



## Guidelines for WB3 Part III: Stakeholder workshop 2

Selection and decision on prevention and mitigation strategies to be implemented

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## Foreword

The DESIRE WB3 methodology was developed by the Centre for Development and Environment (CDE). It is based on experiences from the 'Learning for sustainability (L4S)' methodology ([http://www.cde.unibe.ch/Tools/ALS\\_Ts.asp](http://www.cde.unibe.ch/Tools/ALS_Ts.asp)) and the WOCAT methodology ([www.wocat.net](http://www.wocat.net)). It consists of three parts:

**Part I: Stakeholder Workshop 1: Identification of existing and potential prevention and mitigation strategies (WP 3.1)**

**Part II: Assessment of Conservation Strategies: Assessment and documentation of existing and potential prevention and mitigation strategies (WP 3.2)**

**Part III: Stakeholder Workshop 2: Selection and decision on prevention and mitigation strategies to be implemented (WP 3.3)**

These guidelines are a working instrument for use in conducting and moderating the DESIRE WB3 Stakeholder Workshop 2.

### Part III: Guidelines for Stakeholder Workshop 2 (WP 3.3)

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The graph on the following page illustrates the overall WB 3 methodology

# WB3 Methodology

## WP 3.1

### Stakeholder workshop 1

- Mutual learning
- Identification of actual and potential solutions
- 3-5 days

## WP 3.2

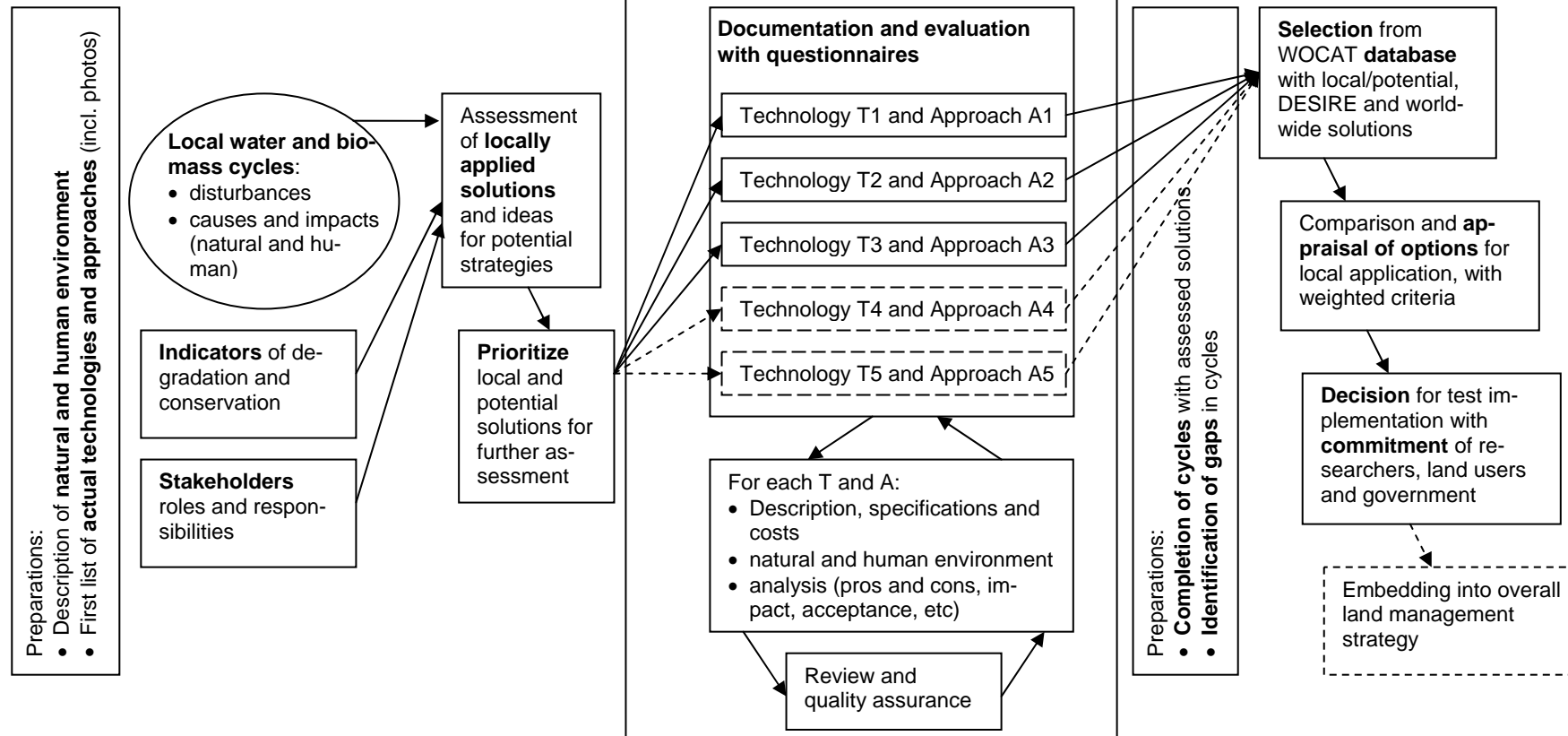
### Assessment of local and potential solutions

- Documentation and evaluation
- 2-3 months

## WP 3.3

### Stakeholder workshop 2

- Selection and decision support for local implementation
- 2-3 days



# **Guidelines for WB3 Part III**

**Stakeholder Workshop 2:  
Selection and decision on prevention and  
mitigation strategies to be implemented  
(WP 3.3)**

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## **Selection and decision on technologies and approaches to be implemented**

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In each of the 18 study sites of the DESIRE Project a stakeholder workshop on 'Selection and decision on mitigation strategies to be implemented' will be conducted. It has the following objectives and contents:

### **Overall aim:**

To select promising (existing and potential) strategies for land conservation to be tested / implemented in the selected study site.

### **Objectives:**

1. To jointly select 1-2 options (mitigation strategies) from the WOCAT database to be implemented / field-tested in the selected study site in the context of DESIRE WB 4.
2. To strengthen trust and collaboration among concerned stakeholders.

### **Contents of the workshop:**

- Definition of options (mitigation strategies) for the local context.
- Identification of relevant criteria to evaluate the different options.
- Scoring the options.
- Creating a hierarchy and ranking criteria.
- Analysis and prioritizing of options. Decision on 1-2 options to be test implemented.
- Embedding the options into the overall strategy.

For this workshop it is indispensable to have a computer and if possible a beamer. Methodologically, the selection of options is based on the WOCAT database and the scoring and decision process is supported by a Multi Objective Decision Support System (MODSS) software.

## Introduction to the workshop guidelines

**WB 3 - Stakeholder Workshop 2** This 2<sup>nd</sup> stakeholder workshop aims at the joint decision-making on the selection of promising strategies for land conservation to be test-implemented in the respective study site. The selection is based on a process of evaluating and scoring different options which meet the specific conditions of a given local context.

**Methodology** The methodology applied in this workshop consists of three main elements:

1. A **participatory approach** has been chosen to guide and lead the workshop participants through the process of evaluation and decision-making.
2. The options or strategies of land conservation from which to choose are derived from the **WOCAT database**.
3. The single steps of the evaluation and decision-making process is supported by a **Multi Objective Decision Support System (MODSS) software**.

In the workshop a computer (and if possible a beamer) is required to run the software in the background.

**Stakeholder WS 2: A chance and a challenge** To go through the process of stakeholder WS 2 which results in the decision made with stakeholders on which technology to test-implement in the course of WB 4 is a chance for each study site. At the same time you must be aware that it is a challenge for the moderators to lead the group successfully through the process and come to a good decision.

For your area or study site it is a chance to provoke good future collaboration with stakeholders, but you can also spoil it, which will probably result in tiredness of collaborating in future projects.

**Responsibility of the moderators** Be aware that moderating stakeholder workshop 2 is a responsible task, as the decision that will be taken in the course of the workshop:

- directly concerns the reality of stakeholders living in the study site;
- is an important decision for the DESIRE project.

The moderators also have to be careful not to manipulate where they do have a great deal of influence such as for instance in the preparatory work done before the workshop (selection of options from the WOCAT database; see page 9ff). We advise you to make the preparatory work to the best of your knowledge but to be open-minded and flexible to be able to consider newly emerging ideas and to adjust to them where necessary.

**To whom the guidelines are addressed** The present guidelines are a working instrument for use in moderating DESIRE WB3 2<sup>nd</sup> stakeholder workshops (→ WP 3.3). They are designed to support the study site moderators in guiding the processes of joint decision-making and selection of options by workshop participants. At the same time they are a baseline document to be used in the training of moderators.

### Content of the guidelines

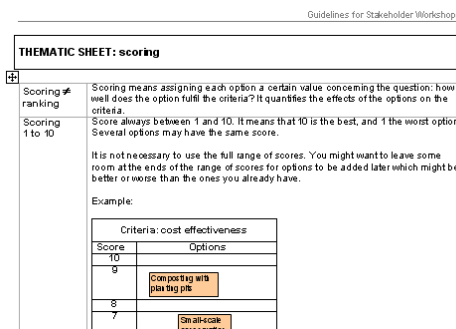
The workshop guidelines consist of:

- a) **didactic guidelines**, which formulate learning objectives, and describe a step by step procedure for leading the participants through the decision-making process;

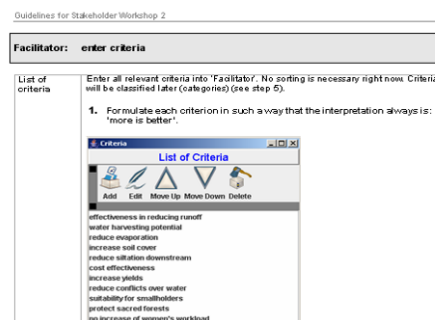
Guidelines for Stakeholder Workshop 2

Step 5: Creating a hierarchy and ranking criteria		
Objectives	To organise criteria in a hierarchical order.	
Duration	1. Introduction	5
	2. Plenary session: ranking criteria	25
	Total	30
Preparations and material required	- Paper sheets, format A4 - Write all criteria on cards (1 criteria per card) - Markers	
Methodology	Plenary session	
Procedure	1. Introduction: The moderator explains the purpose of step 5 (creating a hierarchy and ranking criteria). Most possibly, not all criteria are equally important. Therefore the criteria are ranked according to their importance, so that more important criteria get more weight.  Participants have the opportunity to express which factors they think are more important than others by ranking the criteria. Higher ranked criteria are given more weight than the lower ranked criteria.  2. Plenary session: organise the criteria on a pin-board (or on the wall) according to their importance.  1) Organise them according to the category (socio-cultural, economic /	

b) **thematic sheets**, which provide the moderator with theoretical and conceptual orientation on specific topics or steps; or which provide suggestions on how to explain the use of the database or the software;



c) **instruction sheets** on the use of the Facilitator software.



**How should the guidelines be used?**

The guidelines are intended to lead the group step by step through the process of evaluating and decision-making on suitable options to be implemented. The moderator has to respect the sequence, but he is free to make necessary adaptations concerning his respective context.

**Target groups**

The 2<sup>nd</sup> stakeholder workshop addresses the same target groups as the 1<sup>st</sup> workshop, namely:

a) **local stakeholders** (land users, representatives of local authorities, local NGOs etc.); and

b) **external stakeholders**, i.e. researchers and development professionals (from NGOs, GOs etc.) working in rural environments, with various degrees of professional expertise on environmental and development issues.

The group is composed of around **6 to 10 local** and **4 to 6 external stakeholders**, and 2 moderators (for more details see *Guidelines for Stakeholder Workshop 1*).

**The 2<sup>nd</sup> workshop builds on the analysis and discussions made in stakeholder workshop 1. Thus, it is important, that the same stakeholders participate in the 1<sup>st</sup> and the 2<sup>nd</sup> workshop!**

**Duration of a workshop**  
**Location**

The duration of a stakeholder workshop is **at least 2 days**.

Experience shows that it is much easier to create a relaxed and trustful working atmosphere if the workshop takes place in the community itself, where local participants feel at home. **Try to avoid very formal meeting places** such as rooms from the local administration or classrooms with unmovable furniture, as people usually feel less at ease and the atmosphere tends to be tense. Find lodging facilities for external participants and organise common meals.

**Requirements for workshop moderators**

Generally two persons of the DESIRE programme jointly conduct the stakeholder workshop. **Ideally these are the same persons as in the 1<sup>st</sup> stakeholder workshop!**

They should meet the following requirements:

- to be familiar with moderation techniques and participatory methods;
- to have expert knowledge on Soil and Water Conservation (SWC) / Sustainable Land Management (SLM);
- to have good knowledge of the study site and be familiar with local conditions (socio-cultural, bio-physical, land use, land degradation and conservation, etc.);
- to have trustful relationship with involved stakeholder groups;



- to have communication skills; speak the local language of the study site;
- to have didactical skills;
- to have conflict management skills;
- to have skills in advisory work (advises in sustainable land management).

### Organization and preparation of a workshop

**Organization:** The stakeholder workshop is organized by the study site leader in collaboration with the workshop moderators.

#### Responsibilities and tasks:

- The **study site leader** bears the main responsibility for logistical arrangements (accommodation, meals, transport, etc).
- The **moderator** is primarily responsible for the material and methodological preparation of the workshop.
  - Material needed: computer, beamer, paper, markers, pin board, stickers, tape, A1 paper sheets, transport facilities, etc.).
  - Of primordial importance is a serious and in-depth preparation of the topics and contents of the workshop, i.e.:
    - get familiar with the guidelines, the WOCAT database, the MODSS software;
    - recall the main results and conclusions from stakeholder workshop 1 (list of potential solutions, outline of overall strategy, etc.)
    - be aware of the objectives of the stakeholder workshop and expected outcomes;

### Invitation and preparation of the group

The moderator issues timely invitations to interested professionals and researchers, providing information about the content and objectives, time and programme of the workshop, and requirements for participants. Local participants will also receive this information from the moderator or local institutions that help in organising the workshop.

### Evaluation

Brief daily evaluations serve to get a reading on the mood of the group, and to identify and introduce corrective measures as needed. Let all participants briefly express themselves. Possible guiding questions: What did you like? What did you not like?

Principles to be observed: free, individual expression; tolerance of the opinions of others; respect. Do not discuss what has been stated unless something severe needs to be clarified.

The objective of the final evaluation is to get a feedback from participants on:

- achieved results,
- didactics and process,
- organisation of the workshop.

Ask for oral or written feedback to the workshop (organisation, procedure, didactic approach, content, etc.). It might be helpful to formulate a few specific questions to be answered.

### Workshop report

The moderators and the research team of the study site share the responsibility for documenting the workshop results and writing a workshop report.

Language:

1. A detailed workshop report has to be written in the local language.
2. A summary report has to be written in English and submitted to WB3. A format for the English summary report is provided in Annex 1!

### Use material / results from Stakeholder WS 1

To follow-up on discussions and results from Stakeholder Workshop 1 you will need mainly the following material (big sheets from exercises) / results:

- Overall strategy for SLM
- The cycles
- Stakeholders and their roles

## Overview on the Programme of Stakeholder Workshop 2

### Preparations for Stakeholder Workshop 2 (to be made by the moderators):

- Methodological preparations
- Preparation of the workshop venue

3 days



### WP 3.3: Stakeholder Workshop 2: programme overview

Day 1		Minutes	
Introduction to the workshop		15	
Step 1:	Review and adjustment of objectives	60	
Step 2:	Identification of options	120-180	
Step 3:	Identification of relevant criteria for evaluation	100	
Step 4:	Scoring the options		
	Part A) Scoring in groups	100-130	
		<b>Total</b>	<b>6.5 – 8 h</b>
Day 2			
Step 4:	Scoring the options (continuation)		
	Part B) analysis of assessments	30-60	
Step 5:	Creating a hierarchy and ranking criteria	50	
Step 6:	Analysis and interpretation	90	
Step 7:	Prioritisation of options – negotiation and decision making	60	
Step 8:	Embedding into the overall strategy	90	
Evaluation of the workshop		30	
Closure of the workshop		10	
		<b>Total</b>	<b>6 - 6.5 h</b>



### Next Step WB 4:

Implementation

# Preparatory work

**Preparatory work of the moderator(s) prior to the workshop****(3 days required)**

The moderator(s) need to be prepared for facilitating the stakeholder workshop. Besides organisational preparations it is important that the moderator(s) take enough time to get familiar with the workshop guidelines, the WOCAT database and the MODSS software.

Before the workshop, all local solutions have to be documented and evaluated with the WOCAT technology and approach questionnaires and entered into the WOCAT database, i.e. WP3.2 has to be completed!

**1. Methodological preparations for the workshop****(2-3 days)**

Read the workshop guidelines very carefully, and try to imagine the workshop procedure step by step. Think about how each step is related to the objectives of the workshop, and about the expected results of each step. Think about material that might help you to introduce a step, or to explain or illustrate specific aspects. This second stakeholder workshop (WS2) is a follow-up to the first one (WS1) and will build on discussions and results of the first workshop. Therefore some of the visualizations (e.g. cycles, overall strategy, stakeholder analysis, etc.) from WS1 will be used as a starting point for WS2.

- Reuse the following results from Stakeholder WS 1: **biomass and water cycles** (Ex.2), **outline of an overall strategy** (Ex.8), and **stakeholders' influence and motivation** for SLM (Ex. 4).
- Prepare any useful material that might support moderation (sketches, maps, photos, etc.).
- Develop ideas and write down key words on how you are going to introduce the different steps, and explain the role and use of WOCAT database and MODSS software to stakeholders.
- Make yourself familiar with the WOCAT database and the MODSS software.
- Prepare **posters and cards** illustrating locally applied and potential options (based on a search in the WOCAT database; see below).

**Objectives:**

- To get familiar with the guidelines, the WOCAT database and the MODSS software.
- To be prepared to use the guidelines as a flexible instrument, as adaptations (in time and topics) might be necessary in the course of the workshop.
- To be able to speak in words and metaphors local people understand.

**2. Preparation of the workshop venue and working materials****(2 hours)**

Make the necessary preparations in the workshop venue (either the evening before the workshop or in the morning).

- Check the following: whether the venue is tidy, whether enough chairs and tables are available, whether enough power outlets and extension cables are available, etc.
- Make sure that abundant working material is available such as paper sheets (format A1, format A4, colored paper, etc.), tape, markers, scissors, glue, thumbtacks, pin board etc.
- Install a laptop and beamer (check whether the room where the screen is can be dimmed such that the projection is clear and readable);
- Install a color printer.
- Etc.

**Objectives:**

- To be ready when the workshop starts.
- To be able to concentrate on the topic and process, instead of having to deal with organisational and logistic questions.

## Preparations for step 2:

### Edit and print posters and cards illustrating locally applied and potential options (derived from the WOCAT database)

The following procedure describes the preparatory work to be made for step 2 of stakeholder WS 2. Step 2 is a crucial step in the workshop and needs good preparation, which must be done before the workshop. Time during the workshop does not allow making a thorough search in the database, making necessary adaptations, and printing all the results.

**This is a delicate aspect of the methodology, as you are asked to anticipate possible outcomes of stakeholder discussions in step 1.** But we expect that this anticipation is possible as the discussion in step 1 (see page 19) is a follow-up of the work made and discussions led in stakeholder WS1! Hence, we trust that the discussions and results from stakeholder WS1 give you a sound basis for these preparations. However, you must be aware that it could happen that the stakeholders will focus on another than the anticipated objective. In this case it will be necessary to make a new search in the database and print the resulting options during the workshop itself.

### Remark on the use of the WOCAT database in Stakeholder Workshop 2

The WOCAT database will mainly be used by the moderators during workshop preparations. The database is a source of options and a source of information for researchers (and other interested stakeholders). **We recommend not using the database directly with stakeholders in this workshop**, as this is not the objective of the workshop.

However, when conducting step 2 it is important to be transparent and explain the participants what the database is, how it is used and how you came to the selection of options that you are going to present them (see step 2) without having to show them the database itself.

#### 1. Anticipate the most important objective

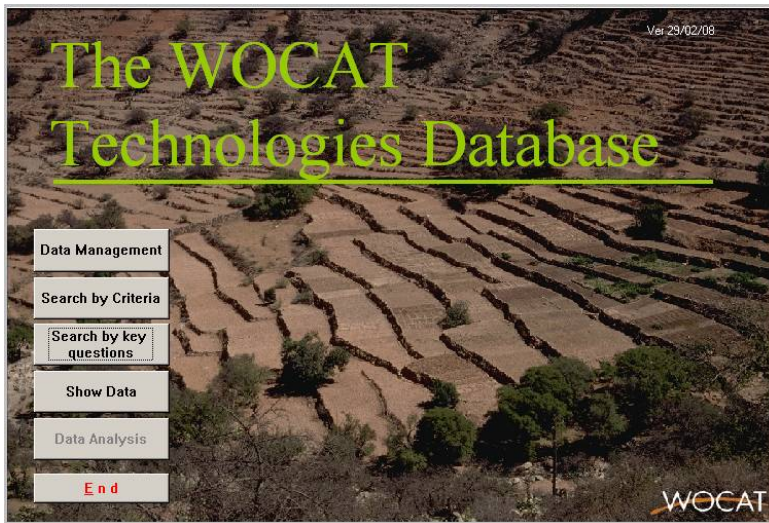
Before you can start your search in the WOCAT database you have to recall and review the discussions you had in WS1, and the objectives defined in Exercise 8 (outline of an overall strategy for SLM) of WS1. From these objectives, i.e. disturbances in the cycles, causes and effects that shall be mitigated, the participants will have to agree on the most important one (in step 1, p. 19). **This most important objective is then the basis for the whole assessment and decision-making process in stakeholder WS2:** options will be searched which match this objective, criteria will be defined, and options scored focussing on this most important objective, etc.

You are now asked to anticipate which of the objectives will most probably be selected as the most important one. We trust that you are able to deduce it on the basis of discussions and results from WS1. To minimise the risk of being totally wrong with your anticipation, we advice to follow two tracks during preparatory work, i.e. to keep two objectives in mind and search for options for both. But remember which options match which objective!

#### 2. Search procedure

For each of the objectives, a number of options need to be identified and listed. Relevant options will be searched and retrieved from the WOCAT database. The WOCAT database contains the locally applied solutions (those identified in WP 3.1 and documented in WP 3.2 by the means of the WOCAT questionnaires) as well as documented potential solutions, aside from all the solutions documented by the other DESIRE study sites, and internationally applied solutions.

Each option consists of a technology and, where available, of an approach describing the ways and means of the implementation of the technology.



In the WOCAT Technologies database, use the option ‘**search by key questions**’. By using this button, the search for potential technologies (and their associated approaches) will be facilitated by leading the user through a series of key questions to limit the number of potential options to some **5 - 10**.

The following is the demonstration of the **search procedure by key questions**. It shows how the number of options is narrowed down by selecting key questions.

**Case study used for demonstrating the search procedure:**

- Climate: semi-arid
- land use: annual cropping → refers to land use type
- objective: to reduce water loss → refers to type of degradation

**Question 1: determine type of degradation**

**Which is your main type of DEGRADATION**  
for which you are searching a technology to prevent, mitigate or rehabilitate it?

Wt: Water erosion: loss of topsoil by water

AND Ha: Water degradation: aridification: decrease of average soil moisture content

Next > Cancel

**Search results:** The search with the 2 degradation types selected (see above) shows the following results:

**Search result**  
for technologies addressing degradation type 'Wt' AND 'Ha'

Technologies found: 12

Quest Id	SWC Technology Name
BRK10e	Composting associated with planting pits
BRK10f	Le compostage associé aux trous de plantation
CHN45	Zhuanglang loess terraces
IND14	Forest catchment treatment
KEN05	Fanya juu terraces
KEN16	Grevillea agroforestry system
KEN30	Small-scale conservation tillage
PER01	Rehabilitation of ancient terraces
SYR01	Stone Wall Bench Terraces
SYR03	Furrow-enhanced runoff harvesting for olives
THA25	Small level bench terraces
UGA04	Improved trash lines

**Question 2:** determine type of land use

**Which is your main type of LAND USE**  
on which you plan to implement the conservation technology?

Cropland: annual cropping

or

< Back      Next >      Cancel

Search result:

**Search result**  
for technologies addressing degradation type 'Wt' AND 'Ha' and land use type 'Ca'

Technologies found: 7

Quest Id	SWC Technology Name
BRK10f	Le compostage associé aux trous de plantation
CHN45	Zhuanglang loess terraces
KEN05	Fanya juu terraces
KEN30	Small-scale conservation tillage
PER01	Rehabilitation of ancient terraces
THA25	Small level bench terraces
UGA04	Improved trash lines

**Question 3: climate regime**

**Which is your CLIMATE regime**  
for which you are searching a suitable technology?

semi-arid

or

< Back      Next >      Cancel

**Search result:**

**Search result**  
for technologies addressing degradation type 'Wt' AND 'Ha' and land use type 'Ca' and climate 'semi-arid'

Technologies found: 5

Quest Id	SWC Technology Name	Potential?
BRK10f	Le compostage associé aux trous de plantation	
CHN45	Zhuanglang loess terraces	
KEN05	Fanya juu terraces	
KEN30	Small-scale conservation tillage	
PER01	Rehabilitation of ancient terraces	

The search result signifies that the WOCAT database on Technologies currently contains 5 technologies (options) which address the conditions of our case study.

As we recommend limiting the number of potential options to 5-10 you may stop the selection process here and continue with the next steps described below.

If you still get too many options after these key questions, you can continue to narrow your search with the next key questions on *slope* and *market orientation*. In fact, you can use as many key questions as are necessary to narrow down your selection to a manageable and useful number.

It is important that you become familiar with the content of the database and get a feeling for the data and we therefore suggest that you 'play around' with these various search procedures.

**Please check whether your search results (options) really match your objective!**



### Alternative search procedure

A more open, but also more complex search form is provided in the database menu option 'search by criteria'. Here you are free to combine a number of search criteria which your technology should suit. It is recommended to use this form only if you don't get a useful set of options from the procedure described above, or if you need other search criteria to limit your selection than those provided by the key questions. The danger with using this form is that users tend to define too many search criteria, which does not give any or too few results. However, you can avoid this by using a step-wise refinement of search criteria.

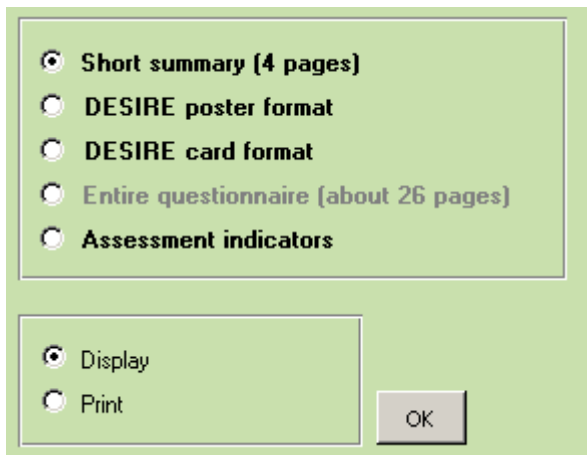
**WOCAT Technologies - Search by Criteria**

<b>General</b> Key word(s) <input type="text"/> and <input type="text"/> or <input type="text"/> or <input type="text"/> Name of technology <input type="text"/> Description of techn. <input type="text"/>		Language: <input checked="" type="checkbox"/> E <input checked="" type="checkbox"/> F <input checked="" type="checkbox"/> S	<b>Tips:</b> Don't be too restrictive by selecting many different criteria! <input type="button" value="Start Search"/> <input type="button" value="Clear Criteria"/> <input type="button" value="Close"/> <input type="button" value="Search Profiles"/>
<b>Geographic</b> Continent <input type="text"/> Region <input type="text"/> Country <input type="text"/>		for ranked values: <input checked="" type="radio"/> restricted search (rank 1 only) <input type="radio"/> broader search (ranks 1,2,3)	
<b>Problems / Means</b> Measures <input type="text"/> or <input type="text"/> Main means <input type="text"/> or <input type="text"/> SWC Category <input type="text"/> or <input type="text"/> Soil deg. addressed <input type="text"/> or <input type="text"/> <i>Please doubleclick!</i>			
<b>Natural environment</b> Climatic regime <input type="text"/> or <input type="text"/> Avg. annual rainfall (mm) <input type="text"/> or <input type="text"/> Elevation (m) <input type="text"/> or <input type="text"/> Slope <input type="text"/> or <input type="text"/> Avg. soil depth <input type="text"/> or <input type="text"/> Land forms <input type="text"/> or <input type="text"/> Soil fertility <input type="text"/> or <input type="text"/> Soil texture <input type="text"/> or <input type="text"/>		<b>Human environment / land use</b> Land use type <input type="text"/> or <input type="text"/> Market orient.(Crops) <input type="text"/> or <input type="text"/> Market orient.(Grazing) <input type="text"/> or <input type="text"/> Market orient.(Forest) <input type="text"/> or <input type="text"/> Land ownership <input type="text"/> or <input type="text"/> Land use rights <input type="text"/> or <input type="text"/> Area per household (ha) Cropland: <input type="text"/> or <input type="text"/> Grazing land: <input type="text"/> or <input type="text"/> Forest land: <input type="text"/> or <input type="text"/> Costs < <input type="text"/> US\$/ha < <input type="text"/> US\$/ha Initial                      Recurrent	

### 3. Preview technology information

On each search result form you have the possibility to preview the details of the technology using various output formats. This will help you understand the technology behind its name and to decide whether the technology really is an option for your objective or not.

For a rough look, it's best to select the poster or card format to preview. For a more detailed look, select the 4-page summary. Once you have decided about a suitable set of technologies, we recommend printing the 4-page summaries and using them as background information in your role as a specialist and moderator.

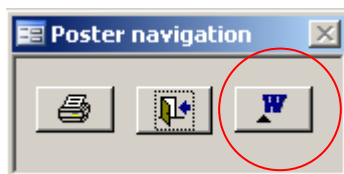


### 4. Posters and cards

For the stakeholder workshop you need to print for each of the relevant options a poster, and additionally several sets of cards of all options to be evaluated (format A6; containing 1 photo and some key information on the technology).

The relevant information can be retrieved from the database. Select from the menu (see above) DESIRE poster format, and DESIRE card format respectively. Select 'display' to preview the output. From there you can export the information to Microsoft Word (clicking on the **W** in the poster navigation).

If you like to produce pdf files directly from the database, you temporarily set your default printer to Adobe PDF and then select the print option from the poster or card navigation menu.



**Composting associated with planting pits**

**Background:** This project is part of the SWC project in Kenya, which aims to improve soil fertility and water retention in semi-arid areas.

**Compost production and its application in planting pits:** Compost is produced in shallow pits, approximately 20 cm deep and 1.5 m by 1 m wide. During the winter or December, layers of chopped crop residue, animal manure, and ash are layered, and they become available, up to 1.5 m high and wider. The pits are covered with straw and left to heat and decompose. After about 15-20 days, the compost is turned over in a second pit and washed again. This is repeated up to three times, so that a pile of available, composted manure is ready for use in the planting pits. Alternatively, compost can be produced in pits which are up to 1 m wide and 1.5 m high, with a 10 cm layer of soil on top. The pits are covered with straw and left to heat and decompose. After about 15-20 days, the pits are turned over and the process is repeated. This is repeated up to three times, so that a pile of available, composted manure is ready for use in the planting pits.

**Advantages:** Composting is a simple and low-cost method of producing organic fertilizer. It improves soil fertility and water retention, and it reduces the need for synthetic fertilizers. Composting also helps to reduce the amount of crop residue and animal manure that is burned, which reduces air pollution and greenhouse gas emissions.

**Disadvantages:** Composting requires a significant amount of land and labor. It also requires a significant amount of time to produce the compost. Composting is not suitable for all types of soil and climate.

**Conclusion:** Composting is a valuable tool for improving soil fertility and water retention in semi-arid areas. It is a simple and low-cost method of producing organic fertilizer. Composting also helps to reduce the need for synthetic fertilizers and to reduce the amount of crop residue and animal manure that is burned.

**References:** FAO (2002), FAO (2004), FAO (2005), FAO (2006), FAO (2007), FAO (2008), FAO (2009), FAO (2010), FAO (2011), FAO (2012), FAO (2013), FAO (2014), FAO (2015), FAO (2016), FAO (2017), FAO (2018), FAO (2019), FAO (2020), FAO (2021), FAO (2022), FAO (2023), FAO (2024), FAO (2025).

**Composting associated with planting pits**

**Compost production, and its application in planting pits (soil by farmers in field near their houses).**

**Conservation measure:** appropriate measure

**Cost - benefits:**

	short-term	long-term
Investment:	very positive	very positive
Maintenance:	very positive	very positive

SWC Technology Composting associated with planting pits WOCAT

Example Poster format (A3):

Example Card format (A6):

In order to make changes to the text you need to export the information to Microsoft Word. Where applicable, we recommend including information on obvious necessary adaptations that need to be made to make the option suitable for the local context (e.g. adaptation to a slope, or a specific land tenure system, etc.). Please make your reflections concerning adaptations explicit! Why do you suggest these changes? How feasible are they? Etc.

**According to your working context, translation into local language might be necessary!**

Search result

for technologies addressing degradation type 'Wt' AND 'Ha' and land use type 'Ca' and climate 'semi-arid'

Technologies found: 5

Quest Id	SWC Technology Name	Potential?
BRK10f	Le compostage associé aux trous de plantation	
CHN45	Zhuanglang loess terraces	
KEN05	Fanya juu terraces	
KEN30	Small-scale conservation tillage	
PER01	Rehabilitation of ancient terraces	

If you are happy with this selection, you can select one, define the output format and display or print it with the menu below.

Short summary (4 pages)  
 DESIRE poster format  
 DESIRE card format  
 Entire questionnaire (about 26 pages)  
 Assessment indicators

Display  
 Print

OK

Otherwise click 'back' to alter your selection or 'next' to go to the next key question.

< Back    Next >    Cancel

## 5. Combinations and improvement of options

According to the needs and the different contexts, the options as derived from the WOCAT database may be seen as standing-alone options, but they may also be combined with other options or single elements of other options (e.g. add a new element from an external solution to a local solution), or they may need some adaptation and improvement to fit a certain context!

**Options taken from the WOCAT database have to be assessed and reflected. Mostly, they can not just be transferred 1 to 1 from one context to another!**

This necessary adaptation process must be considered in the discussions. In this sense, the WOCAT database has to be seen as a basket of diverse options and ideas, which can be used as a model for the development of a context specific version, but which should not be confused with a blueprint solution!

Please **write down all adaptations which have to be made to a certain option** and include this information in the posters and cards. Please write necessary adaptations **in red** colour, so that they are distinguishable from the original option.

For the evaluation and decision-making process supported by the MODSS (or 'facilitator') software, it is important that the options with their necessary adaptations are considered and assessed, not the pure version from the WOCAT database!

## 6. Missing options and status quo

After retrieval of options from the database it is worthwhile to think about any possible solutions that have been mentioned in WS1 (e.g. new ideas), but which are not represented in the sample. If so, try to include such solutions, especially those which you might have specified using the proposed description format (see file 'Description of potential strategy.doc' from WP3.2).

According to the context and the options that come from the database, it might also be viable to include the option 'status quo' (keep going on with what the land users are doing anyway).

Produce your own posters and cards for these options as well (by writing directly into the poster and card format in MSWord)!

## 7. Identify relevant options for evaluation

Out of the range of options retrieved from the WOCAT database and completed with missing solutions and necessary adaptations, decide on the number of options to be taken into consideration for evaluation. Make sure that the different options are clearly distinguishable. We recommend selecting between 3 and 8 options (per objective).

# **The workshop - steps**

**Introduction to the workshop**

- Goals**
- To inform participants on the objectives and programme of the workshop.
  - To prepare the ground for a good working atmosphere.

**Duration**

	Minutes
1. Welcome participants	5
2. Introduction to WB3, Stakeholder workshop 2	5
3. Objectives and programme of the stakeholder workshop	5
<b>Total</b>	<b>15</b>

- Preparations and material required**
- Workshop programme and objectives (written on sheets A1)
  - Paper sheets, markers, tape

**Methodology Plenary session**

- Procedure**
1. The moderator welcomes participants, introduces himself and asks participants to briefly introduce themselves. (Do not spend too much time on this as the majority of participants is expected to be the same as in Stakeholder Workshop 1).
  2. Briefly recall the DESIRE program and its objectives. Explain the purpose of the WB3 2<sup>nd</sup> stakeholder workshop within the whole programme.
  3. Present the workshop programme and the objectives.
  4. For a good working atmosphere, recall the 'rules of the game' (eg. rules of communication, commitment to attend, etc).

- Expected results**
- The participants are clear about objectives, the procedure and programme of the workshop.

<b>Step 1:</b>	<b>Review and adjustment of objective(s) (causes / effects of disturbances to be mitigated)</b>
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- Goals**
- To recall and refresh main discussions and results from the first stakeholder workshop (WS1).
  - To decide on which objectives to focus on for the selection of options that will be implemented later.

Duration	Minutes
1. Recall main results from WS1	15
2. Plenary discussion	30
3. Agree on most relevant objective(s)	15
<b>Total</b>	<b>60</b>

- Preparations and material required**
- Paper A1, markers, tape
  - Posters / visualisations from WS 1 (biomass and water cycle; outline of an overall strategy, stakeholder analysis, list of already applied and potential strategies)

**Methodology** **Plenary session**

**Procedure** Paste the posters with the main results from WS1 to the wall.

1. **Plenary session:** with the help of the posters from WS1 the moderator recalls the main findings and results from the following exercises:
  - **Exercise 2: water and biomass cycle**
    - diagnosis of the cycles
    - main disturbances, causes and effects; already applied solutions, potential solutions
    - most important problems and solutions
    - main legal, institutional and socio-economic factors
  - **Exercise 8: synthesis – outline of a strategy for SLM**
    - objectives (disturbances, causes, effects that shall be mitigated)
    - appropriate technologies and approaches

Focus your presentation and explanations on:

- most important causes / effects of disturbances that need mitigation (→ deduce objectives)
  - appropriate technologies and approaches
2. **Plenary discussion:** initiate a discussion to review and complete the objectives identified in WS1. The objectives will guide the selection of options to be implemented in the study site. Thus, it is important that the objectives are really relevant for the local context, and in the perception of the various stakeholders. To start the discussion, refer to the objectives defined in the outline of the overall strategy. The following questions may guide the discussion:
    - Are there any important disturbances or their causes and effects which have been forgotten so far, and which need to be considered when deciding on options to be implemented?
    - Are these the most important objectives?

- Do we already have locally applied solutions for these objectives? What kind of new / external solutions do we need?
- What may be the effects of potentially changing framework conditions such as EU-policies, EU-subsidies, climate change etc. on the relevance of these objectives?

3. **Plenary:** The group needs to agree on **1 objective** (or 2 at the most), which will be used as the basis for the selection of options to be test implemented in the study site.

It is important to make clear, **that all the following steps**, i.e. the search for options, their evaluation and finally the selection of options to implement in a test in the study site **depend on the objective identified**. Be aware that for each objective you select, you need to go through the whole assessment process (time!)! So, if ever possible, agree on 1 objective.

**What we call objective here, is the mitigation of a cause or an effect of a disturbance in one of the cycles.**

*Example:* If for instance reduced soil water availability is a crucial problem / disturbance in the water cycle, the reduction of run-off can be an objective, or the increase of the water retention capacity of the soil could be another one.

Don't be too broad in the definition of an objective. For example 'poverty alleviation' might sound attractive, but is not specific enough. The same with 'reduce runoff', it is too broad and might as such not be interesting for the land users. In this example 'improve water availability for enhanced production' might be a good compromise.

**If possible, find a consensus!** If not, let participants individually weigh according to their own opinion.

*Remark:* It is assumed that the objective selected here will not be something completely different from objectives identified in WS1 and we found it therefore feasible that the moderators prepare the search for options to suit the objective in advance (see also step 2).

**Expected results**

- Participants are up to date and can follow-up the discussions from WS1.
- 1-2 agreed upon objectives, as a basis for the search of options for implementation



## THEMATIC SHEET: The use of computer in the stakeholder workshop

- Use of computer in the background only** Starting from here, the decision-making process will be supported by computer with the help of the 'Facilitator' software.
- During the workshop, use the computer and the software at the background only. **In most steps, the computer will not be directly used in the work with stakeholders.** Ideally, an assistant or the second moderator will feed the data from each step (results from work done in the different steps) to the Facilitator software. The calculations for the analysis of the assessment however are made by computer.
- Transparency** Although the computer will only be used at the background, it is important to be transparent and to explain participants that the WOCAT database was used for selecting options, and that the Facilitator software is used to calculate the results from the assessment process done in the course of the different steps of the workshop.
- Transparency and a clear understanding of the purpose of the use of these tools are important to avoid suspicion and mistrust. People should understand that no decisions will be taken by the software itself nor any magic applied.
- Purpose of the software** Explain the workshop participants that a software will be used in the background. Its purpose is to: A) calculate the results of the assessment which will be done by the participants according to their own criteria. B) Visualise the results.
- Make clear that the software itself does not make any selection, or decision, or evaluation of options! It only reflects what workshop participants are doing and how they assess it.** The only purpose is to calculate what participants evaluate in the course of the different working steps, and to visualise it. It works with the data generated by the participants themselves, without adding or subtracting anything.
- Why using the software?** The software is used for the mere reason of dealing with the impossibility of handling all the information generated in the assessment process!
- A number of technologies will have to be judged and scored according to different criteria, and in the end the group will have to have an idea on which of the technologies fit the local context best to be able to make a decision on which one to test-implement. It would just be impossible to consider and remember all important aspects without this technical help.

## About the MODSS software 'Facilitator'

### About DESIRE 'facilitator'

DESIRE facilitator is based on the open source software 'Facilitator'. Few adaptations and some debugging were made in March 2008 by CDE, University of Berne, Switzerland. Below please find the original description by the software authors.

**Software Description:** This Multi Objective Decision Support System (MODSS) software uses decision rules, a hierarchical system for ranking criteria, score functions and linear programming to identify a preferred management option consistent with the ranking of the decision criteria. Assigning an importance order to the decision criteria overcomes in part the need to assign individual weights. The matrix framework of management options and decision criteria is generic and open, encouraging participation by all stakeholders and can accommodate measured data, simulation model results and expert opinions in the decision making process. The results can be viewed in one of two formats; bar and polar. Results in the bar format are displayed as horizontal bars with best and worst composite scores; the length of the bars representing the sensitivity of the resource management option to the individual ordering of the criteria. The polar format highlights, and groups, differences between best and worst composite scores. "What if" scenarios can be generated by reordering the decision criteria, selecting a different score function or by including additional options and criteria. The entire process can be exported to HTML allowing scenarios to be viewed from anywhere on the web.

**Programming Platform:** This software is written entirely in platform independent Java. As a result it should run on any platform which supports the JDK/JRE 1.5 (or 1.6) environment

**Brief History:** The *Facilitator* project was started in 1997. It has seen a number of iterations since then. Up until 2002 it was a proprietary application used in-house. It is now open source.

**The project page for the Facilitator is:** <http://facilitator.sourceforge.net>

#### **This software is based on research from:**

- The Department of Natural Resources (DNR), Queensland Australia.
- The U.S. Department of Agriculture, Agricultural Research Service (ARS) Southwest Watershed Research Center (SWRC) in Tucson Arizona.

#### **This software was designed and built by:**

- Netstorm Pty Ltd, Queensland Australia. <http://www.netstorm.net.au>
- The U.S. Department of Agriculture.
- The Department of Natural Resources (DNR), Queensland Australia. <http://www.dnr.qld.gov.au>

#### **Funding sources for this project included:**

- The Natural Heritage Trust, Appraisal System for Catchment Resource Use Management Strategies.
- The USDA Water Quality Initiative.
- The Sugar Research and Development Corporation.

### Manual on the use of Facilitator

#### *Reference:*

Coastal CRC, Queensland Government, 2005: Manual for decision-making in groups with Facilitator software.

→ was used as the main source for the explanations on the use of the software in this document.

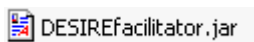
**Facilitator: Enter objectives**

**How to use the Facilitator software**

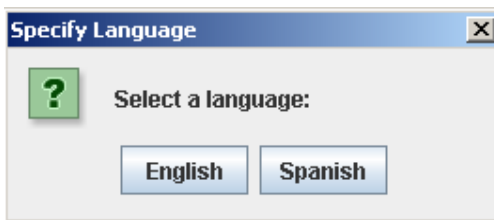


**Start DESIRE Facilitator**

To start the DESIRE Facilitator software double-click on the file **DESIREfacilitator.jar**



In a first screen you are asked to select your language. Please select 'English'.

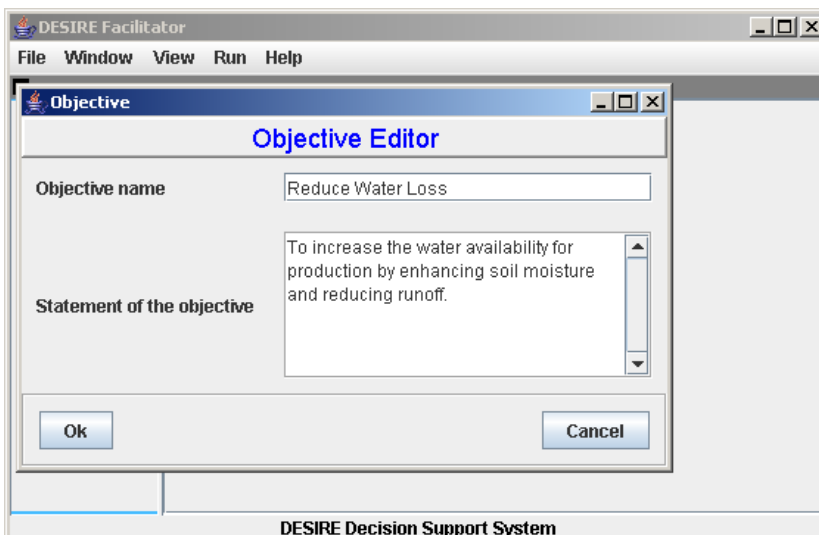


**Make a new file**

Make a new file by choosing *New* from the *File* menu. Save the file by choosing *File* and then *Save*. It will create a .dss file.

**Entering objectives**

Click on *Window* and then *Objective*. Enter the objective as defined with participants (objective name). In the section below (statement of the objective) you have the opportunity to describe the objective more precisely.



**Step 2: Identification of options (technologies) according to selected objective**

**Preparations to be made before the workshop**

**This 2<sup>nd</sup> step requires preparations to be made by the moderator and the study site team already before the workshop!** They need to search the WOCAT database for options, and to prepare and print the posters and cards before the workshop, based on the objectives defined in WS1.

However, as the discussion in Step 1 may lead to new or additional objectives, it may be necessary to search for additional options in the database, and to print respective posters and cards during the workshop.

For details see: *Preparatory work to be made by the moderators prior to the workshop; page 9 ff.*

**Goals**

- To identify with the help of the WOCAT database a range of options (technologies and approaches) that fit the selected objectives.
- To visualise the potential options.

**Duration**

	Minutes
Introduction	5
Presentation of options from the WOCAT database	45-105
Plenary discussion	50
Selection of options to be assessed	20
<b>Total</b>	<b>120-180</b>

**Preparations and material required**

- Posters that document and illustrate the options from the WOCAT database (1 poster per option).
- Cards (format A6) containing key information on the options. 1 Set of cards for each working group.
- Computer
- Printer
- Paper, markers, tape

**Methodology Plenary session**

**Procedure**

1. **Introduction:** The moderator explains the preparatory work done by him/her and the study site team. He/she briefly explains what the WOCAT database is, and how it was used. Make sure that the purpose and the use of the database (search for options) is transparent and well understood by the participants in order to avoid suspicion and mistrust (see *thematic sheet*).

## 2. Presentation of options

Write the selected objective on an A4 paper, stick it to the wall and add the posters with respective options. (In case you are working with two different objectives, make clear which options fit which objective by spatially separating them.)

Start from the objective and explain the single options. Take enough time for each of the options and make sure that everybody fully understands. In the case of options for which you have already identified necessary adaptations during preparatory work, explain which adaptations you consider necessary and why. Present these options including the adaptations (not as the 'pure' version from the database).

## 3. Plenary discussion: Allow time for questions and discussion. The following questions may guide the discussion:

- Is the option viable for the local context, generally speaking?
- Are certain adaptations necessary to fit the local context?
- Can several options or elements of an option be combined?
- Are any very important options lacking?

If the discussion should reveal that any **important** options are lacking in the presented selection of options, it is still possible to go back to the database, search again, and add new options from the database! However, it is expected that this step, i.e. the brainstorming on possible options, was already completed in stakeholder workshop 1!

In this case, however, you will need to print additional posters and cards, too.

## 4. Selection of options to be assessed: Ask the participants to agree on 4 to 7 options which seem to be feasible and interesting enough for the context of your study site to be more thoroughly assessed in the course of the next steps.

**Try to find a consensus!** If no consensus can be found, give each participant 5 stickers to mark his preferences. Make sure that nobody feels pressurised by others into voting for certain options. Those options with the highest number of votes will be assessed.

*Remark:* One out of these options will finally (at the end of the whole process) be selected to be test-implemented in the study site. **In case the current selection contains options which are already well known and successfully applied in your study site we recommend to not consider them for further assessment, as it will not be interesting to select them for test-implementation!**

### Expected results

- The participants agree on 4-7 options to be evaluated with the help of the following steps.

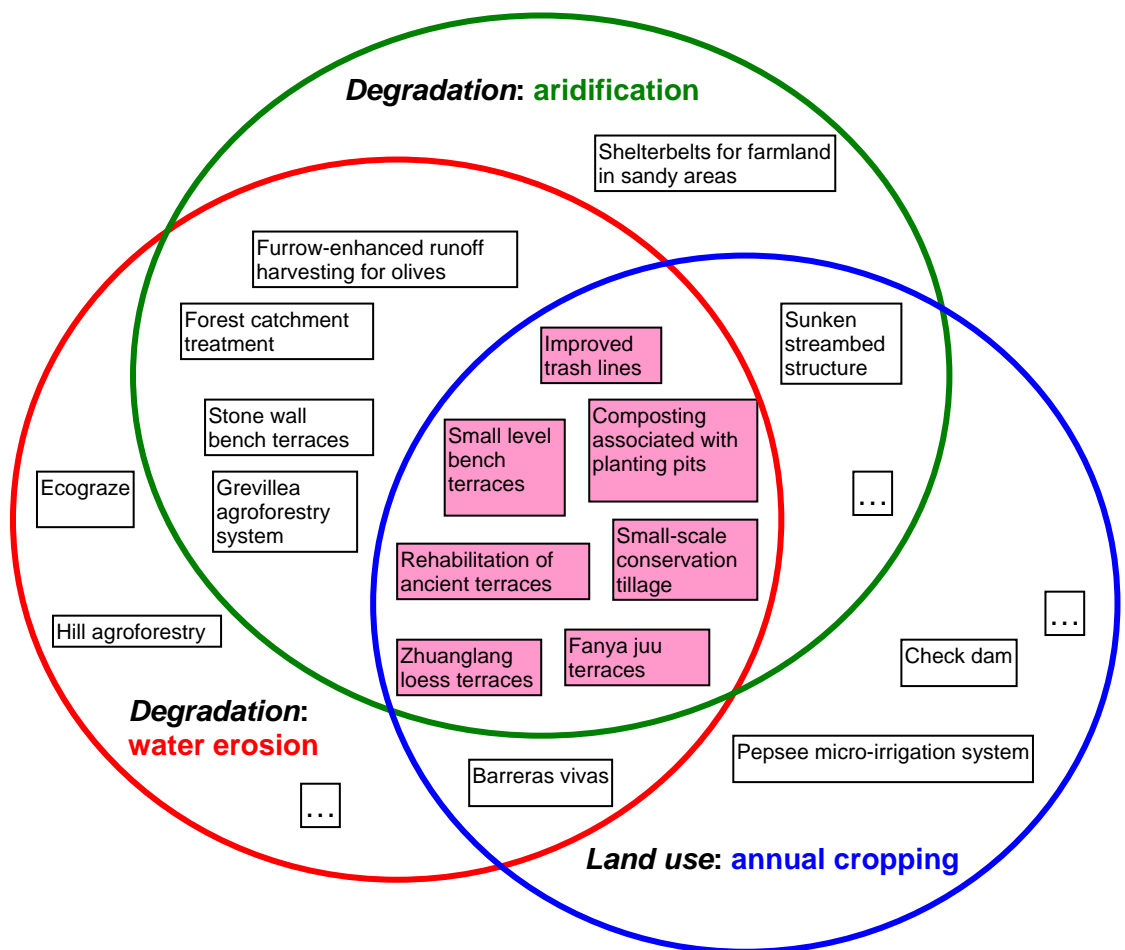
**THEMATIC SHEET: selection of options from WOCAT database**

The following graph (see below) can be used by the moderator to explain how the WOCAT database was used to select options.

1<sup>st</sup> step: selection of **type of degradation** → in this example two types of degradation were selected, namely *aridification* and *water erosion*. All options in the red circle fight water erosion and all those in the green circle fight aridification. It is important to note, that besides the intersection of the green and the red circle, i.e. those options that fight aridification and water erosion, there are more options for each of the 2 degradation types.

2<sup>nd</sup> step: select **type of land use**: type of land use for which we are seeking a technology is *annual cropping*. This specification further narrows down the range of options to those belonging to the intersection between the red, green, and blue circle. Each new specification leads to another narrowing down of the number of options!

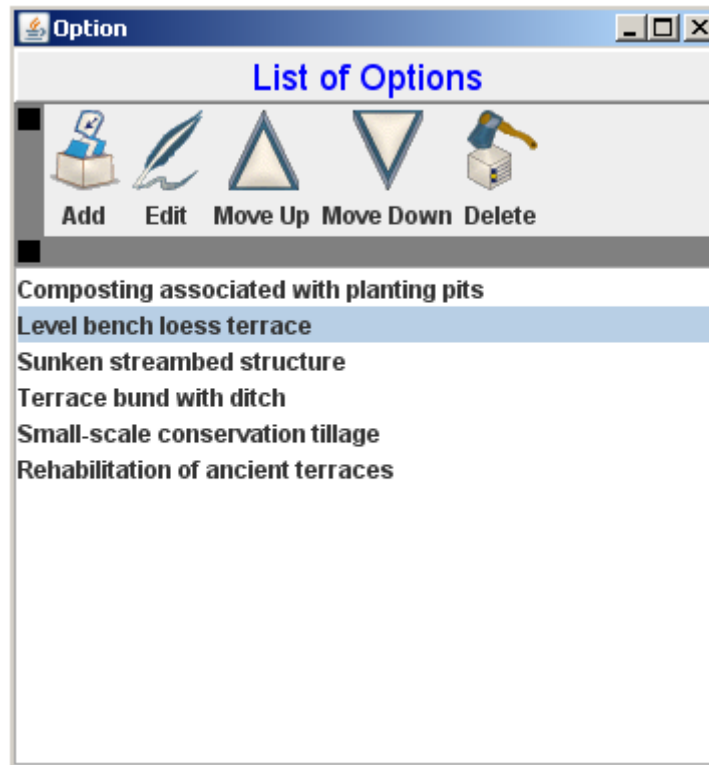
**The selection process**



**Facilitator: enter options**

**Enter options**

Enter the selected options into 'Facilitator'. It doesn't matter in which order. For options which have a strongly context specific name (e.g. Zhuanglang loess terraces), and / or where you have already identified necessary adaptations, you may wish to change the name to something that fits your context (e.g. level bench loess terrace).



Note that in the graph above, for 2 options the names have been changed compared to their original technology database name, i.e. the selected 'Zhuanglang loess terrace' is now 'Level bench loess terrace' or the 'Fanya juu terrace' became the 'Terrace bund with ditch'. This is either because the name is not meaningful enough for the local stakeholders, or because some adaptations or combinations have already been included.

**Step 3: Identification of relevant criteria for evaluation**

- Goals**
- To identify and agree on a set of 9-12 criteria (ecological, economic, and socio-cultural) per objective, relevant for the local context, along which the different options can be evaluated.

**Duration**

	Minutes
1. Introduction	15
2. Group work: brainstorming on criteria	15
3. Analyse and complete criteria	30
4. Group work: select most important criteria	10
5. Agree on most relevant criteria	10
6. Create a common understanding of selected criteria	20
<b>Total</b>	<b>100</b>

- Preparations and material required**
- Paper sheets, format A1, and cards
  - Stickers (different colours)
  - Posters of options, cards of options
  - Markers (different colours)
  - Computer, DESIRE facilitator software

**Methodology** **Group work: brainstorming, selection**  
**Plenary: discussion and final selection**

- Procedure**
1. **Introduction:** the moderator explains the process of evaluating the different options. He gives a brief overview on the purpose and procedure of each of the following steps (see: thematic sheet step 3):
    - identification of relevant criteria
    - scoring of all options against all criteria
    - ranking / weighing of criteria
    - analysis (done by computer)
    - select 1-2 options for test implementation

**The three dimensions of sustainability**

To be feasible, options must fit into the specific bio-physical, economic and socio-cultural context of the respective study site. An option can only be considered sustainable if its evaluation is (more or less) positive concerning all three dimensions of sustainability: economic, ecological, and socio-cultural. That is, it has to pay off for the farmers implementing it, has to have positive impacts on the land (including soil, water, vegetation, fauna), and has to be acceptable by local actors, i.e. it has to fit into the socio-cultural context and practices.



## 2. Definition of criteria

Briefly introduce the use of the term 'criteria' by illustrating it with an example from daily life, such as 'how do you decide on renting a flat: it needs to have 3 rooms, be cheap, be located near your working place, etc.' The option (flat) meeting these criteria (size, low cost, location) best, will be selected.

**Criteria for sustainable options:** for each of the three dimensions of sustainability, criteria have to be defined which are relevant for your specific context. An option will be considered good; the more criteria are valued positively.

For the identification of possible criteria the following question may help:  
**How can we recognise if a technology is good for us or not?**

Example:

	Criteria
Economic	<ul style="list-style-type: none"> <li>• low financial input required</li> <li>• little maintenance work required</li> <li>• increased yields</li> </ul>
Ecological	<ul style="list-style-type: none"> <li>• Increased soil cover</li> <li>• Reduce siltation down-stream</li> <li>• Water harvesting potential</li> </ul>
Socio-cultural	<ul style="list-style-type: none"> <li>• Reduce conflicts over water</li> <li>• Must be suitable for small-holders</li> <li>• No increase of women's workload</li> </ul>

**Group work:** Participants split up in groups (2 to 4 groups according to the size of the learning group), within the same type of stakeholders, e.g. local stakeholders (farmers, representatives of local authorities etc.), and external stakeholders (e.g. researchers, representatives from ministries, etc.). Each group brainstorms on criteria (economic, ecological and socio-cultural) which are useful to assess whether a technology is suitable, sustainable and successful in the local context or not. Remember that the criteria should always focus on the selected objective.

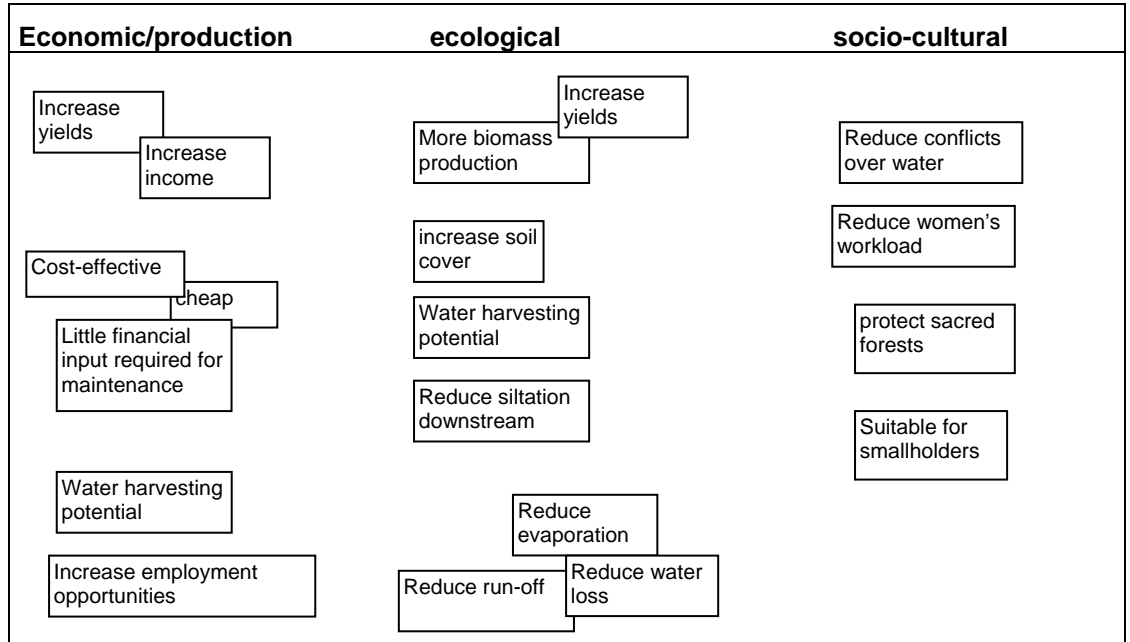
The following questions may help:

- **Which qualities must a technology have to be good (regarding the objective)?**
- **Which services/benefits/effects should it provide to be good?**

Write the criteria on cards (1 criterion per card).

**3. Plenary: presentation of group work:** each group presents the criteria they identified. The moderator takes the cards and sticks them on a big sheet under one of the three categories: economic, ecological, socio-cultural.

Example:



**Group the criteria:** After all criteria have been presented, the moderator starts to group criterions that belong together. Clarify the meaning of a card and re-write it, if necessary. If several cards coincide, eliminate the redundant ones, i.e. if there is some overlap between criteria it is good to put them in the same category. This prevents the overlap between concepts being measured twice.

**Summarise:** the moderator briefly summarises the identified criteria. He points to categories of criteria that are underrepresented and asks if there is anything important to add. Complete where necessary.

The list of criteria provided in the thematic sheet (see p33) can be used by the moderator as a checklist or aide memoire to make sure that all relevant realms are covered, and to complete the list resulting from the brainstorming. *But: do not just select criteria from this list; let the stakeholders identify their own criteria!*

The criteria should meet the following requirements:

- It should reflect the most important qualities which the options (technologies) should have.
- It has to include economic, ecological, and socio-cultural criteria.
- It should include off-site effects (geographically → e.g. downstream effects; and socio-economic → e.g. effects on poor / rich farmers; pastoralists vs agriculturalists).

- 4. Group work: Select the 3 most important criteria per category**  
Groups are the same as before. Organise the groups in a way, that everybody can see the pin boards with the criteria. From all criteria listed, each group selects **the 3 most important criteria per category**, those that they consider to be most relevant for the local context.
- 5. Plenary: Try to find an agreement among participants on the 3-4 most important criteria per category. Proceed as follows:**
- **Add the results** from the different groups: ask each group to say which criteria they selected. Mark the criteria with a sticker for each vote they get. (If for example 'reduce women's workload' has been selected by two groups, put two stickers).
  - Check if there are **major differences** between the selection made by local participants and by external participants. If so, discuss and see whether a consensus can be found.  
(Note: If major differences remain even after discussing the issue, it is also possible to continue working with two different valuations, although the process becomes more complicated and time-consuming!)
  - Sum up and identify the **3-4 criteria per category** that received the highest number of votes. These are the criteria that will be used to assess the options / technologies. Please note: The number of criteria selected from a single category should not exceed **4!**
- 6. Plenary: Find a common understanding of criteria**  
For the next step (scoring of criteria) it is decisive that everybody understands the criteria the same way, otherwise scoring made by different stakeholder groups will not be comparable, and much time will be needed for clarifying.  
Example: 'costs' → it has to be clear, whether 'costs' means implementation costs only, or whether it includes implementation and recurrent costs. Which costs? Financial input, labour, material, etc.
- Clarify the meaning of each of the selected criteria. Where necessary, rewrite the card and specify.**

<b>Expected results</b>	<ul style="list-style-type: none"> <li>- Relevant criteria for the evaluation of different options are identified.</li> <li>- The participants have a common understanding of selected criteria.</li> </ul>
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**THEMATIC SHEET: steps of the evaluation process**

**Steps of the evaluation process**    The process of evaluating the different options mainly consists of the following steps:

- identification of relevant criteria
- scoring of all options by criteria
- ranking / weighing of criteria
- analysis (done by computer)
- select 1-2 options for test implementation

Step	purpose	procedure
Identification of context-relevant criteria	<ul style="list-style-type: none"> <li>• To be sustainable, options must fit into the given ecological and socio-cultural context, and must have positive ecological and economic impacts. For each context a set of relevant criteria needs to be defined.</li> <li>• Criteria, along which the different options will be evaluated, differ according to the local context.</li> <li>• The criteria have to reflect the most important qualities that the options should have.</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss and identify relevant context-specific criteria</li> </ul>
Scoring of options	<ul style="list-style-type: none"> <li>• Each of the options needs to be evaluated regarding each criterion, i.e. it has to be evaluated which of the options fulfils criterion A best, which second etc., and this for all criteria.</li> <li>• The method allows that different stakeholders may score different options differently.</li> <li>• Options which score high in most of the criteria are supposed to be promising and fit the given context best.</li> </ul>	<ul style="list-style-type: none"> <li>• Participants score in small groups all the options against all criteria</li> <li>• The scoring results are entered into <i>facilitator</i></li> </ul>
Ranking / weighing of criteria	<ul style="list-style-type: none"> <li>• Most possibly, not all criteria are equally important. Therefore criteria are ranked according to their importance, so that more important criteria get more weight.</li> </ul>	<ul style="list-style-type: none"> <li>• The group agrees on the importance of each criterion</li> <li>• The results are entered into <i>facilitator</i></li> </ul>
Analysis	<ul style="list-style-type: none"> <li>• The analysis is the result of all previous steps mentioned here. It is supported by the 'facilitator' software. The analysis shows: how participants assess each option; and the appraisal of their suitability for the local context concerning economic, ecological, and socio-cultural aspects.</li> </ul>	<ul style="list-style-type: none"> <li>• Calculations made by computer</li> <li>• Interpretation of results in the plenary</li> </ul>
Selection of options for test implementation	<ul style="list-style-type: none"> <li>• In the DESIRE programme each study site will test implement 1-2 options to mitigate or prevent soil and water degradation / desertification. In this step the options for testing will be selected.</li> </ul>	<ul style="list-style-type: none"> <li>• The group agrees on 1-2 options that will be test implemented in the given study site<sup>1</sup></li> </ul>

<sup>1</sup> Although within the DESIRE programme only 1-2 options can be implemented, the evaluation process should lead to a better understanding and to finding additional options that could be implemented or recommended for implementation by other programs.

**Identify criteria**

To be useful a criterion should:

- **Distinguish between your options.** For example, if all options cost the same, there is no point having cost as a criteria.
- **Be possible to be assessed.** If no one can think of a way to assess a criterion it should not be used. For ex., while it sounds nice to include "maximise happiness" as a criterion, it can not be assessed in a way acceptable to everyone.
- **Be important to at least one person included in the process.** To build consensus, it is better not to use voting. If something is important to one person and it is ignored then that person will not share ownership of the process.

**Checklist criteria****Checklist for possible criteria** (for the evaluation of conservation options)**Category: economic (includes production!)**

- crop yield
- fodder production
- fodder quality
- animal production
- wood production
- risk of production failure
- drinking / household water availability / quality
- water availability / quality for livestock
- irrigation water availability / quality
- off-site water availability (groundwater, springs)
- demand for irrigation water
- expenses for inputs
- farm income
- diversification of income sources
- land availability: loss of land (decreased production area) or increased production area (new land under cultivation / use)
- workload / labour constraints
- eased / hindered farm operations
- product diversification
- economic (in)equity
- suitability for local socio-economic conditions (e.g. cropping system, market orientation, etc.)

**Category: socio-cultural**

- cultural opportunities (eg spiritual, aesthetic, others)
- recreational opportunities
- community institution strengthening
- national institution strengthening
- conservation / erosion knowledge
- socio-cultural conflicts / conflict mitigation
- food security / self-sufficiency (reduced dependence on ext. support)
- health
- suitability for small holders / large-scale land users
- gender (in)equity
- suitability for local socio-cultural conditions
- damage on neighbors' fields
- damage on public / private infrastructure

**Category: ecological**

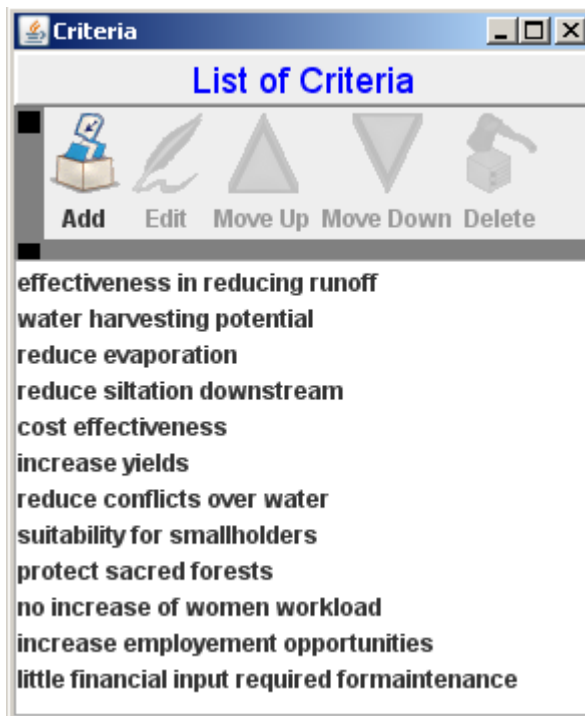
- water quantity
- water quality
- harvesting / collection of surface runoff
- soil moisture
- evaporation
- surface runoff
- improved excess water drainage
- waterlogging
- groundwater table/aquifer
- hazard towards adverse events (drought, floods, storms, ...)
- downstream flooding
- off-site stream / river flow
- downstream siltation /sediment yields
- off-site groundwater / river pollution
- off-site buffering / filtering capacity (by soil, vegetation, wetlands)
- wind velocity
- wind transported sediments (off-site)
- soil cover
- biomass / above ground C
- nutrient cycling / recharge
- soil organic matter / C sequestration
- emission of carbon and greenhouse gases
- soil loss
- soil crusting / sealing
- soil compaction
- salinity
- fire risk
- animal diversity
- plant diversity (incl. crop diversity)
- invasive alien species
- beneficial species (predators, earthworms, pollinators)
- biological pest / disease control
- habitat diversity / fragmentation
- competition (water, sunlight, nutrients)
- suitability for local ecological conditions: slope, soil, climate, etc.

**Facilitator: enter criteria**

**List of criteria**

Enter all relevant criteria into 'Facilitator'. No sorting is necessary right now. Criteria will be classified later (according to category) (see step 5).

- 1. Formulate each criterion in such a way that the interpretation always is: 'more is better'.**



**Properties of criteria**

- 2. Define minimum and maximum score of criteria. Standard criteria limits are defined as 1 (minimum) and 7 (maximum).**

Depending on the context, it might be easier for stakeholders if you use words instead of numbers for scoring: e.g.

	Corresponds to...
Very good	7
Good	6
Slightly good	5
Neutral / medium / acceptable	4
Slightly bad	3
Bad	2
Very bad	1

However, the limits (minimum and maximum score) can be changed if the standard definition is not applicable (e.g. if only very limited information is available it might be useful to use 1 (poor), 2 (acceptable) and 3 (good) only).

**You need to decide what is most appropriate for the context you are working in and accordingly adjust the 'criteria editor' in Facilitator (see below).**

**3. Define interpretation of criteria, e.g. if highest score is the best = 'more is better (linear)' → standard definition**

The image shows a software dialog box titled "Criteria Editor" with a subtitle "Criteria: effectiveness in reducing runoff". The dialog has two tabs: "Description" and "Properties", with "Properties" currently selected. The "Properties" tab contains the following fields and controls:

- Measurement**: "Quantity" and "Units" text input fields.
- Criteria limits**: "Minimum" and "Maximum" text input fields, with values "0.0" and "7.0" respectively.
- Score Graph**: A small graph icon showing a diagonal line from bottom-left to top-right, and a dropdown menu currently set to "More Is Better (linear)".

At the bottom of the dialog are "Ok" and "Cancel" buttons.



## Step 4: Scoring the options

**Goals** - To assess for each option, to which extent it fulfils the different criteria identified in step 3, i.e. to assess the options by the criteria.

Duration	Minutes
1. Introduction	10
2. Scoring (in groups)	90-120
3. Analysis of assessments	30-60
<b>Total</b>	<b>130-190</b>

**Preparations and material required**

- A3 poster print-outs of all options to assess → 1 set per group
- A4 table (matrix) with all options (in columns) and all criteria (in rows)
- A6 cards of options → 1 set per group
- A5 to A4 sheets with all criteria to be scored (1 criterion per sheet) → 1 set per group
- Prepare a 'scoring tool' on a big sheet of paper for each group
- Computer with WOCAT database and a person who acts as information officer (→ info desk)

**Methodology** **Group work:** scoring options against criteria  
**Plenary:** consensus building

**Procedure** Step 4 consists of two parts:

- **Part A)** scoring in groups;
- **Part B)** analysis of assessments

Part A) will be done at the end of day 1 of the workshop, and

Part B) at the beginning of day 2. At night of day 1, the moderator / assistant has to fill in the values of the scoring into Facilitator software.

## Part A) Scoring (groupwork)

1. **Plenary session:** The moderator explains the scoring process. The work will be done in small groups, i.e. 3-4 persons from similar stakeholder groups. **Each group assesses all the options by all the criteria.**
2. **Group work:** form groups of 3-4 persons (same or similar stakeholder group). Each group gets:
  - a 'scoring tool'
  - a set (sheets) of all criteria to be scored
  - a set of A6 cards of all the options to be assessed;
  - an A4 table (containing all options and criteria) to fill in the results of the scoring

According to the context you are working in, it might be necessary to moderate the discussion and assessment made by groups of local stakeholders. If this is the case, ask e.g. one of the researchers to support the group by moderating discussions. **But:** make sure that the researcher fully understands his/her role of moderating, i.e. he/she is not supposed to influence the discussion by forcing his/her own opinion! It is not his/her assessment that is wanted, but the local stakeholders'!

**Information sources:** For scoring options, the groups can rely on their own experience where applicable, on the information provided on technology descriptions (A3 print-outs), and if necessary, they can ask for more information (from WOCAT database) at the info desk. The information officer checks the WOCAT database for more specific information.

### Scoring process:

1. Put the first criterion on the 'scoring tool' (example see next page).
2. Start discussing which of the options is best, and which one worst concerning the selected criterion.
3. Once you agreed on the best option, think about its score concerning the selected criterion, and place the A6 card on the respective field.
4. Do the same with the worst option.
5. Discuss and score the remaining options.
6. For each option, fill the score concerning criterion 1 into the table (example below).
7. Repeat the same process with all other criteria.

**Table: scoring**

Scoring	Criterion 1	Criterion 2	Criterion 3	Criterion 4	Criterion 5	Etc.
Option 1						
Option 2						
Option 3						
Etc.						






### Example:

Scoring	Effectiveness in reducing runoff	Water harvesting potential	Reduce evaporation	Increase soil cover	Etc.
Composting associated with planting pits	6	6	1	5	
Level bench terrace	2	7	3	1	
Sunken streambed structure	5	7	1	0	
Small-scale conservation tillage	7	6	6	7	
Rehabilitation of ancient terraces	7	6	3	1	

**Scoring tool**

Prepare the following (empty) form on a big sheet of paper, where each line is about 17 cm high (to fit the A6 cards).

Example:

<b>Criterion:</b>		<b>Increase yields</b>	
<b>Score</b>	<b>Options</b>		
<b>Very good (7)</b>			
<b>Good (6)</b>			
<b>Slightly good (5)</b>			
<b>Acceptable (4)</b>			
<b>Slightly bad (3)</b>			
<b>Bad (2)</b>			
<b>Very bad (1)</b>			
<b>0 (killer criteria)</b>			

<b>Work to be done at night by the moderator</b>	<p>After all the groups have finished their work, collect the tables and enter the data for each group into an Excel sheet. You may either create a sheet for each group or you can place the matrices below each other in the same sheet.</p> <p>Identify big disparities between the scoring of different (stakeholder) groups for discussion in part B.</p> <p>Calculate the averages of each value in the matrix on an additional sheet and create a tab separated text file of this resulting sheet (using <i>File – Save As – .tab</i>). This file can then be imported into Facilitator using the <i>File – Matrix – Import</i> menu. Tick 'overwrite existing alternative/criteria', otherwise both old and the new matrix will appear in the analysis.</p>
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## Part B) Analysis of assessments

1. **Plenary session:** The moderator presents the scorings made by different groups (not very detailed), pointing out the following:
  - Indicate where (in which criteria) the assessments more or less **coincide**.
  - Point out **major discrepancies** in the assessments. It might happen that certain criteria are judged very differently by different stakeholders.

Criteria which have been assessed very differently by different stakeholders need to be discussed! Try to find the reasons for the discrepancy:

- Is it due to different understanding / misunderstanding?
- Is it due to different valuation? Where are the differences?

If the reason for the discrepancy is more a question of understanding, see whether you can find a consensus concerning the scoring. If the valuation is different and no consensus possible, you have the opportunity to double the Facilitator file and continue working on two tracks.

- |                         |   |
|-------------------------|---|
| <b>Expected results</b> | <ul style="list-style-type: none"> <li>- All options are assessed for the different criteria.</li> <li>- Major differences in the assessments made by different stakeholder groups are made transparent.</li> </ul> |
|-------------------------|---|

**THEMATIC SHEET: scoring**

**Scoring ≠ ranking**

Scoring means assigning each option a certain value concerning the question: *how well does the option fulfil the criteria?* It quantifies the effects of the options on the criteria. Scoring is not the same as ranking! Ranking is putting the options into an order. At scoring we define the value of each option separately. Therefore it might happen that several options get the same score and that certain score values are 'unused'. If for example all options increase soil cover and there are only small differences in their effectiveness, all options will get a score value between 5 and 7.

**Scoring 1 to 7**

Score always between 1 and 7. It means that 7 is the best, and 1 the worst option. Several options may have the same score.

It is not necessary to use the full range of scores. You might want to leave some room at the ends of the range of scores for options to be added later which might be better or worse than the ones you already have.

Example:

Criteria: cost effectiveness	
Score	Options
7	Composting with planting pits
6	
5	Small-scale conservation tillage
4	
3	Terrace bund with ditch      Rehabilitation of ancient terraces
2	
1	
0	

**How to score**

When scoring the options, it is best to score one criterion at a time. Give the best option the highest score (which does not necessarily have to be 7) and the worst option the lowest score (which does not necessarily have to be 1; see example above). Then try to work out how well the others do relative to the best and worst, and score them in relation to those best and worst scores.

**Killer criterion →scoring 0**

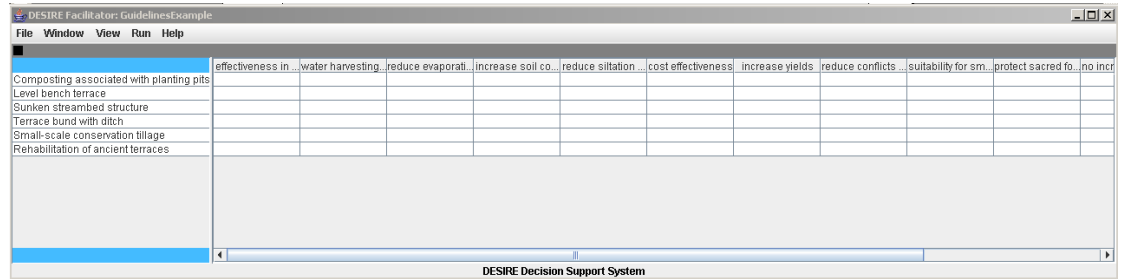
The score 0 signifies that an option performs so poorly on that particular criterion that it is probably not viable. A score 0 therefore indicates a killer criteria concerning a certain option.

Example: if you have a budget of \$10'000 and one of the options is going to cost \$50'000 you might want to give it a 0 because you know, that you cannot really implement it. You may want to leave it in, so that people can see that it has been considered, and why it wasn't a feasible option.

**Facilitator: scoring**

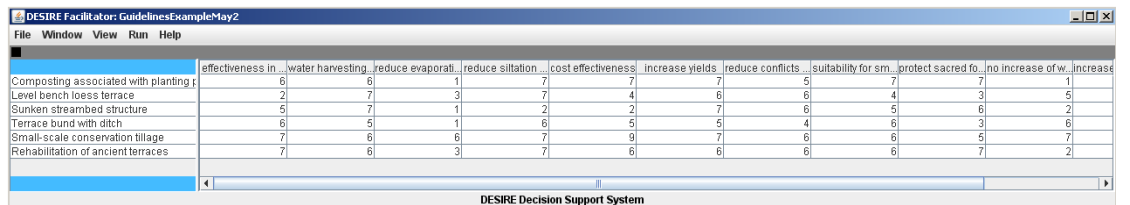
**Scoring matrix**

In Facilitator, a table is formed with the criteria along the top and the options down the left hand side.



**Enter scoring data**

The scores for each option against each criterion are added into the score table or matrix. It is possible to navigate this matrix using the mouse or the cursor keys, in the same way as a spreadsheet. **Note:** it is not possible to enter a score outside the range (minimum and maximum) entered for that criterion.



**Step 5: Creating a hierarchy and ranking criteria**

**Goals** - To organise criteria in a hierarchical order (related to the objective!).

Duration		Minutes
	1. Introduction	5
	2. Plenary session: ranking criteria	45
	<b>Total</b>	<b>50</b>

**Preparations and material required**

- Paper sheets, format A1
- Write all criteria on cards (1 criteria per card)
- Markers

**Methodology** Plenary session

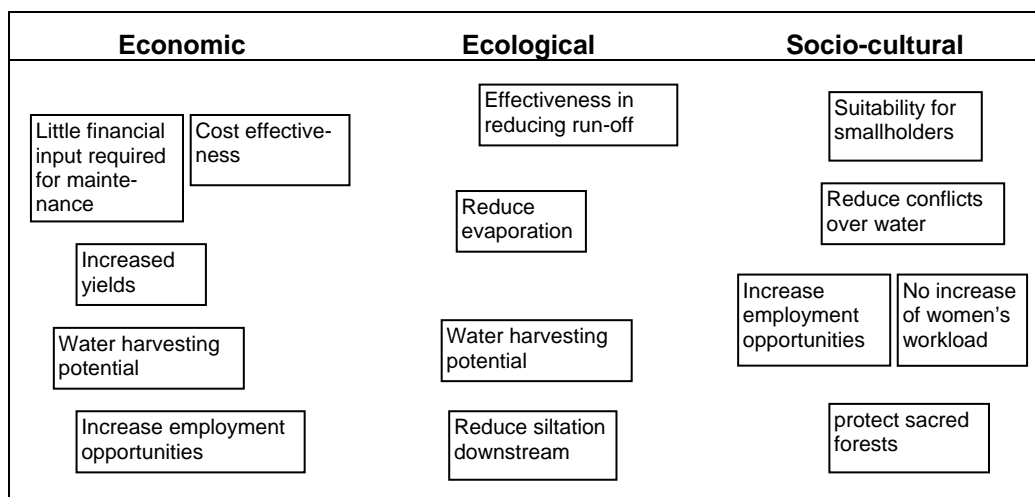
**Procedure**

1. **Introduction:** The moderator explains the purpose of step 5 (creating a hierarchy and ranking criteria). Most possibly, not all criteria are equally important. Therefore the criteria are ranked according to their importance, so that more important criteria get more weight.

Participants have the opportunity to express which factors they think are more important than others by ranking the criteria. Higher ranked criteria are given more weight than the lower ranked criteria.

2. **Plenary session:** organise the criteria on a pin-board (or on the wall) according to their importance.
  - 1) Organise them according to the category (socio-cultural, economic, ecological) they belong to (see step 3).
  - 2) Check if there are criterions which belong to two (or three) categories. In this case, write a second (third) card and put the criterion in both (all) categories!

**Example:** 'increase employment opportunities' fits in as both, a socio-cultural and an economic factor and could go under both headings.



- 3) In each category, rank the criteria according to their importance. The higher ranked (higher up on the pin-board) a criterion, the more weight it gets. Criteria that are equally important are put on the same level.

Try to find a consensus in the plenary on the weight / rank the different criterion shall be assigned. In case of enormous differences between the perceptions of different stakeholders, it is also possible to make separate rankings and later on to compare the results.

- 4) An assistant feeds the ranking accordingly into the DESIRE Facilitator software.

**Expected results**

- The weight / importance of each criterion is identified and agreed upon.

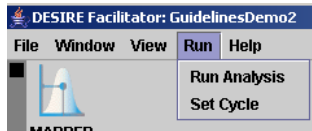


## THEMATIC SHEET: ranking

<b>Organise criteria according to categories</b>	The use of socio-cultural, ecological and economic as categories (including on and off-site effects) is a good way to structure the criteria for natural resource decision-making. These are valued differently by different people and represent major differences in value systems. It will be easier to gain consensus in diverse groups if economic, socio-cultural and ecological criteria are in separate categories, and so ranked separately. They should also be analysed separately (step 6).
<b>In multiple categories</b>	You can put the same criterion in more than one category. For example, 'increase employment opportunities' might fit in as both a socio-cultural and an economic factor and could be in both categories. If the impacts are different from the two perspectives they could even be assessed differently.
<b>How many criteria per category</b>	In fact, there is no limit to the number of criteria that can be in one category, but if there are too many, people may have difficulties conceptualising what the category is about. If you have 4-5 criteria in a category, people will be able to think about it fairly easily.
<b>Ranking of criteria</b>	By ranking criteria, participants have the opportunity to express which factors they think are more important than others. Higher ranked criteria are given more weight than the lower ranked ones. Criteria can be grouped as equally important. Example: 'little financial input required for maintenance' and 'cost effectiveness' are equally ranked.
<b>Rank each category separately</b>	Criteria are ranked in their own category, so socio-cultural criteria are ranked separately from economic criteria, for instance. Categories as such can also be ranked, although we suggest analysing the categories separately.
<b>Conflict over ranking</b>	If participants disagree over which are the most important criteria, it is possible to create several different rankings and compare them. Often, it will not make much difference to the results, and it's useful for people to be able to see this.

**Facilitator: creating a hierarchy and ranking criteria**

**Set cycle** Before you start creating a hierarchy and ranking the criteria in Facilitator, you need to Set Cycle (click *Run* and then *Set Cycle*). This deletes any old runs and prevents confusion over which data set goes with which run. This is especially important if you make changes to the options, the criteria or their scoring later on.



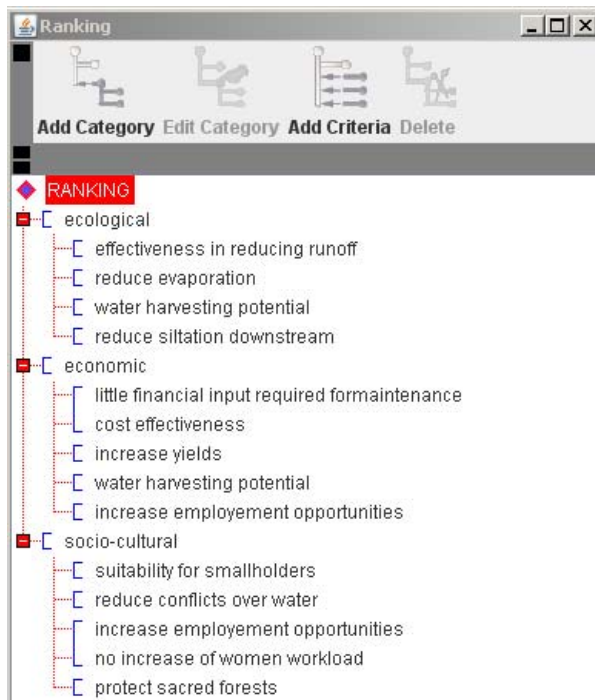
Any previous ranking will be deleted and you need to redo the ranking.

**Create hierarchy headings** To create the criteria hierarchy choose *Ranking* from the *Window* menu, then click *Add Category*. Create 3 categories and name them 'ecological', 'economic' and 'socio-cultural'.

**Add criteria to categories** Click *Add Criteria* and select all relevant criteria to be added to the ranking window. Place a criterion under a category by selecting the criterion and dragging it to the left of the category. When the category is highlighted in blue, drop the criterion and it will appear underneath the category.

**Ranking criteria** Changing the relative importance of a criterion is done by dragging and dropping elsewhere in the hierarchy. The criterion will appear below where you drop it.

**Equally important criteria** Double clicking on a criterion assigns equal importance to the criterion and the one above. Double clicking again breaks this assignment and assigns greater importance to the criterion above. Example: 'little financial input required for maintenance' and 'cost effectiveness' are equally ranked (see graph).



**Criteria in multiple categories** You can put the same criterion in more than one category. Click *Add Criteria* to add one of the criteria and drag it to your second category. Example: 'water harvesting potential' is put under 'ecological' and under 'economic' (see graph).

## Step 6: Analysis and interpretation

- Goals**
- Visualisation of the relative merits of the different options (related to objective!).
  - Interpretation of the results.

Duration		Minutes
	1. Introduction	5
	2. Interpretation of results and discussion	85
	<b>Total</b>	<b>90</b>

- Preparations and material required**
- Computer, beamer
  - Keep paper and markers ready

**Methodology** Plenary session

**Procedure** Using DESIRE Facilitator software you can analyse the options. This produces graphs which give a visual representation of the relative merits of each option.

1. **Plenary session:** The moderator explains that the results from all previous steps have been fed to the computer and that the analysis is now made by computer. Install the computer and the beamer. Run an analysis and show the results (see instruction sheet). Discuss the results.

General remarks on the interpretation of the graphs (for more details see thematic sheet).

- Each option is represented by a green bar showing the range of overall scores for that option.
- The smaller the green bar, the clearer the valuation, i.e. the lower the variability of valuations.
- The further to the right in the graph, the better the option.
- An option is clearly better than another if there is no overlap between the green bars.

2. To find out which of the options has the most promising relative merits, look at the graph for each of the categories (socio-cultural, economic, ecological) separately and try to satisfy all of them.

**An option can only be sustainable if it receives a (more or less) good valuation in each category!** If an option scores well in two categories but very bad in the third, it can not be considered to be sustainable for the local context.

Sometimes it is clear which of the options is best, in other cases this might not be obvious. Given the latter case, it will be necessary to further discuss and negotiate among the different stakeholders to agree on which option is most promising and suitable. The following question may guide the discussion:

- What is more important in our context that an option scores better economically, socio-culturally, or ecologically?

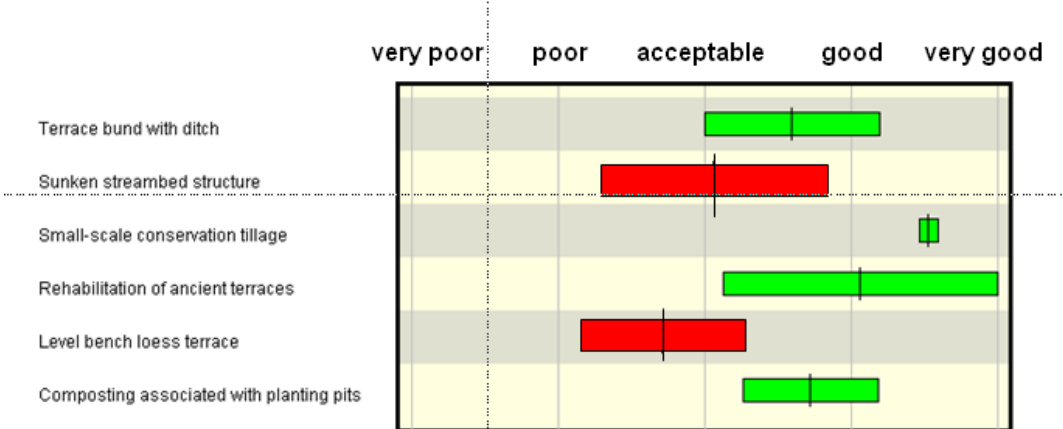
Different stakeholders may have different opinions and a concluding answer is maybe not possible. However, consider it to be a great chance to discuss such basic principles together with the stakeholders.

- Expected results**
- The relative merits of different options become clear, and participants get aware of the pros and cons depending on the view of different stakeholders.
  - Participants understand which options are most promising in the local context.

**THEMATIC SHEET: analysis and interpretation**

**How to explain the role of MODSS** Before showing the results of the MODSS, the moderator should explain that the software only helps to organise your thoughts. It is difficult for the human mind to keep all criteria in your head and know the overall effect. Therefore, the software helps us to summarise the result of all our scoring.

**Visualisation of results** The results of data analysis are displayed in graphs. The way Facilitator displays them is not very stakeholder-friendly though. Therefore we suggest to either draw them manually on the wall (flip chart) while explaining their meaning, or to use e.g. Photoshop or PowerPoint to simplify the graphs (replacing the number with words ranging from poor to good, giving the lower bars a red colour, etc.).

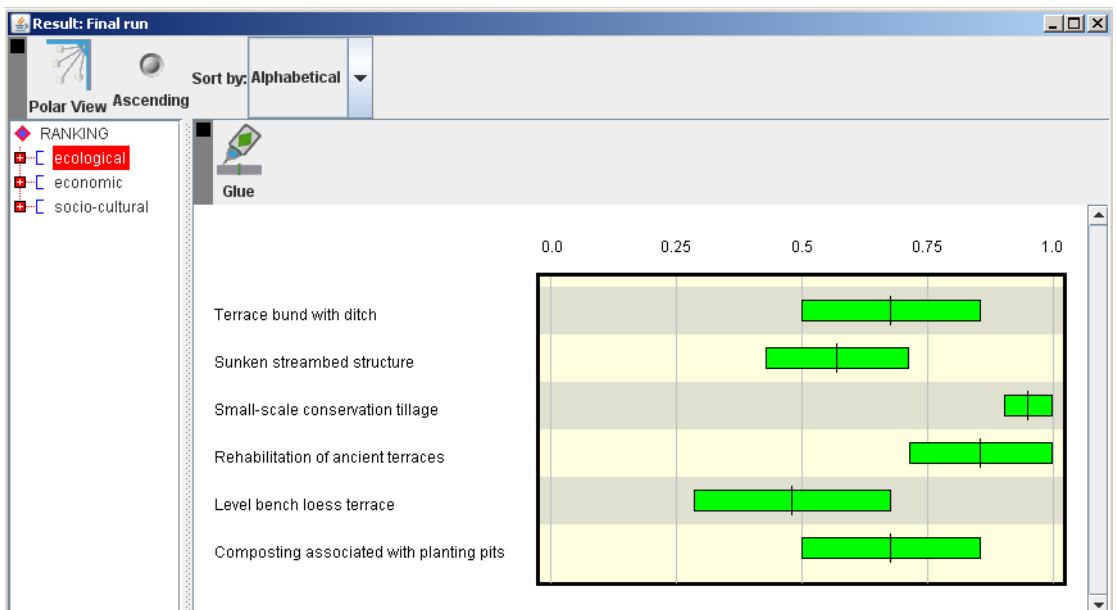


**General interpretation of the graphs** The further to the right in the graph, the better the option. Each option is represented by a green bar, which shows the range of overall scores for that option. It is only clear that an option is better than another if there is no overlap between the bars.

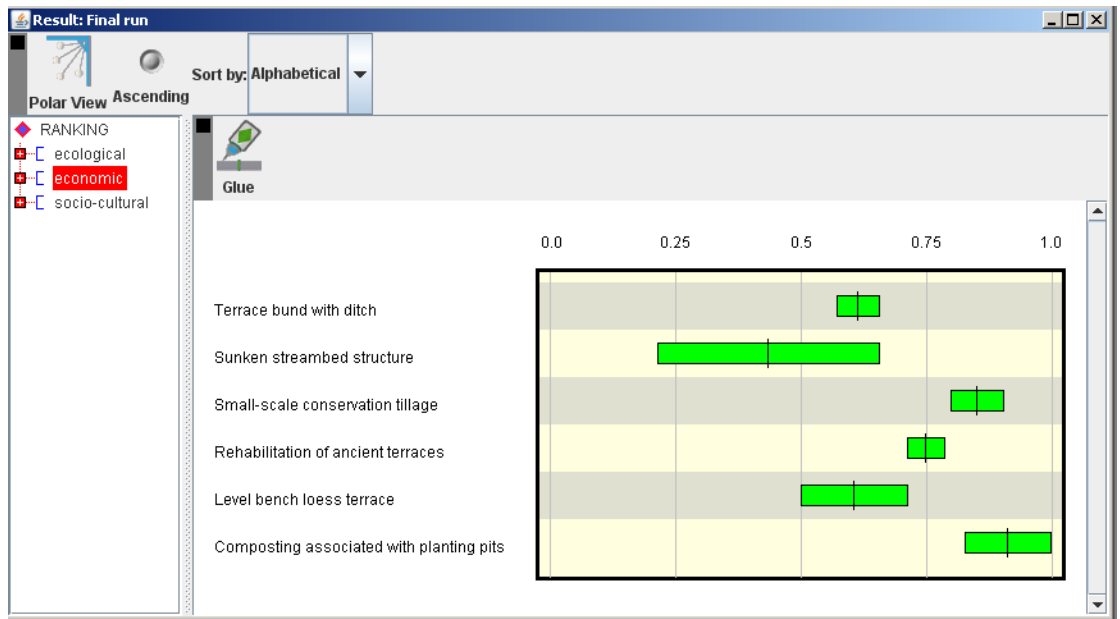
**Analyse the categories separately** Look at the graphs for categories (economic, ecological, socio-cultural) separately. To be sustainable, an option must rank well in all three categories!

Producing an overall analysis averages out the different aspects.

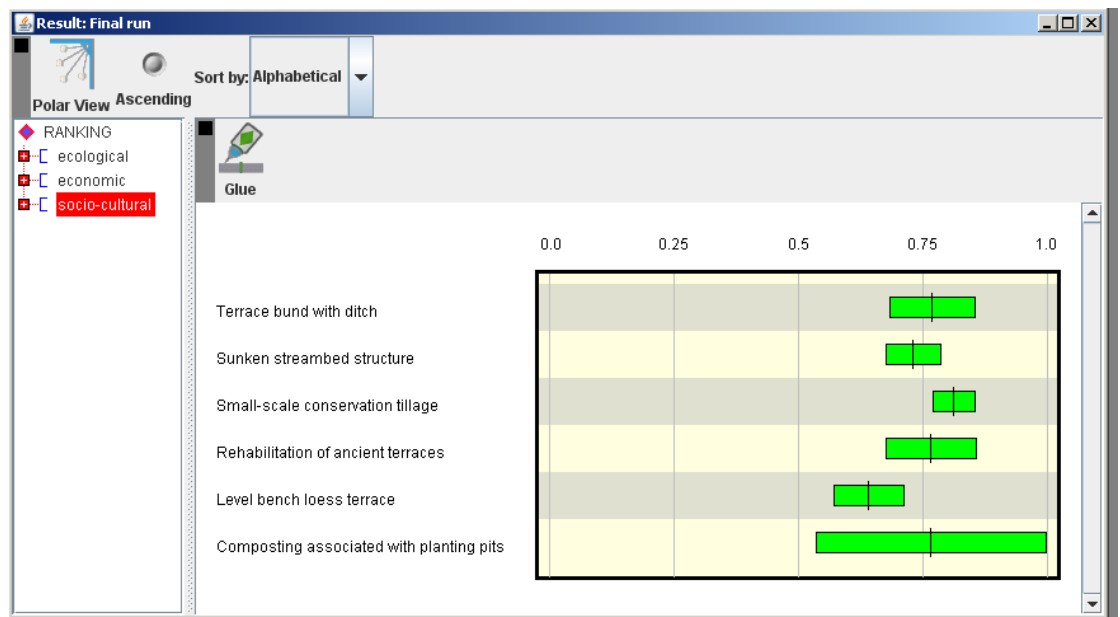
**Ecological:**



**Economic:**



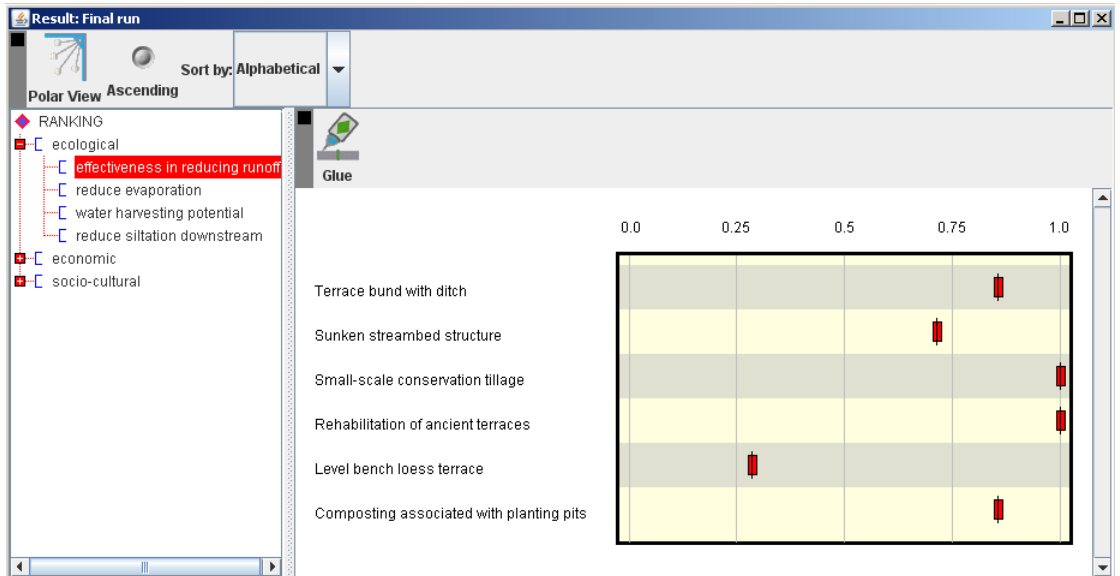
**Socio-cultural:**



**Interpretation**

How to interpret the results is explained using the example (see the 3 graphs) above.

From an ecological point of view, 'small-scale conservation tillage' is clearly scoring best, although in certain aspects 'rehabilitation of ancient terraces' is better. This is mainly due to its best effectiveness in reducing runoff and because this criteria was ranked highest. You can see this by selecting that specific single criterion to be displayed.



Economically, ‘*small-scale conservation tillage*’ and ‘*composting associated with planting pits*’ score best because they are both rather cheap and do not require high labour inputs. From a socio-cultural point of view, the picture is not that clear anymore, but all options rank fairly well, as for none of the options the average is below 0.5. Here, ‘*composting associated with planting pits*’ is the less clear, because its range is the largest. ‘*Small-scale conservation tillage*’ is again scoring best.

In this example, it is quite obvious that ‘*small-scale conservation tillage*’ would most probably be selected as the best option. In other cases it might be less clear, and the results need to be negotiated, i.e. discuss questions like “What is more important in our context, that an option scores better economically or ecologically?” etc.

The various stakeholder groups will probably have different opinions and it is a great chance to discuss such basic principles while sitting together.

**Reflecting the results**

Once you are running the analysis and looking at the results, you will start to get a feeling for whether you have included all the important factors. Does the analysis produce the sort of results that people who are really familiar with the situation would expect, or that appeal to them? If not, what is missing? Are there criteria that should have been included? Are there problems with the hierarchy or the rankings? Do you need to collect additional information to refine the scores? Have additional options emerged which need to be added and assessed?

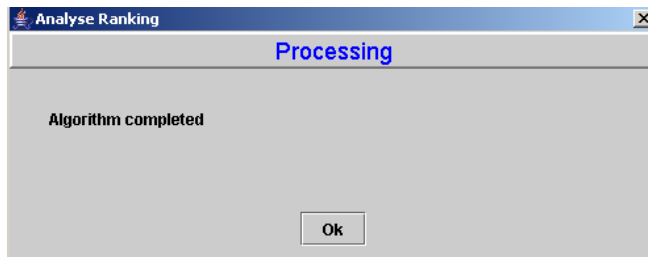
The process is iterative – the first runs provide useful information on how to refine your matrix to come up with a decision that people involved with have confidence. You might expect to have to revisit criteria, options, scores and rankings several times before feeling confident that you really have chosen the best option(s).

The major problem is that you will probably not have time during the stakeholder workshop to go back to previous steps and redo them! So try not to rush through the steps but do them carefully, or otherwise, extend the duration of the stakeholder workshop.

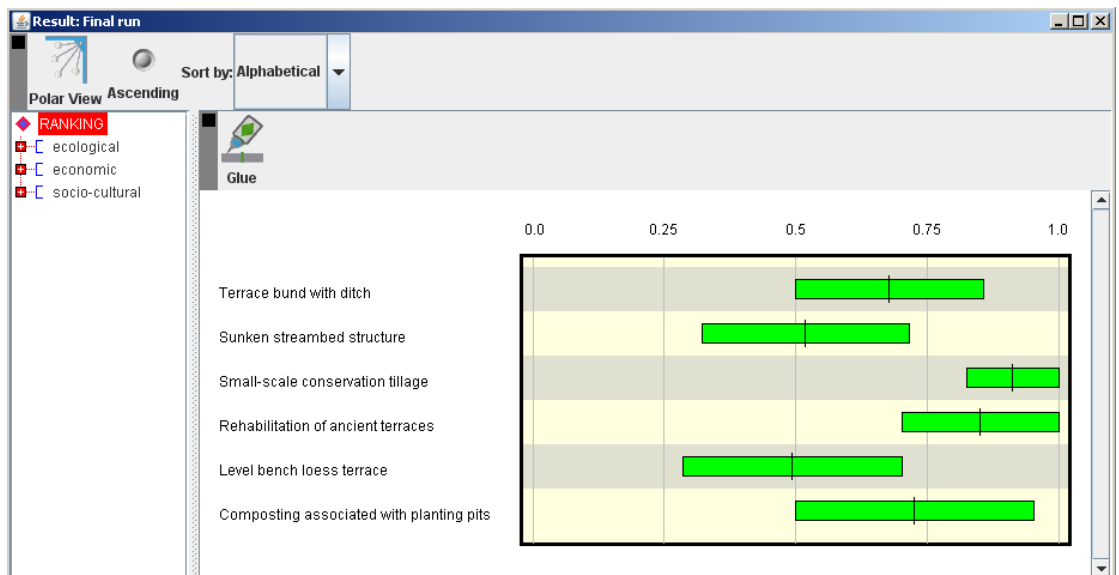
## Facilitator: analysis and interpretation

**Analysis by DESIRE Facilitator** Using DESIRE Facilitator software, you can analyse the options. This produces graphs of the options, which gives a visual representation of their relative merits. All values are normalized between 0 and 1.

**Run analysis** Choose *Run Analysis* from the *Run* menu to launch the processing of the data. The following window proves that the analysis was run successfully.



**Viewing and ordering the results** After running the analysis, the view of the result will automatically be displayed.



The results can be viewed from any point within the hierarchy by clicking on the relevant category in the left navigation.

It is most useful to compare the main categories ecological, economic and socio-cultural. An overall analysis averages out the different aspects, and might therefore not be very meaningful.

Example: if an option scores high from an economic point of view and low from an ecological perspective, in the overall analysis it would be placed somewhere in the middle. That means the option seems to be more or less viable, although it could be very damaging to the environment! It is important not to lose this information.

The display order of the options can be changed. You can order the options regarding mean, minimum, maximum, range or alphabet. To be able to compare the various categories, we recommend sorting the options alphabetically.

**Using the glue to compare categories**

You have the option to glue the current background for easier comparison of categories (or single criterion). Click *Glue* on the current view and then switch to another category. The previous category will be display below the actual green bar.

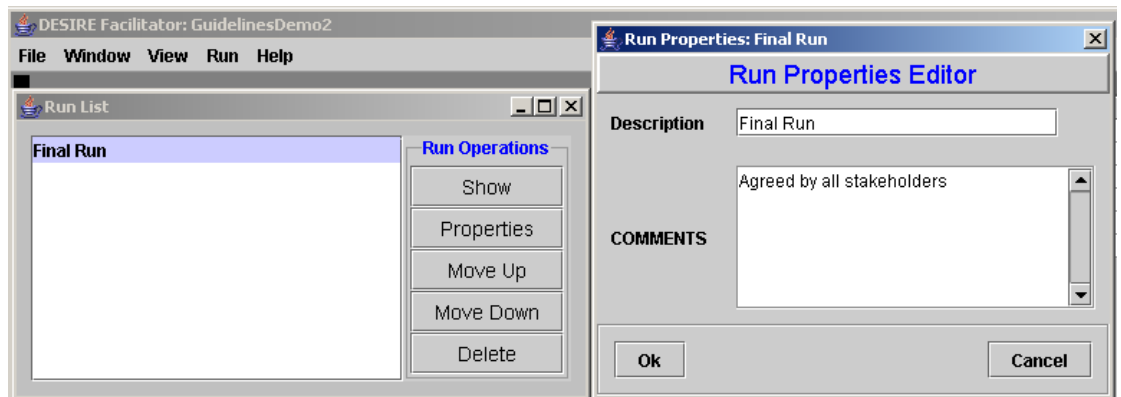


In the example above, the light green bars correspond with the economic category and the dark green bars below with the ecological category.

Unfortunately it is not possible to compare more than two categories at a time.

**View previously run results**

Previously run results can be viewed by selecting *Results* in the *View* menu. Then click *Show* in the dialog box. That's also where you can change the run name or add comments by selecting the *Properties* option.





## Step 7: Prioritisation of options – negotiation and decision making

**Goals** - To find a final agreement on which option should be selected for test-implementation in the study site.

Duration	Minutes
1. Introduction	5
2. Select option(s) for test implementation	55
<b>Total</b>	<b>60</b>

**Preparations and material required**

- Paper sheets, format A 1
- Cards
- Markers

**Methodology** Plenary session

- Procedure**
1. **Introduction:** The moderator explains that the group now has to select one (or at the most two) option that will be test-implemented in the study site. The application of the Decision Support System in the previous steps allows to take an informed decision rather than an accidental decision. *But still, Decision Support Systems are meant to support decision making and not to make decisions on their own!*

Refer to the results from Step 6 and the discussion led there, and point out which of the options score well in all three categories (economic, ecological, and socio-cultural). They are supposed to be the best options.

Maybe there is already a clear favourite because one of the options absolutely scores best. In this case the selection will be easy and just has to be confirmed by the group.

Maybe several options got comparable scores. In this case a selection has to be made considering and weighing pros and contras of the different options. The negotiation of these options is the aim of this plenary discussion.

Explain that before a technology will be implemented in the field, a more detailed assessment of necessary adaptations to make it fit to local conditions will be necessary and will be made by the study site researchers in collaboration with local and external stakeholders.
  2. **Plenary discussion:** Try to find a **consensus** among the participants concerning which option shall be test-implemented in the next step of the DESIRE project.

To reach this consensus the finally best options need to be negotiated among the stakeholder groups. For example, if two options generally score well, but one scores better ecologically, and the other better economically, the stakeholders have to negotiate which aspect is more important to them. Sometimes the group has two fractions, the conservationists and the developers. The conservationists are most concerned about ecological criteria and the developers over economic criteria, which will show in their different ranking of the criteria. The discussion about this divergence can promote collaboration and the recognition of each other's contribution to the solution. It is very important to moderate this negotiation process well!

It will be important that the test-implementation is broadly accepted and supported, and that local stakeholders really have an interest in it. Therefore make sure that everybody can speak out his / her concerns and give local stakeholders enough space to reason.

The whole selection and decision process is iterative, i.e. the discussion during step 7 may conclude that it would be necessary to revise criteria, options, scores and rankings before everybody will agree with the decision. If time allows going back to the previous steps, such an iterative procedure is recommended.

If no consensus can be found, let participants vote (openly or secretly, according to your context). Each person 1 vote and the option which receives the highest number of votes is selected. However, a selection by voting bears a higher risk that the result will not be accepted by some people, and therefore should be avoided if possible.

**Expected results**

- 1 to 2 options are selected for test implementation.

**Step 8: Embedding into the overall strategy and seeking a commitment**

**Goals** - To refine the overall strategy and to ensure that the option selected for test-implementation fits in and framework conditions are considered.

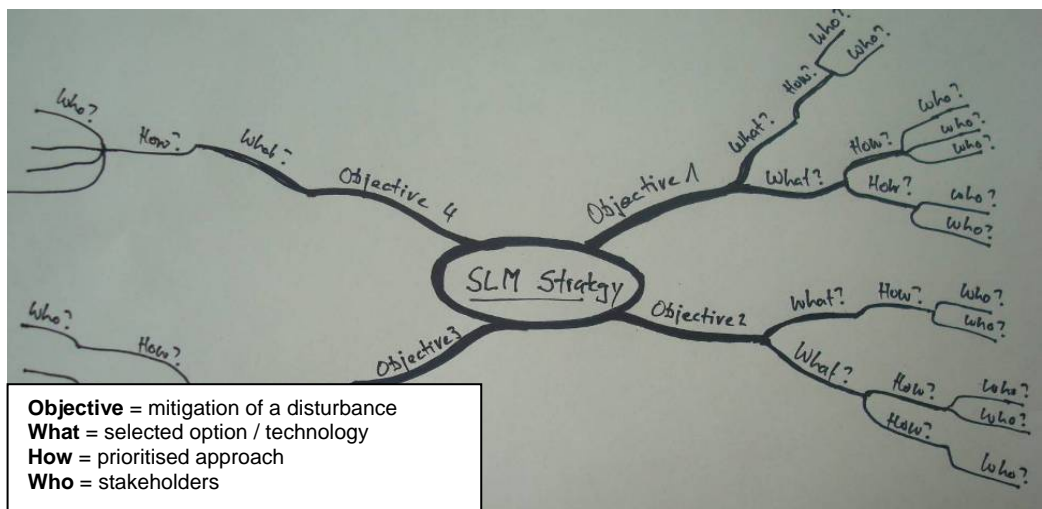
Duration	Minutes
1. Introduction	5
2. Plenary discussion	45
3. Support to the implementation process	30
4. Conclusions	10
<b>Total</b>	<b>90</b>

**Preparations and material required**

- Overall strategy and list of stakeholders (results from Stakeholder WS1, Ex. 8/4)
- Paper sheets, format A1, cards
- Markers

**Methodology** **Plenary discussion**  
**Group work**

**Procedure** 1. **Introduction:** Put the overall strategy for sustainable land management which has been drafted during the 1<sup>st</sup> stakeholder workshop to the wall. Recall the strategy and explain along general lines.



2. **Plenary discussion:** complete and complement the draft strategy with the work done in the 2<sup>nd</sup> stakeholder workshop:
- Recall the **objective** the group has been working on in this 2<sup>nd</sup> stakeholder workshop and reformulate it in the strategy if necessary.
  - Fill in the **selected option** (= what), and
  - Initiate a brief discussion on the **appropriate approach** (= how). If the option comes from the WOCAT database have a look at the approach suggested there.
  - Recall **legal, institutional, political, and socio-cultural framework conditions** (e.g. EU agricultural policy; subsidies, inheritance or land use rights, etc.) which have been identified in the first workshop as having a strong influence on land management practices, and which may even be obstacles to the implementation of certain technologies. Discuss how these obstacles can be overcome by specific accompanying measures, or adaptations to selected option(s) and respective approaches, etc.

- Identify **stakeholders** to be involved in the (test-) implementation (= who) process. Make sure no important stakeholder category was forgotten by also revisiting stakeholder categories identified in Stakeholder WS1, Ex. 4, and especially those identified as key stakeholders for implementation, and those ‘most critical stakeholders’ (who have the power to obstruct SLM)!

**3. Group work:** In order to get a certain commitment of participants to support the test-implementation process, people reflect on what type of support they could contribute.

Form groups of 2-3 people (belonging to the same stakeholder group). Each group takes 10 minutes to reflect on how it is willing to support the test-implementation of the agreed upon option(s). Write on cards.

Each group presents what its contribution will be.

Example:

Stakeholder group	Willing to support test-implementation by...
Large-scale farmer	<ul style="list-style-type: none"> <li>• To put a test-plot at disposal</li> <li>• To provide necessary machinery</li> <li>• To provide labour force and inputs to implement the technology</li> <li>• To attend meetings and assist in evaluations</li> <li>• To help development adaptations to local context</li> </ul>
Small-scale farmer	<ul style="list-style-type: none"> <li>• To put a test-plot at disposal</li> <li>• To provide labour force for technology implementation</li> <li>• To attend meetings and assist in evaluations</li> <li>• To collaborate in the identification process for necessary adaptations</li> </ul>
Advisory service	<ul style="list-style-type: none"> <li>• To provide technical assistance</li> <li>• To collaborate with land users and researchers</li> <li>• To incorporate test results into future advice and dissemination</li> </ul>
Ministry of Agriculture	<ul style="list-style-type: none"> <li>• To follow-up the implementation process</li> <li>• To support the implementation by providing free tools and inputs to the small-scale farmers</li> </ul>
Local administration	<ul style="list-style-type: none"> <li>• To co-organize and support evaluation meetings</li> </ul>
Researcher	<ul style="list-style-type: none"> <li>• To make external know-how available</li> <li>• To organize evaluation meetings together with the advisory service and the local administration</li> </ul>

**4. Plenary discussion:** draw important conclusions from the discussion on the overall strategy, and the presentation of possible support from participants.

**Expected results**

- Participants are aware of the need for matching the selected option(s) for test-implementation with current framework conditions and the overall strategy for sustainable land management.
- Possible obstacles and respective solutions are identified.
- Participants specify how they are going to support the implementation process and commit themselves.

## Evaluation and closure of the workshop

**Goals** - Evaluate contents, methodology, and results of the workshop.

Duration	Minutes
1. Evaluation	30
2. Closure of the workshop	10
<b>Total</b>	<b>40</b>

**Preparations and material required**

- Paper sheets, format A 1, cards
- Markers (different colours)
- Write each question on a separate A1 sheet of paper

**Methodology** Plenary session

**Procedure**

1. Give each participant cards to write on. State some concrete questions to be answered covering results/contents, methodology / didactics, and organisation of the workshop. Write the questions on A1 sheets and stick them to the pin-board.

The following questions may be used:

- 1) Which are your hopes and concerns regarding the selected option?
  - 2) How did you like the methodology used in the workshop?
  - 3) Which suggestions do you have to improve the organisation of the workshop?
2. Give 10 minutes to write down the answers. Ask people to use for each question a separate card. In case not everybody is literate make sure that those in need of assistance do get it from other participants.
  3. Collect the cards, read them loudly and stick them to the respective question. Do not initiate a discussion on what has been written unless there is something really severe which needs clarification.
  4. **Closure of the workshop:** Give a brief outlook on the next steps of DESIRE activities in the study site.
  5. Officially close the workshop and thank all participants for their valuable collaboration.

**Expected results**

- A feedback from workshop participants: what they liked / disliked, what they found useful / useless, necessary improvements, etc.
- Participants are aware of next steps in the DESIRE project.

# Annex



## **Workshop Report - English summary**

### **Stakeholder workshop 2**

#### **Selection and decision on technologies / approaches to be implemented**

Results and conclusions from the stakeholder workshop

Name of the study site:

Date of workshop:

Author(s):

## I General information

### A) Workshop

Workshop venue:

Workshop moderator(s):

#### List of workshop participants:

Mr. / Ms.	First name, name	Stakeholder category and institution (e.g. land user, researcher, NGO, GO)	Local or external participant? (L / E)

#### Comments:

(e.g. stakeholder categories that were not represented in the workshop; stakeholder categories invited to the workshop but who did not participate; participants who partially attended, etc.)

.....

.....

.....

.....

### B) Background

Please provide background information on the context in which the workshop was conducted (area covered, no. of inhabitants, predominant types of land use, main types of land degradation, constraining factors for soil and water conservation, etc.)



## II Results and conclusions from single steps

Please send the .DSS file together with your workshop report to:  
gudrun.schwilch@cde.unibe.ch

*Please provide the following results from the single steps:*

**Step 1 → Objective(s) you worked on:**

Which objective?

**Step 2 → Selected options and necessary adaptations:**

Which options did you work with?

Necessary adaptations to fit the local context?

**Step 3 → Criteria for evaluation:**

Which criteria did you work with?

Economic / production	ecological	Socio-cultural
•	•	•

**Step 4 → Scoring of options made by different groups:**

- The scoring itself
- Major differences between stakeholder groups

**Step 5 → Ranking criteria**

How have criteria been ranked?

**Step 6 → Analysis and interpretation:**

Graphs of each of the three categories

**Step 7 → Prioritisation of options:**

Which option (technology) has been selected for test implementation?

Please provide a brief description of the context in which it will be implemented:

- **On which land use type will the Technology be applied?** Land use type(s): .....
- **If land use will change due to the implementation of the Technology, indicate land use type before and after:**  
Original land use (before implementation): .....  
Future (final) land use (after implementation )(if relevant): .....
- **Land users who will apply the Technology**  
*tick one option per line*  
Individual/household  groups / community  cooperative  employee (company, government)   
Small scale land users  medium scale land users  large scale land users   
Leaders / privileged  common / average land users  disadvantaged land users   
Mainly women  mainly men  mixed

**Step 8 → Embedding into overall strategy**

Which conclusions have been drawn from the discussion? Which are the commitments made by the stakeholders?

### **III Evaluation of the workshop**

Evaluation of contents and methodology of the workshop:

- By participants (local and external)
- By the moderator(s)

## **IV Other information**

**Difficulties encountered:**

**Changes made concerning the procedure suggested in the workshop guidelines:**

**How was the interest and participation of the different stakeholder groups in the workshop?**

**Recommendations:**

**Comments:**