WOCAT
World Overview of Conservation Approaches and Technologies

United Nations Convention to Combat Desertification | United for land

SOIL AND VEGETATION

Gender and Sustainable Land Management (SLM)

Gender equality is a key entry-point for SLM adoption, spread and upscaling. The joint WOCAT-UNCCD project on gender-responsive SLM technologies and approaches was launched in 2020 to fill the gap in the availability of gender-disaggregated data. The project deepens the analysis of SLM practice adoption patterns, assesses and analyses their differentiated impacts on women and men and informs gender-responsive policy design aimed at achieving land degradation neutrality.

Methods and data

A gender questionnaire (QG) was developed and reviewed by 20 gender and SLM experts and piloted in 15 countries to test the methodology, the applicability of the tool and the relevance and use of the data collected. Five technology group profiles for gender-responsive SLM technologies and approaches were elaborated based on the WOCAT global SLM database and piloting data. The data under this profile cover 6 Technologies and QGs. Hence, the data is not comprehensive and there are gaps in terms of practices and regions. Two exemplary technologies are attached to each profile.

Nurturing the soil: keeping it fertile and maintaining green cover on the surface

Enhanced soil fertility management and improved ground cover go hand-in-hand. The key strategy is to combine various methods of promoting fertility while conserving soil, water and vegetation. This leads to multiple benefits: soil organic matter content is increased, soil structure improved, soil nutrient content raised, water infiltration is eased – and there are positive influences on above and below-ground biodiversity.

Healthy soils deliver simultaneous socio-economic and environmental benefits. Thus, yields are increased, but also stabilized. Diversified production practices – which are part of the strategy – lead to better and more reliable livelihoods. At the same time, soil erosion is reduced, and chemical and physical soil deterioration can be reversed. Off-site and downstream damage is controlled. Heathy and fertile land supports more resilient, drought-tolerant systems for the direct benefit of people, and protects biodiversity for the overall good of the environment.

Technologies that are included under this group are numerous. They include manure and compost making and application; "green manuring"; crop rotations that include leguminous nitrogen-fixing plants; micro-placement of inorganic fertilizer; addition of biochar as a soil amendment; mulching with organic residues; and cross-slope barriers of vegetative strips or stone/earth bunds. It may also entail entire systems, such as organic agriculture, or alternatively "conservation agriculture", which combines minimal soil disturbance, mulching and crop rotation.

There are technologies here that can be employed under the full range of agro-ecological zones and farming systems.

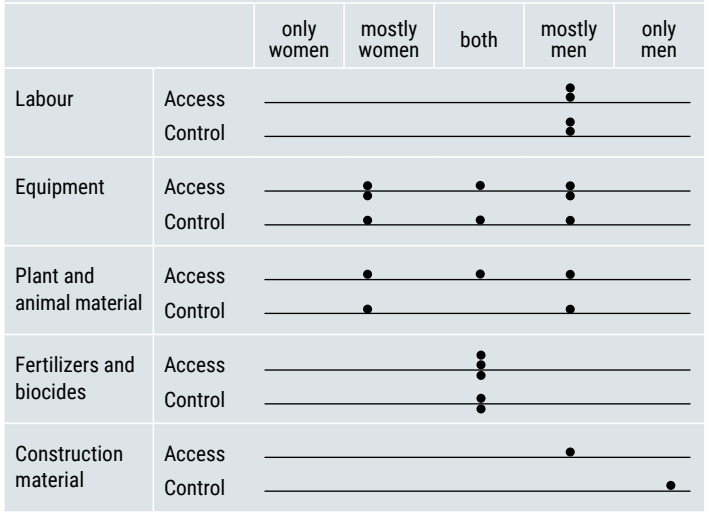
Policy recommendations

- Raise awareness of the gender-specific aspects and gender-related challenges of land management – in-field decision-making as well as field operations of tillage, manuring and harvesting – all of which influence household income generation from farming.
- Build awareness amongst men and women about addressing structural barriers, customary laws, beliefs and cultural norms that limit women's mobility and their access to labour, land, financing and training – in relation to productive land use.
- Provide gender-specific incentives through facilitating access to finance, and support investment – thus strengthen women's decision-making power over farmland.
- Increase information and extension services equally for women and men: tailor messages that address both genders.
- Promote learning and knowledge sharing experiences through exchange or site visit events for men and women equally – and ensure "host farmers" are women and men in proportion.
- Where women are isolated, encourage working in cooperatives or informal groups to trigger their ability to profit from soil and vegetative resources.

Technology-related aspects

Access and control to main inputs

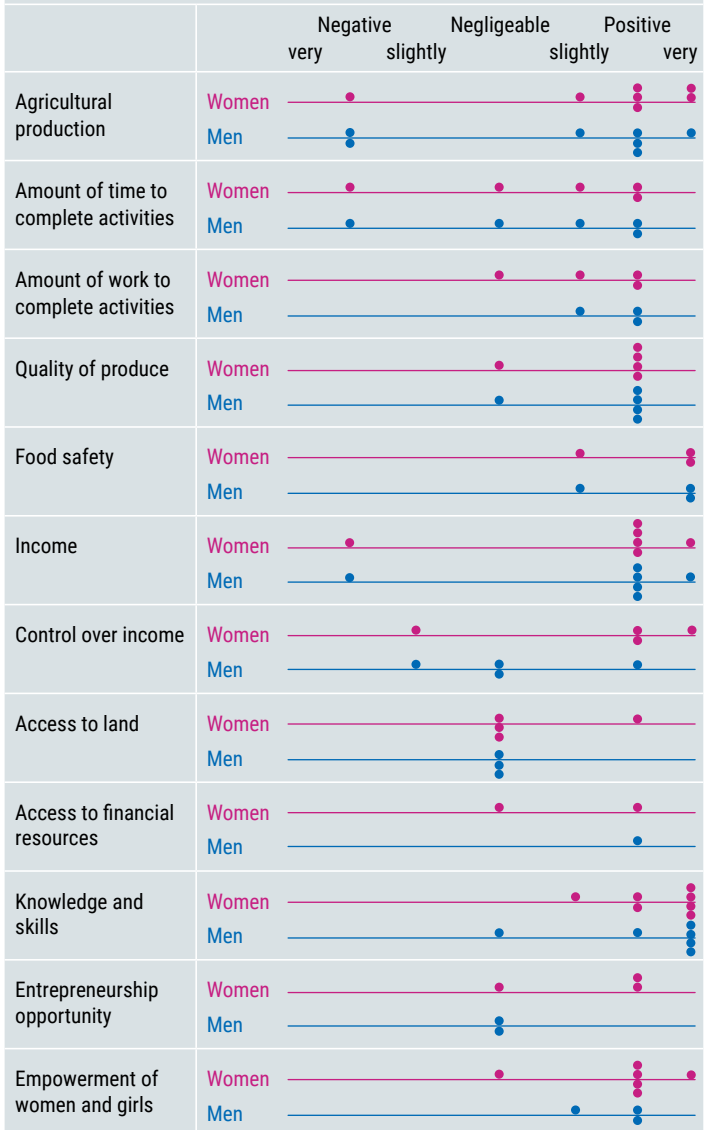
Each dot represents a case study



Access: Right to use resources **Control:** Power to decide on the use of resources

Gender-related impact of Technology implementation

Each dot represents a case study



Involvement and participation

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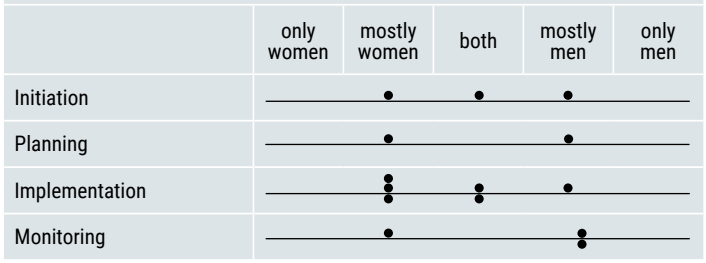
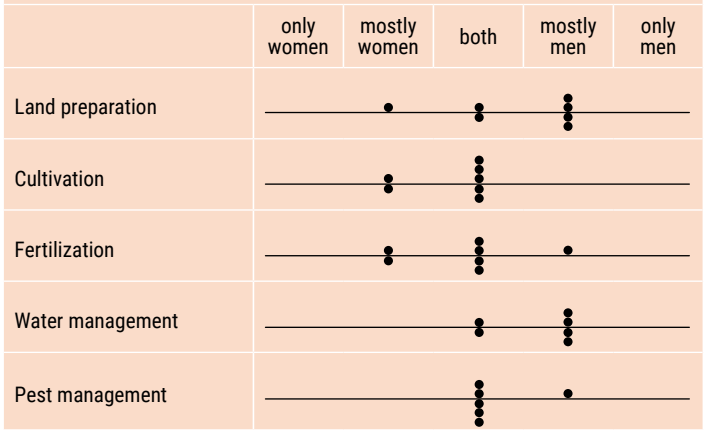


Community-related aspects

Gender roles in land management

Each dot represents a case study



Ownership and tenure rights

	Women number of case studies	Men number of case studies
Access to land	**5 inherited** 3 bought	**5 inherited** 3 bought
Quality of land	**4 marginal land** **4 fertile land**	**4 marginal land** 3 fertile land
Tenure rights	2 open access 2 communal **3 individual** (not titled) 2 leased	2 open access 2 communal **3 individual** (not titled) 2 leased
Perceived land right security	1 low **4 medium** 2 strong	1 low **4 medium** 2 strong
Ownership of livestock	**Mainly small ruminants**	**Large and small ruminants**

Land use rights

Type	Gender-specific number of case studies	Not gender-specific number of case studies
Statutory		**5**
Customary	**3**	3
Inheritance	1	**5**

Literature

Dick Frederiksen, S.; Elias, M., Zaremba, H.; Aynekulu, E. (2021). Developing gender-equitable ecological restoration initiatives: A synthesis of guidance to improve restoration practice. Rome (Italy): The Alliance of Bioversity International and CIAT. 58 p.

Mwambi, M., Bijman, J., & Galiè, A. (2021). The effect of membership in producer organizations on women's empowerment: Evidence from Kenya. Women's Studies International Forum.

Intercropping can assist farmers in increasing yields and reduce crop damage by insects, whilst maintaining and improving soil fertility; Photo: Sophea Tim

Crop rotation to promote safe vegetables [Cambodia]

Description

Crop rotation is a component of integrated pest management (IPM), which can contribute to improvement in crop production and reduces use of chemical fertilizers and pesticides.

Crop rotation is the process of regularly alternating crops on a seasonal basis on the same plot of land. One of the benefits is that nutrients, especially nitrogen, are transferred to the soil as organic matter is incorporated when "green manure" crops are alternated with cereals. If these alternating crops are legumes, they also add nitrogen from the atmosphere. Rotation helps to reduce the infestation of diseases and insects that often occur when monocropping is carried out over a prolonged period. Crop rotation can improve the soil's structure and fertility: furthermore nutrients are absorbed from different layers of the soil as the various plants' root systems are able to penetrate the soil to different depths. Even though Cambodia has laws regarding the application of agricultural pesticides and fertilizers, there are some farmers who still use them incorrectly. In this case of rotation, long beans, luffa, winter melons, pumpkins and cucumbers are rotated on the plot.

The farmer stated that before practicing crop rotation, she mostly grew one or two crops which could be sold at a high price throughout the year. Therefore, in order to maintain her yields and prevent the crops from being damaged by insects, she had to use a lot of chemical fertilizers and pesticides. However, these only remained effective for a relatively short period and also increased her overheads. Now, rotation improves the soil quality, mitigates pests and diseases, reduces costs, improves income and also protects the health of producers and users.

Women-friendliness of SLM Technology

The application of this technology is mostly done by women as it does not require heavy work, but men also provide support with the tasks. In general women's input is greater than men's under this technology.

Location:
Kyang Tboung village, Kampong Chhnang province, Cambodia

Land use:
Cropland – Annual cropping

Types of degradation adressed:
Chemical and physical soil degradation
biological degradation

Main purpose(s) of the technology:
- reduce, prevent, restore land degradation
- create beneficial economic impact

References

Compiler of Gender Questionnaire:
Sophea Tim and Sotheara Sun, Royal University of Agriculture

Date: February 2022

Key informant(s):
Phally Hoem and Chanthou Aek, Inspector committee of AC

Visit in WOCAT database:
qcat.wocat.net/en/summary/4486
qcat.wocat.net/en/summary/3216

Meeting with Svaymeanchey Satrey Samaki Agricultural Cooperative to collect gender-disaggregated data; Photo: Sophea Tim

Long bean in rotation after cucumber; Photo: Sok Pheak

Main establishment and maintenance activities

Activity	Labour by family	Reason	Labour
Land preparation	Both	Heavy workload	Hired: both Exchange*: none
Transplanting the seedlings	Both	Cultural Customs and taboos	Hired: both Exchange*: none
Watering	Both	Cultural Customs and taboos	Hired: mostly women Exchange*: none
Weeding and fertilization	Only women	Cultural Customs and taboos	Hired: none Exchange*: none
Trellising	Mostly men	Heavy workload	Hired: only men Exchange*: none
Pruning	Both	Cultural Customs and taboos	Hired: none Exchange*: none

* Labour exchange within community

Cultural customs and taboos

Nothing special from ordinary Khmer/Cambodia.

Land tenure

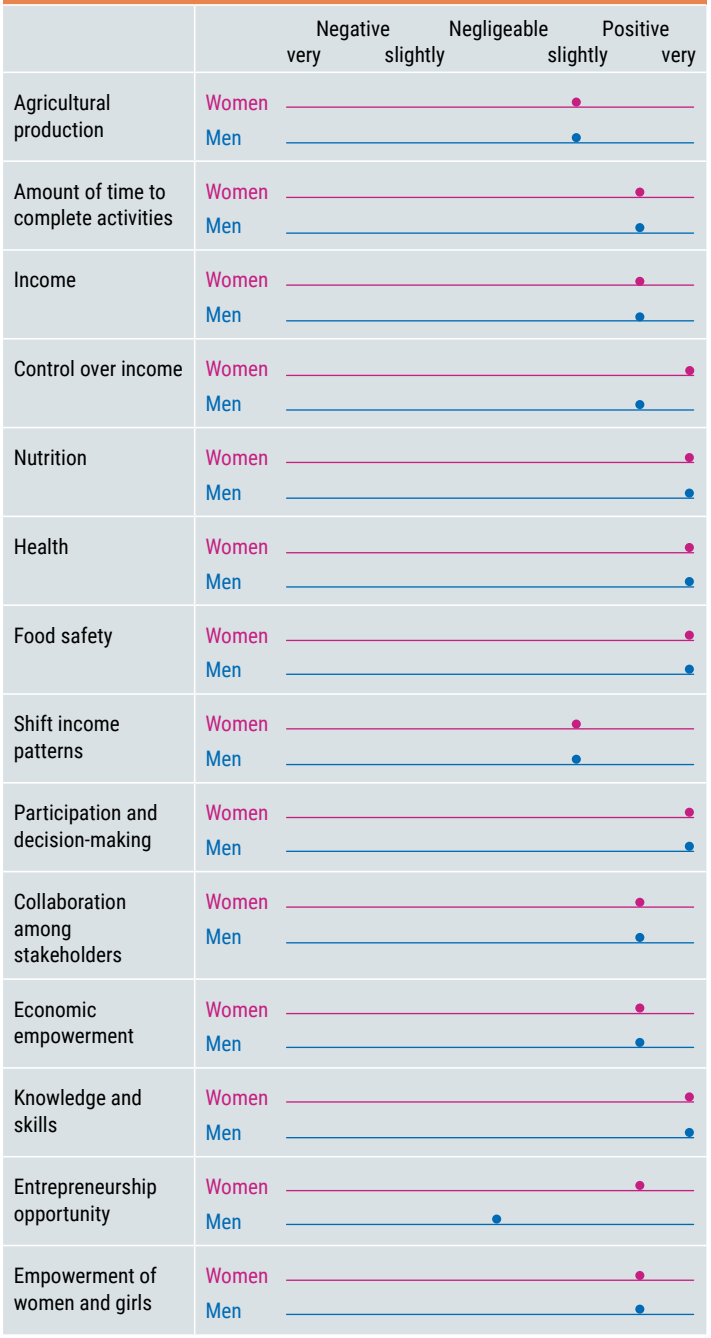
- Men and women inherit equally.
- Statutory and customary land use rights are not gender-specific
- Customary rights do not prevail over statutory rights.

Recommendations to improve gender-responsiveness of the Technology?

This technology is applied by more women than men. Men should be encouraged to participate in learning sessions to see the benefits of practicing this technology for income generation. This is most ikely to result in wider spread of the technology.

Gender-related impact of Technology implementation

Each dot represents a case study



Compact farming for vegetable production: cooperative members jointly produce high value crops; Photo: Djolly Dinamling

Compact farming for vegetable production [Philippines]

Description

Land users are organized under cooperatives to jointly produce organic, high value crops. Through this practice, marketability and available markets for the produced commodities are increased.

"Compact farming" was set up to enhance group interaction and leadership among members of an association. The aim of the land users in growing organic vegetables is to revive and sustain soil fertility and improve waste management. Marigolds are also planted between plots within the farm to prevent and control insect and pest infestation. Land users in the barangay were empowered through farming and conservation of the forest area.

This arrangement started in 2011 with 18 farmers investing 1000 pesos (US$ 22) each to buy initial inputs of land, seeds and fertilizer. The area was cleared for agricultural activities. Production involves high value crops such as tomatoes, lettuces, pechay, cabbages, carrots, beans, broccoli, cucumbers, and radishes. These are sold not only in Jaro but also in neighbouring municipalities and big markets in Leyte. The barangay was dubbed as the "Vegetable Basket" and the "Watermelon Queen" because of their production. Activities in the farm such as ploughing, harrowing, establishment of plots, fertilizer application, transplanting, watering, spraying and harvesting are carried out on a reciprocating basis among members of the association.

Most of the farmers cultivate a single parcel, with sizes ranging from 1000-2000 square meters. Land ownership and land use rights are communal. Farm production is managed by the cooperative, which is composed of small-scale land users. Members of the association are engaged in off-farm activities such as hunting and hired labor for additional income.

Women-friendliness of SLM Technology

The technology is easily applied by both women and men.

Location:
Jaro, Leyte, Barangay Villaconzoilo, Philippines

Land use:
Cropland – Annual cropping

Types of degradation adressed:
chemical soil deterioration
biological degradation

Main purpose(s) of the technology: –

References

Compiler of Gender Questionnaire:
Djolly Ma. Dinamling, Filipina Ventiga and Jemar Raquid from Bureau of Soils and Water Management

Date: February 2022

Key informant(s):
Alex Aborita, Leyte Compact Farming Agriculture Cooperative

Visit in WOCAT database:
qcat.wocat.net/en/summary/5067

Meeting with Leyte Compact Farming Agriculture Cooperative to discuss gender-related issues and collect gender-disaggregated data; Photo: Djolly Dinamling

Compact farming for vegetable production: cooperative members jointly produce high value crops; Photo: Djolly Dinamling

Main establishment and maintenance activities

Activity	Labour by family	Reasons	Labour
Clearing the area	Only men	Heavy workload	Hired: none Exchange*: none
Ploughing and harrowing	Only men	Heavy workload	Hired: none Exchange*: none
Fertilization	Both		Hired: none Exchange*: none
Transplanting and watering	Both		Hired: none Exchange*: none
Harvesting	Both		Hired: none Exchange*: none

* Labour exchange within community

Cultural customs and taboos

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Land tenure

The land tilled by the Leyte Compact Farming Agriculture Cooperative is a Certificate of Land Ownership Award (CLOA) awarded by the Department of Agrarian Reform (DAR). This is a certificate under land reform for the agrarian reform beneficiary (ARB). Lands awarded shall be paid for by the Beneficiaries to the Landbank of the Philippines (LBP) in thirty (30) annual amortizations at six percent (6%) interest per annum.

Recommendations to improve gender-responsiveness of the Technology?

Men and women devote the same time for the farm activities. Farm activities that require a lot of physical strength are only done by men. Women in the cooperatives accepted that there are limitations in terms of the physical farm activities that they could perform. It also a form of respect that men carries the burden.

Gender-related impact of Technology implementation

Each dot represents a case study