ICIMOD

Food and Agriculture Organization of the United Nations

RESILIENT MOUNTAIN SOLUTIONS (RMS) WEBINAR SERIES

Women farmers and sustainable mechanization

Improving lives and livelihoods in the Hindu Kush Himalaya

Episode III: The role of private sector in agri-mechanization

27 August 2021 | MS Teams | 14:30-16:45 (Nepal Standard Time, UTC+05:45)

Mountain agriculture and changing gender dynamics in the HKH

The challenge of food and nutrition security in the Hindu Kush Himalaya (HKH) has become increasingly complicated due to rapid socioeconomic, demographic, and environmental change, including migration and climate change. Increasing climate variability and extreme events, coupled with limited investment in mountain agriculture and rural development, have resulted in low productivity and lack of off-farm employment options, pushing men into seeking alternative livelihoods elsewhere. Women have therefore been compelled to take on tasks formerly done by men, especially in land preparation, harvest, and post-harvest operations, and marketing of produce, adding to their burden of household and off-farm work. This increasing feminization of mountain labour has emerged as one of the most pressing issues in recent decades.

Rationale

Mountain agriculture is physically demanding and time consuming. Rural women, who mostly work as subsistence farmers while also performing domestic work and communal activities, often face a poverty trap, undermining their well-being. Despite increasing labour participation in this sector, women remain invisible as active players and agents of change.

A range of new and inexpensive agriculture machinery, adapted to local conditions, could potentially enhance labour productivity, reduce work burden and drudgery, and enable women to gain new skills and knowledge that can transform rural gender relations and reduce inequalities. It could also allow them to shift from subsistence to more market-oriented farming. However, the extent to which these technologies are available, suitably introduced (by individual use or via extension services) or adopted by women farmers in the HKH is still not clear.

Sustainable agricultural mechanization in HKH must be tailored to the diversity of mountain contexts and user needs, especially of women. To gain better understanding of the current context and explore the opportunities and barriers to introducing customized technologies for women farmers in the HKH, the Resilient Mountain Solutions (RMS) Initiative of ICIMOD organized a regional consultation on 15 November 2019. The consultation revealed that while there is some degree of mechanization in mountain agriculture, the process is uneven, understudied, and lacks documentation. It also highlighted

BOX 1

Barriers that women farmers face in accessing and adopting agricultural mechanization

Lack of customized machines and equipment for women: The machines are often piloted with male farmers and fail to consider women's needs, features, and preferences. Lack of pre-consultation with women in technology development, evaluation, and their adoption results that many machines are inappropriate for women (e.g. too big to handle) and therefore difficult to operate.

Limited access to finance: The cost of machines often makes them unaffordable for small holder famers, mainly women. Even where subsidies are provided, these are mostly availed by men as women have very little or no information. Limited ownership of land by women in many HKH countries makes it difficult for them to obtain collateral free loans easily. Consequently, women have difficulties in acquiring machines.

Inadequate institutional support: Absence of strong political buy in for upscaling and outscaling as well as limited linkages with existing outreach and extension, credit and market services which fail to target and reach women with information, knowledge, capacity, and services to handle these machines.

Restrictive social norms: Social norms associated with gender roles often amplify gender gaps and influence women's ability to participate in training programmes, access finance, or use technology.

Little monitoring of the impacts of technology: While technologies may offer opportunities to challenge existing imbalances in gender relations, they can worsen existing power imbalances if not monitored. Sometimes, technologies meant to reduce drudgery or improve the socioeconomic conditions of women can push women out of the sector, replacing them with men, thus taking away their opportunity for income generation.

the need to address gender-related concerns in agricultural mechanization, its effects on women farmers and the need to disseminate these concerns to a wider policy audience. Some of the challenges to accessing and adopting these technologies based on the presentations made during the regional consultation are described in Box 1.

Given this background, ICIMOD's RMS Initiative and the Food and Agriculture Organization (FAO) of the United Nations have come together to organize a series of country-specific and regional webinars on sustainable mechanization for improving lives and livelihoods of women farmers in the HKH as part of their commitment to improving women's active participation in agriculture.

RMS is committed to scaling out gender responsive and mountain specific resilient solutions that are simple, affordable, replicable, sustainable as well as appropriate and relevant to the needs of stakeholders at different levels. FAO is committed to addressing the gender-related technology adoption constraints by promoting the dissemination of equipment, machines and tools that are sustainable and can address the drudgery women face. As part of this effort, FAO is also supporting women to be entrepreneurs as mechanization hire service providers.

The webinar series

Through the webinar series, ICIMOD and FAO expect to create awareness and action around current mechanization gaps and help identify good practices and possible solutions for empowering women farmers in the region. The webinar series will discuss strategies contributing to the process of mainstreaming and institutionalizing successful efforts of agricultural mechanization for improving productivity while also reducing drudgery for women farmers.

Objectives

- Share lessons learned from projects, programmes, and policies focusing on agricultural mechanization for women in the HKH
- Showcase successful examples and solutions of agricultural mechanization used in the HKH
- Identify key actionable solutions and approaches to promote agricultural mechanization in the HKH

Each webinar will conclude with a call for action to align policy with practice to leverage technology to address the constraints and solutions that women farmers face for sustainable, efficient, and profitable farming.

The first webinar of this series, Episode I: The Nepal Chapter was organized on 5 March 2021 followed by Episode II: The Bhutan Chapter organized on 7 May 2021.

EPISODE III

The role of private sector in agri-mechanization

The mechanization pathway adopted by developing countries mainly focused on promoting industrial agriculture using power-operated heavy machines based on transfer of technology from developed countries. This approach favoured the flatlands and neglected the needs of the small holder farms in the hills and mountains. The Nepal and the Bhutan episodes of the webinar series highlighted the emerging socially responsible and innovative import, marketing and supply sectors in both the countries that could address this neglect.

The third webinar of the series aims to critically discuss alternative pathways to agricultural mechanization innovation, powered by local manufacturers and entrepreneurs, and the development of scale-appropriate machines and tools suitable for sustainable development of hill and mountain farming systems. In this context, the webinar will focus on two key areas where the private sector can play a major role in agricultural mechanization. These are (i) supporting sustainable markets for manufacturing, supplying and importing of machine, equipment and spare parts; (ii) provision of mechanization hire services.

Private sector and manufacturing of agri-machine and equipment

A responsible, innovative, and organized private sector can offer competitively priced and scale-appropriate machine and equipment that aids in the national mechanization process and meets the needs of farmers (including women farmers) in the HKH region. While there is an emerging private sector in the agricultural mechanization business in the region, particularly in imports, marketing and supply, the manufacturing of machines and equipment has been predominantly led by India and China. China's manufacturing sector supplies the bulk of the machinery (mini-tillers, electric powered maize shellers, and rice-flour-feed mills) that are both light and affordable for widespread use in the hill and mountain areas of the region.

Private sector and mechanization hire services

Mechanization hire services are an important mechanism through which most smallholder farmers can access machinery appropriate to their needs and scale of operations. The majority of these services (particularly for machines like tractors, threshers, irrigation pump sets) come from individual owners who rent them out. Renting of such machinery by individual farmers is in itself a micro-enterprise, which is often under recognized. This process not only provides renting households with additional and significant income but also improves access to agri-machinery to many other farmers, who are otherwise unable to afford them. Mechanization hiring services can be formally recognized and organised as custom hiring centres where individuals or farmers' associations and women's groups can manage such services for their members and earn income through hiring and operating scale-appropriate machinery.

Agenda

Moderator: **Mayling Flores Rojas**, Agricultural Mechanization Systems Officer, FAO

Time (NPT)	Programme	Speakers
14:30–14:40	Introduction	**Mayling Flores Rojas** Agricultural Mechanization Systems Officer, FAO
14:40–14:50	Welcome remarks	**Takayuki Hagiwara** Regional Programme Leader, FAO Regional Office for Asia and the Pacific
14:50–15:05	Spread of agricultural machinery among women farmers in the hills of Nepal: The role and experience of NAMEA	**Sunita Nhemaphuki** Board Member, Nepal Agricultural Machinery Entrepreneurs Association (NAMEA), Nepal
15:05–15:20	Development of scale appropriate machinery for mountainous areas: The role and experience of CAAMM	**Youji Li** Chairman of the Board of Supervisors, China Association of Agricultural Machinery Manufacturers (CAAMM), China
15:20–15:30	Q & A session	**Mayling Flores Rojas** Agricultural Mechanization Systems Officer, FAO
15:30–15:45	Experiences of the informal sector service providers in China	**Yanyu Li** Independent Entrepreneur, China
15:45–16:00	Agri-mechanization for women farmers: Lessons from India	**Sachin Kawade** Rohitkrishi Industries, India
16:00–16:10	Q & A session	**Mayling Flores Rojas** Agricultural Mechanization Systems Officer, FAO
16:10–16:30	Way forward	**Mayling Flores Rojas** Agricultural Mechanization Systems Officer, FAO
16:30–16:45	Closing remarks	**Pema Gyamtsho** Director General, ICIMOD

Register here

Co-organized by

International Centre for Integrated Mountain Development (ICIMOD) and the Food and Agriculture Organization of the United Nations (FAO)

For further information

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ICIMOD gratefully acknowledges the support of its core donors: the Governments of Afghanistan, Australia, Austria, Bangladesh, Bhutan, China, India, Myanmar, Nepal, Norway, Pakistan, Sweden, and Switzerland.

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