

ADAPTATION SOLUTIONS BRIEF

No. 1

# Strengthening women's roles as risk and resource managers at the frontline of climate change

# Summary

- Research shows that in the Hindu Kush Himalaya (HKH) climate variability already influences water availability, ecosystem services, and agricultural production. According to downscaled climate projections, the risks of climate-induced hazards such as floods, landslides, and droughts are projected to increase significantly by 2050.
- To an increasing degree, rural women in the HKH manage the frontline of local agriculture and natural resources, and as such, deal directly with the impacts and risks associated with climate change.
- Women's livelihood options, adaptive capacities, roles in decision-making, and access to and control over resources are constrained by structural and gendered inequalities, which enhance their vulnerability. Despite high levels of male outmigration for work, women still operate within a system that is highly patriarchal and denies their full participation.
- Remittances from migration have enhanced household finances generally in rural areas, but women often lack the financial literacy necessary for money management, or they are denied power to make decisions regarding this income.
- To increase community and household resilience to climatic and socio-economic changes, it is crucial to invest in strengthening women's capacities to manage the associated risks through, for example, financial literacy training and skills training on resilient agricultural practices.
- Policy makers and decision makers need to recognize women's increasing roles and responsibilities in agriculture, food security, and natural resource management to create enabling policies and institutions that acknowledge women as vital agents of change and adaptation.

# Women at the frontline of climate change

Temperatures in the Hindu Kush Himalaya (HKH) have increased significantly faster than the global average, and are projected to increase by 1–2°C on average by 2050.<sup>1</sup> Monsoon is expected to become longer and more erratic, and extreme rainfall events will likely increase in intensity. Glaciers found in the mountains are projected to lose substantial mass by 2050. Over the same period, total river flow is not projected to decrease on average in volume, but spatial variability in volumes of water may become substantial.<sup>1</sup> These climate variables do not only impact mountain communities, but also those downstream, as they are at greater risk of floods and other hazards. Furthermore, local water sources can become less reliable, and water scarcity will be felt in some localities, potentially influencing local water management practices. The incidence of natural hazards such as floods, landslides, and dry spells is projected to increase, which will pose a threat to agricultural production,



food security, and the safety of human lives and household assets.<sup>1</sup>

Outmigration of men for work is widespread in the HKH and has shifted the responsibilities of agriculture and natural resource management to

women.<sup>2</sup> As more and more rural women in the HKH are bearing responsibility for managing local agriculture and natural resources, they must deal with the impacts and risks associated with climate change in addition to the constraints of physical isolation, difficult terrain, limited arable land, unfavorable bio-physical conditions, and limited market access.<sup>3</sup>

However, women's capacity to adapt to climate change, their livelihood options, and decision-making power are hampered and constrained by entrenched structural and social inequalities perpetuated in traditional gender roles. The Intergovernmental Panel on Climate Change (IPCC) has acknowledged gender differences with regard to adaptive capacity, which is unevenly distributed and differentiated not only by gender, but also by age, class, ethnicity, health, and social status.<sup>4</sup>

## Projected climate change and impacts in the Hindu Kush Himalaya by 2050

- Temperature increase up to 1–2°C on average, and even more at higher elevations. Winters are expected to see greater warming than summers in most places.
- Increase in summer precipitation of 5% on average, but projections are uncertain and spatial variability is high.
- Increase in droughts and dry spells in certain areas, resulting in insect plagues, natural springs drying out, and hardening of soils.
- Higher incidence of floods and landslides, which threatens agricultural production, household assets, and human lives.



# Women are disproportionately facing the impacts of climate change

Within the context of climate change and male outmigration, the challenges that women in the HKH face are increasing. Changes in the availability of water and ecosystem services means that women have to spend more time collecting water, fodder, and fuelwood. Prolonged droughts harden the soil, add pressure to agricultural irrigation, and oblige households to source irrigation water at night, which in some areas is socially discouraged for women and unsafe due to assault risks or animal attacks.<sup>5</sup> Women have also shouldered the large burden of labor-intensive farming tasks previously assigned to men, such as threshing, land preparation, seedbed preparation, and woodcutting, alongside their usual agricultural duties.<sup>6</sup> An increase in the occurrence of new and unknown varieties of weeds and pests further increases workload and threatens productivity. The increased

workload reduces the time available for women to attend community meetings, engage in income-generating activities, access extension services, and collect fruit, wild vegetables, and medicinal plants.<sup>7</sup>

***“In the past three years, springs have either dried up or have less water. More than 70% of households in the village spend at least three to four hours every day in the dry season fetching drinking water. We have had to cut down on bathing and washing clothes to deal with the water shortage.”***

Female community leader and farmer from Sindhuli district in the mid-hills of Nepal

In spite of male outmigration and women’s new roles and increased responsibilities, women still have to deal with unchanged institutions, policies, and markets. For example, land



ownership, which most women lack, is often a prerequisite for accessing banking and agricultural extension services. As a result, women are often excluded from such services.<sup>6</sup> In households where the male household head has migrated, he remains the formal head of the household and often continues to oversee and ‘phone control’ significant aspects of the household’s economy, such as investments, assets, and banking. Moreover, decision making at the community level is still largely dictated by men. These factors and others limit women in their managing role, and denies them the opportunity to utilize their full potential to enhance household and community resilience and adaptation to climate change.

## Leveraging remittances for adaptation and disaster risk reduction

In the HKH, 52% of migrant sending households receive financial remittances.<sup>8</sup> In those remittance-receiving households, remittances comprise, on average, 44% of the family’s annual income.<sup>8</sup> In Nepal alone, remittances constitute 32% of gross domestic product.<sup>9</sup> For many households in the region, outmigration of men is a livelihood diversification strategy that can enhance household resilience. Action research by ICIMOD in Assam, India, has highlighted the potential of leveraging remittances for adaptation purposes by providing financial literacy and disaster preparedness training to remittance-receiving women and supporting them in accessing banking services. These measures showed that remittances could be a valuable resource for households to mitigate climate-induced risks and build resilience.





# WOMEN AS RISK & RESOURCE MANAGERS

In the Hindu Kush Himalaya (HKH), rural women manage natural resources and deal directly with the impacts and risks associated with climate change. With more men migrating from rural areas, women's roles as risk and resource managers need to be supported and strengthened.

## 1. TEMPERATURES HAVE INCREASED SIGNIFICANTLY FASTER IN THE HKH THAN THE GLOBAL AVERAGE

Projected increase in average temperature by 2050



Global

1-2°C ↑



HKH

1-4°C ↑

### POSITIVE EFFECTS



Social and financial remittances



Livelihood diversification

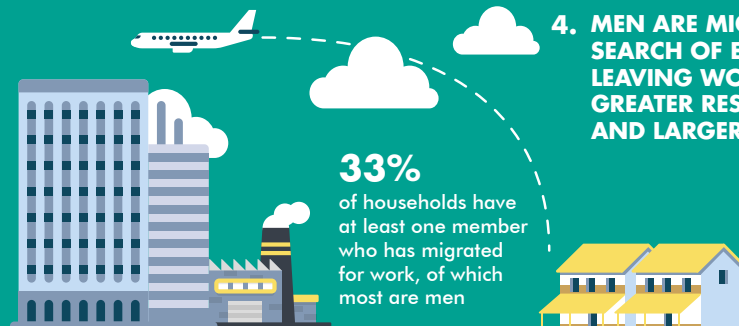
### NEGATIVE EFFECTS



Labour shortages in mountain communities



Intensified workloads for women



## 5. SOCIOECONOMIC CONSTRAINTS LIMIT WOMEN'S ABILITY TO MITIGATE CLIMATE CHANGE RISKS AND MANAGE RESOURCES

Average adult literacy in India, Nepal, and Pakistan:



54%



76%

World Bank Data <sup>9</sup>

Despite women's increasing role in management of risks and resources, only:

11%

of households are headed by women

8%

of women have exclusive land ownership

0.06

hectares is women's average landholding

HICAP PVA data <sup>8</sup>

### Women have limited:



Income opportunities



Control and ownership of resources



Participation in education and training



Decision-making power within the household and community



Social mobility because of gendered cultural norms

## 2. CLIMATE CHANGE IS EXPECTED TO HAVE SEVERE EFFECTS



Rising incidence of floods



Increase in frequency and duration of dry spells



Increase in precipitation



Longer and more erratic monsoons

### 85%

of 8,083 households have observed changes in the environment within the past 10 years

 **17%**  
Insect attack

 **25%**  
Landslides

 **30%**  
Floods

 **34%**  
Droughts

HICAP PVA data <sup>8</sup>

## 3. PEOPLE IN THE MOUNTAINS ARE ALREADY EXPERIENCING THE IMPACTS OF CLIMATE CHANGE <sup>1</sup>



## 6. WOMEN'S CAPACITIES TO MANAGE RISK AND RESOURCES CAN BE STRENGTHENED THROUGH VARIOUS SOLUTIONS

Invest in financial literacy, leadership, skills and disaster preparedness training for women



Develop extension and financial services that take into account women's needs, time constraints, and limited social mobility



Sensitize gatekeepers and policymakers in formal bodies to secure women's participation in decision-making bodies



Promote women-friendly, time-saving and inexpensive agricultural and household technologies to ensure efficiency and reduce workloads



Secure women's access to insurance and banking services irrespective of land ownership and assets



Increase recruitment of women staff particularly in extension services and other frontline departments

# Securing adaptation by strengthening women's roles as risk and resource managers

Rural women in the HKH possess critical and valuable mountain-specific knowledge, experience, and technical know-how for sustainable management of agriculture, livestock, and natural resources,<sup>2</sup> which needs to be recognized and harnessed for adaptation to climate change. Active participation of women in planning and decision making has been shown to improve the outcome and sustainability of interventions.<sup>10</sup> It is then essential to enhance

women's contributions to adaptation planning and implementation by formally securing and increasing equal participation in decision-making bodies and by increasing the recruitment of women staff in extension services.

Securing women's influence and contributions to adaptation also entails creating enabling policies and institutions that reflect women's new roles and responsibilities. Agricultural

## Resilient Mountain Villages

The Resilient Mountain Villages (RMV) model incorporates dimensions of sustainable development and climate change adaptation into a comprehensive mountain specific approach that enhances communities' resilience to climate variability. The model has been piloted in eight villages in Kavre, Nepal, where a total of 1,089 small-scale farmers (82% women) have received training on how to adapt their farming practices to climate variability by adopting simple, affordable, and climate-friendly tools and techniques. Such tools and techniques include mulching, homemade bio-pesticides and -fertilizers, rain and waste water collection methods, and environmentally sustainable energy technologies.

In addition, the farmers' resilience is strengthened through trainings on gender inclusion and how to mitigate loss and secure vulnerable assets with insurance. Digital phone-based services provide crop, market, and weather advisories to the farmers, and meteorological equipment installed at local schools inform and teach students as well as farmers about climate change.

With a key focus on gender integration, the pilot in Kavre has showcased the importance of providing women with knowledge on resilient practices to strengthen their adaptive capacities. It has also shown that the opportunity to gather for collective action in farmers' groups (most of which are women's groups) can build women's confidence and enable them to more effectively take part in local decision making.







extension services, financial services, and adaptation interventions and technologies have to be targeted towards women as users and made accessible irrespective of ownership of land and assets. Additionally, such services need to be sensitive to the changing dynamics of households due to migration by accounting for the specific needs of women, their time constraints, and limited mobility.

***“A lack of women’s active involvement negatively affects the implementation, monitoring, and overall sustainability of interventions to enhance people’s resilience.”***

*From the report 10 things to know: Gender equality and achieving climate goals*

However, improved gender sensitivity cannot focus only on women’s lives; men must also be encouraged. It is pivotal that men recognize and acknowledge women’s responsibilities and potential, and support their role in adaptation. Without this change in perspective, household and community adaptation to climate variability will not be successful. It is therefore in the interest of both men and women to secure women’s equitable participation and access.

Sustainable development will not advance nor will adaptation be as effective as it needs to be if gendered power imbalances and unequal decision making is not sufficiently addressed. Therefore, the capacities of national and

local-level organizations need to be built to integrate gender in adaptation planning and implementation.

However, the creation of enabling policies, institutions, and extension services needs to be accompanied by investments in women’s leadership skills. This is crucial in order to strengthen women’s voices, confidence, and capacities to fulfill their role as agents of adaptation and participate in decision-making processes. Concurrently, investments should be made in promoting women-friendly technologies and equipment, which will not only ensure efficiency, but also free up time for women.

The Himalayan Climate Change Adaptation Programme’s (HICAP) gender-related research has reduced the knowledge gap regarding women and adaptation to climate change. However, several findings of our research highlight the need for more work: pilot projects, gender-disaggregated data, and of course, more research. Such efforts will help to identify ways to incorporate women’s new role and responsibilities into adaptation planning and solutions.

# Recommendations for action

*The following package of recommendations for action are mutually reinforcing and will help ensure that women's roles as risk and resource managers are strengthened. The recommendations are sorted into three categories of recommendations aimed at 1) creating enabling policies for harnessing women's potential; 2) securing investments for enhancing women's adaptive capacities; and 3) strengthening civil society participation.*

## 1. Create enabling policies

- a)** Acknowledge women as farmers by creating women-friendly extension services that take into account the specific responsibilities, time constraints, and limited mobility of women.
- b)** Ensure financial inclusion of women by securing equitable access to insurance and banking services, irrespective of land ownership and assets.
- c)** Ensure gender-balanced adaptation planning and implementation and secure women's participation in decision-making bodies through sensitization of gatekeepers and policy makers in formal bodies.
- d)** Enhance recruitment of women staff at district and sub-district levels, particularly in extension services such as banking, agriculture, and other frontline departments.

## 2. Secure investments in women's capacities

- a)** Invest in the development and promotion of women-friendly and time-saving household and agricultural equipment to ensure efficiency, reduce workloads, and free up time for women.
- b)** Invest in women's skills through capacity training on resilient agricultural practices, and flood and disaster preparedness.
- c)** Invest in financial literacy training for women to enhance their capacities to invest remittances in climate resilient agricultural practices, adaptation technologies, and micro-enterprises.
- d)** Provide leadership training to rural women and establish women's groups to act as the agency for enhanced participation in community level decision making processes.
- e)** Support the national and local-level organizations that are working to build resilience and adaptive capacity, to integrate gender in their adaptation planning and implementation.
- f)** Support further research and pilot projects that examine the impact of climate change on women and the gendered differences in adaptation and vulnerability.

## 3. Strengthen civil society participation

- a)** Institutionalize multi-stakeholder platforms in adaptation planning to ensure interdepartmental cooperation between women and other government departments, and at the same time provide opportunity for civil society engagement.
- b)** Strengthen local institutions to conduct long-term gender-disaggregated monitoring and evaluation of the sustainability and impacts of implemented policies.



**NORWEGIAN MINISTRY  
OF FOREIGN AFFAIRS**



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A woman wearing a red patterned dress and a white face mask is spraying pesticides in a lush green field. She is carrying a backpack sprayer and holding a spray wand. The field is filled with various green plants, including large-leafed vegetables in the foreground. The background shows more dense vegetation and a small stream or river.

## ADAPTATION SOLUTIONS BRIEFS

The Adaptation Solutions Brief series synthesizes findings from research and pilot projects carried out under the ‘Himalayan Climate Change Adaptation Programme’ (HICAP). Initiated in 2012, HICAP focuses on four selected river sub-basins: Upper Salween Mekong (China), Eastern Brahmaputra (India), Koshi (Nepal), and Upper Indus (Pakistan). Find more information about the programme, please visit our website: [www.icimod.org/hicap](http://www.icimod.org/hicap)