant social sciences background for this demanding position, has ample experience in qualitative research and a very good understanding of rural livelihoods in Afghan mountain communities from previous work in both development cooperation and media.

Mandate

HAFL contracts Aqila Haidari for a three months mission in Afghanistan with the mandate to act as the principal research consultant to the socio-economic component of the Rustaq NRM Study. The tasks listed below will be conducted in close collaboration with Dominic Blaettler (HAFL, leader of the socio-economic component, project coordinator). The contract will cover a maximum of 70 working days for the senior research consultant during the time from September to December 2016.

The **general tasks** for the senior research consultant are as follows:

- Acts as the principal research counterpart of Dominic Blaettler (hereafter DB), and actively contributes to all stages of this research project
- Acts as the deputy lead of the socio-economic component and as the representative when DB is not present (e.g. contact person/link with Tdh team in Rustaq, village leadership etc)
- Leads and manages the local team (namely 5 local research assistants); in consultation with DB where meaningful and possible
- Acts as the contact person/first port of call for the local team
- Provides interpretation tasks to DB, provides (minor) translation tasks
- Commits to an open, transparent communication culture, including frank feedbacks to DB
- Keeps a field diary and takes notes of relevant information/observation, and actively contributes to learning

The **specific tasks** for the senior research consultant are as described in the 5 task sections (below).

1) Preparation field research activities of the socio-economic component, Kabul (5 days)

- Actively contributes to joint preparation of the research with DB, from Sept 19-22 in Kabul; this covers both organizational and content-related aspects of the research
- Selects 4 research assistants and 1 data entry person prior to field research (over tel/skype)

2) Field research Block A, Rustaq (27 days)

- Conducts and moderates training for the local team in Rustaq (Dari), including pre-test; partly together with DB, partly independently
- Takes charge of all tasks necessary for a successful implementation of field research in Block A. This includes the local organization, overall, of the survey implementation in the 3 study villages. Among other things this includes acting as the contact person towards the village leadership, the planning of interviews, local-level problem solving, and the like

- Takes charge of monitoring the overall quality of interviews taken (e.g. questionnaire check)
- First port of call for problems, creative problem solving
- Takes key informant interviews and moderates focus group discussions
- Maintains the link to DB, provides regular updates (via skype & email)

3) Collaboration in data management and interpretation Block A, Kabul (3 days)

- Assists in data management (e.g. cleaning of data base)
- Actively contributes to data interpretation, namely the process of "making sense" of data

4) Field research Block B, Rustaq (27 days)

- Conducts and moderates training for the local team in Rustaq (Dari), including pre-test; partly together with DB, partly independently
- Takes charge of all tasks necessary for a successful implementation of field research in Block B. This includes the local organization, overall, of the study implementation in the 3 study villages. Among other things this includes acting as the contact person towards the village leadership, the planning of interviews, local-level problem solving, and the like
- Takes charge of monitoring the overall quality of interviews taken (e.g. questionnaire check)
- First port of call for problems, creative problem solving
- Takes key informant interviews and moderates focus group discussions
- Maintains the link to DB, provides regular updates (via skype & email)

5) Collaboration in data management and interpretation Block B/overall, Kabul (8 days)

- Assists in data management (e.g. cleaning of data base)
- Actively contributes to data interpretation, namely the process of "making sense" of data
- Actively contributes to learning
- Contributes to writing and proof-reading report sections, background information
- Writes a short summary of the most important insights and "lessons learnt" (max. 4 pages)

Time Schedule

The period of field activities to be conducted by the senior research consultant is September 15 to December 15, 2016, as a part-time engagement. The contract will cover a total of 70 working days organized in 2 Blocks of field research. The mission includes field research in the Rustaq area in Afghanistan from 24 September to 19 October 2016 and from from 8 to 30 November 2016, as well as preparatory and analytical work to be conducted in Kabul. Dates may be subject to change.

Important notes

- Aqila Haidari will work closely together with HAFL staff involved in the project.
- She will submit a short report to HAFL until December 15, 2016. The report will cover the most important insights and lessons learnt related to the above mentioned tasks and will comprise no more than 4 pages.
- Aqila Haidari will keep track of her working days and reports the days/hours worked in written form.
- As this research takes place in a fragile context, flexibility will be essential. Thus, some of the tasks described above may change, and challenges will need creative solutions at times.
- In case the above described field research cannot (or can only partly) take place between September and December 2016, the contract for 70 days of work stays valid, and binding. However, in such case tasks would need to be re-designed to benefit the Rustaq NRM Study yet without involving going to the field.

Zollikofen, 6.9.2016

Annex 2: Terms of Reference for four Field Researchers/Interviewers and one Data Entry Person

Terms of References for collaboration in the frame of the research study on „Potential and limitations for improved natural resource management (NRM) in mountain communities in the Rustaq district, Afghanistan“ (Rustaq NRM study) for which HAFL was mandated by the Swiss Agency for Development and Cooperation (SDC).

The tasks will be conducted under the direction of Dominic Blaettler (HAFL, leader of the socio-economic component, project coordinator) and in close collaboration with Aqila Haidery (Afghan senior researcher). The contract will cover a maximum of 25 working days for each of the four researchers during the time from September to October 2016 (total 100 working days); and 25 working days for the data entry person from September to October 2016. For the 5 team members it is obligatory to participate in the socio-economic interview training planned to take place 25-28 September 2016 in Rustaq.

The focus of the socio-economic interview training is on the introduction to field research methods and review/finalizing of research tools (e.g. sampling designs, questionnaires) jointly by Swiss and local researchers. Field work will focus on the three study villages: Sar-e-Joy, Dasht-e-Mirzai and Jawazkhana.

Overall, the socio-economic component aims to gain a more in-depth understanding of decision-making in terms of livelihood strategies and the adoption of agricultural/sustainable land management (SLM) practices. This affords a qualitative rather than a quantitative study approach.

The HAFL team is seeking 4 interviewers (Dari/local languages speakers) and 1 data entry person (Dari/local languages speaker) to contribute to the socio-economic component. Knowledge of the LIPT villages is an advantage. For reasons of a strong focus on gender inclusion it will need 2 women and 2 men interviewers, preferably two married couples. For this kind of work, experience with survey, qualitative interviews and related skills are key; it needs capable and open-minded individuals, with basic computer skills for data entry. English is not required.

Survey Interviews, in Round A (~20 days)

The goal of the first round of interviews (the ‘initial interview’) is to collect data in order to establish the basic information on issues such as:

- Household and livelihood assets
- livelihood outcomes, including criteria informing the pursuit of specific livelihoods strategies
- farmers’ interest, constraints and potential towards the adoption of (as well as their already made experience with) SLM innovations
- present/absent formal and informal institutions, vulnerability context
- importance and influence of structures and processes from Rustaq town and beyond on decision making at the household/village level

The team will carry out a total of around 120 survey interviews, namely around 40 interviews in each of the 3 selected villages (around 20 households/village, in every household 1 man and 1 woman). The initial interviews of Round A will take place immediately following the Team Training in Rustaq, thus starting around October 1 and lasting until around 20 Oct, 2016. 5 days are planned for the specific team training for Round A (including the pre-test), and 5 days in each of the 3 villages, divided by the weekends.
The data entry person will stay in Rustaq town and transfer the information from the questionnaires into the computer (excel file).

Dominic Blaettler, 24.5.2016, revised 26.09.2016

Annex 3: LIPT III Interventions in Selected Villages

	Sar-i-Joy	Jawaz khana	Dasht-e-mirzaie
NRMC	x	x	x
Reforestation	x	x	x
Fruit plantations on common land	x	x	x
Fruit plantations on private land (subsidized)	x	x	x
Orchards and vineyards (private or common? RED or NRM?)	x	x	x
Small nurseries	x		x
Big nursery for WSA			x
Terracing	x	x	x
Hedgerows	x	x	
Gully treatment with bio-engineering	x	x	
Vaccination campaign	x	x	x
Stable	x	x	x
Fodder bank	x	x	x
Cashmere	x	x	
Paravets	x		x
Urea treatment		x	x
Pasture rehabilitation: grazing plan	x		
Pasture rehabilitation: grazing plan for closed pasture		x	x
Pasture rehabilitation: alfalfa sowing	x	x	x
Irrigation infrastructure	x		x

Annex 4: Code of Conduct for Interviewers

Rustaq NRM Study
Code of Conduct
Socio-economic component, Block A
Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences (HAFL)
September – October 2016

- We work honestly at all stages of data collection by carrying out interviews to the best of our ability and knowledge.
- We work in a focused manner, stay flexible when changes arrive and are on time both for interviews in the village as well as for team meetings.
- We commit to an open, transparent communication culture, including frank feedbacks among each other and address issues and problems whenever they arise; Aqila Haidary is the first port of call as the coordinator of the interviewer team.
- We work under the lead of Dominic Blaettler and Aqila Haidary as a team for achieving a common goal.
- We participate in the research training to improve our own skills and the mentoring of others.
- We pay respect to villagers in the study area at all times and behave according to local culture.
- We value the time the respondents of the survey spend with us, and their contribution to the study.
- We listen carefully and with an open mind, the respondents are the experts; we are neutral and want to learn from respondents about their opinions and ideas.
- We want to stay curious throughout the research, but never become intrusive.
- We keep anonymity of respondents at all times, also when talking to other interviewers or when walking in the village.

(September 29, 2016)

Annex 5: Checklist for Interviewers

Preparation

- Do I know where I have to go?
- Is the person I am going to interview informed that I am coming? Did I arrange the interview at a time when the respondent is free and at a place where he/she feels relaxed?
- Do I have all the material I need (questionnaire, notebook, pen, gift, letter of introduction [if] …)?
- Did I note down the correct questionnaire code on top of the questionnaire?
- Am I well prepared to do a good introduction and to conduct the interview? Do I know the purpose of the research? Do I know the questionnaire well enough?

Introduction

- Introduce yourself.
- Establish a friendly environment considering the life and interests of respondents.
- Explain the topic and the aim of the research.
- Highlight the importance of the respondent's contribution.
- Encourage honest and open expression.
- Explain the structure of the interview.
- Establish a "contract" with the respondent:
    - Duration
    - Use of information (for the report)
    - Anonymity
    - Importance of honesty and openness
    - Neutrality of the interviewer
    - No "correct" answers, no right or wrong
- Thank for the participation/contribution.
- Give the small gift (if).
- Make sure that the atmosphere is good, relaxed and concentrated (everyone sits well, enough light no disturbance by other people, noise etc.).

During the Interview:

- Listen well and with an open mind. The respondents are the experts.
- Be neutral: we are not promoting any project or technology. We are researchers and want to learn from respondents about their opinions and ideas.
- Repeatedly highlight that there is no "correct" answer and that honest and open expression is appreciated.
- Each and every respondent is unique and provides individual, fresh information and stories. Therefore stay curious in a friendly way and never give answers by yourself.
- Communicate receptivity and respect in the way you talk and move (body language).
- Probe and mirror: this helps to make sure that you correctly understood the respondent's statements and allows to dig deeper, avoid superficiality.
- When probing, always ask open and/or balanced questions.
- Consider the needs of the respondent during the interview (e.g. short rest etc).
- Observe the atmosphere and the interview situation

Ending:

- Thank once again for the time and insights and highlight the value of the contribution for the research and the future of the area the research takes place (e.g. Chokar valley).

After the interview:

- Go through the notes again, correct mistakes and note down additional information and forgotten things.
- Note down observations on the atmosphere and the interview situation (place, respondent's mood and character, flow of conversation etc.).
- Assess the interview quality.
- Keep anonymity also when talking to other interviewers, when walking in the village etc.

Annex 6: Data Entry Control Sheet

Rustaq NRM Study
Control Sheet DATA ENTRY Sar-e-Joy (SEJ, Rustaq)
Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences (HAFL)
October 2016

	QUEST CODE	DATE DATA ENTRY	NAME ENTRY PERSON	INTERVIEW CHECKED	ENTRY PERSON SIGNATURE
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

QUEST CODE

Socio-Economic Household Survey
The Rustaq NRM Study | 2016

finvers (2.10.2016)

Dear participant

Thank you very much for taking your time to share your views with us.

My name is ……, and I am an interviewer for the "Rustaq Study". This is a research study focusing on local livelihoods, farming and land management practices in Chokar valley in order to learn for future development projects here and in similar locations. We are interviewing about 100 people in the Chokar valley. The answers from all the people we talk to will be combined for a report. By this way your view and the views of many others will contribute to inform decision-makers in different organisations about your realities and needs.

As someone who is living and working in this region you are in a unique position to talk about your experiences in living here, farming and doing land management here, about things you have tried out and changed, about your way of doing things as well as new practices. And this is what we would like to learn more about in this interview, from you as an expert.

As we are interested in better understanding your realities, priorities and needs, some aspects of the conversation have to do with your household and your life. Your opinion and views are very valuable to us, so please freely and openly express yourself. Nothing you say will ever be identified with you personally. As an interviewer, I am neutral and will not judge any of your statements. As we go through the interview, if you have any questions about why I am asking something, please feel free to ask. If you do not understand a question, please ask for an explanation. Or if there is anything you don't want to answer, just say so.

This study is carried out by the School for Agriculture, Bern University of Applied Sciences (HAFL, Switzerland), in cooperation with CDE (University of Bern, Switzerland) and the NGO Terre des hommes (Tdh) and with the support of Swiss Development Cooperation (SDC).

The interview will last around 2 hours.

Do you have any question before we begin?

Again, thank you very much for your participation.

1. Livelihood Outcomes and Strategies

To get started we invite you to share with us some short stories. We would like to better understand your personal outlook on life, and what really matters to you. Every story is unique, and there is no right and wrong answer to these questions. What matters is that it is your story.

Q1.1 Very spontaneously, what has been the **most significant change in your life** in the past 2-3 years? *[Tell me more about what happened and how it affected your life]*	
Q1.2 Where do you see yourself and your family **in 2-3 years' time**? *[And why?]*	

Q1.3 What will you do to get there? *[What is your strategy to get there?]* *[Tell me more how you intend to get there]* *[Have you **taken any measures** already?]*	
Q1.4 Is there anything that makes reaching your goal(s) especially difficult? If yes, what is it? *[**Obstacles** to achieving goal(s), and if yes, which ones?]*	

Q1.5 What especially helps you to reach your goal(s)? *[What supports you most in achieving your goals?]* *[**Conducive factors** that help you achieving your goal(s)? Which ones?]*	
Q1.6 Are there any institutions or individual people playing an important role in achieving your goal(s)? If yes, which ones?	Institutions: People:

Q1.7
If you compare today with 5 years ago: would you say that your HH's economic condition, overall, now is… ?

□	□	□	□	□	□
much worse	worse	the same	better	much better	don't know

Q1.8 According to you, what is the reason for this? Why is it worse/better now?	

Q1.9
Looking 5 years ahead: do you expect that your HH's economic condition, overall, will be…

□	□	□	□	□	□
much worse	worse	the same	better	much better	don't know

Q1.10 Why so? Why do you expect it to be worse/better in 5 years' time?	

Q1.11 According to you, and on a most general level, what do you see as the major challenge for the Chokar valley? Where do you see the most "need for action"?	

2. Livelihood Activities

In this section we would like to talk about what you and your household members do to make a living in addition to subsistence farming. But let us start with a question on grain…

Q2.1 In a **good year** (a year with good agricultural production), for how many months is your HH self-sufficient in terms of grain? → *number of months grain supplied from own production*	……. months
Q2.2 And in a **bad year**, for how many months is your HH self-sufficient in terms of grain? → *number of months grain supplied from own production*	……. months

Q2.3 Apart from subsistence farming: what else do you and your household members do in terms of **livelihood activities**?	☐ [1] selling crops (and crop products)	☐ [2] selling livestock (and livestock products)	☐ [3] selling fuel wood
	☐ [4] Farm labour1 What/where:	☐ [5] Farm labour2 What/where:	☐ [6] Farm labour3 What/where: .....
	☐ [7] Non-farm labour1 What/where:	☐ [8] Non-farm labour2 What/where:	☐ [9] Non-farm labour3 What/where: .....
	☐ [10] small business	☐ [11] selling wild plants	☐ [12] selling carpets
	☐ [13] trading & transport	☐ [14] working as employee	☐ [15] selling other assets
	☐ [16] Other (specify): …….		

Q2.4 Is your household receiving any of the following?	☐ [1] remittances	☐ [2] credits and loans	☐ [3] pension Source: .....
	☐ [4] land rent/mortgage	☐ [5] charity	☐ [6] Other (specify): …….

Q2.5 You mentioned different sources of income: what are the **3 most important sources of cash income** for your HH? Please also mention their rough share of the total annual cash income.	**First source** of income [1] Name …… Rough annual share (%) [2] ……	**Second source** of income [3] Name …… Rough annual share (%) [4] ……	**Third source** of income [5] Name …… Rough annual share (%) [6] ……	
Q2.6 Do these **most important cash income sources change** over the years?	☐ no, always the same sources	☐ yes, sometimes changing	☐ yes, different every year	☐ don't know
Q2.7 How **stable is the overall amount** of cash income across years?	☐ amount stable	☐ somewhat varying	☐ strongly varying	☐ don't know
Q2.8 What are the main factors for this stability/instability in income?				☐ don't know
Q2.9 Are there sometimes periods of hardship for you and your HH?	☐ no, never	☐ yes, in especially difficult years	☐ yes, every year	☐ don't know
Q2.10 What do you do in such periods to make ends meet?				☐ don't know
Q2.11 Does your HH make **use of** (informal?) **credits** in such periods of hardship?	☐ no, never	☐ yes, sometimes	☐ yes, often	☐ don't know
Q2.12 What would be the **chance to get a** (informal?) **credit** for your HH if you needed one now?	☐ very good chance	☐ some chance	☐ no chance	☐ don't know
Q2.13 According to you, how would you consider this year (2016) in terms of your HH's own agricultural production?				☐ good year ☐ average year ☐ bad year

3. Agricultural Assets: Land & Livestock

We would like to ask you about all the land your household uses/operates. Can you please identify the different types of land that your family uses/operates this year?

Q3.1	**Y/N**	**Own land**	**NOT own land**			**Main crop(s)**
		Area (jerib)	**Area (jerib)**	**Tenure system** *'NOT own land'*	**Duration of tenure** *'NOT own land'*	
[1] **Lalmi land**	☐ Yes ☐ No			☐ sharecrop ☐ rent ☐ mortgage ☐ …….	Mostly… ☐ 1-2 yrs ☐ 3-5 yrs ☐ 6+ years	1) ..... 2) ..... 3) .....
[2] **Abi land**	☐ Yes ☐ No			☐ sharecrop ☐ rent ☐ mortgage ☐ …….	Mostly… ☐ 1-2 yrs ☐ 3-5 yrs ☐ 6+ years	1) ..... 2) ..... 3) .....
[3] **Orchard**	☐ Yes ☐ No			☐ sharecrop ☐ rent ☐ mortgage ☐ …….	Mostly… ☐ 1-2 yrs ☐ 3-5 yrs ☐ 6+ years	1) ..... 2) ..... 3) .....
[4] **Pasture area**	☐ Yes ☐ No			☐ common land ☐ rent ☐ mortgage ☐ …….	Mostly… ☐ 1-2 yrs ☐ 3-5 yrs ☐ 6+ years	

Q3.2 Does the size of land (area) your HH uses **change** over the years?	☐ no, more or less the same		☐ yes, changing	☐ yes, very different every year	☐ don't know
Q3.3 If changing: which type of land (own/not own) is changing in size across the years?	☐ Mostly own land		☐ mostly NOT own land	☐ both	☐ don't know
Q3.4 In terms of overall size of land you use/operate: how does this compare with other HHs in your village?	☐ much less	☐ less	☐ about the same	☐ more	☐ much more	☐ don't know
Q3.5 Does your HH own livestock?	☐ NO ☐ YES				

IF YES, type & number of livestock?	[1] Cattle:	[3] Goat:	[5] Donkey:	[7] Horse:
	[2] Oxen:	[4] Sheep:	[6] Poultry:	

Q3.6 How does this compare with other HHs in your village?	☐ much less	☐ less	☐ about the same	☐ more	☐ much more	☐ don't know

Q3.7
Do you intend to increase the number of your animals, in the near future?

□ yes, as much as possible	□ yes, moderately increase	□ no, keep the same number	□ no, moderately reduce	□ no, strongly reduce	□ don't know

Q3.8 Are there any animals that you manage but don't own?	☐ NO ☐ YES (specify number, kind of animals, owner)……..
Q3.9 Do women in your HH own resources such as land and livestock?	☐ NO ☐ YES (specify type and amount asset)……..

4. Changes in Agricultural Practices and Land (Management)

You have been describing aspects of your household's farming, land and livestock assets. The next set of questions is about your view on changes in agricultural practices and land management.

Q4.1 Thinking back to the last few years, have there been things you or your HH did/started doing differently than in the past? If yes, what has been the **most significant change** in practices? *[Please provide details on When, What, Why]* *["change" here is an innovation-related practice, not simply "more/less land" etc]*	

Q4.2 Where, or from whom, do you get information about such new practices the most?		☐ don't know

Q4.3.1

According to you, how do you judge the **today's quality of the crop land** you use, in very general?

very good	rather good	medium	rather bad	very bad	don't know
☐	☐	☐	☐	☐	☐

Q4.3.2

If you **compare with 10 years ago**: would you say that the land you use, overall, now is in ..... condition?

much better	better	the same	worse	much worse	don't know
☐	☐	☐	☐	☐	☐

Q4.3.3
According to you, what are the **reasons** for this? Why is the land in better/worse condition now?

.....

.....

Q4.3.4
If 'worse' or 'much worse': Did/do you do something about it? If yes, what? If no, why not?

☐ YES
☐ NO

Explanation: .....

.....

Q4.3.5
If 'worse' or 'much worse': should something be done about it? If yes, what would it need? If no, why not?

☐ YES
☐ NO

Explanation: .....

.....

Q4.4.1
According to you, how do you judge the **today's quality of the pasture** you use, in very general?

very good	rather good	medium	rather bad	very bad	don't know
☐	☐	☐	☐	☐	☐

Q4.4.2
If you **compare with 10 years ago**: would you say that pasture, overall, now is in ..... condition?

much better	better	the same	worse	much worse	don't know
☐	☐	☐	☐	☐	☐

Q.4.4.3
According to you, what are the **reasons** for this? Why is the pasture area in better/worse condition now?

.....

.....

Q4.4.4
If 'worse' or 'much worse': Did/do you (and other pasture users) do something about it? If yes, what? If no, why not?

☐ YES
☐ NO

Explanation: .....

.....

Q4.4.5 **If 'worse' or 'much worse':** should something be done about it? If yes, what would it need? If no, why not? Explanation: …… ……	☐ YES ☐ NO

5. Experience with specific SLM interventions

Your local NRMC (supported by Tdh) has done specific SLM interventions in the village. In the last section we would like to talk about these specific interventions in more detail.

Q5.1 Are you **aware** of the following practices?	1 Reforestation, planting non-fruit trees	☐ YES ☐ NO
	2 vineyards	☐ YES ☐ NO
	3 Terracing	☐ YES ☐ NO
	4 Hedgerows	☐ YES ☐ NO
	5 Gully treatment	☐ YES ☐ NO
	6 grazing plan	☐ YES ☐ NO
	7 Pasture rehabilitation: re-sowing (e.g. alfalfa)	☐ YES ☐ NO
	8 Stable	☐ YES ☐ NO
	9 Fodder storage	☐ YES ☐ NO
	10 Medicinal herbs	☐ YES ☐ NO
	11 Other ……..	☐ YES ☐ NO

Q5.2 If aware: are there any of these practices of interest to you and your household?	☐ YES → go to question Q5.3 ☐ NO → go to question Q5.d

Q5.3 IF YES: what are the **3 practices of most interest to your HH**?	[1] **Most interesting practice**	[2] **Second-most interesting practice**	[3] **Third-most interesting practice**
	Name ……..	Name ……..	Name ……..

5a. …… (specify first choice)

Q5a.1 Where did you see this practice? AND/OR: from whom did you hear about it the first time?		
Q5a.2 What are some of the things you **like** about it (perceived benefits)?		☐ don't know
Q5a.3 What are some of the things you **dislike** about it (perceived problems)?		☐ don't know
Q5a.4 Did you or your **HH participate in NRMC activities** regarding this practice?	Q5a.4 ☐ NO ☐ YES ☐ don't know If no: why not? …… If yes: how/under what conditions *(e.g. cash-for-work)*? ……	
Q5a.5 & 6 Did your household replicate the practice on land your HH uses/operates?	Q5a.5 ☐ NO ☐ YES ☐ don't know IF NO: why not? …… …… …… IF YES: what influenced your decision to replicate? …… …… …… Q5a.6 If YES: did you receive any subsidies/support for this? ☐ NO ☐ YES (specify) …… ☐ don't know If YES: on what type of land did you replicate? ☐ on own land ☐ on land owned by …… If YES: do you intend to further replicate? ☐ NO (specify) …… ☐ YES (specify) ……	
Q5a.7 **[only if Q5a.5 is NO]** Do you think this practice could be something of interest for your household? Does your HH intend to replicate the tech?	Q5a.7 ☐ NO ☐ YES ☐ don't know ☐ NO: why not? …… …… …… ☐ YES: why? …… …… …… Q5a.8 If YES: would you replicate even without receive any subsidies/support for this? ☐ NO ☐ YES (specify) …… If YES: on what type of land would you replicate? ☐ on own land ☐ on land owned by ……	

5b. …… (specify first choice)

Q5b.1 Where did you see this practice? AND/OR: from whom did you hear about it the first time?		
Q5b.2 What are some of the things you **like** about it (perceived benefits)?		☐ don't know
Q5b.3 What are some of the things you **dislike** about it (perceived problems)?		☐ don't know
Q5b.4 Did you or your **HH participate in NRMC activities** regarding this practice?	Q5b.4 ☐ NO ☐ YES ☐ don't know If no: why not? …… If yes: how/under what conditions *(e.g. cash-for-work)*? ……	
Q5b.5 & 6 Did your household replicate the practice on land your HH uses/operates?	Q5b.5 ☐ NO ☐ YES ☐ don't know IF NO: why not? …… …… …… IF YES: what influenced your decision to replicate? …… …… …… Q5b.6 If YES: did you receive any subsidies/support for this? ☐ NO ☐ YES (specify) …… ☐ don't know If YES: on what type of land did you replicate? ☐ on own land ☐ on land owned by …… If YES: do you intend to further replicate? ☐ NO (specify) …… ☐ YES (specify) ……	
Q5b.7 **[only if Q5b.5 is NO]** Do you think this practice could be something of interest for your household? Does your HH intend to replicate the tech?	Q5b.7 ☐ NO ☐ YES ☐ don't know ☐ NO: why not? …… …… …… ☐ YES: why? …… …… …… Q5b.8 If YES: would you replicate even without receive any subsidies/support for this? ☐ NO ☐ YES (specify) …… If YES: on what type of land would you replicate? ☐ on own land ☐ on land owned by ……	

5c. ..... (specify first choice)

Q5c.1 Where did you see this practice? AND/OR: from whom did you hear about it the first time?		
Q5c.2 What are some of the things you **like** about it (perceived benefits)?		☐ don't know
Q5c.3 What are some of the things you **dislike** about it (perceived problems)?		☐ don't know
Q5c.4 Did you or your **HH participate in NRMC activities** regarding this practice?	Q5c.4 ☐ NO ☐ YES ☐ don't know If no: why not? …… If yes: how/under what conditions *(e.g. cash-for-work)*? ……	
Q5c.5 & 6 Did your household replicate the practice on land your HH uses/operates?	Q5c.5 ☐ NO ☐ YES ☐ don't know IF NO: why not? …… …… …… IF YES: what influenced your decision to replicate? …… …… …… Q5c.6 If YES: did you receive any subsidies/support for this? ☐ NO ☐ YES (specify) …… ☐ don't know If YES: on what type of land did you replicate? ☐ on own land ☐ on land owned by …… If YES: do you intend to further replicate? ☐ NO (specify) …… ☐ YES (specify) ……	
Q5c.7 **[only if Q5c.5 is NO]** Do you think this practice could be something of interest for your household? Does your HH intend to replicate the tech?	Q5c.7 ☐ NO ☐ YES ☐ don't know ☐ NO: why not? …… …… …… ☐ YES: why? …… …… …… Q5c.8 If YES: would you replicate even without receive any subsidies/support for this? ☐ NO ☐ YES (specify) …… If YES: on what type of land would you replicate? ☐ on own land ☐ on land owned by ……	

Q5.d You mentioned different practices: what are the **2 practices of LEAST interest to your HH**?	[1] **Least interesting practice** Name ……..	[2] **Second-least interesting practice** Name ……..

5e. ..... (specify first choice)

Q5e.1 Where did you see this practice? AND/OR: from whom did you hear about it the first time?		
Q5e.2 What are some of the things you **like** about it (perceived benefits)?		☐ don't know
Q5e.3 What are some of the things you **dislike** about it (perceived problems)?		☐ don't know
Q5e.4 Did you or your **HH participate in NRMC activities** regarding this practice?	Q5e.4.1 ☐ NO ☐ YES ☐ don't know Q5e.4.2 If no: why not? …… If yes: how/under what conditions *(e.g. cash-for-work)*? ……	

5f. ..... (specify second choice)

Q5f.1 Where did you see this practice? AND/OR: from whom did you hear about it the first time?		
Q5f.2 What are some of the things you **like** about it (perceived benefits)?		☐ don't know
Q5f.3 What are some of the things you **dislike** about it (perceived problems)?		☐ don't know
Q5f.4 Did you or your **HH participate in NRMC activities** regarding this practice?	Q5f.4.1 ☐ NO ☐ YES ☐ don't know Q5f.4.2 If no: why not? …… If yes: how/under what conditions *(e.g. cash-for-work)*? ……	

Q5g Out of all the things we have talked about today – or maybe some topics we have missed – **what should I pay most attention to**? What should I think about when I read your interview again?	

Thank you very much, once again, for your time and highly valuable contribution! Your view and the views of many others will contribute to inform decision-makers in different organisations about your realities and needs.

6. Demographic Details of Respondent & Household

6.1 Details of respondent			□ Male □ Female	**Age** …….
Marital Status	□ Married	□ Unmarried	□ Widowed	□ Separated □ Divorced
Highest education level (respondent)	□ not at school □ Madrassa □ Other (specify) ……	□ school class (specify) ……. □ College/Univ		□ can read or write □ cannot read or write
Respondent is … of 2. Interview	□ Spouse □ Father □ Father-in-law □ Other (specify) ……	□ Brother □ Mother □ Mother –in-law	□ Sister □ Child □ Brother-in-law	□ Grandparent □ Sister-in-law

6.2 Household Details

Size of Household	Total	No of men in HH (x≥16 yrs) ……	No of women in HH (x≥16 yrs) ……	
		No of boys in HH (x≤15 yrs) ……	No of girls in HH (x≤15 yrs) ……	
Highest education level (HH)	□ not at school □ Madrassa □ Other (specify) ……	□ school class (specify) ……. □ College/Univ	□ can read or write □ cannot read or write	
			□ Male □ Female	**Age** …….
Head of HH is … of respondent	□ him-/herself □ Father □ Father-in-law □ Other (specify) ……	□ Spouse □ Mother □ Mother –in-law	□ Brother □ Child □ Brother-in-law	□ Sister □ Grandparent □ Sister-in-law

7. Filled in by interviewer

Name of village	……	Name of Kharia	……
Name of Mosque	……	Ethnic bkg respondent	……
Name of Interviewer	……	Date of Interview	……
Time start		Time end	
Quality of Interview (1-5, 1 = low quality, 5 = high quality)			……
Pre-defined wealth group	□ poor	□ middle	□ better-off

کود تحقیق

تحقیق اجتماعی-اقتصادی خانواده‌ها
مطالعه مدیریت منابع طبیعی ولسوالی رستاق، ۲۰۱۶

تاریخ ترتیب نسخه نهائی، (02.10.2016)

اشتراک کننده محترم
تشکر از وقت تان و تشکر از اینکه نظریات تان را با ما شریک می‌سازید.

اسم من ..... است و من به خاطر (آگاهی و مطالعه در باره مدیریت منابع طبیعی ولسوالی رستاق) می‌خواهم با شما مصاحبه داشته باشم. این تحقیق در باره زندگی روزمره و دریافت معیشت، شیوه مزرعه داری و نحوه مدیریت زمین در دره چاکر انجام می‌شود تا از طریق این تحقیق موارد جدید در مورد این ولسوالی و منابع طبیعی آن بیاموزیم و سپس از آن در پروژه‌های توسعه‌یی آینده در این دره و در مکان های مشابه دیگر استفاده کنیم. در این دره ما با ۱۰۰ نفر مصاحبه می‌کنیم و جوابات ایکه به سوال‌ها داده می‌شوند بعدا به شکل یک گزارش نوشته می‌شود. بنابراین، نظریات شما و دیگران باعث می‌شود تا تصمیم گیرندگان در سازمان‌های مختلف در باره واقعیت زندگی شما و نیازهای تان آگاه شوند.

شما به عنوان فردی که در این اجتماع و این موقعیت جغرافیایی زندگی و کار می‌کنید، نظریات تان در باره تجارب تان از زندگی در این جا، شیوه زراعت، نحوه مدیریت زمین، مواردایکه شما خواستید تغییر بدهید، شیوه انجام کارها و راه‌های جدید زراعت، بسیار با اهمیت و حیاتی می‌باشد. این‌ها مواردی هستند که ما می‌خواهیم در این مصاحبه از شما به عنوان کسی که آشنایی کامل با این منطقه و نحوه انجام کارها در آن دارید، بشنویم.

از آنجائیکه ما علاقه مند استیم در باره واقعیت‌ها، اولویت‌ها و نیازهای زندگی تان بیشتر بدانیم؛ پس ناگزیر استیم در باره زندگی خانوادگی و شخصی تان نیز بعضی سوالات را بپرسیم و با هم در باره آن بحث نماییم. نظریات و گفته‌های شما بسیار با اهمیت و ارزش مند است، پس لطفا به طور آزادنه صحبت کنید. صحبت ها و معلومات شما به شکل محرمانه و سری نگهداری می شود، پس ازین بابت هیچ نگرانی نداشته باشید. من به عنوان مصاحبه کننده، کاملا بیطرف می‌باشم و در باره هیچ یک از گفته‌های شما قضاوت نمی‌کنم. در جریان مصاحبه، اگر پیش تان سوال خلق شد که چرا من این سوال را می‌پرسم، لطفا بدون تردید از من سوال کنید. همچنان اگر کدام سوال را نفهمیدید، لطفا به من بگویید که برای تان توضیح بدهم. و یا اینکه اگر نمی خواهید به کدام سوال پاسخ بدهید ، فقط به من بگویید و لازم نیست آن را جواب بدهید.

این تحقیق توسط دانشکده زراعت دانشگاه بَرن، بخش علوم کاربردی (HAFL، سویس) در همکاری با مرکز مطالعات توسعه و محیط CDE (دانشگاه بَرن سویس) و موسسه (Terre De HommesTDH) با حمایت نمایندگی سویس برای انکشاف و همکاری انجام شده است.

مدت مصاحبه حدود دو ساعت می‌باشد.

قبل از اینکه مصاحبه را آغاز کنیم، اگر کدام سوال داشته باشید می‌توانید بپرسید.

بازهم تشکر از همکاری و اشتراک تان در این مصاحبه.

1. استراتیژی ها و محصول/نتایج معیشت

قبل از آغاز سروی، از شما می خواهیم که بعضی از خاطرات زندگی تان را با ما شریک سازید. ما می خواهیم بدانیم که از نظر شما زندگی چی معنی و مفهومی دارد و چی چیز واقعا برای شما مهم است. این سوال جواب مشخص ندارد و هر جواب که شما ارائه می کنید درست است و جایگاه و ارزش خودش را دارد. مورد مهم و حایز اهمیت، داستان شما است.

1.1: در دو الی سه سال اخیر، مهم ترین تغییرات ایکه در زندگی تان رخ داده کدام ها اند؟ {لطفا درباره اینکه چی اتفاق افتاد وچی تاثیری روی زندگی شما داشت،بیشتر توضیح بدهید.}	
1.2 طی دو الی سه سال آینده خود و خانوار خود را در کجا می بینید؟ {وچرا؟}	

:1.3 برای رسیدن به آنجا کدام اقدامات را روی دست می گیرید؟ (استراتژی تان برای رسیدن به آنجا چیست؟) {لطفا در باره اینکه چگونه تصمیم دارید به آنجا برسید معلومات دهید؟} {کدام اقدامات را روی دست گرفته اید؟}	
:1.4 آیا کدام چالش و یا مشکلی سر راه تان قرار دارد که رسیدن به هدف را برای تان مشکل سازد؟ اگر بله، کدام است؟ {موانع برسر راه رسیدن به اهداف،اگربله،کدام موانع وجود دارد؟}	

:1.5 به صورت مشخص چی چیز به شما کمک می کند تا به اهداف تان برسید؟ {چی چیز شما را در رسیدن به اهداف تان یاری میرساند؟} {عوامل هدایت کننده که شما را به رسیدن در اهداف تان کمک می کند کدام ها اند؟ کدام عوامل؟} به طور نمونه: نهادها، مردم و غیره}	
:1.6 آیا کدام نهاد و یا افرادی وجود دارد که نقش مهمی را در رسیدن شما به اهداف تان بازی کند؟ اگر بله، کدام نهاد و یا افراد؟	نهاد ها: مردم:

:1.7
اگر بخواهید وضعیت اقتصادی فعلی خانواده تان را با پنج سال قبل مقایسه کنید، کدام یک از گزینه های ذیل را انتخاب خواهید کرد؟

☐ خیلی بد شده. ☐ بد تر شده. ☐ یکسان است. ☐ خوب شده. ☐ خیلی خوب شده. ☐ نمی دانم

:1.8 به نظر تان چی چیز باعث شده که وضعیت اقتصادی تان نظر به پنج سال پیش بهتر/ بدتر شود؟	

:1.9
طی 5 سال آینده توقع دارید وضعیت اقتصادی خانواده تان قرار کدام یک از گزینه های ذیل باشد؛

☐ خیلی بد خواهد شد. ☐ بدتر خواهد شد. ☐ یکسان خواهد بود. ☐ خوب خواهد شد. ☐ خیلی خوب خواهد شد. ☐ نمی دانم.

:1.10 چرا چنین خواهد شد؟ چرا فکر می کنید در پنج سال آینده وضعیت اقتصادی خانواده تان بهتر و یا بدتر تر خواهد شد؟	

:1.11 به نظر شما و به صورت عمومی مشکلات عمده دره چاکر کدام اند؟ و در کدام زمینه ها و بخش ها ضرورت به اقدامات و نیازمندی بیش تر است؟	

2. فعالیت های مربوط به معیشت (درآمد خانواده ها)

در این بخش می خواهیم در باره این صحبت نماییم که شما و اعضای خانواده تان برای پیشبرد زندگی علاوه بر کشت و زراعت معیشتی کدام فعالیت ها و کارهای دیگر را انجام می دهید. اجازه بدهید این صحبت را با پرسیدن یک سوال در باره گندم (یا غله جات) آغاز کنیم...

:2.1 در یک سال خوب (سالی که در آن محصولات زراعتی تان خوب باشد) برای چند ماه حاصلات گندم خود تان برای مصرف خانواده تان کافی می باشد؟ ⟸ تعداد ماه ها ای را بنویسید که حاصلات گندم تان برای مصرف خانوادهتان کافی می باشد.	تعداد ماه ها را بنویسید
:2.2 در یک سال بد (سالی که در آن محصولات زراعتی تان خوب نباشد) برای چند ماه حاصلات گندم خود تان برای مصرف خانوادهتان کافی می باشد؟ ⟸ تعداد ماه های را که که گندم خود تان برای مصرف خانواده تان کافی می باشد را بنویسید.	تعداد ماه ها را بنویسید

:2.3 به غیر از کشت و زراعت معیشتی شما و اعضاء خانواده تان کدام فعالیت های معیشتی را انجام می دهید؟	☐فروش محصولات (به شمول محصولات گندم) [1]	☐ فروش حیوانات اهلی (و محصولات حیوانات اهلی) [2]	☐ فروش مواد سوخت [3]
	☐ مزد کاری در مزرعه 1 چی کار / کجا..... [4]	☐ مزد کاری در مزرعه 2 چی کار / کجا..... [5]	☐ مزد کاری در مزرعه 3 چی کار / کجا..... [6]
	☐ کار در بیرون از مزرعه 1 چی کار / کجا.....	☐ کار بیرون از مزرعه 2 چی کار / کجا..... [8]	☐ کار در بیرون از مزرعه 3 چی کار / کجا..... [9]
	☐کسب و کار کوچک [10]	☐ فروش نباتات یا درختچه های کوهی [11]	☐فروش قالین و محصولات بافندگی [12]
	☐تجارت و نقل و انتقال [13]	☐ کار به عنوان کارمند [14]	☐ فروش دارایی های دیگر [15]
	☐ کارهای دیگر مشخص سازید ..... [16]		

:2.4 آیا خانوادهتان تمام و یا یکی از موارد ذیل را دریافت می کند؟	☐ دریافت پول از خارج[1]	☐ دریافت کریدت و قرض[2]	☐ دریافت تقاعد[3]
	☐ دریافت زمین به عنوان اجاره یا گرو[4]	☐ دریافت کمک/خیرات [5]	☐ موارد دیگر، لطفا مشخص سازید[6] ....

:2.5 شما منابع درآمد مختلف را ذکر کردید، **سه منبع درآمد نقدی که از همه بیشتر برای خانواده تان مهم است**، کدام ها اند؟ لطفا عاید سالانه تان به حساب پول نقد را که از طریق این سه منبع درآمد کسب می کنید، نیز ذکر کنید.	منبع درآمد **اولی** اسم درآمد سالانه به فیصد	منبع درآمد **دومی** اسم درآمد سالانه به فیصد	منبع درآمد **سومی** اسم درآمد سالانه به فیصد . . . .
:2.6 آیا این منابع مهم درآمد نقدی تان با گذشت زمان (در مدت چندین سال) تغییر کرده است؟	☐ نه، همیشه یکسان بوده	☐ بله، بعضی اوقات تغییر کرده	☐ بله، هر سال تغییر کرده ☐ نمی دانم
:2.7 به صورت تخمینی میزان درآمد نقدی تان در طول چندین سال چقدر ثابت می باشد؟	☐ ثابت است می‌کند	☐ کمی تغییر می‌کند	☐ بسیار تغییر ☐ نمی دانم
:2.8 عوامل اصلی که باعث ثابت ماندن و یا تغییر درآمد تان می شود، کدام ها اند؟			☐ نمی دانم
:2.9 آیا بعضی اوقات، دوران مشقت و مشکلات برای شما و خانواده شما وجود دارد؟	☐ نه، هرگز	☐ بله، مخصوصا در سال های سخت	☐ بله، هر سال ☐ نمی دانم
:2.10 برای از میان برداشتن این دوران کدام اقدامات را روی دست می گیرید؟			☐ نمی دانم
:2.11 آیا در چنین حالات سخت و دشوار، خانواده تان از **کریدت** استفاده می کند؟	☐ نه، هرگز	☐ بله، بعضی وقت ها	☐ بله، اکثرا ☐ نمی دانم
:2.12 درصورت ایکه خانواده شما حالا ضرورت به دریافت قرضه داشته باشند فرصت دریافت قرضه (به شکل غیر رسمی) چی خواهد بود؟	☐ فرصت خوب ندارد	☐ بعضی فرصت	☐ امکان ☐ نمی دانم
:2.13 با درنظرداشت حاصلات زراعتی خانواده تان سال جاری(2016) را چگونه ارزیابی می کنید؟			☐ سال خوب ☐ متوسط ☐ سال بد

3. دارایی های زراعتی: زمین و مالداری

در این بخش می خواهیم در باره تمام زمین های که خانواده تان در آن کار می کند، بپرسیم. لطفا انواع مختلف زمین های را که خانواده تان امسال در آن کار می کنند را شناسایی و بیان کنید؟

3.1	بله / نه	زمین شخصی	زمین غیر شخصی			محصولات اصلی
		اندازه زمین به جریب	اندازه زمین به جریب	سیستم (نظام) اجاره داری یا تصدی	مدت اجاره داری (تصدی)	
زمین للمی	☐ بله ☐ نه			☐ کشت اشتراکی ☐ اجاره ☐ گرو ☐	☐ اکثرا ☐ 2-1 سال ☐ 5-3 سال ☐ اضافه از 6 سال	1). . . . . . 2). . . . . . 3). . . . . .
زمین آبی	☐ بله ☐ نه			☐ کشت اشتراکی ☐ اجاره ☐ گرو ☐	☐ اکثرا ☐ 2-1 سال ☐ 5-3 سال ☐ اضافه از 6 سال	1). . . . . . 2). . . . . . 3). . . . . .
باغداری	☐ بله ☐ نه			☐ کشت اشتراکی ☐ اجاره ☐ گرو ☐	☐ اکثرا ☐ 2-1 سال ☐ 5-3 سال ☐ اضافه از 6 سال	1). . . . . . 2). . . . . . 3). . . . . .
مالچر (چراگاه)	☐ بله ☐ نه			☐ زمین عامه ☐ اجاره	☐ اکثرا ☐ 2-1 سال ☐ 5-3 سال ☐ اضافه از 6 سال	

3.2 آیا مقدار یا اندازه زمینی را که خانواده شما استفاده می کند، در طول سال ها تغییر می کند؟	☐ نه، تغییر نمی کند	☐ بله، تغییر می کند	☐ بله، هر سال تغییر می کند	☐ نمی دانم
3.3 در صورت تغییر: کدام نوع زمین (شخصی/غیر شخصی) در طول سال ها تغییر می کند؟	☐ اکثرا زمین های شخصی	☐ زمین های غیر شخصی	☐ هر دو گزینه	☐ نمی دانم
3.4 اندازه زمینی را که خانواده شما استفاده می کند، در مقایسه با خانواده های دیگر در قریه چگونه است؟	☐ خیلی کم است ☐ کم است	☐ برابر است	☐ زیاد است	☐ خیلی زیاد است ☐ نمی دان
3.5 آیا خانواده شما دارای مواشی استند؟	☐ نه ☐ بله			

اگر بله، تعداد شان را بنویسید؟	گاو ماده: [1]		بز: [3]		مرکب: [5]	اسب: [7]
	گاو نر: [2]		گوسفند: [4]		مرغ: [6]	

3.6 از نظر مالداری، نسبت به دیگر خانواده های قریه در چی سطح قرار دارید؟

☐ خیلی کم است ☐ کم است ☐ یکسان است ☐ زیاد است ☐ خیلی زیاد است ☐ نمی دانم

3.7 آیا تصمیم دارید در آینده نزدیک تعداد حیوانات (مالداری) را تان افزایش بدهید:

☐ بله، تا اندازه ایکه امکان داشته باشد ☐ بله، تا حد متوسط اضافه می کنم ☐ نه، همین تعداد را حفظ می کنم ☐ نه، می خواهم تا حد متوسط کم کنم ☐ نه، می خواهم به خیلی کم کنم ☐ نمی دانم

3.8 آیا کدام نوع حیوان وجود دارد که شما از آن نگهداری می کنید ولی صاحب اصلی آن نیستید؟

☐ نه
☐ بله، لطفا تعداد و صاحب اصلی آن را مشخص سازید: . . . . . .

3.9 آیا در خانوادهشما زنان صاحب منابع مثل زمین و مالداری می باشند؟

☐ نه
☐ بله، لطفا نوعیت و اندازه آن را مشخص سازید: . . . . . .

4. <u>تغییرات در شیوه زراعت و مدیریت زمین</u>

شما در مورد زراعت، زمین و مالداری خانواده تان معلومات لازم را ارائه کردید. حالا سوال بعدی در مورد این می باشد که نظر تان در باره آوردن تغییر در شیوه زراعت و مدیریت زمین چی است.

4.1: در مورد چند سال گذشته فکر کنید و بگویید که آیا کاری بوده است که شما و یا خانواده تان آن را به طریق متفاوت تری شروع و یا انجام داده باشید؟ اگر بله، **تغییرات مهم در شیوه انجام آن** کدام ها بوده است؟ {لطفا در باره این تغییرات که چی وقت، در کدام بخش و چرا به وجود آوردید معلومات کافی بدهید} {منظور از "تغییر" در اینجا تنها "تغییر در کمیت زمین نیست" بلکه منظور از تغییر "نوآوری مرتبط به شیوه انجام کار" و غیره می باشد}		
4.2: از کجا و یا از کدام شخص در مورد این شیوه های جدید معلومات بدست می آورید؟		☐ نمی دانم
4.3.1 به نظر تان، در مجموع **کیفیت زمین های زراعتی که فعلا** استفاده می کنید، چطور است؟ ☐ بسیار خوب است ☐ نظر به قبل خوبتر است ☐ متوسط است ☐ نظر به قبل ضعیف است ☐ بسیار ضعیف است ☐ نمی دانم		
4.3.2 اگر زمین های امروزی تان را با 10 سال قبل مقایسه کنید، در مجموع به نظر تان وضعیت زمین های امروزی تان نسبت به 10 سال پیش چگونه است؟ ☐ بسیار خوب است ☐ بهتر است ☐ یکسان است ☐ ضعیف تر است ☐ خیلی ضعیف است ☐ نمی دانم		

4.3.3
به نظر شما دلایل آن چیست؟چرا زمین های تان امروز نسبت به گذشته بهتر و یا ضعیف تر است؟

. . . . . .

. . . . . .

4.3.4

اگر وضعیت زمین های تان نسبت به گذشته **ضعیف و یا ضعیف تر است:**آیا شما در این زمینه کاری کردید و یا اینکه کاری می کنید. اگر بله، چی کاری کرده اید؟ اگر نه، چرا نمی خواهید کاری کنید؟ ☐ بله
☐ نه خیر

توضیحات: . . . . . .

. . . . . .

4.3.5
اگر وضعیت زمین های تان نسبت به گذشته **ضعیف و یا خیلی ضعیف است:**آیا باید برای آن کاری کرد؟ اگر بله، چی کار؟ اگر نه، چرا نه؟ ☐ بله
☐ نه خیر

توضیحات: . . . . . .

. . . . . .

4.4.1
به نظر شما و به صورت کلی وضعیت و کیفیت چراگاه های که امروزه استفاده می کنید چگونه است:

☐ بسیار خوب است ☐ نظر به قبل خوبتر است ☐ متوسط است ☐ نظر به قبل ضعیف است ☐ بسیار ضعیف است ☐ نمی دانم

4.4.2
اگر چراگاه ها را **با 10 سال پیش مقایسه** کنید، نظر به 10 سال پیش چگونه است؟

☐ بسیار خوب است ☐ بهتر است ☐ یکسان است ☐ ضعیف تر است ☐ خیلی ضعیف است ☐ نمی دانم

4.4.3
به نظر تان **دلایل** این تغییرات چی است. چرا چراگاه ها امروز نسبت به 10 سال پیش بهتر و یا خرابتر شده است؟

توضیحات . . . . . .

. . . . . .

4.4.4
اگر وضعیت چراگاه ها نسبت به گذشته **ضعیف و یا خیلی ضعیف شده:**آیا شما و یا (دیگر استفاده کنندگان چراگاه) در این مورد اقداماتی را انجام دادید/ روی دست گرفته اید؟ اگر بله، چی کار؟ اگر نه، چرا نکرده اید؟ ☐ بله
☐ نه خیر

توضیحات: . . . . . .

. . . . . .

4.4.5
اگر وضعیت چراگاه های تان نسبت به گذشته **ضعیف و یا خیلی ضعیف شده:**آیا باید برای آن کاری کرد؟ اگر بله، چی کار؟ اگر نه، چرا نه؟

☐ بله
☐ نه خیر

توضیحات: . . . . . .

. . . . . .

5. <u>تجربه بوسیله اقدامات مشخص مدیریت پایدار زمین</u>

مدیریت منابع طبیعی محلی تان (که از طرف سازمان Terre De Hommesحمایتمی شود)، بعضی اقدامات مشخص مدیریت منابع طبیعی را در قریه تطبیق کرده اند. در بخش پایانی ما میخواهیم در مورد این اقدامات مشخص مدیریت پایدار زمین با جزئیات بحث نماییم.

5.1 آیا در مورد این روش ها (پرکتس ها) آگاهی دارید؟	1 احداث جنگلات و کشت درختان غیر مثمر	☐ بله ☐ نه
	2 تاکستان	☐ بله ☐ نه
	3 پلبندی	☐ بله ☐ نه
	4 خط سبز	☐ بله ☐ نه
	5 چکدم گلی	☐بله ☐ نه
	6 برنامه چرش	☐بله ☐ نه
	7 احیای چراگاه ها: کشت و زرع دوباره	☐بله ☐ نه
	8 طویله	☐ بله ☐ نه
	9 ذخیره علوفه حیوانات	☐ بله ☐ نه
	10 نباتات طبی	☐بله ☐ نه
	11 سایر موارد	☐بله ☐ نه

5.2 در صورت داشتن آگاهی آیا این روش (پرکتس) مورد دلچسپی شما و خانواده شما قرار گرفته است؟	☐ بله ←به سوال 5.3 مراجعه نمایید. ☐ نه خیر←به سوال 5.d مراجعه نمایید.

5.3: در صورت بله، **سه روش (پرکتس) ایکه خانواده تان بیش تر به آن علاقه مند اند** کدام ها اند؟	جالب ترین روش 1	جالب ترین روش 2	جالب ترین روش 3
	اسم	اسم	اسم
	. . . .	. . . .	. . . .

5a. انتخاب تان را مشخص سازید.....	
5a.1 اولین بار این روش را در کجا مشاهده نمودید و در مورد آن از کی آگاهی حاصل نمودید؟	
5a.2 کدام بخش های این روش (پرکتس)**را دوست** دارید (از نظر مفیدیت)؟	☐ نمی دانم
5a.3 کدام بخش های این روش (پرکتس) را **دوست**ندارید (از نگاه غیر مفیدیت بودن)؟	☐ نمی دانم
5a.4 آیا **خانواده شما در فعالیت های کمیته مدیریت منابع طبیعی** در رابطه به این روش اشتراک کرده اند؟	☐ نه خیر ☐ بله ☐ نمی دانم در صورت نه: چرا نکرده اند؟ . . . . . . در صورت بله: چگونه/تحت کدام شرایط (به طور نمونه، کار در مقابل پول نقد)؟ . .. .
5a.5 آیا خانواده شما از این روش در زمین خود تان که از استفاده می کنید/در آن کار می کنید تقلید یا اقتباس کرده است؟	☐ نه خیر ☐ بله ☐ نمی دانم در صورت نه: چرا نه؟ . .. . در صورت بله: کدام نکات باعث تشویق شما در زمینه اقتباس و تقلید از این روش گردید؟. . . . . 5a.6 در صورت بله، آیا شما در عملی ساختن آن کدام حمایت و یا کمک نقدی (اعانه) دریافت کردید؟ ☐ نه. ☐بله. شرایط آن را ذکر کنید . . . . . ☐ نمی دانم در صورت بله، در کدام نوع زمین آن را دوباره تطبیق/ تقلید نمودید؟ ☐در زمین شخصی تان. ☐در زمین ایکه صاحب آن . . . . . . در صورت بله، آیا می خواهید در آینده نیز آن را تقلید کنید؟ ☐ نه (مشخص سازید) . . . . . . ☐ بله (مشخص سازید) . . . . .
5a.7(تنها در صورتی که جواب 5a.6منفی باشد)آیا فکر می کنید این روش به فایده شما و خانواده تان باشد؟ آیا خانواده تان قصد دارد از این روش تقلید کند؟	☐ نه خیر ☐ بله ☐ نمی دانم در صورت نه: چرا نه؟ . . . . . . در صورت بله: چرا؟ . . . . . . 5a.8 اگر بله، آیا می خواهید حتی بدون دریافت کدام حمایت و یا کمک نقدی (اعانه) آن را استفاده کنید؟ ☐ نه. ☐بله. مشخص سازید . . . . . . اگر بله، در کدام نوع زمین می خواهید از آن تطبیق/ تقلید نمایید؟ ☐زمین شخصی تان. ☐ در زمین ایکه صاحب آن .....

5b. انتخاب تان را مشخص سازید	
5b.1 اولین بار این روش را در کجا مشاهده نمودید و در مورد آن از کی آگاهی حاصل نمودید؟	
5b.2 کدام بخش های این روش (پرکتس) **رادوست** دارید (از نظر مفیدیت)؟	☐ نمی دانم
5b.3 کدام بخش های این روش (پرکتس) را **دوست** ندارید (از نگاه غیر مفیدیت بودن)؟	☐ نمی دانم
5b.4 آیا **خانواده شما در فعالیت های کمیته مدیریت منابع طبیعی** در رابطه به این روش اشتراک کرده اند؟	☐ نه خیر ☐ بله ☐ نمی دانم در صورت نه: چرا نکرده اند؟ . . . . . . در صورت بله: چگونه/تحت کدام شرایط (به طور نمونه، کار در مقابل پول نقد)؟ . . . . .
5b.5 آیا خانواده شما از این روش در زمین خود تان که از استفاده می کنید/در آن کار می کنید تقلید یا اقتباس کرده است؟	☐ نه خیر ☐ بله ☐ نمی دانم در صورت نه: چرا نه؟ . . . . در صورت بله: کدام نکات باعث تشویق شما در زمینه اقتباس و تقلید از این روش گردید؟. . . . . 5b.6 در صورت بله، آیا شما در عملی ساختن آن کدام حمایت و یا کمک نقدی (اعانه) دریافت کردید؟ ☐ نه. ☐ بله. شرایط آن را ذکر کنید. . . . . ☐ نمی دانم در صورت بله، در کدام نوع زمین آن را دوباره تطبیق تقلیدی نمودید ؟ ☐ در زمین شخصی تان. ☐ در زمین ایکه صاحب آن . . . . . . در صورت بله، آیا می خواهید در آینده نیز آن را تقلید و دوباره تطبیق کنید؟ ☐ نه (مشخص سازید) . . . . . . ☐ بله (مشخص سازید) . . . . .
5b.7(تنها در صورتی که جواب 5b.6منفی باشد)آیا فکر می کنید این روش به فایده شما و خانواده تان باشد؟ آیا خانواده تان قصد دارد از این روش تقلید کند؟	☐ نه خیر ☐ بله ☐ نمی دانم در صورت نه: چرا نه؟ . . . . . . در صورت بله: چرا؟ . . . . . . 5b.8 اگر بله، آیا می خواهید حتی بدون دریافت کدام حمایت و یا کمک نقدی (اعانه) آن را استفاده کنید؟ ☐ نه. ☐ بله. مشخص سازید . . . . . . اگر بله، در کدام نوع زمین می خواهید از آن تطبیق/ تقلید نمایید؟ ☐ زمین شخصی تان. ☐ در زمین ایکه صاحب آن . . . . .

5c. انتخاب تان را مشخص سازید	
5c.1 اولین بار این روش را در کجا مشاهده نمودید و در مورد آن از کی آگاهی حاصل نمودید؟	
5c.2 کدام بخش های این روش (پرکتس) **را دوست** دارید (از نظر مفیدیت)؟	☐ نمی دانم
5c.3 کدام بخش های این روش (پرکتس) را **دوست** ندارید (از نگاه غیر مفیدیت بودن)؟	☐ نمی دانم
5c.4 آیا **خانواده شما در فعالیت های کمیته مدیریت منابع طبیعی** در رابطه به این روش اشتراک کرده اند؟	☐ نه خیر ☐ بله ☐ نمی دانم در صورت نه: چرا نکرده اند؟ . . . . . . در صورت بله: چگونه/تحت کدام شرایط (به طور نمونه، کار در مقابل پول نقد)؟. . . . .
5c.5 آیا خانواده شما از این روش در زمین خود تان که از استفاده می کنید/در آن کار می کنید تقلید یا اقتباس کرده است؟	☐ نه خیر ☐ بله ☐ نمی دانم در صورت نه: چرا نه؟ . . . . در صورت بله: کدام نکات باعث تشویق شما در زمینه اقتباس و تقلید از این روش گردید؟. . . . . 5c.6 در صورت بله، آیا شما در عملی ساختن آن کدام حمایت و یا کمک نقدی (اعانه) دریافت کردید؟ ☐ نه. ☐ بله. شرایط آن را ذکر کنید. . . . . ☐ نمی دانم در صورت بله، در کدام نوع زمین آن را دوباره تطبیق تقلیدی نمودید؟ ☐ در زمین شخصی تان. ☐ در زمین ایکه صاحب آن . . . . . . در صورت بله، آیا می خواهید در آینده نیز آن را تقلید و دوباره تطبیق کنید؟ ☐ نه (مشخص سازید) . . . . . . ☐ بله (مشخص سازید) . . . . .
5c.7(تنها در صورتی که جواب 5c.6منفی باشد)آیا فکر می کنید این روش به فایده شما و خانواده تان باشد؟ آیا خانواده تان قصد دارد از این روش تقلید کند؟	☐ نه خیر ☐ بله ☐ نمی دانم در صورت نه: چرا نه؟ . . . . در صورت بله: چرا؟ . . . . 5c.8 اگر بله، آیا می خواهید حتی بدون دریافت کدام حمایت و یا کمک نقدی (اعانه) آن را استفاده کنید؟ ☐ نه. ☐ بله. مشخص سازید . . . . . . اگر بله، در کدام نوع زمین می خواهید از آن تطبیق/ تقلید نمایید؟ ☐ زمین شخصی تان. ☐ در زمین ایکه صاحب آن .....

5.d: دو روش ایکه خانواده شما کم تر به آن علاقه مند اند کام ها اند؟	روش ایکه کمتر به آن علاقه مند اند1 اسم	روش ایکه کمتر به آن علاقه مند اند 2 اسم . . ..

5e. انتخاب اول تان را مشخص سازید		
5e.1 اولین بار این روش را در کجا مشاهده نمودید و در مورد آن از کی آگاهی حاصل نمودید؟		
5e.2 کدام بخش های این روش (پرکتس) **رادوست** دارید (از نظر مفیدیت)؟		☐ نمی دانم
5e.3 کدام بخش های این روش (پرکتس) را **دوست** ندارید (از نگاه غیر مفیدیت بودن)؟		☐ نمی دانم
5e.4 آیا **خانواده شما در فعالیت های کمیته مدیریت منابع طبیعی** در رابطه به این روش اشتراک کرده اند؟	☐ نه خیر ☐ بله ☐ نمی دانم در صورت نه: چرا نکرده اند؟ . . . . . . در صورت بله: چگونه/تحت کدام شرایط (به طور نمونه، کار در مقابل پول نقد)؟	

5.f:. انتخاب دوم تان را مشخص سازید		
5f.1 اولین بار این روش را در کجا مشاهده نمودید و در مورد آن از کی آگاهی حاصل نمودید؟		
5f.2 کدام بخش های این روش (پرکتس) **رادوست** دارید (از نظر مفیدیت)؟		☐ نمی دانم
5f.3 کدام بخش های این روش (پرکتس) را **دوست** ندارید (از نگاه غیر مفیدیت بودن)؟		☐ نمی دانم
5f.4 آیا **خانواده شما در فعالیت های کمیته مدیریت منابع طبیعی** در رابطه به این روش اشتراک کرده اند؟	☐ نه خیر ☐ بله ☐ نمی دانم در صورت نه: چرا نکرده اند؟ . . . . . . در صورت بله: چگونه/تحت کدام شرایط (به طور نمونه، کار در مقابل پول نقد)؟	

5.g از تمام موضوعات ایکه امروز در مورد آن بحث کردیم و همچنان نکات ایکه ممکن است باقی مانده باشد، بیش تر روی کدام یکی از موضوعات توجه و تمرکز کنم؟ زمانی که دوباره مصاحبه شما را می خوانم، باید در مورد کدام نکات فکر کنم و روی کدام گفته های شما بیشتر تمرکز کنم؟	

بار دیگر یک جهان سپاس بابت همکاری تان و این که وقت گران بهای تان را در اختیار ما گذاشتید. نظریات شما و نظریات تعدادی از افراد دیگر می تواند زمینه آگاهی در مورد نیازها و مشکلات اساسی شما را فراهم کند تا این که تعدادی از موسسات و نهادها بتوانند قادر به شناسائی نیازهای واقعی شما گردند.

6. آمار و ارقام جواب دهندگان و خانواده ها

6.1 مشخصات پاسخ دهنده				☐ زن ☐ مرد	سن . . . . .
حالت مدنی	☐ متاهل	☐ مجرد	☐ بیوه	☐ جدا شده	☐ طلاق شده
بلندترین سطح سواد	☐ مکتب نرفته ☐ مدرسه ☐ موارد دیگر (مشخص کنید)	☐ مکتب (صنف چند) ☐ دانشگاه			☐ می تواند بخواند و بنویسد ☐ خواندن و نوشتن بلد نیست
نسبت پاسخ دهنده با جواب دهنده دومی	☐ همسر/زوج ☐ پدر ☐ خسر ☐ موارد دیگر "مشخص کنید"	☐ برادر ☐ مادر ☐ خشو	☐ خواهر ☐ طفل ☐ برادر زن	☐ پدر کلان و مادر کلان ☐ نَنو (خواهر زن\شوهر)	
6.2					
تعدادعضای خانواده	مجموع	تعداد مردان بزرگتر از 16 سال		تعداد زنان بزرگتر از 16 سال	
		تعداد پسران کوچکتر از 15 سال		تعداد دختران کوچکتر از 15 سال	
بلند ترین سطح سواد	☐ مکتب نرفته ☐ مدرسه ☐ موارد دیگر (مشخص کنید)	☐ مکتب (صنف چند) ☐ دانشگاه		☐ می تواند بخواند و بنویسد ☐ خواندن و نوشتن بلد نیست	
نسبت سرپرست خانواده با جوابدهنده	☐ خودش ☐ پدرش ☐ خسراش ☐ موارد دیگر	☐ همسر/زوج اش ☐ مادرش ☐ خشو اش	☐ برادرش ☐ طفلش ☐ برادر زن\شوهر اش	☐ خواهرش ☐ پدر و مادر کلان اش ☐ خواهر زن\شوهر اش	

7. بوسیله مصاحبه کنندگان ساحوی خانه پُری شود

اسم قریه	. . . . .	اسم منطقه	. . . . .
اسم مسجد	. . . . .	ملیت شخص پاسخ دهنده	. . . . .
اسم مصاحبه کننده	. . . . .	تاریخ مصاحبه	. . . . .
زمان شروع مصاحبه	. . . . .	زمان ختم مصاحبه	. . . . .
کیفیت مصاحبه (5-1، 1=کیفیت پایین، 5=کیفیت بالا)			

گروپ ثروت (از قبل تعیین شده)	☐ فقیر	☐ متوسط	☐ ثروتمند

	AH	Tdh	Team BlockA	CDC FGD	CDC Head	VE FGD	VE Head	Women FGD	Men FGD	Old Man	Young men	Old woman	Young women	Others	Survey
FOLLOW-UP BLOCK A															
0. WEALTH RANKING															
Validate the Wealth Ranking for each village and make sure that the numbers we use are as correct as possible (see table in Sheet2, this file)				x		x									
1. LIVELIHOOD OUTCOMES & STRATEGIES															
1.1 Health															
Treatment in Kunduz is mentioned quite often. Why Kunduz? Is it because of the MSF Hospital?		x													
"Cancer" was mentioned a few times. What does it mean, stand for?			x												
Mental problems are mentioned quite often. Is it a serious disease or a "high level of distress", or both?	x		x												
1.2 Cycle of Life / Marriage / Family															
What are standard patterns of inheritance?		x					x								
What is meant by Hajj? Is it really THE Hajj?							x								
What type of resources do women own? Land and livestock? Mostly livestock rather than land? What type of livestock, land?								x	x						
Following from this: do/can women use this money for themselves?								x	x						
1.3 Economic Situation of HHs															
What does "becoming a borrower" exactly mean? Is there a stigma attached to it?	x		x												
Who is providing loans? Apart from relatives, are there "money lenders" in the villages? If so, who are they? Where do they get the money from?		x							x						
1.4 Work / Labour															
What kind of wage labour is available in the villages, nearby, further away, abroad?									x		x				x
Who is seeking which (work) opportunities (e.g. poor = closer, richer = further away)?							x								x
Who are the employers? (e.g. rich village people, government, organisations etc)		x		x		x									
Why is there so little entrepreneurship / business? (or is there more, and we did not hear about it?)		x		x		x									
Relatively little emerges from the stories in terms of child labour. Are children working in other people's (rich) homes? Mudzur?		x					x								
Relatively little emerges from the stories in terms of early marriage / selling girls. Is this very rare really?		x						x	x						
Is "hing" extraction a new trend, or has it existed for a long time already?							x								
Is goldwashing rather individual in DEM or more organised (e.g. By a rich villager, a company)?						x			x						
What is the effect of goldwashing in DEM on the economic situation of HHs (Q 1.7)? The impact on HH economy is there, but to what extent is it sustainable (e.g. link								x	x						
What is the effect of LBRC on the economic situation of HHs in DEM (Q 1.7)?The impact on HH economy is there, but to what extent is it sustainable (e.g. link to migration)?		x						x	x						
1.5 Migration															
Who sends their sons to Iran? All, only the rich, the poor?							x								x
"Almost all of the migrants are young men." Is this statement correct? Or are also old men, women, families migrating?			x	x		x									
How is migration organised? Are the migrants travelling in groups? Is there a group leader, a "tour operator", an "agency"?			x								x				
How much does a "trip" from Rustaq to Iran cost? Is it paid upfront, or in instalments?			x								x				
Is the daily wage in Iran much higher than in AF, how much (in AF around 300afs)?			x								x				
Is all cross-border migration "irregular" (=without visa)? Or does it matter which country (TU, TA, PA, IR)?			x								x				
Do the deportees/deported youth try to leave again for Iran?			x								x				
What is the motivation (push & pull factors) for young people to go to Iran? Is it only economic hardship/opportunities/income? Or are there other reasons, other											x				
After some time in Iran, do the young men want to return home to the village? Parents sending their sons (this emerges from the stories) hope for their return											x				
How does the Iran experience affect people's identity, norms and values?								x	x		x				
"No news from my son in Iran" - Reasons/why?								x	x						
"They don't send us money back" - Reasons/why?								x	x						
What are the ambitions/wishes of the youth?											x		x		
1.6 Fragility, Conflict, Violence (many sensitive questions - ask with great care, if at all)															

Is the current situation understood as insecure/war or secure/peace (also compared with previous years)? Were there worse times? Were people forced to flee, were				x		x		x	x							
What does "worsening of the security situation" mean? How is it felt, experienced in villages?				x		x		x	x							
What is insecurity mainly caused by? War, intra-village conflicts, tribal disputes?				x		x		x	x							
Are fights between neighbours, families, clans (incl. murders) common? What are the main reasons for such conflicts?				x		x		x	x							
What are people mostly afraid of in the village? The taliban, other AOGs or rather village-internal actors?								x	x							
Are young villagers joining Taliban/AOGs (and by doing so bringing the war closer to the villages)? Why (job, conviction...)?				x		x										
Arbaki in JWK - Who pays them? Are they paid at all?		x		x												
What has changed in the village due to war/insecurity? Specific examples?								x	x							
What has changed in the village due to war/insecurity in terms of people's every-day live (e.g. pre-emptive obedience), norms & values, level of intra-village solidarity				x	x	x	x	x	x							
Has war/insecurity had an influence on land management and NRM? In what sense, to what extent? Examples?				x	x	x	x	x	x							
1.7 Institutions / Leadership																
"The government" and "the organisation(s)" are often mentioned as supporting institutions. What does "the government" mean (local, district, national or simply a			x					x	x							
Why are mainly external actors mentioned as supporters and rarely institutions at village level (CDC, customary institutions)?			x	x				x	x							
Which organisations besides Tdh are present in the villages?		x		x												
Which organisations do people know about?								x	x							
Since when, from local people‘s perspective, does there exist a “government” and “organisation(s)”? How did people help themselves before that? Is the								x	x							
Have the means of conflict resolution changed? In what sense?							x									
"My son is in prison" indicates government linkages. Such issues were normally solved within the village. Are things changing towards more formal/state institutions?					x		x									
“Extortioners” (mardumi zorowar = powerful person, slightly negative): Who are these? The same as “rich people”, “capitalists”?	x				x		x									
On what did the CDC spend the money (spending priorities)? E.g. why not health if it is so important?				x												
2. LIVELIHOOD ACTIVITIES																
There is an extreme dominance of wheat on Lalmi land (more than 85% of total surface according to survey). Confirm with Eng. Shaida		x														
3. AGRICULTURAL ASSETS: LAND & LIVESTOCK																
1/3 of HHs sells „crops“ (Q 2.3.1). Which villages (DEM only?) and HHs (only the rich?) and what kind of crops (also wheat)?		x														x
1/3 of HHs does not sell Livestock (Q 2.3.2). Which HHs, villages, DEM only?																x
3111 and 3112 state to have 300 resp 280 jerib of Lalmi land (Q.3.1.1). Is this possible? Are there large "landlords" in DEM and in the three villages in general? Do also people from outside the villages (e.g. from Rustaq, Taloqan) own land int the villages?																
In DEM quite a lot of HHs share Lalmi land (Q 3.1.1). How is this in the two other villages (Q was not asked in SEJ and JWK)?			x													
One HH says he owns 50 jerib of own pasture. Is there really private pasture or was this a misunderstanding?		x	x													
What are cattle and goats used for (draught, meat, milk)?		x	x													
If cattle and goats are used for meat and milk production: for home consumption or for sale?		x	x													
Overall the numbers of animals are very low. Is this realistic or under-reported?		x														
Do there exist large-scale animal herders in the villages? Livestock specialists?				x		x										
4. CHANGES IN AGRICULTURE																
4.1 Changes in agricultural practices																
FERTILIZERS: What kind of fertilizer is used? DAP and UREA, different? Where do people get the fertilizer from (marketplace, input supplier, “organisation”, else?)? Are there subsidies for this (e.g. from the government)?																
TRACTOR: whom do the tractors belong to? is this another project or a private initiative? Are there many tractors in the area (or only very few but in operation all the time), or are the tractors only moving in (e.g. from Taloqan) during cultivation season? What is the cost of renting it? Or has a village received a tractor as a gift (e.g. from a project) and the Arbob makes sure that it is used fairly? Is there anyone using a tractor for terracing?																
INPUTS & SERVICES: more generally, how are agricultural “inputs & services” organised? Who provides them - the government, “organisation”, private traders and how (shops, market, cars coming to the village...)?																
OTHER CHANGES: are there other important changes – apart from “modernisation” (fertilizer, tractor etc) that have occurred in the villages? Maybe change in crops (example: from wheat to barley?), or producing a new crop as prices are high (producing wood in orchards, production of hing) or a new animal breed etc.?																
Terracing: is another project also working in terracing or is TdH the only one? If there is another project: which one?		x														
4.2 Quality of pastures / public land																
Some stories indicate that conversion from pasture land to Lalmi land has taken place (from common to private) – can you tell us more about it? Who was involved, and where? What implications for local people does this have?																

More generally: how is “public land” (or common land) managed? Are there any agreements, and if so what kind of agreements (e.g. splitting up areas according to families or neighbourhoods, max. number of animals, time restrictions for use)?															
Some stories indicate “planting of trees in the pasture” or “converting our pasture to forest" - can you tell us more about it? Who was involved, and where? What implications for local people does this have?															
What is the level of dependence on livestock, village by village (e.g. availability of abi land etc)?															x
5. EXPERIENCE WITH SPECIFIC SLM INTERVENTIONS															
Is it really the case that TDH is investing in orchards – while people appear to have orchards cultivated already by themselves?		x													
Is there a list available now regarding "spontaneous replication" of orchards?		x													
Is it really the case that where there is a lot of work/time involved, people cannot/don’t want to do it?		x													
Question to nursery owner(s): what is the demand for saplings? Who are the main customers (private farmers, Tdh, other organisations etc.)?														x	
VILLAGE CONTEXT															
1a. Village Name and Identity															
Altitude of village (*metres above sea level*)		x													
When was the village settled?							x								
Name of village (*as defined by village)*							x								
Number of Mosques in the village															x
Are there any IDPs settled within the village? If so how many households, where did they come from and when did they settle?					x		x								
Ethnic Identity of surrounding villages							x								
RETO: ETHNIC IDENTITY (needs reworking!)															
What are the different ethnic groups (= subgroups of Usbek) present in the three villages? When did they settle there and where do they come from?	x						x								
Do the Qarluks in the research area consider them as a Quaum or as a Urugh?	x						x								
How do the Qarluks define social status? Which "classes" exist, and how are they characterised?	x						x								
What are the essential constituents of the Qarluk identity? Genealogical ties (urugh), common territory (watan), language/dialect (labs), costumes (especially women dresses), customary practices such as rites of passage, others?	x						x								
Is the Qaum still the operational unit in the research villages ? Does it correspond to what we called village or mosque or something else? Is the Qaum still the basic framework of the socio-political organization?	x						x								
1b. Mantiqua															
Mantiqua (discuss how this worked/ was used before NSP was introduced)							x								
name of mantiqua to which village belongs; number of villages in mantiqua and its coverage; role / significance of mantiqua (e.g. collective resource management, dispute resolution, elections, other)							x								
Since the introduction of the NSP programme have there been any changes in the role and function of the mantequa. If so what has changed and what effects has this had?							x								
Village Landscape position (*irrigated plain/ rainfed plain / main valley floor/ main valley edge / side valley floor/ side valley edge/ hillside or hilltop)*	x														
1c. Irrigation															
Does the village share an irrigation source with other villages? What is the irrigation source? (Spring / qarez / seasonal stream or river / permanent stream or river canal/ irrigation canal); Is this water supply reliable? If so is the village upstream, mid stream or downstream from these other villages?					x		x								
Distance to district centre in terms of travel time (hours) by specified means (car, horse, foot) of transport)					x										
Road Access (number of months a year that it is normally connected)					x										
History: what have been the key historical connections of the village to the outside world (through trade, migration, refugee experience etc)							x								
Village networks / connections															
Who are the key people that the village connects to at various levels (e.g. district, province and beyond e.g. Kabul), what is the role of these key people, who in the village has or can use the connections, what is the basis/ origin for that connection and what are those connections used for				x		x									
2. Village Economy & Structure															
DB: Do landlords (larger landholders) exist in the village? How many are there in the village? With how much land each?							x								
3. Customary Village Organizations															
<u>Before NSP</u> was introduced please describe the customary organization (arbob/ malik, whitebeards, mosque/ mullah etc) that existed in the village , what role they played and how the people who were active in them were selected.						x									

What effect if any has NSP had on the role these customary organizations play and the selection of people to fulfill these roles? In asking this question we are interested if the formation of CDC has meant that the customary organization does not exist any more and its role has been absorbed into the CDC or if the CDC has made no difference – it is still there and still functions as before – or if the leadership of the customary organizations has simply moved into the CDC and continues to play the same customary role as well as the new role of CDC chairman etc.						x								
What positions if any did women hold in any of the above customary organizations? Were women members of other customary organizations not mentioned above?						x								
List the members of these customary organizations (please produce a list)							x							
Does the village have a mirab or share a mirab with other villages? If yes who is the current mirab and does he come from this village? If not which village does he come from and why was he selected? How long has the mirab been in position? Who was responsible for his selection?					x		x							
4. Public Good Provision by Village Customary Organizations														
[Village based actions: note this relates to actions initiated by the village, not by NGOs although NGOs might have been asked to assist]														
4a. Dispute/ conflict resolution *(what sort of conflicts, resolved by whom)*														
When there are conflicts in the village who are the key people in the village engaged to seek conflict resolution;							x	x	x					
Does the nature of the conflict determine who will be engaged to seek resolution (e.g. differences between internal household conflicts, conflicts between a few households, conflicts between many households							x	x	x					
how are those conflicts addressed and resolved (give examples)							x	x	x					
Are there example of conflicts that have not been solved within the village? (Yes/No)							x	x	x					
If yes what are these conflicts and how have they been addressed							x	x	x					
4b. Informal Welfare/ social protection (grain banks, food provision) – *Please pay particular attention to the role of the Mosques, whether or not they raise money*														
If a household runs faces major difficulties through illness, economic hardship or food insecurity how does the village respond? Leave it to the household to find help; Leave it to other individual households to help out; Take village level action (give examples); If village level: Who organizes this?							x	x	x					
4c. Collective Action (Public good provision, common pool resources etc)														
Have there in the last 10 years been any major natural disasters (drought, floods, landslides, earthquakes)? If yes: What were these disasters and when? How many households were affected? What actions if any did the village take to help the affected households?					x		x							
5. Introduced Organizations														
5a. Village NSP CDC														
Which NGOs have worked in the village, what have they done and when and which NGO was responsible for the NSP programme?					x									
Year village joined NSP programme					x									
How many elections have been held for the CDC since it first started?					x									
Has the NGO clustered this village/ CDC with other village CDCs; if so how many other village/CDCs has it clustered it with, do these include the villages that were in the mantiqua and if not what were the changes					x									
Since the establishment of the CDCs how has this changed the presence of women in decision making structures in the village?					x									
If after the NSP was established, food aid was delivered to the village who decided how the food should be distributed and how was that distribution done? How did					x									
Who are the current members of the CDC and what are their roles? (list names, position and whether person was member of previous CDC)					x									
Individuals who were members of earlier CDCs but were not relected (list names, position and reason for non-reelection)					x									
What activities / actions and role has the CDC undertaken since it was established?				x	x									
How would you describe the differences and similarities between the past role of customary structures and the CDC?				x		x								
5b. Introduced Organizations: NRMC														
Date organization introduced/established; Name of NGO that introduced the new organization; Purpose/role of new organization; How was membership of the organization selected; How many of the households are members of the NRMC?				x										
Who are the current members of the leadership of the NRMC and what are their roles? (list names, position)				x										
Have there been other associations / organisations introduced into the village by outside agencies? (Yes/No, if yes please list them and complete a separate form for each)				x										
6. Externally supported action by government / NGOs etc														
6a. Schools *(when started for boys, girls, what percent attending*)														
What year did boys in the village first go to primary school and where was this school? What year was the first primary school for boys started in the village? Who initiated / was responsible for the idea of having the school? What proportion of primary age boys in the village go to primary school?							x							
What year did boys in the village first go to secondary school and where was this school? Does this village have a secondary school and if it does when was it built? What proportion of secondary age boys in the village now go to secondary school?							x							
What year did girls in the village first go to primary school and where was this school? What year was the first primary school for girls started in the village? Who initiated / was responsible for the idea of having the school? What proportion of primary age gilrs in the village go to primary school?							x							

What year did girls in the village first go to secondary school and where was this school? Does this village have a secondary school and if it does when was it built? What proportion of secondary age girls in the village now go to secondary school?							x								
6b. Health Facilities Does the village have any health facilities? If so when were these established? Who initiated / was responsible for the idea of having the health facility?							x								
6c. Other Public Goods (Drinking water supply, electricity, roads, irrigation canals etc.) Does the village have ……..? If so when were these established? Who initiated / was responsible for the idea of having the ……..?							x								
7. Debriefing Points for the Assessment Team															
In your view who are the key actors in village decision making now? What evidence can you provide to support this view? What do you see as the relative role of village customary structures and the CDC in decision making and action in the village? What evidence can you provide to support this view? How would you compare the level of public good provision in this village with other villages? What in your view explains any differences? What evidence do you have to support this view? Any other comments / observations with supporting evidence															

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