



GENDER-RESPONSIVE NEEDS ASSESSMENT FOR MECHANIZATION

Questionnaire

About the questionnaire

The purpose of the questionnaire is to identify women's needs and constraints in accessing agricultural mechanization and related services. The information gathered will enable practitioners to address farmer needs in machines and equipment that are crop and value chain specific, in training and support services, and in business opportunities either through mechanization hiring services or value addition. The results can guide interventions to improve the efficiency of agricultural operations, reduce drudgery, and increase employment and income opportunities along agricultural value chains.

This questionnaire has 30 questions divided into five modules:

- personal information;
- land, crop, value chain and division of work;
- work burden;
- access to and constraints in adopting agricultural mechanization; and
- mechanization services.

The questionnaire was developed and piloted in a project that FAO implemented in Nepal called *"Technical support for sustainable agricultural mechanization of smallholder farms for enhancing agricultural productivity and production, and reducing drudgery of women and young farmers"*. Although the questionnaire was designed to collect data from women, it can easily be adapted to assess constraints of both women and men and opportunities. The information gathered with this questionnaire can be combined with that gathered from key informant interviews to analyse the existing (or lack of) national policies, programmes, capacities and institutional mechanism that address gender and mechanization issues.

Annex 1 lists codes for different machines and equipment to be used to answer specific questions during field data collection.

This questionnaire is available in Kobo Toolbox which can be shared upon request (see contact details in page 7).

Why do we carry out a gender-responsive needs assessment for mechanization?

- Gender dynamics and social norms determine technology access and use.
- Even though no role is necessarily exclusively performed by just women or men, the traditional division of labour tends to assign specific responsibilities along value chains to women and others to men.
- Women and men have different technology and mechanization needs, but these needs do not always determine the choice of machines and equipment.
- Women tend to be more affected by the drudgery of manual work (hence work burden and time poverty), while men often carry out tasks using technology.
- There is a need to identify critical gender gaps and constraints in access to: (a) local institutions and organizations that determine technology use and management, and (b) key formal and informal services such as information, repair and maintenance, training, financial and business development services, etc.

Target respondents

The questionnaire respondents are women farmers living in the targeted communities of the project or programme. The criteria for selecting the respondents will vary depending on the local context. Criteria can include land size, topography (flatland, mountain), ethnicity, religion, and so on. If a value chain with the potential to benefit women is identified, the women involved in this value chain will be targeted.

Method of reaching target respondents

Face-to-face, one-on-one interviews are recommended, if possible. The questionnaire should ideally be conducted in the absence of spouses, tutors and groups of people.

This questionnaire takes about 45 minutes to complete. It can be adapted to specific crops and value chains (question 11).

Personal Information

1. What is your name? _____
2. What is your village name? _____
3. What is your district name? *(to be adapted to national administrative divisions)*

4. What is your age? _____
5. Is your household:

Male-headed	Female-headed
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6. Number of household members who regularly help in the farm work
(besides you and the household head)

7. Number of household members who require substantive care from you
(e.g. small children, elderly people, people with disabilities)

8. Are you a member of:

Cooperative	Farmer group	Neither
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Land, crop, value chain(s) and division of work

9. What is the total land size that you farm *(for all crops)*?

Less than 0.5 hectare	Between 0.5-1 hectare	Between 1-3 hectare	More than 3 hectare
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10. What is your land ownership/tenure?




















Owned by me	Owned by husband/ other male relatives	Jointly owned (by me + husband/relatives)	No ownership, working on lease
No ownership, working under contract	No ownership, sharecropping	Other	
11. What are the three (3) most important crops or products for your household's livelihood?
 1. _____
 2. _____
 3. _____

Questions 12, 13, 14, 15, 18 and 24 should be repeated – if needed – for each of the different crops based on Q. 11 or the main value chain(s) studied in this questionnaire.

Question 12 to be repeated for each relevant crop or value chain

12. Who performs the following operations for the {crops selected in Q.11 or main(s) VC of the questionnaire}?

Crop or value chain (please insert): _____

		Men only / mostly men	Men and women equally	Women only / mostly women	N/A
Production 	 Land Preparation and maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Planting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Fertilizing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Weeding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Applying pesticides/herbicides	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Harvesting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Purchasing of inputs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post-harvest 	 Drying / Dehydrating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Threshing/Shelling/pulping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Cleaning/Winning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Milling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Storing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Parboiling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Oil / juice extraction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Grinding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Collection and Transportation (including: transporting within the farm, to and from farm to collection centre/milling/parboiling /storing/ market)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Packaging and Marketing (figuring out prices, negotiation, selling)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Questions 13-14-15 to be repeated for each relevant crop or value chain

Crop or value chain (please insert): _____

13. Is the land where you grow this crop composed of:

- a. One or more plots (on average bigger than 0.5 hectares) b. One or more small plots (on average smaller than 0.5 hectares)

14. If you selected a. – is this land terraced?

- Yes No

15. If yes – is the width of the terraces:

on average larger than 5 metres

on average smaller than 5 metres

16. Who performs the following tasks in your household? (leave blank if not applicable)

		Men only / mostly men	Men and women equally	Women only / mostly women	N/A
Household Task	Child and elderly care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Cooking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Cleaning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Water collection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Firewood collection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. How are decisions taken within your household on the machines and equipment needed for farming and on their management?

My husband (or another male in the household) decides

We decide together

I decide

Other



Workload

Question 18 to be repeated for each relevant crop or value chain

Crop or value chain (please insert): _____

18. Among the operations listed in question 12, rank the four that are most physically demanding or time-consuming for you

(1 being the most demanding and 4 being the least)

(select the operations from question 12)

1: _____

2: _____

3: _____

4: _____

19. Work burden perceptions

	I feel I spend less time than what I want or need on this activity	I feel I spend adequate time on this activity	I feel I spend too much time on this activity
Household chores	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Agriculture work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leisure/ Personal time (relaxing activities, time with friends, hobbies, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20. Have you found the opportunity to discuss your work burden?

(multiple-choice)

Yes, with the adult men in my family

Yes, with other members of my family

Yes, within my community (help groups, women groups, religious groups, political groups)

Yes, with a member of the association/farmer group cooperative I belong to

Yes, Other

No

21. Did you identify any solutions in recent years to reduce the workload? *(multiple-choice)*
- Sharing of household tasks
 - Changes/sharing of tasks at field level
 - Adopting machines/equipment/tools
 - No
 - Other _____
22. In case you selected the option **“adopting machines/equipment/tools”** please specify which ones *(Please enter machines and equipment codes, Annex 1)*
- _____
23. If **“Other”** please specify _____



Access to and constraints in adopting agricultural mechanization

Question 24 to be repeated for each relevant crop or value chain

Crop or value chain *(please insert)*: _____

24. Please list the machines and equipment (coded in Annex 1) you usually use for farming and post-harvest operations and specify how you access them *(please mention not only tractors or power tillers but also threshers, shellers, dyers, pumps, if available)*

Code of the machine <i>Refer to the list of machines and the codes (Annex 1)</i>	User	Type of tenure	What operations from question 12 does this machine support? <i>(enter more than one if needed)</i>
Enter the code of the first machine here: _____ 	<input type="checkbox"/> Used by me in my farm and/or my products <input type="checkbox"/> Not used by me, but used in my farm or for my products (by family members or external operators)	<input type="checkbox"/> Individual ownership (by me or my household) <input type="checkbox"/> Collective ownership (beyond my household, e.g. groups/cooperatives) <input type="checkbox"/> Individual rent (by me or my household) <input type="checkbox"/> Collective rent (beyond my household e.g. by groups or cooperatives) <input type="checkbox"/> Borrowed/other arrangements	_____ _____ _____
+ Add more rows if you use more than one machine. Add row for each machine.	_____	_____	_____

25. What are your constraints in using available machines/equipment/tools?

(select all the relevant)

Budget	Lack of money in hand available for renting or buying
	No payback/in-kind option for renting (informal credit)
	Lack of access to credit for renting or buying
Technical issues	<input type="checkbox"/> Size (height) and weight of machine/equipment/tools
	<input type="checkbox"/> Lack of training /capacity to operate the machine/equipment/tools
	<input type="checkbox"/> Machines are too old/low performing
Insufficient services	<input type="checkbox"/> I do not have access to maintenance and repair services
	<input type="checkbox"/> I am not a member of any local organization/group that would facilitate individual or collective access to mechanization
	<input type="checkbox"/> Service providers are too slow; machines and services are not available in time
	<input type="checkbox"/> Service providers are not interested in supporting me/my community
	<input type="checkbox"/> Service providers are not flexible to my needs (my home duties schedule, family caring responsibilities, mobility issues)
Personal and cultural issues	<input type="checkbox"/> I am not interested in using mechanization
	<input type="checkbox"/> I do not own the land or I don't make productive decisions
	<input type="checkbox"/> I do not think I would be able to use them correctly
	<input type="checkbox"/> Lack of time/too busy with my other work and family duties
	<input type="checkbox"/> I feel it is not appropriate/allowed since, in my community, men manage machinery
Lack of infrastructure/ isolation	My farm is too far/hard to reach for service providers/ or for me to get the machines
	My field is too small or not adapted for operating machines on it

26. If you could choose, which are the main machines/equipment you would adopt to reduce the time and effort it takes you to do the work and/or generate extra income?

1: _____

2: _____

3: _____

(Insert machine codes - maximum 3)

Please rank from 1 to 3; 1 being the most preferred option and 3 being the least.

27. In case your household/group/cooperative owns/co-owns machines/equipment/tools, would you be interested in becoming a mechanization service provider to external users to make extra income?

(in case you don't own them leave it blank)

- Yes, I would be interested
- This is already the case; my family provides mechanization services to others
- This is already the case; my group/cooperative provides mechanization services to others
- No
- I don't take these kinds of decisions

 **Mechanization Services**

28. How do you access mechanization services? Through...
(multiple choice)

- My husband/ father (other male of the household) arranges it for me
- Producer organization/self-help group
- Cooperative
- Individual service provider
- Public mechanization centre
- I do it myself
- Other (Specify below)

29. If "Other" please specify _____

30. How far in km are the following services?

	Less than 2 km away	Between 2 and 5 km away	More than 5 km away
Maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Repair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spare parts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

***** Note to surveyor *****

Please take pictures of the machine and/or equipment used by women in the household/group/cooperative, if available and if possible.

The purpose of this revision is to refine the questions based on the feedback from the field and include Annex 1 with the list of machines and equipment for easy reference for enumerators.

For further information and queries

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Food and Agriculture Organization of the United Nations

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Annex 1. Machines and equipment codes

FUNCTIONS	OPERATIONS	SOURCE OF POWER					
		Thermal and electrical		Animal		Human	
		Machines	Codes	Categories of animals and tools	Codes	Gender and tools	Codes
Power source	Mechanical	Mini-tiller	C01	-	-	-	-
		2-wheel tractor/power tiller (2WT)	C02	-	-	-	-
		4-wheel tractor (4WT)	C03	-	-	-	-
		Diesel engine	C04	-	-	-	-
		Gasoline engine	C05	-	-	-	-
	Animal traction	Electrical engine	C06	-	-	-	-
		-	-	Oxen	B01	-	-
	Human operations	-	-	Donkey	B02	-	-
		-	-	-	-	Male	-
		-	-	-	-	Female	-
-		-	-	-	-	-	
Land Preparation	Subsoiling	Ripper	C10	Ripper	B10		
		Subsoiler	C11				
	Soil ploughing	Disc plough	C20	Steel plough	B20	Hand hoe	A01
		Cultivator	C21	Wooden plough	B21		
		Mouldboard plough	C22				
	Soil harrowing	Disc harrow	C30	Disc harrow	B30		
		Rotovator	C31				
		Spike-tooth harrow	C32				
	Soil levelling	Levellers	C40	Levellers	B40		
	Soil ridging	Ridger	C50				
Planting / transplanting	Seeding	Broadcast seeder	C60			Jab planter	A10
						Push planter	A11
						Drum seeder	A12
						Rolling punch planter / Rotary dibbler	A13
	Planting	Seed/fertilizer drill	C70	Seed/fertilizer drill	B60		
	Transplanting	Transplanter	C80			Manual rice transplanter	A20
						Manual vegetable transplanter	A21

FUNCTIONS	OPERATIONS	SOURCE OF POWER					
		Thermal and electrical		Animal		Human	
		Machines	Codes	Categories of animals and tools	Codes	Gender and tools	Codes
Crop maintenance	Fertilizing	Fertilizer broadcaster	D01			Hand-cranked seed and fertilizer spreader	A22
		Manure spreader	D02				
	Pesticide/herbicide application (pest and disease control)	Airblast Sprayer	D10			Knapsack sprayer	A30
		Boom Sprayer	D11				
		Mist blower sprayer	D12				
	Weeding	Powered weeder	D20			Cono weeder	A40
						Push row weeder	A41
						Hoe	A42
	Irrigation (pump)	Centrifugal (aboveground) diesel	D30			Hand water pump, treadle pump	A50
		Centrifugal (aboveground) petrol	D31				
		Centrifugal (aboveground) electric	D32				
		Submersible	D33				
	Irrigation (water distribution, etc.)	Sprinkler	D40				
		Drippers	D41				
	Harvest	Cereal harvesting	Powered brush/Grass cutter	D50			Sickle
Combine harvester			D51				
Corn picker			D52				
Reaper-binder for 2 wheel tractor			D53				
Reaper-binder for 4 wheel tractor			D54				
Walk-behind reaper			D55				
Fodder harvesting		Hay rake	D60			Machete	A70
		Hay baler	D61				
		Forage harvester	D62				
		Forage blower	D63				
			D64				
Tuber harvesting		Digger, potato harvester	D70			Hand hoe	A01
		Manioc/cassava harvester	D71				
Vegetable harvester		Sugar beet harvester	D80				

FUNCTIONS	OPERATIONS	SOURCE OF POWER					
		Thermal and electrical		Animal		Human	
		Machines	Codes	Categories of animals and tools	Codes	Gender and tools	Codes
Post-harvest and Processing	Threshing	Thresher powered by 2WT				Pedal Thresher	A80
		Thresher powered by engine	E01				
		Mobile thresher powered by engine	E02				
	Dehusking	Maize dehusker with sheller by engine	E10				
		Rice dehusker and flour mill	E11				
	Milling	Mill	E20				
	Shelling	Maize sheller powered by engine	E30			Manual sheller	A90
	Winnowing					Manual Winnower	A95
	Drying	Dryer	E50				
		Solar dryer					
	Cleaning	Grain cleaner	E60				
	Sorting/Grading	Sorter and grader	E70				
	Processing	Oil pressing machine	E80				
Pressing machine		E81					
Transport	Transporting	Mini trailer	F01	Cart	B80		
		Trailer for 2W tractor	F02				
		Trailer for 4W tractor	F03				
		Motorized tricycle for transport of goods	F04				
Animal production		Powered fodder chopper	G01				
		Milking machine	G02				
		Milk cooler	G03				
		Cream separator	G04				
		Incubator	G05				



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