ENHANCING WOMEN'S LEADERSHIP

TO ADDRESS THE CHALLENGES OF CLIMATE CHANGE ON NUTRITION SECURITY AND HEALTH

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"The absence of women, particularly from the Global South, from national and international discussions and decision making on climate change and development must change. The battle to protect the environment is not solely about innovation, it is also about empowering women and their communities to hold their governments accountable for results."

Mary Robinson and Wangari Maathai
2010

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KEY MESSAGES

1 **Empowering women is a cornerstone of fostering adaptation and addressing the impacts of climate change on nutrition security and health.** Through drawing on women's knowledge and experiences based on their unique social, economic and resource management roles, climate change adaptation planners can significantly reduce communities' vulnerability to climate change.

2 **Women's capacity to address health and nutrition risks resulting from climate change must be enhanced through greater gender equity.** This involves improved access to education, information, land, technologies, credit and social protection, as well as increased participation in climate change decision-making.

3 **Facilitating access to maternal and child care and nutrition services** reduces hunger and malnutrition among women and children in the face of climate-related hazards and climate change impacts. This includes direct nutrition interventions, promotion of good nutrition and feeding practices such as breastfeeding, complementary feeding for infants and improved hygiene practices, among others.

4 **Strengthening women's roles in promoting sustainable and diverse diets, resilient livelihoods, local food systems and climate-smart agriculture,** including the production and consumption of nutrient-rich crops, is critical for ensuring food and nutrition security under a changing climate.

5 **Protection and enhancement of health is an essential pillar of sustainable development, and of the response to climate change.** Promoting health access and healthy environments through investing in health care systems, clean energy access, water and sanitation all address significant climate change impacts on health. Policies and investments to mitigate and adapt to climate change have great potential for improving health.

All this can only be achieved if women are at the centre of adaptation and development planning processes at community, national and international level.

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1 INTRODUCTION

Women serve as agents of social change and development through their unique roles in the family and child care, agricultural labour, food and nutrition security, health and disaster risk reduction. The promotion of their engagement and leadership is critical to addressing climate change in equitable, healthy, and sustainable ways. Integrating women's empowerment as well as food and nutrition security and health in adaptation strategies is urgently needed to ensure the well-being of communities under a changing climate.

Yet the issues of climate change adaptation, global health, women's empowerment, nutrition and food security continue to be addressed in siloed approaches. Current climate change policies and strategies tend to inadequately address the needs of women and children, particularly in the contexts of nutrition, food security and health. Women are also poorly represented in consultation and decision-making processes for the development of climate change adaptation strategies – at the local, the national and global levels. At the last United Nations Framework Convention on Climate Change Conference of Parties (UNFCCC COP16), women accounted for just 30% of all delegation parties and less than 15% of all heads of delegations *(1)*.

Based on the recognition that empowering women is not only a matter of equity and justice, but also a key pathway to achieving healthy, resilient and sustainable communities and societies, this paper aims to identify successful strategies for addressing the challenges that climate change poses to nutrition security and health, and to promote women's engagement and leadership in adaptation planning and decision-making to ensure that these are gender as well as nutrition and health sensitive.

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GENDERED CLIMATE CHANGE IMPACTS ON NUTRITION AND HEALTH

Climate change affects all the basic determinants of health, including food, shelter, water and air. It impacts human health and well-being through different pathways, including undernutrition, changing patterns of vector-, food- and waterborne infectious diseases, such as malaria or diarrhoea; increasing death and injury due to extreme weather events and contributing to increased population dislocation and insecurity *(2,3,4,5)*. Many of the same inefficient and polluting uses of energy that are causing climate change are exacerbating chronic diseases such as cardiovascular disease, stroke, asthma and other respiratory illnesses. They are also contributing to the 1.3 million deaths each year from urban air pollution, and to the 1.9 million from indoor air pollution *(3,4)*.

Undernutrition remains one of the world's most serious but least addressed socio-economic and health problems, hitting the poorest the hardest, especially women and children *(6,7,8)*. The number of people suffering from hunger stood at 925 million in 2010 and maternal and child undernutrition persists *(7, 9)*. In developing countries nearly one-third of children are underweight or stunted and undernutrition is the cause of more than one-third of under age five child mortality *(6,8,9)*. Undernutrition has a profound impact on a child's ability to grow, learn, and rise out of poverty *(10)*.

DEFINING NUTRITION SECURITY

Nutrition security exists when food security is combined with a sanitary environment, adequate health services, and proper care and feeding practices to ensure a healthy life for all household members.

Climate change will exacerbate the crisis of undernutrition through three main causal pathways *(11, 12, 2, 13, 14, 15, 16, 17)*:

- Impacts on household access to sufficient, safe and adequate food and nutrition.
- Impacts on maternal and child care and feeding practices.
- Impacts on access to health services and the existence of a healthy environment.

Climate change could act as a significant "hunger risk multiplier" *(18)*. By 2050, 24 million additional malnourished children, 21% more than today, are anticipated - almost half of them in sub-Saharan Africa *(16)*.

Poor health and undernutrition in turn further undermine people's resilience to climatic shocks and their ability to adapt. At the same time, climate change and climate-related disasters exacerbate many socio-economic factors that determine poor health and nutrition insecurity, such as insufficient access to education, information and resources; and they threaten the functioning of institutions that are critical for human health and well-being, including public health services and social protection systems *(19)*.

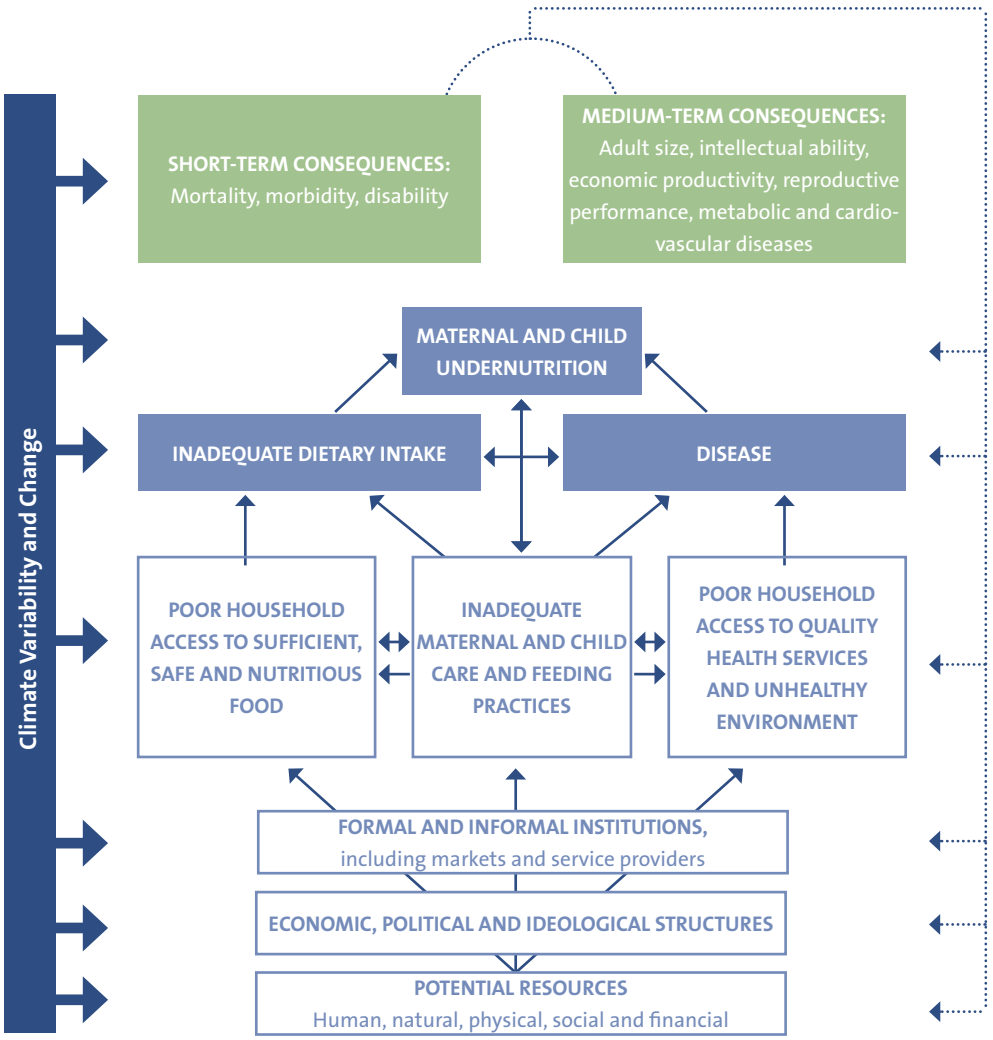

Figure 1
Framework illustrating the pathways through which climate change and variability affect nutrition security.
Source: Adapted from (9), (40) and (45).

Climate change disproportionately impacts poor women and children as socially vulnerable members of society *(20)*. Many of the world's poorest people are rural women in developing countries who rely on subsistence agriculture to feed their families. Women are on the front line, in food production and gathering (including water and wood), and in preparing and distributing food within their households, which makes them highly exposed to climate change impacts on health and nutrition. Climate change could add to water insecurity, thereby increasing the work burden of women subsistence farmers, especially in Africa and Asia *(21)*. This would adversely affect health and nutrition security through lack of access to clean drinking water and safe sanitation; lack of time for necessary child caring practices, such as breastfeeding; and reduced access to and availability of food, due to inadequate agricultural water *(22)*. In areas threatened with drought and desertification, women's increased domestic care responsibilities could significantly reduce their opportunities to engage in income-generating activities, with negative implications for household food security *(23)*. Women have different options and capacities than men do to respond to climate change impacts on health, food and livelihood security *(24)*. Many women have limited access to education, livelihood assets and health care, due to lower incomes and cultural expectations that restrict their mobility *(25)*, and frequently they lack access to modern farming technologies *(26)*. Forced migration and displacement, including when these result from climate change-related events, tend to leave female-headed households behind *(24)*.

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KEY STRATEGIES FOR ENHANCING WOMEN'S CAPACITY TO ADDRESS CLIMATE-RELATED CHALLENGES TO NUTRITION AND HEALTH

STRENGTHENING WOMEN'S RIGHTS AND OPPORTUNITIES - A BASIS FOR RESILIENCE AND ADAPTIVE CAPACITY

There are a number of key issues related to women's rights and gender equity that need to be addressed in order to reduce vulnerability and to increase adaptive capacity and resilience to the impacts of climate change on nutrition and health. These include, among others:

■ EDUCATION FOR GIRLS AND WOMEN

Empowering women through education is a key component of building women's resilience and leadership capacity. Governments must focus on educating girls and women, including the provision of educational incentives, such as school feeding programs and cash transfers for educating girls. Analysis from 32 countries in sub-Saharan Africa showed that girls' enrolments in primary schools went up by 28% through school feeding. When on-site school meals were combined with take-home rations for a student's family, girls' enrolment in the highest primary grade surged by 46% *(27)*.

When climate-related disasters strike and household resources are diminished due to increased environmental degradation, girls are often withdrawn from school. It is therefore critical to incorporate school meals and food-for-education programs into climate change adaptation strategies in order to ensure full enrolment, educational gender equality and improved food security *(36)*. Girls with more education also grow up to have smaller and healthier families *(29)*. Educating girls and women on reproductive health and access to voluntary contraceptive methods will improve their livelihoods' resilience and their access to food and health services for themselves and their children.

At the same time, with the right education and training, women can better contribute to environmental, agricultural, health and nutrition decision-making *(30)*. Policies that support gender equality in access, use and control over science and technology, formal and informal education and training will enhance a nation's capability in disaster reduction, mitigation and adaptation to climate change *(44)*. Providing women with the opportunity to pursue secondary education, including through scholarships for university studies in agriculture, health and nutrition-related areas, helps to enhance their ability to influence decision making.

WOMEN'S ACCESS TO RESOURCES

Promoting equal access by women to land ownership and other resources, such as capital, technical assistance, technology, tools, equipment, markets and time, is needed for effective socio-economic participation *(25,31).* Women produce up to 80% of the world's food, but own less than 2% of the world's titled land *(32)*. This disparity leaves women incredibly vulnerable; the loss of a husband, father or brother often also signals a loss of land and with it, a main source of food security, income, bargaining power and status within the household and community. Women's property rights must be strengthened in both law and practice.

Financial services provide opportunities for improving agricultural output, food security and economic vitality. Farmers who want to invest in more productive (but expensive) technologies or who are unable to cover their short-term expenses rely on credit markets or other credit sources to allow them to do this. Credit markets, however, are not gender neutral. Women face legal barriers and cultural norms that limit them from holding bank accounts or entering into financial contracts in their own right. Moreover, women often have less control over fixed assets, which are often necessary as collateral for loans. They may also face discrimination, with institutions granting women smaller loans than they grant men for similar activities *(24)*. These challenges impact women's production capabilities and ultimately, their livelihoods. It is thus important for women to be ensured access to savings, credit and loans. Access to financial services, in turn, influences access to technology, which is crucial to maintaining and improving agricultural productivity. In this context, it is critical to encourage the development of technologies that are tailored to the needs of women and to foster the transfer of technology to women *(25)*.

WOMEN'S ACCESS TO SOCIAL PROTECTION AND SAFETY NETS

Social safety nets protect lives, livelihoods and human capital during crises and help the most vulnerable recover from shocks. They are essential to preventing the deterioration of food and nutrition security and health among the most vulnerable, and reduce the risk of more people falling into the poverty trap. Social protection policies and programmes can also catalyse women's empowerment. Labour-based safety nets - known as food- and cash-for-work programs - engage women in building assets that enhance the well-being and the resilience of their communities, such as schools or sanitary facilities, as well as natural resources and productive infrastructure. Safety nets can also be used to help women create assets that they use within their traditional sectors of activity, such as cooking stoves and vegetable gardens, or to allow women to spend time learning new marketable skills *(43)*.

The Government of Bangladesh's Vulnerable Group Development (VGD) programme, for example, supported by the World Food Programme (WFP), provides monthly

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wheat flour rations and entrepreneurship training to the poorest, most marginalised women in Bangladesh. Roughly 10 million women and their families have benefited from the programme since it was launched three decades ago. Participating women attend regular training sessions where they discuss social issues and learn about their rights, e.g. in marriage and divorce proceedings. They also participate in a savings plan and are encouraged to start their own businesses, mainly in vegetable production or in animal rearing *(41)*.

Safety nets are also critical for promoting nutrition security among children, particularly girls, and mothers. Conditional cash transfer programs in Colombia, Mexico and Nicaragua, in which families receive financial support on the condition that children attend school and receive vaccinations, and that pregnant women receive pre-natal care, have decreased stunting by rates of 7, 10 and 5.5% points respectively *(17)*. These programmes target the core of the vicious cycle of hunger and malnutrition that undermines maternal health, stunts children's physical and cognitive growth, impairs school performance and impedes progress towards gender equality and the empowerment of women.

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■ GENDER EQUITY IN AGRICULTURAL AND OTHER EXTENSION PROGRAMMES

While there are extension programs and projects designed to support women, they are often disadvantaged with regard to access to institutional support and information. In fact, a survey of the UN Food and Agriculture Organization (FAO) of extension services showed that only 5% of all extension resources were directed at women and only 15% of the extension workers were women *(33)*. With some cultural practices discouraging women from interacting with men from outside the community, their communication with male extension workers is significantly hindered *(24)*. Moreover, extension services are often aimed at the farmers who are the most likely to be able to adopt innovations, for example, farmers with sufficient resources in well-established areas. These tend to be male farmers, so women may therefore get bypassed. In addition, women's active participation in training activities may be limited due to their lower levels of education, time constraints and cultural reservations. Consequently, female farmers have less access to information and institutional support than their male counterparts, which has significant implications for supporting and building their resilience to climate change. It is thus essential that extension information and programs be designed in a way that ensures that climate-related information and support reaches effectively women, enabling them to make sound decisions.

■ WOMEN'S PARTICIPATION IN CLIMATE CHANGE-RELATED DECISION MAKING AND INITIATIVES

Women possess unique skills, experience and knowledge with respect to natural resource management, household food provisioning, and stewardship of community resources, all of which can contribute to robust climate change adaptation policies and strategies *(34)*. Yet women are underrepresented in environmental governance and decision making. In order to strengthen the participation of women in climate change initiatives and to provide avenues for inclusion of their skills and knowledge in climate change plans and strategies, women must be equally represented in climate change decision-making bodies.

In order to promote women's participation in climate change decision making, governments must enforce gender mainstreaming in governance at the local, regional and national levels. Women's participation can be enhanced at various levels and in different sectors through the promotion of inclusive planning, decision-making, implementation, monitoring and evaluation processes of climate change-related measures and initiatives. Governments should support the inclusion of women in the development of National Adaptation Plans (NAPs), Nationally Appropriate Mitigation Actions (NAMAs) and corresponding local plans, in particular.

EMPOWERING WOMEN TO ADDRESS THE CHALLENGES OF CLIMATE CHANGE ON NUTRITION AND HEALTH

SUPPORTING WOMEN TO ENHANCE HOUSEHOLD FOOD SECURITY THROUGH ADAPTATION AND RISK REDUCTION

Food-insecure people, the majority of whom live in fragile areas that are prone to natural hazards, are the least able to adapt to and cope with shocks. Exposure to high levels of disaster risk and lack of capacity to manage these risks, compounded by other factors such as poor access to markets and income-generation opportunities, trap poor farmers and rural households in a cycle of food insecurity and poverty that quickly deteriorates into a food crisis when a disaster occurs *(42)*. In most developing countries, women farmers are responsible for 60%-80% of all food production. In Africa in particular, 70% of agricultural workers are women, and women are responsible for 80% of food storage and transport, 60% of harvesting and marketing activities, and 100% of the processing of basic foods *(24)*. Women are hence directly affected by the increasing frequency of droughts and potential changes in rain patterns that will affect crop production and crop susceptibility to disease.

At the same time, women are a repository of traditions and knowledge of natural resource management that are indispensible for building resilience and adapting to climate change. Women are stewards of natural and household resources, and could hence play a crucial role in climate change adaptation strategies in the agriculture sector that are health and nutrition sensitive and have mitigation benefits.

Agricultural policies need to go beyond simply producing more food, and focus on producing the right food, promoting resilient local food systems and putting people back at the centre of climate-resilient sustainable development. Malnutrition can be the result of deficiencies or imbalances in energy, protein and/or other nutrients. Even diets that meet appropriate caloric intake can still be deficient in micronutrients, particularly iodine, iron and Vitamin A *(35)*. Rising food prices as a direct result of climate change further exacerbate this problem, as households are forced to substitute cheap starchy staples for micronutrient-rich animal proteins, fruits and vegetables *(35)*. Furthermore, cultural feeding practices leave women and children most vulnerable to malnutrition.

Many of these micronutrient deficiencies can be prevented through diet diversification. Though research is underway to breed new drought-tolerant crops and develop "biofortified" micronutrient-dense crop varieties, there is often a trade-off between more resistant crops and less productivity. Drought resistant and less labour intensive crops are also not always as nutritious as the crops they replace *(35)*. Strategies recommended to promote diet diversification include *(17)*:

- Agroforestry, the integration of tree and crop cultivation.
- Agricultural extension services promoting better crop diversity.
- Promotion of cultivation and consumption of local micronutrient rich foods.
- Gender-sensitive policies that train both men and women in methods for increasing productivity through development of nurseries, proper site selection and land preparation.

CLIMATE-SMART AGRICULTURE

Climate-smart agriculture is defined as agriculture that sustainably increases productivity and resilience (adaptation), reduces/removes greenhouse gases (GHGs) (mitigation), and supports achievement of national food security and development goals *(36)*. Food security and climate change are addressed together by transforming agriculture and adopting practices that are "climate-smart," i.e., that increase productivity and resilience while reducing or removing greenhouse gases. Some of the approaches include changing or improving management of farming practices such as agroecology, conservation agriculture, low emission rice production systems, livestock efficiency and resilience and agroforestry among others. Agroecology can contribute to the realisation of the right to food and to broader economic development.

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Climate change strategies also need to take into account women's important contributions to disaster risk reduction. Men and women are affected differently by disasters. In inequitable societies, women are more vulnerable to natural disasters than men because of socially constructed gender roles and behaviours that affect access to resources. In post-disaster situations, too, women are often more vulnerable than men, as their care-giving roles expand dramatically after a disaster, and women's access to resources for recovery is often constrained *(42)*. Women's participation could greatly improve the effectiveness of disaster preparedness, prevention, and response and the development of nutrition and health sensitive risk-reduction strategies. They can also act as agents of social change, since their resilience and their networks are essential to household and community recovery *(2)*.

■ INCREASING ACCESS TO MATERNAL, CHILD CARE AND NUTRITION SERVICES

Pregnant women, new mothers and young children are particularly vulnerable to the impacts of climate change. Pregnant women with poor quality diets marked by micronutrient deficiencies or chronic malnutrition experience a higher rate of maternal mortality and are more likely to give birth to developmentally challenged or stunted children. Even mild stunting is associated with higher rates of illness and death, impaired cognitive function and reduced school performance in children. Health and nutrition interventions during the critical "window of opportunity" between conception and the first 24 months of a child's life can be particularly effective *(35)*.

Good nutrition protects and promotes health; reduces mortality, especially among mothers and children; encourages and enables children to attend and benefit from school; and enhances productivity and incomes in adulthood. Women's nutritional status has a direct impact on the nutrition status of their children, with many effects over the life course. Focusing on women's roles in food production and distribution at the household level is an important strategy for improving children's nutrition outcomes. Aside from food security and health, maternal and child care practices are key determinants in a child's nutritional status.

Adapting to climate change requires incorporating strategies that strengthen and support primary maternal and child care practices and services, including the promotion of breastfeeding, complimentary feeding for infants beyond six months of age, growth monitoring of infants and children, improved hygiene practices including hand washing, deworming, and immunization programs, and micronutrient supplementation for young children and mothers (e.g., periodic vitamin A supplements and therapeutic zinc supplements when treating diarrhoea). Strategies to promote good maternal and child health and care practices requires the provision of family planning, maternity and other reproductive health services. Promoting childcare facilities and other approaches to support women's caregiving role can be beneficial to address the impacts of climate change on health, and may contribute to transforming related gendered roles and norms *(22)*.

■ IMPROVING HEALTH ACCESS AND PROMOTING A HEALTHY ENVIRONMENT

There is a need for the development of gender-responsive and accessible health services that reach the poorest populations and therefore address particular health needs of women and men *(22)*. Incorporating gender into health interventions is a crucial component of addressing gender inequality and ensuring women's full access to comprehensive health services *(37)*. This is particularly relevant in connection with natural disasters and displacement. There were 42.3 million people displaced by natural disasters in 2010 *(38)*, a number which is expected to increase due to climate change. Women are more likely to suffer injury or death during natural disasters due to limited mobility outside the home, lack of warning, or inability to swim *(39)*. In communities affected by forced migration and displacement, women and girls are at a higher risk of sexual violence, exploitation and abuse, and domestic violence, and also face a lack of access to adequate reproductive health care services.

Climate change has a significant impact on environmental health, in particular on access to clean water and to sanitation systems. The risk of flooding of human settlements is predicted to increase due to increased rainfall in coastal areas and a rise in sea level. Flooding may result in increased exposure to contaminated water and food, and to diarrhoeal and other infectious diseases. The incidence of vector-borne diseases such as malaria and dengue fever has already increased due to climate change. Limited availability of drinking water increases the work of collecting, storing, protecting and distributing it, increasing the burden of work on women. Water-insecure regions suffer disproportionately from malnutrition, infant mortality, sanitation problems and vector- and waterborne diseases *(35,28)*. Because women in the developing world have less access to formal education than men, they are underrepresented at the institutional level where water management programmes are designed. Steps should be taken to create capacity-building and training programmes targeted at women and based on their needs. Studies have shown that when women and girls are given the opportunity to participate in development programmes, there is a corresponding increase in efficiency and sustainability *(34)*.

CLEAN COOKSTOVES

Indoor air pollution is one of the 10 most significant public health threats faced worldwide by poorer nations *(20)*. Women and children are exposed to high levels of indoor air pollution from cookstoves resulting in high rates of chronic respiratory diseases.

Incorporating fuel-efficient clean cookstoves into climate change adaptation strategies has numerous co-benefits, including reducing cardio-pulmonary disease among women and children, reducing overall levels of carbon emitted by inefficient cooking, and reducing the amount of time women and girls spend collecting firewood.

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Adaptation and mitigation strategies have great potential for improving health while reducing emissions. Climate change adaptation plans should facilitate access to comprehensive health services and outreach initiatives to promote the availability of basic vaccinations, nutrition programmes and gender sensitive education and communication programs on climate and health related risks. The potential health co-benefits of climate change mitigation should be considered and supported by financial mechanisms.

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CONCLUSION

In order for climate change mitigation and adaptation strategies to be responsive to the needs of communities, they must be designed with the inclusion of women's voices. Gender equality begins when we empower poor and marginalized women to work together with all members of society to create a safer, more sustainable world. In turn, gender equality benefits society as a whole, and can contribute significantly to better nutrition- and health-sensitive climate change strategies.

Women's roles in agricultural production and management, household food provision and nutrition security, and in natural resource management equip them with particular skills and knowledge that must be included in national climate change policies and strategies. To pave the way for women's leadership in climate change, women must be enabled to participate equally in the development of nutrition- and health-sensitive climate change mitigation and adaptation strategies at all levels. In addition, climate change mitigation and adaptation strategies must include gender- and nutrition-sensitive indicators, in order to address women's social and nutritional vulnerability.

Protection and promotion of nutrition and health are essential components of climate-resilient and sustainable development. Women can be instrumental in addressing climate change, nutrition and health in an integrated way. Promoting women's leadership on these issues requires an integrated approach focusing on both immediate and long-term actions. These include creating mechanisms to promote and protect women's rights, empowering women, and enhancing their capacity to address the challenges of climate change for nutrition and health. Promoting women's leadership will have a positive and significant effect on climate change mitigation and adaptation strategies, and ultimately, on the health and well-being of the societies of which they are members.

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