

Dear Reader,

We thank you for your interest in our Stakeholder WEFE Efficiency Evaluation Tool (SWEET).

In the subsequent pages, you will find selected screenshots from the online application for the SWEET tool.

For any questions or requests please contact:

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The latest version of the Stakeholder WEFE Efficiency Evaluation Tool (SWEET), which is a policy analysis tool, was developed through funds from the Policy Innovations CGIAR Science Program. The first version of this tool which was called WEFE DST was developed with funding from the CGIAR Initiative called Nexus Gains. SWEET improves on the WEFE DST by incorporating data on the costs of inaction to combat agricultural resource degradation and economic analysis of alternative interventions, while enhancing user friendliness and flexibility.

SWEET

Stakeholder WEFE Efficiency Evaluation Tool



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Welcome to SWEET

Stakeholder WEFE Efficiency Evaluation Tool

Tab 1: Home

1.1 Read me (this tab)

Provides an overview of the WEFE Nexus, the role of SWEET, and the overall workflow:

- Introduces the concept of alternatives and the idea of combining technical performance with stakeholder preferences.
- Explains how the later tabs (Data Entry, Results, Export) fit together.

- Offers a short step-by-step guide for new users and for facilitation in workshops.

1.2 Pre-empting

Helps you start quickly by loading predefined datasets:

- Lets you select a prepared SWEET dataset from a list constructed by ICARDA. New case studies can be added on demand.
- Each pre-empted case study and its data come with a short description.

1.3 Further reading

Provides background and credits:

- Acknowledges partners, projects, and funding that contributed to SWEET.
- Shares links and references for users who want to read more about the WEFE Nexus and multi-criteria decision analysis.

Tab 2: Data Entry

2.1 MCA Structure

Defines the structure of the Multi-Criteria Analysis (MCA):

- Use the canvas to build a hierarchy of groups and criteria that reflects your decision logic.
- Create multiple levels (for example: WEFE efficiency → Water and Energy → specific criteria such as irrigation efficiency or fuel use).
- The hierarchy graph updates automatically so you can validate the structure.
- The concept of effective weights shows how local weights, together with the hierarchy, determine the real influence of each criterion on final scores.

2.2 Prioritization

Captures stakeholder preferences through weights:

- Create and manage stakeholder profiles that represent different actors or viewpoints.
- Assign weights to groups and criteria to express what each stakeholder considers important. This can be done with point allocation or Saaty pairwise comparisons.

2.3 Technical alternatives

Collects technical and financial data for each alternative.

Technical performance

- Enter technical performance scores for each alternative and criterion.
- Choose your own scale (for example 1 to 5, 1 to 10, or 1 to 100) as long as you are consistent.
- Lower values represent poorer performance (for example high carbon emissions, low efficiency) and higher values represent better performance.
- Technical values can be adapted to local conditions and to reflect combined technical and policy solutions.

Financial data

- Enter direct costs and benefits (immediate financial effects such as investment cost, running cost, and revenue).
- Enter external or indirect costs and benefits that represent wider impacts, including ecosystem services, pollution, or avoided damage.
- Use any monetary unit (for example USD per hectare, EUR per year) as long as you apply it consistently.

All edits in this tab are highlighted so that changes in technical or financial data remain traceable.

Tab 3: Results

3.1 Stakeholder Weights

Shows how stakeholders distribute their weights:

- A bar chart displays weight distributions for the selected part of the hierarchy. Each bar corresponds to one stakeholder.
- Bars sum to 100 percent, with white segments indicating unassigned weight.
- You can see where stakeholders align or differ and identify criteria that are strongly emphasised or neglected.

3.2 Alternative comparison

Compares the performance of alternatives across criteria:

- A radar plot shows one line per alternative across the selected criteria.
- You can select or deselect alternatives to focus on the comparisons that matter.
- A larger area covered by a line indicates stronger overall performance on the selected criteria.
- The plot helps you spot strengths, weaknesses, and trade-offs in the technical and weighted performance of alternatives.

3.3 Trade-off Analysis

Analyses trade-offs between two selected metrics:

- A scatter plot shows points for each stakeholder–alternative combination, based on the chosen metrics and the stakeholder’s weighting profile.
- You can define the baseline at the origin as a reference, for example the current situation or a specific alternative, and compare all other alternatives to it.
- Points close to the baseline indicate low combined performance relative to that reference; points further away in positive directions show stronger performance.
- The four quadrants (Win–Win, Win–Lose, Lose–Win, Lose–Lose) help identify mutual gains, trade-offs, and weak options.

- The plot supports stakeholder engagement by making differences in priorities and perceptions visible and by steering the discussion toward shared solutions.

Tab 4: Export (coming soon)

4.1 Export to Excel

Creates downloadable summaries of your analysis:

- Select what you want to export, such as all data, only results, or user-related inputs.
- Optionally filter by date range if this is relevant.
- Generate an Excel file that contains stakeholder weights, technical and financial data, scores, and other key information for documentation and further analysis.

4.2 Export to Word (planned)

Reserved for future extensions:

- Intended for formatted narrative reports that summarise SWEET results for communication and reporting.
- Can be used in the future to produce Word-based summaries for non-technical audiences.

Ready to Get Started?

Navigate to '2. Data Entry' to begin creating stakeholders and evaluating innovations, or explore the documentation above to learn more about the WEFE Nexus approach.

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SWEET - Stakeholder WEFE Engagement Evaluation Tool

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Pre-empting Data Load

Select a predefined dataset to load. This will overwrite current settings.

Select Dataset:

Uzbekistan 1



Description:

In Uzbekistan's irrigated lowlands, decades of cotton-dominated agriculture have placed growing pressure on water availability, soil quality, and energy systems, prompting national efforts to explore more diversified and sustainable production alternatives. In this pre-empted dataset, we simulate how the four governmental WEFE departments—Water, Energy, Food, and Ecosystems—evaluate a set of promising innovations that could support this transition. Each selected practice, including improved sprinkler irrigation with mungbean, conservation agriculture, laser-assisted land levelling, and alternate furrow irrigation, is assessed against a comprehensive set of criteria spanning water productivity, energy demand, food production, ecological impacts, and socio-economic performance.

To enable structured comparison, the innovations are ranked on a standardized 0–9 scale using evidence from field studies across Uzbekistan. These rankings feed into a Multi-Criteria Analysis (MCA) in which each WEFE department applies its own priority weights—previously derived through the Best-Worst Method—to reflect its mandate and strategic preferences. This simulation highlights how different innovations perform under different sectoral viewpoints, revealing trade-offs and potential synergies between water savings, energy use, agricultural output, and ecosystem restoration.

Ultimately, this setup encourages reflection: Are the WEFE departments represented here sufficient, or are additional stakeholders needed to ensure a legitimate policy analysis? Do the indicator values and rankings truly reflect local realities, or should they be refined as new evidence becomes available? Which innovations appear strongest, for whom, and why? And what adjustments might be required to make the assessment more robust and aligned with broader regional development goals?

Successfully loaded Uzbekistan_1.xlsx

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MCA Structure Builder

In Multi-Criteria Analysis (MCA), criteria are organised into a hierarchical tree that breaks broad objectives into specific factors. This structure shapes how information aggregates through the model and how each criterion influences the final evaluation.

Use the canvas to create and organise groups and criteria, including multiple hierarchy levels. The hierarchy graph below the canvas updates automatically, helping you confirm that the structure matches your intended decision logic.

Effective Weights

Because criteria sit at different levels, their final influence depends on both their local weights and their position in the hierarchy. The tool calculates effective weights to show each criterion's true contribution to the overall score.

WEFE Example

For a WEFE efficiency assessment, the overall objective may be divided into high-level groups such as Water and Energy. The Water group may include criteria like Water Availability and Irrigation Efficiency, while the Energy group may include Carbon Emissions and Machine Use. Effective weights reveal how each criterion's local weight and its placement within this hierarchy determine its actual influence on the final WEFE score—especially when some stakeholders assign very low priority to certain groups, such as Water.

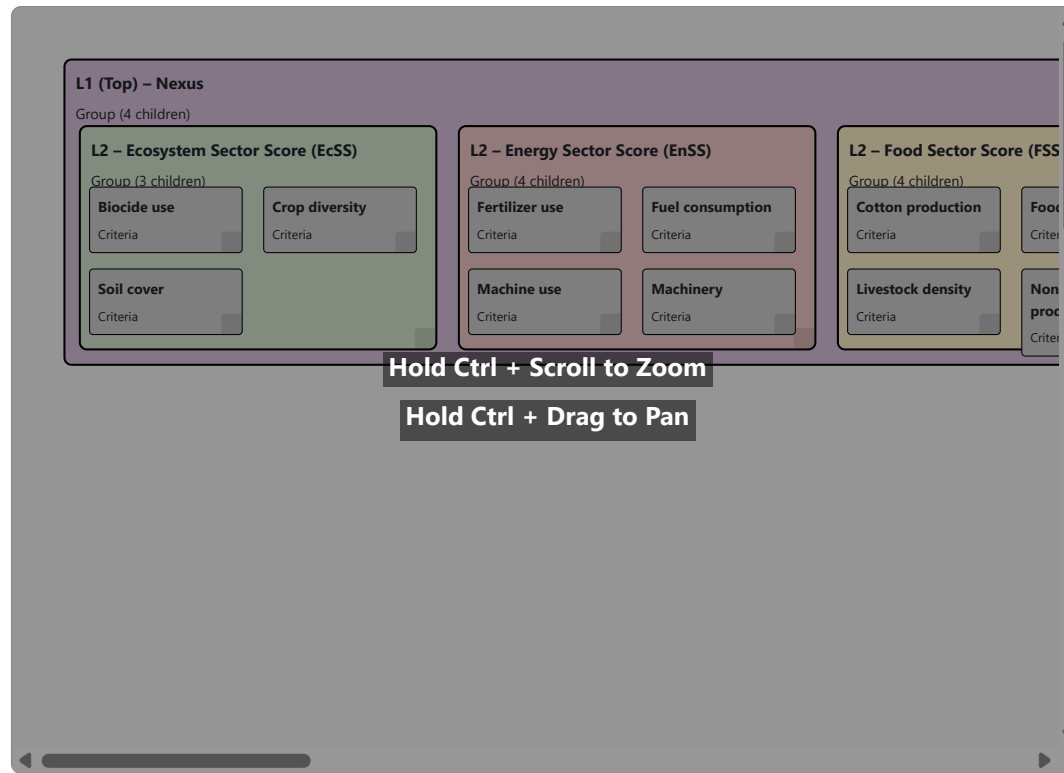
Tools

+ Add Group

+ Add Criteria

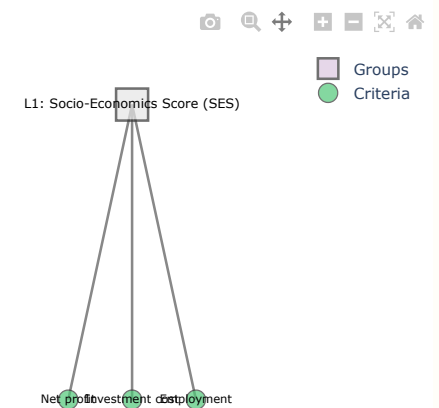
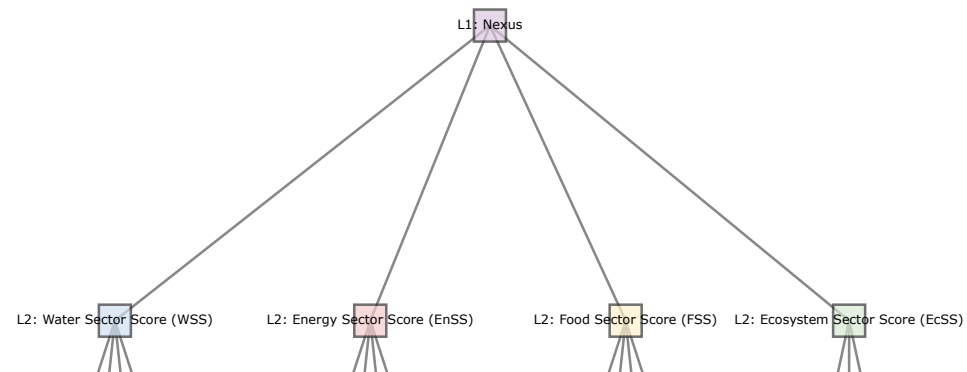
Hierarchy Canvas

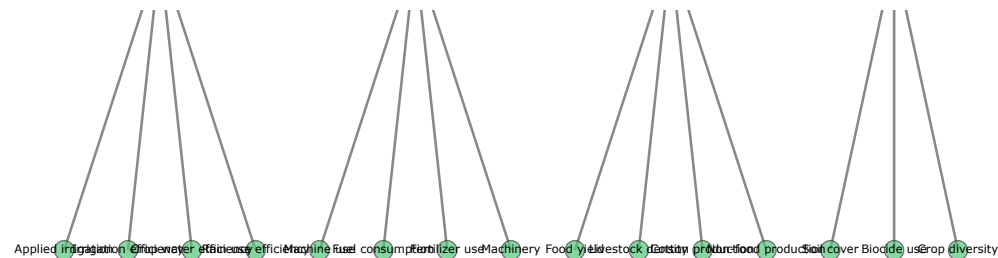
6 groups, 18 criteria



Structure Configuration

MCA Structure Hierarchy



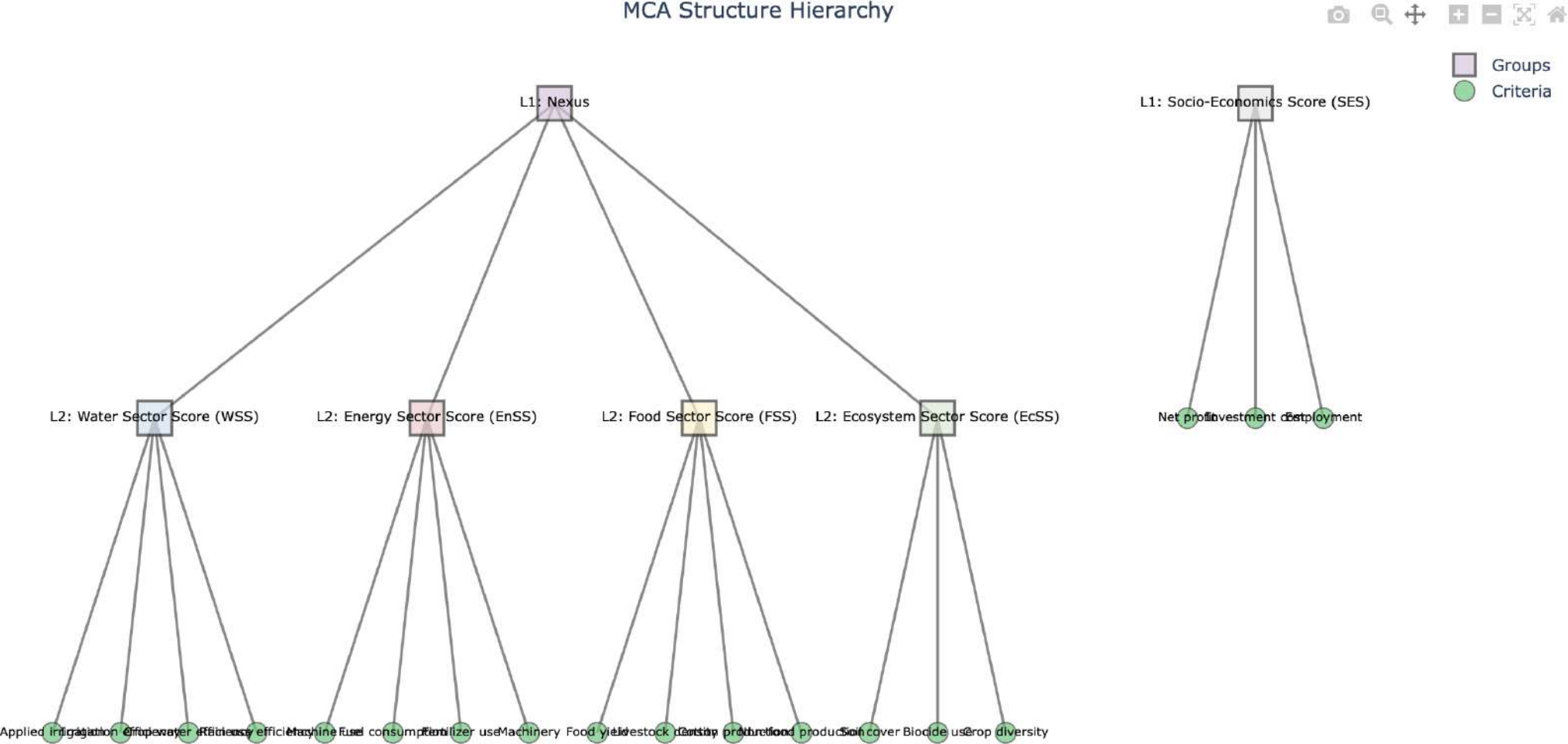


How to Use:

- Click 'Add Group' to create a new grouping box
- Click on a group name to select it (it will highlight in blue), then click 'Add Criteria' to add criteria inside that group
- Right-click on any item to see options like Edit or Delete
- Drag and drop boxes to reorganize the hierarchy
- Criteria will appear inside the selected group box
- Click the ✏ button to edit a node name
- Click the ↑ button to move a node to its parent
- Click the 🗑 button to delete a node
- Use 'Save Structure' to save your configuration
- Use 'Load Structure' to load a previously saved configuration

Structure Configuration

MCA Structure Hierarchy



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Trade-off Scatter Plot

This scatter plot visualizes the trade-offs between two selected metrics and helps you understand how each alternative performs when both its technical values and the stakeholder's prioritization are taken into account. Each point represents a specific stakeholder-alternative combination and shows how an alternative scores when evaluated through that stakeholder's weighting profile.

The chart uses a baseline at the origin where both selected metrics equal zero, but this baseline is a reference point chosen by the user. You can set this reference to represent the current situation or to compare several alternatives against a specific alternative. Points close to the baseline indicate low combined performance relative to that reference, while points farther from it in positive directions on one or both axes reflect stronger performance on the selected metrics.

The scatter plot is divided into four quadrants: Win-Win (green), Win-Lose and Lose-Win (orange), and Lose-Lose (red).

These quadrants make it easy to identify where alternatives generate mutual benefits, where trade-offs appear, and where performance is universally weak.

This visualization supports stakeholder engagement by highlighting differences in priorities, showing areas of alignment or disagreement, and guiding discussion toward solutions that increase shared benefits. It helps stakeholders see where compromises may be needed and where certain alternatives could receive broad support.

Chart Controls

Select Baseline Innovation:

Cotton production (BaU)



Select Stakeholders:



Economic (EoSh)



Water (WoSh)



Select Innovations to Compare:



Conservation agriculture



Laser assistend land levelling



Alternate furrow irrigation



X-Axis Metric:

(Options include MCA group-level and overall scores)

Net Direct (Benefit minus Cost)



Y-Axis Metric:

(Options include MCA group-level and overall scores)

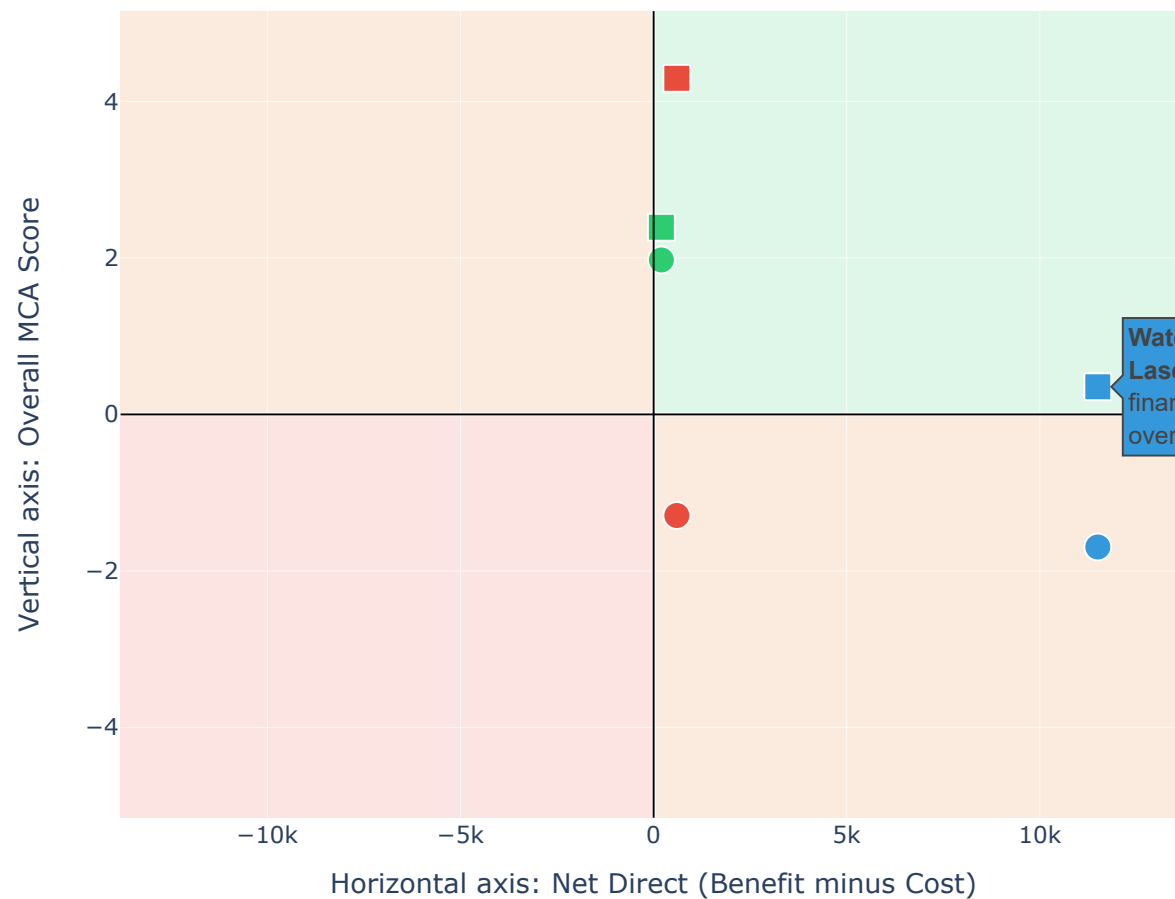
Overall MCA Score



Trade-off Analysis

Point Information

Trade-off Analysis



Win-Win

Stakeholder (Icon)

- Economic (EoSh)
- Water (WoSh)

Alternative (Selected Point)

- Conservation agriculture
- Laser assisted land levelling
- Alternative furrow irrigation

Alternative:
Laser assistend

Water (WoSh)
Laser assistend land levelling
financial_direct: 11500.00
overall_mca: 0.35

**Net Direct
(Benefit minus
Cost):**
11500.000

**Overall MCA
Score:**
0.353

*Compared to
baseline 'Cotton
production (BaU)',
innovation 'Laser
assistend land
levelling' is Win-
Win for*

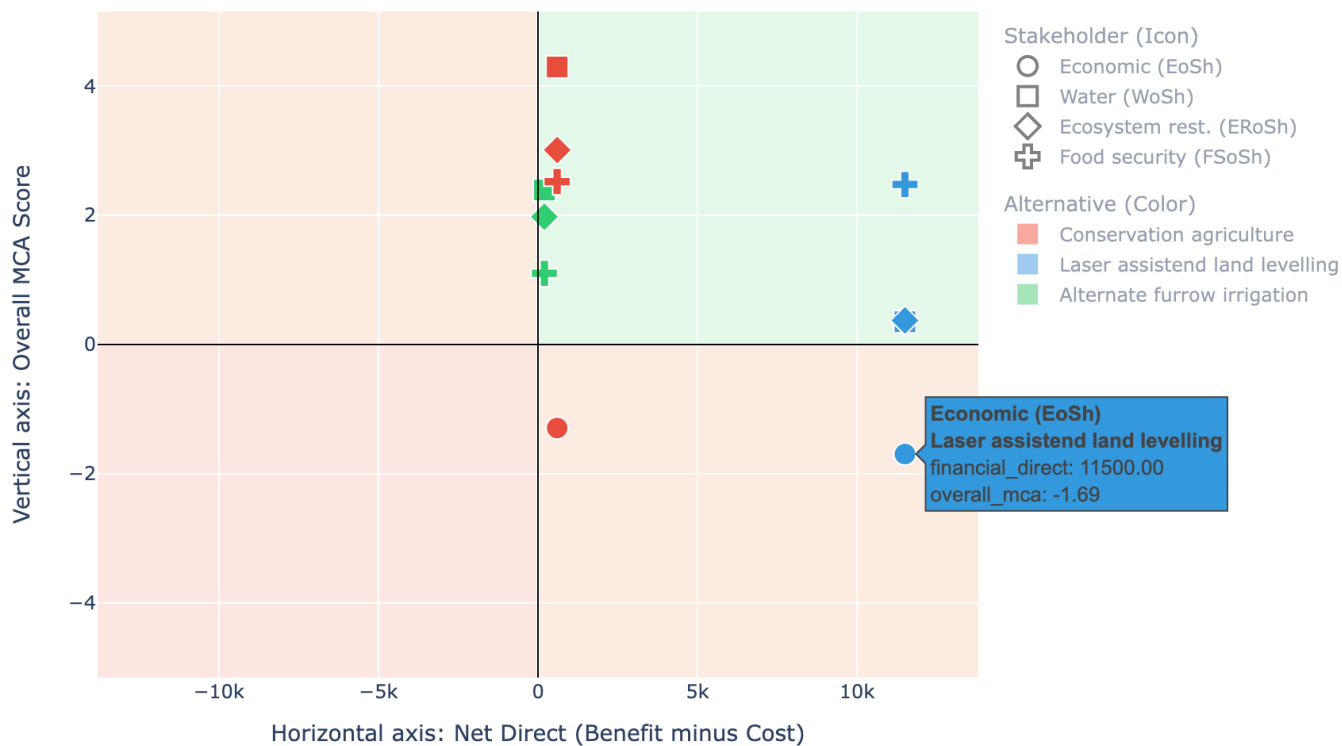
*stakeholder 'Water
(WoSh)'*

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Trade-off Analysis

Trade-off Analysis



Point Information

✓X Win-Lose

Selected Point

Alternative:

Laser assistend land levelling

Stakeholder:

Economic (EoSh)

Net Direct (Benefit minus Cost):

11500.000

Overall MCA Score:

-1.695

Compared to baseline 'Cotton production (BaU)', innovation 'Laser assistend land levelling' is Win-Lose for stakeholder 'Economic (EoSh)'

