



## **Mainstreaming Gender in the Implementation of State Action Plan on Climate Change Toolkit**



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### Foreword

Climate change poses an emerging challenge to sustainability of social and economic development, livelihoods of communities, and environmental management. Awareness on gender aspects of climate change is still lacking. It is becoming increasingly evident that climate change is not gender neutral and its impacts are disproportionately higher on women.

Our government is committed to empowering women to deal better with climate change. Indeed, women work shoulder-to-shoulder with men as nation builders, labouring with climate-sensitive natural resources to tend vegetable gardens, poultry and farms as well as fetch water, firewood and fodder for their homes. Women are also more vulnerable to natural disasters. Recent years have seen a rise in 'feminisation' of agriculture labour and in women-headed households in both rural and urban India.

India's National Action Plan on Climate Change (NAPCC) recognises that with increasing scarcity of water, reduction in yields of forest biomass, and increased risks to human health due to climate change, the impacts will be more on children, women and the elderly. The plan envisages that special attention be paid to the aspects of gender in Adaptation programmes. However, it is equally critical to focus on mitigation sectors to ensure that women's concerns are part of energy solutions, low carbon transport models and green habitats in rural and urban areas.

The Government is involving the states to combat threats of climate change at local level through State Action Plan on Climate Change (SAPCCs) consistent with the objectives of NAPCC. The actions under the SAPCCs require gender friendly approach to climate solutions for the benefit of both men and women.

This toolkit aims to sensitise policy makers and administrators in identifying and analysing socio-economic and political vulnerabilities faced by women in energy security, health, agriculture, industry, urban development and transport. The toolkit indicates how to provide women with tools that can be used to both enhance gender perspective in planning and make it work through programmes and schemes.

It is hoped that this toolkit will go a long way in addressing socio-economic impacts of climate change at the local level, where gender-specific disparities are most intense. It will help create awareness on mainstreaming gender in the implementation of State Action plan on Climate Change.

  
(Prakash Javadekar)



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# Climate Change and Gender Relations

*'Men and women together have to solve the climate problem'*

Climate change has fast emerged as a real threat to India's food security, economic growth and poverty reduction. It also threatens to widen the gender gap. Contrary to general perception, climate change and gender are not separate functional areas but have integral over-laps. Overcoming the climate challenge requires addressing the gender gap. This toolkit endeavours to help implementers of climate-related programmes address the gender divide within these programmes.

## Knowing 'gender'

The English word 'gender' may not have an equivalent term in any Indian language but the concept it describes is universal.

Gender refers to both men and women, defining them with respect to their different economic, social and cultural roles and responsibilities. Thus, biological differences between men and women are natural; gender differences are cultural. They also vary across age, race, ethnicity, caste and class. Mainstreaming gender in public policy helps reach benefits equally to men and women in an appropriate manner.

## Links between climate change and gender

Growing literature and empirical studies show that climate change is not gender neutral and climate impacts are already deepening India's existing gender gap.

The 2007 Fourth Assessment Report of the Inter-governmental Panel on Climate Change (IPCC) explicitly states that men and women

have different adaptive capacities and vulnerabilities to climate change (chapter 17). It is also an accepted fact that, local participation and management is necessary to deal with climate variability and climate change. Local-level awareness, knowledge and incentives go a long way in reducing risk and gaining control over climate-induced changes in one's life and livelihoods.

India's blueprint for action on climate change, the National Action Plan on Climate Change (NAPCC), points to gender differentiation by stating that 'the impacts of climate change could prove particularly severe for women. With climate change, there would be increasing scarcity of water, reduction in yields of forest biomass, and increased risks to human health to which children, women and the elderly in a household are most vulnerable. With the possibility of a decline in the availability of foodgrains, the threat of malnutrition may also increase. All these contribute to deprivations that women already encounter; therefore it is vital that adaptation programmes pay special attention to the aspects of gender' (NAPCC, p. 13).

The NAPCC offers goals and guidelines on mitigation and adaptation through eight Missions. Three of the Missions focus on mitigation, four on adaptation and one on building strategic knowledge on climate change. None of the Missions, however, make any reference to gender-based vulnerabilities or adaptive solutions. Based on the NAPCC and directed by the Union Ministry for Environment and Forests (MoEF), all Union Territories (UTs) and State governments have prepared draft State-level Action Plans on

Climate Change (SPACCs). Only a few States have made any reference to gender-based aspects of climate change.

Socio-economic deprivation makes women more vulnerable to climate risks than men. For instance, when food production declines due to untimely rainfall, the first priority for food goes to men and boys. The 2009 cyclone Aila in West Bengal saw an exodus of men and boys as crops and the fish habitat were destroyed. Women and girls were left behind. These women-headed households had to till the land with little resources and carry the care burden for the old, the infirm and children. Male migration has led to an increase of women in agricultural labour.

Where adaptation does not factor in gender-based roles and responsibilities, the gender divide further deepens. In many adaptive farming practices, for instance, women and girls shoulder more time and work burden than men.

Women are critical agents of change when implementing climate solutions. Their traditional knowledge and skills are often a resource to adapt to climate impacts and they have a valuable influence over their households' consumption patterns and lifestyle choices. Adaptation to climate change will require recognition of women workers as critical partners in delivering solutions needed to increase their resilience and deliver adaptation and mitigation goals.

Women are less likely than men to have the opportunities, authority and resources for adaptation to climate change impacts. Yet, the socio-economic impacts of climate change at the local level, where gender-specific disparities are most intense, have hardly been understood, let alone addressed. A strong focus on addressing women's vulnerabilities and promoting women's agency in adaptation is unavoidable in India for several reasons. Up to 70% of Indians still live off climate-sensitive natural resources and over 87% of the women workers, twice the proportion of male workers,

are engaged in agriculture and allied activities. Among cultivators and agricultural labourers, female marginal workers outnumber male marginal workers (Census 2011). The XIth Five-year Plan had expressed concern about 'feminization of agricultural labour.'

Indeed, all agriculture and allied service programmes require gender-differentiated mechanisms to address women's vulnerabilities and to help them adapt by building on their capabilities. Several studies show how women are also disproportionately affected by climate-induced natural disasters such as floods, droughts and cyclones and require relief and rehabilitation packages customized to address their needs.

## **Gender, infrastructure and climate change**

That women are more vulnerable than men is evident across sectors. With regard to water and sanitation, a whopping 49.2% of Indians still defecate in the open and more than a third (36%) of households have no source of drinking water in their premises (Census 2011). Women are also vulnerable to the increased prevalence of vector-borne and water-borne diseases in the wake of climate change. These add to deprivations that women already face. For instance, more than half of the women, compared to a fourth of men, are anaemic and thus more prone to maternal mortality, weakness, diminished physical and mental capacity, and increased morbidity from infectious diseases (NFHS-3, 2005-06).

Climate change impacts on energy security of the country also hit women first and worst. Over 85% of rural India still uses firewood, crop residue and cow dung as the primary source of cooking fuel; 20% of urban India uses firewood (Census 2011). Women's burden of collecting fuel resources is increasing in the wake of receding forests and higher crop loss. Energy is indeed a women's issue.

Even in seemingly 'non-conventional' areas such as transport, industry and urban

development, women's concerns are different from those of men. Road projects for motorized transport do not help women and girls who still walk to fetch water, firewood and fodder. Hotter summers, intense or erratic rainfall will need reserved parking/shady areas for pregnant and lactating mothers and those with young children. Mobility patterns also differ. Young mothers and housewives need small clean fuel vehicles in and around residential areas for tasks such as local shopping and trips to schools and the local doctor. Village women need transport to fetch water and firewood. In other words, impacts of climate change need to be mapped for men and women differently for these sectors too, to enable appropriate adaptive and mitigating solutions. Indeed, gender-responsive governance and development are critical for effective climate action on the ground.

#### **Box 1: Key Departments of Focus**

*Agriculture and allied departments, Environment and Forests, Rural development, Panchayati Raj Institutions, Water, Health, Disaster Management, Energy, Renewable Energy, Urban development, Transport, Industry, Science and Technology.*

## **Purpose and focus of the toolkit**

This toolkit is a user-friendly hands-on guidebook for implementing agencies and frontline staff across departments. Case studies illustrate how gender can be mainstreamed in existing programmes and schemes. A reference section is included for more information.

The toolkit includes practical guides for closing the gender gap on climate vulnerability, agriculture and allied activities, disaster management as well as energy and habitat. The toolkit shows how different agencies can adopt revised roles and responsibilities to mainstream gender in their climate action.

# Using the Gender Lens

*'Programmes and schemes empower men and women differently'*

## The Issue

India is mandated to actively promote inclusion of gender concerns in all its policies and programmes. Its recent decision to reserve 50% of the seats in Panchayati Raj Institutions for women candidates and to make gender budgeting mandatory across government ministries and departments translates into action the Constitutional commitment to gender equality.

The National Policy for Empowerment of Women 2001 provides for the creation of an enabling environment for women's empowerment, including securing equal access to participation and decision-making in the social, political and economic spheres. The National Mission for Empowerment of Women endeavours to strength coordination between different departments while the National Resource Centre for Women is mandated to act as a convergence platform for all women-responsive programmes.

At the international level, India has agreed to promote gender equality at several fora, including the wide-ranging United Nations Beijing Platform for Action (PFA) 1995 and the UN 1993 Convention on the Elimination of Discrimination Against Women (CEDAW). Gender equality is at the core of the Millennium Development Goals (MDGs) adopted in 2000, and the commitment continues in the ongoing post-MDGs process. Commitments made in international conventions are adopted in the National Policy for the Empowerment of Women. Gender mainstreaming itself became a global strategy as part of the Beijing Platform for Action.

Yet, both in policy making and in implementation, gender mainstreaming remains a challenge. For instance, females are

### Box 2: Key Constitutional Provisions

**Article 14:** Men and women to have equal rights and opportunities in the political, economic and social spheres.

**Article 15(1):** Prohibits discrimination against any citizen on the grounds of religion, race, caste, sex, etc.

**Article 39(a):** The State shall direct its policy towards securing all citizens, men and women equally, the right to means of livelihoods.

biologically a stronger sex but the child sex ratio has been adverse and consistently declining since Census 1981. The current ratio of 919 females against 1000 men (Census 2011) is the lowest ever since Independence and a sharp fall from the last decade when it was 927 (Census 2001). Women own only around 10% of the agricultural land and comprise just 11% of India's Parliamentarians in the elected house.

Gender Budgeting, through a mandate, has not even reached the stipulated one-third part of the planning process and is not proportional to the participation of women and girls in various sectors.

The need to mainstream gender across the spectrum has perhaps never been greater than in the wake of climate change.

## What needs to be done?

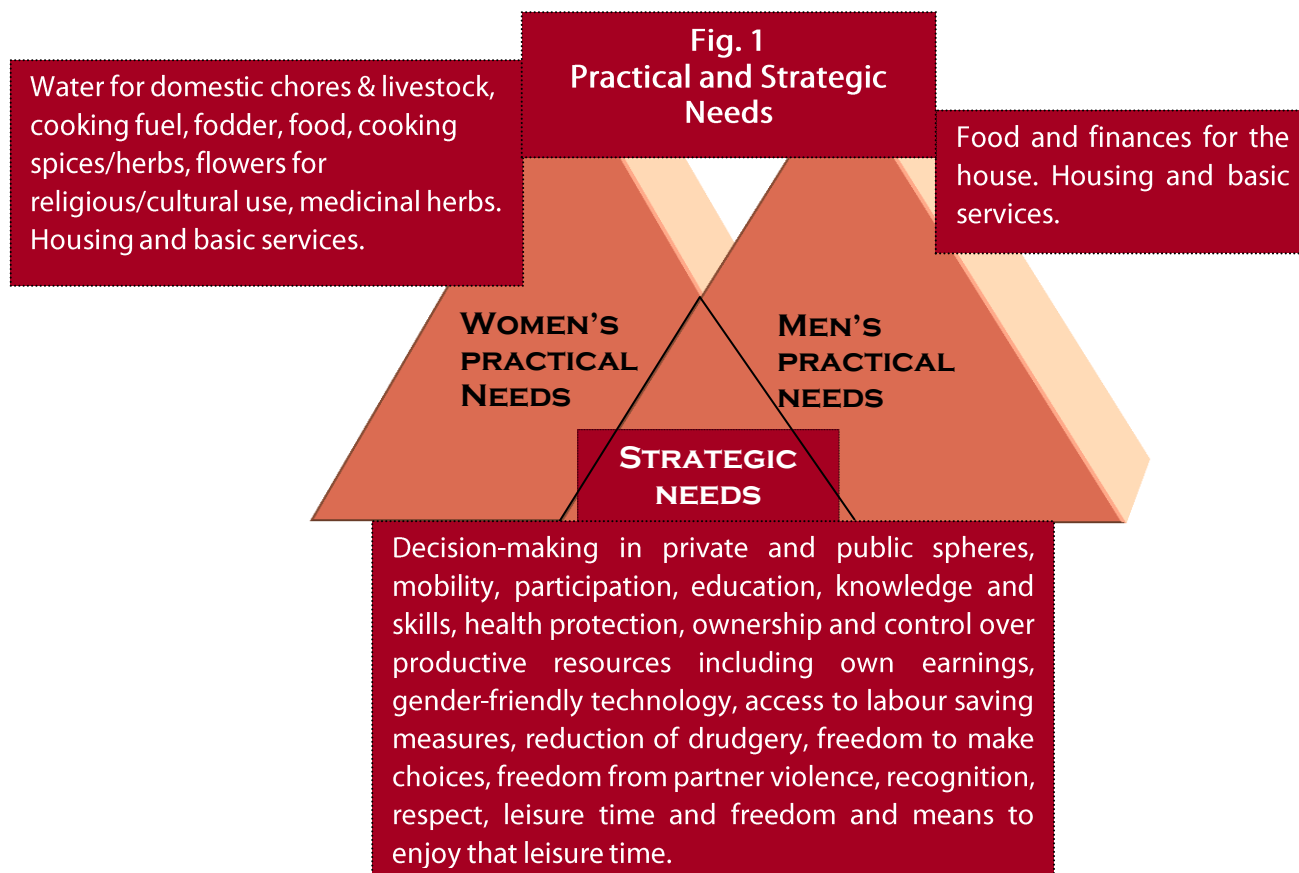
Fortunately, many of India's policies, programmes and schemes that can help women deal better with climate change have the flexibility to mainstream gender at the field level. At times this may need a government notification, in addition to **awareness, built capacities and some new ways of working**.

The State-level climate plans offer a golden opportunity for line departments and local governance structures to involve more women at every level and ensure that they are really able to deal with climate vagaries. Having more women in Panchayati Raj Institutions (PRIs) will make this easier to implement.

As a first step, every department, including District Rural Development Agencies (DRDAs) and urban municipalities, can adopt the following **10-point Agenda** to enable gender-friendly implementation of existing climate-responsive programmes and schemes:

1. **Demonstrate leadership** through top-level support for gender mainstreaming.
2. **Bring in gender experts**, converging with the agenda of State-level departments on women affairs where possible, and have these experts work with implementation bodies across programmes and schemes, perhaps through the preparation of 'gender check-lists' that can become part of operational manuals, training programmes and IEC (information, education, communication) material for public awareness.
3. **Mandate collection of gender-disaggregated data** at every level of assessment and intervention.
4. **Monitor and evaluate** adaptation and mitigation **programmes and budgets** from a list of gender-based quantitative and qualitative 'outcome' (not 'output') indicators and spends - created in consultation with the gender experts.
5. **Undertake gender-based research** across a range of critical areas.
6. **Work with panchayats to converge programmes** by getting women members of self-help and other user groups to be part of panchayat committees that plan, oversee and manage natural resources and government programmes. Else, women will continue to function outside the governance system.
7. **Mandate in-service capacity building** on gender mainstreaming, in collaboration with departments of women affairs for all officers, especially the front-line staff in line departments at regular intervals - stipulating a minimum of such trainings over a specific time period, to allow for development of new perspectives and institutionalization of new ways of working.
8. **Mainstream gender in Climate Cells** where these are being set up by investing in gender expertise and capacities within these cells.
9. **Create incentives** for equal opportunity like awards, sharing-and-learning platforms, equal opportunity evaluation criteria in staff performance evaluations and reporting in departmental annual reports.
10. **Partner non-profits and community groups** across programmes to bring in the 'software' needed for gender-friendly implementation, including to mobilize men and women, build their capacities, arrange for a dialogue with officers, explore gender-just climate solutions and help transform the power equation between genders in public space and within homes. Without pro-active collaboration with people and people's





groups, government agencies cannot mainstream gender on the ground.

The section below lists **five tools** that can be used by implementing agencies to mainstream gender in existing climate plans. These tools need to be used together to both: enhance the gender perspective and make it work through programmes and schemes. These tools can also be used to shape new climate programmes across all sectors.

## How can it be done?

### Tool 1: Unpack the Jargon

#### *The first critical step*

What is gender mainstreaming? What is gender equality? What is gender empowerment? Is there a straightforward way of understanding this plethora of terms and phrases? Is there a relationship between the policies and programmes?

'Gender mainstreaming' simply means that women and men should have the same authority and opportunities to take all decisions that affect their lives and livelihoods. This will lead to gender equality.

Gender mainstreaming is absent because men have more independence, or more **power for self-determination** than women; men also have more influence, or **power in public spaces**.

The goal of gender mainstreaming is to redistribute this unequal power to decide and act between men and women – both within homes and in public spaces.

A more gender-sensitive way of implementing government programmes and schemes will help balance the power play between men and women, giving women a more level playing field to deal with climate vagaries.

## Tool 2: Identify Women's 'Real' Needs

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### *Practical and strategic needs*

Caroline Moser, an academic, based needs of men and women on their roles, responsibilities, socio-economic and political status in a society. The needs were put in two categories (Fig. 1). Satisfaction of these needs is directly proportional to the degree of women's empowerment.

The category of '**practical needs**' addresses what men and women need to survive in the short-run. Satisfaction of these needs do not disturb the status quo between men and women. The intent to maintain the status quo also means that not all practical needs of women are always satisfied. For example, a poor woman farmer's need for cooking fuel is very basic and just requires proper more gender-responsive implementation of existing policies related to forest, energy and agriculture.

The second box of '**strategic needs**' are long-term and similar for men and women. Satisfaction of these needs for women means there is some transformation of the status quo. In India, this included just receiving formal education or giving birth to a child in a medical facility. This is because this happens only in cases where their menfolk are empowered enough to realize its long-term benefits to the family and society.

## Tool 3: Bring Women Centre-stage

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### *From welfare to greater equality*

Developed by Sara Longwe, a gender expert from Lusaka, Zambia, this guide can help line agencies and field staff to decide how programmes and schemes can make that leap from satisfying women's 'practical' needs to meeting their 'strategic' needs.

If the implementation of a programme addresses only 'practical' needs then it has adopted only a 'welfare' approach to implementation. Where the implementation

addresses 'strategic' needs, gender is mainstreamed and the programme becomes transformative, empowering women, for instance, by giving them greater control over resources and decision-making.

The examples in Box 3 and Table 1 illustrate that this can be done with several existing programmes.

Longwe's framework is progressive so it helps improve gender mainstreaming in programme implementation in phases and over an intended timeline, moving to greater levels of gender equality – from 'welfare' to 'equal control.'

The matrix (Table 1), with an example, is a working tool for implementing agencies to map implementation of programmes against gender mainstreaming levels reflected as a combination of practical/strategic needs and women's empowerment.

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## Tool 4: Empower with Budgets

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### *Fair allocations & spends*

Programme goals, activities and indicators, if matched with programme allocations and spends disaggregated by gender will service two purposes. One, it will map where all the money is going – to men or to women and whether to satisfy practical or strategic needs.

#### **Box 3**

##### **Potential of Programmes to Empower**

Both the Participatory Irrigation Management Programme and the Integrated Watershed Development Programme lend themselves to gender mainstreaming because they provide for involvement of men and women in designing and managing water resources.

Water bodies in a village are used not just for irrigation but for domestic chores and livestock, both of which are women's responsibility. Women also exceed men as farm labour.

Line agencies and panchayats can bring women centre-stage to deal with the looming water crisis and demonstrate a path breaking way to mainstream gender in the water sector.

Two, it will service as a guide to better allocation and spending towards mainstreaming gender activities. Table 1 can be used to map these budgets for every programme, again with the help of gender experts/departments of women affairs working with finance officers to develop working matrices like this one.

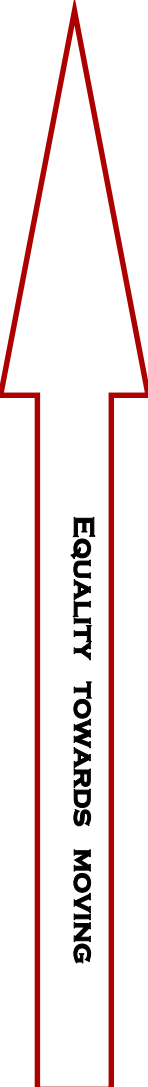
Development of a matrix is one-time task. The computer software can then be used to monitor and evaluate both allocations and spends. The following steps will help mainstream gender in climate plans and existing programme budgets.

- Shift to gender budgeting from Women's Component Plan
- Monitor allocations and spends of programmes using the Table 1 matrix
- Spend according to gender-based needs – the needs are also mapped on the Table 1 matrix.
- Go beyond budget spends of up to 30% for women to spend, and allocate where possible, on the basis of women's participation in livelihoods activities, extent of risk to natural disasters, use of infrastructure and public services, etc.
- For new programmes, incorporate gender-based needs in the planning process itself – across all sectors.

**Table 1: A Working Tool  
Mapping Gender Mainstream Levels**

**An Example: Joint Forest Management (JFM)**

*Already contains provisions to empower women but needs to mainstream gender needs*



Gender-based Need	Empowerment Category (Longwe)	What needs to be done?	Gender Budget Allocations & Spends
<b>Strategic</b>	<b>Control</b> Equal control over decision-making on factors of production	<i>E.g. JFM members, at least 50% of them women have power and funds to decide types of plantation (for food, herbs, spices, fodder, fuel, etc.) use and management of village forests; Degraded and other forest land given on lease to panchayats, women collectives; incentives given to best nurtured/preserved patches for assisting in mitigation.</i>	
<b>Strategic</b>	<b>Participation</b> Equal participation in decision-making, including planning and administration	<i>E.g. JFM committee quorum must have at least 50% women (Govt. notification needed); converge JFM plans with PRI plans to access other schemes and funds.</i>	
<b>Strategic</b>	<b>Conscientisation</b> Equal understanding of gender roles and a gender division of labour that is fair and agreeable	<i>E.g. Capacities of villagers and officers built to use gender lens in running the JFM programme.</i>	
<b>Strategic</b>	<b>Access</b> Equal access to productive resources through legal reform.	<i>E.g. government notifications for (a) gender-balanced quorum; (b) JFM to be part of the village panchayat plan; (c) women's needs to be prioritised; and (d) women collectives to be leased degraded/other forest land in every village.</i>	
<b>Practical</b>	<b>Welfare</b> Equal access to material welfare (food, income, medical care).	<i>E.g. Women to have free access to forest for firewood, fodder and edible food – this will work better if strategic needs are also addressed simultaneously, as several NGO-led forest conservation/regeneration initiatives show.</i>	

**Tool 5: The Final Benchmarks**

**Addressing all critical areas**

In the final analysis, what are those key areas that programmes on climate adaptation and mitigation must focus on to ensure gender mainstreaming and gender empowerment? These key focus areas stem from women's

strategic needs and programmes that mainstream gender should address all of the following questions with regard to any programme or scheme. Is the programme or scheme:

1. **Creating economic/productive assets for women?** Assets like land titles, self-owned livestock, leases on forest land/common

land, biogas, solar panels and other decentralized renewable energy infrastructure, water tanks, labour reducing devices, income-enhancing technologies and safe transport?

**Box 4**  
**Creating Assets for Women with MGNREGA**

The National Rural Employment Guarantee Act has got wide application in helping pull poor people out of poverty by securing their lives and livelihoods. How can women gain from this scheme?

The MGNREGA is used to build infrastructure that will protect people's assets during disasters - like drains to let out water from water-logged fields in Gorakhpur, Uttar Pradesh.

A special focus must be on creating quality assets for women. For instance, creating grain/seed/fodder banks in flood-proof and cyclone-proof areas, small watersheds for kitchen gardens, rain roof water harvesting tanks for lower caste women who have to travel furthest for water, and flood- and cyclone-proof shelters for small animals on whom women depend for food and income during floods and storms.

2. **Building their knowledge, skills and capacities?** These help women overcome their vulnerabilities, sustain and improve their livelihoods, become more self-confident, have higher self-esteem and the ability to control their incomes, join public institutions and influence decisions that affect their lives.
3. **Reducing their labour and drudgery?** Else women's health will be impacted and they will not be able to have leisure time. This also contributes to mental problems such as depression and alienation.



**Fig 2: The Four Cornerstones of Gender Mainstreaming and Gender Empowerment**  
*Guidelines for Programme Implementation*

4. **Providing space for equal participation on decision-making platforms and within governance systems?** Progressive and integrated programmes like ATMA (Agricultural Technology Management Agency) have a huge potential to address all practical needs of women farmers and also their strategic needs. Programmes can bring in women to constitute half of the members of key bodies such as fishermen cooperatives and primary agricultural societies. Implementing authorities can bring about a change in society by mandating inclusive implementation of all programmes designed to help people adapt to climate vagaries.



## Gender and Climate Vulnerability

*'Men and women are not equally vulnerable to climate change'*

### The Issue

Climate change is not neutral when it comes to people. Climate change is already beginning to impact water and food security, energy, health, education, safety of lives, economic well-being, quality of life and even political stability in border areas of the country. Men and women are affected by each of the above differently.

*Yes, vulnerability is a measure of climate risks on natural resource systems. It is also a measure of vulnerable livelihoods and survival needs of men and women.*

Vulnerability is also differentiated within each gender. For instance poor farmers are more vulnerable than richer farmers just as urban poor are more vulnerable than the richer city people. For women too, vulnerability varies across age, class, caste, ethnicity and geography. Again, disability affects both men and women but within this women are more vulnerable than men. Single mothers are more vulnerable than single fathers. In other words, vulnerability is also a result of the opportunities and authority a gender has relative to the other gender. The same holds true within each gender groups.

State climate plans have mapped physical vulnerabilities but few States have taken into account socio-economic vulnerabilities within different agro-climatic zones. The need to understand socio-ecological vulnerabilities is critical because certain groups of people face a combination of multiple social stresses and natural shocks. Hence there is a need to design successful multi-sectoral adaptation interventions. All things being equal, women are more vulnerable than men (Table 2). For instance, women are more vulnerable than men in polluted cities because of their low health indicators and increased care-burden for the sick.

Some of the social stresses in a geographical area can be captured in demographic indicators, economic levels and financial viability of women and men, their participation in public, social, economic and political institutions, gender-specific health hazards, availability of energy sources and levels of infrastructure development. This gives a clearer indication of more vulnerable populations to natural disasters or health hazards or even energy insecurity.

**Table 2****Gender-differentiated Climate Change Vulnerabilities in Different Agro-climatic Zones**

An illustration based on primary field work

<b>Climate Change Impacts</b>	<b>Women's Vulnerabilities</b>	<b>Men's Vulnerabilities</b>
<b>Lower food production</b>	Least to eat; sleep on an empty stomach Additional work as wage labour – feminisation of agriculture labour	First priority to available food
<b>Untimely rainfall Rain in villages where it used to snow</b>	Lower farm production & consequences of male distress migration – work overload on own farm and as wage labour + care giver	Distress migration
<b>Higher summer temperatures</b>	Lower milk production among animals, water and fodder. Needs more labour and time to collect water, fodder  More tiring work in fields (intense rains means more weeds)  Longer hours - rise earlier to put in work when still cooler manual labour – harder soil	Lesser tasks in the field  Distress migration
<b>Lower regeneration of species</b>	Medicinal herbs and fodder unavailable in forests	No impact on work

*Source: Kapoor (2011)***What needs to be done?**

**Research**  
**Mapping gender-based vulnerabilities**  
**using different tools**

*Research Area 1: Mapping socio-ecological vulnerabilities for men and women using statistical and GIS tools*

The use of **Census 2011 and other similar statistical data to map socio-economic vulnerabilities** in different agro-climatic zones

for each state is critical. For instance, the first ever socio-economic data by Census 2011 revealed that less than half of Indian homes have basic toilet facilities and over a third do not have access to safe drinking water. Both these stresses are felt by women more than men. Women need privacy more than men when it comes to sanitation facilities; women also shoulder the main responsibility for fetching water for the household and home-based economic activities.

This mapping will be in addition to the projections of climate scientists mapping vulnerabilities of eco-systems and agricultural

scientists mapping potential effects of climate vagaries on the Indian agriculture. Gender experts, social scientists and scientists need to work together to map gender-disaggregated socio-ecological vulnerabilities across all the ecological zones in the country.

Vulnerability mapping needs to be done across sectors ranging from water availability and food availability to health hazards, energy insecurity, transport challenges, threats to education levels, magnitude of slum populations, availability of basic services, city air quality, and changes in population densities. The mapping needs to collect gender-disaggregated baselines and project gender-based vulnerabilities, taking into account socio-economic factors, for appropriate implementation of adaptation and mitigation interventions.

**Geographic Information Systems (GIS)** is another tool which needs to be used across the country to map social, economic and political vulnerabilities in addition to hydrological, meteorological or geo-physical vulnerabilities.

Development of these socio-ecological models can inform programme implementation agencies, build public awareness and flag other areas of local-to-national research.

### *Research Area 2: Developing gender-based vulnerability indicators*

Departments need to work with statisticians to develop gender-based indicators for socio-ecological vulnerabilities and perhaps even an index for a group of indicators. For instance, people living in urban slums, catchment areas, low-lying areas in urban or rural regions are more vulnerable to natural hazards than those on higher ground. They will share similar vulnerabilities.

### *Research Area 3: Gender-based vulnerabilities in disaster-prone areas*

Gender-based vulnerabilities related to natural disasters is a third area of mapping. India is one of the world's most disaster-prone countries and the magnitude of income poverty and 'capability poverty' (identified by economist Amartya Sen) makes India's people one of the most vulnerable in the world. Women earn less than men and their 'capabilities' are worse given their lower levels of education and authority.

Several studies show that women are more vulnerable to natural hazards. An Oxfam study showed how more women died during the 2004 Indian Ocean Tsunami than men. A UNDP study mapping 141 countries between 1981 and 2002 revealed that, disasters lower women's life expectancy more than men's and women also face greater domestic violence and sexual violence – in relief camps and in the dismal aftermath. Women are more vulnerable than men in urban slums and those with lower incomes in cities are more vulnerable to floods, storms, intense rains, temperature peaks than those who are living on higher ground and economically better-off.

Mapping of these gender-differentiated vulnerabilities along the axis of class, age, disabilities and single women-headed families will give a true picture of the ground realities and acknowledge what kind of adaptation interventions are required to address them.

### **How can it be done?**

#### **Approaches to Research**

#### **Synergy between an ant's view and a bird's eye-view**

All mapping exercises have two ways of looking at it: What the researcher thinks the vulnerabilities are and how the person maps out his or her vulnerabilities himself- or herself. There is a difference not just of a value judgement but also of the range of vulnerabilities mapped.

Vulnerabilities mapped by an outside researcher will tend to put different vulnerabilities in silos. So for instance, number of anaemic or pregnant/lactating women in a geographic setting will give one vulnerable index for each category. However, the anaemic women may have a chronic stomach problem which will not be mapped by the health department. This will make her weak, unable to earn adequate wages, fetch water/fodder/firewood easily and in turn, give inadequate care to her children or the aged family members. In cities, a more vulnerable woman will be an aged woman beggar withstanding intense dust storms, torrential rains and extreme temperatures.

If she is a single mother, she is more vulnerable. If she is receiving money from her migrant husband, she is more resilient. If her husband also earns in the village, she is even more resilient. Adaptation interventions, whether by the health department or the agriculture department or even by the women's department will have to put women like these in different categories even within the vulnerable category. In other words, how do intervention programmes tackle progressive vulnerabilities within the same categories? Especially because women as a gender have more nuanced vulnerability characteristics given her larger workload within the house and outside and her economic and reproductive responsibilities.

The solution to this lies in **undertaking research at two levels and collating the results**. It is important to note that neither of the levels are sufficient or comprehensive on their own. Both have failings and it is in combining the two methods that the real picture on gender-based vulnerabilities across other divisions like disability, class and caste will emerge.

The '*bird's eye-view*' research will be done by State departments across sectors using secondary information and some primary household surveys. Each department can also commission an '*ant's eye-view*' participatory

*research* by non-profit organizations where these organizations use several Rapid Rural Appraisal (RRA) and Participatory Research Appraisal (PRA) techniques and exercises to elicit more detailed and individual-based information from both men and women.

Both the quality of the information collected and the process of collecting the information are important in the combination of these techniques. RRA and PRA together also enable triangulation of research teams and the collected information. Participatory researchers often meet with men and women groups separately, thus giving space to women to speak more not just about their material needs but also their concerns, fears and aspirations. If women have to join men in being change agents, it is critical to map their perspectives and abilities with their physical vulnerabilities.

RRAs and PRAs will also flag issues that State departments may not consider. Ants often see things that birds miss! Women's vulnerabilities with regard to infrastructure is one such area. Lack of energy sources for the household and home-based enterprises (for women their homes are their workplace for many of the off-farm work) in a climate change-threatened world has not yet triggered large-scale surveys to map their vulnerabilities over the next decade or two. Rural transport for women to collect household provisions (currently firewood, fodder and water) and flood-resilient houses and water wells are other areas that are often cited by women in PRAs and RRAs but these are not part of official vulnerability-mapping exercises.

Computer models, case studies, flow diagrams and other means of mapping information collected from the two models of research can give a reality map of socio-ecological vulnerabilities across genders in different agro-climatic zones.

# Gender, Agriculture and Allied Activities

*'Women invest more time and labour than men in agriculture and related activities'*

## The Issue

Despite rapid urbanization, India is going to remain an agricultural society with majority of its people working on farms, with livestock, fish and forest produce. At the forefront of these will be women, just like they are investing more time and labour today (Fig. 3).

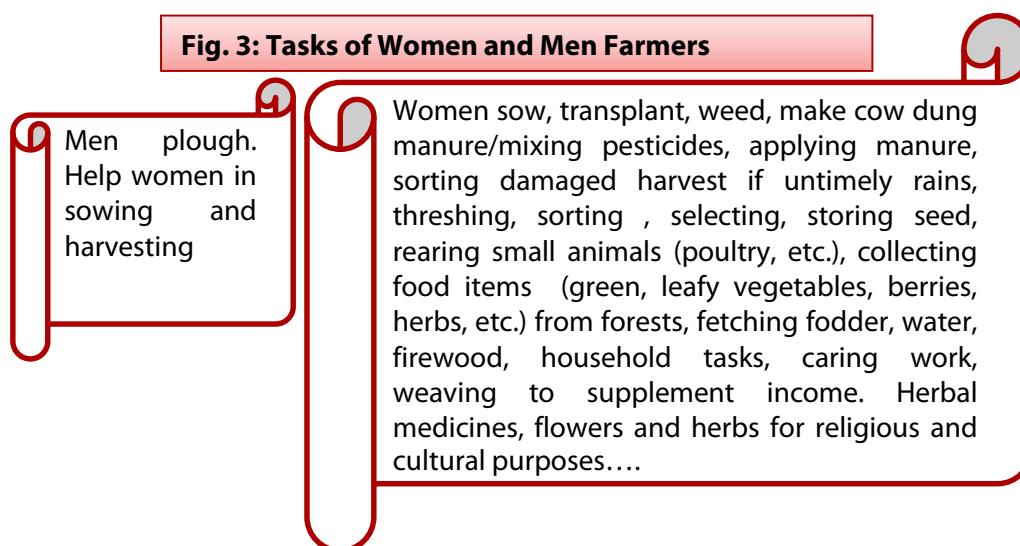
Census figures do not reflect women's work in agriculture and allied activities but several Planning Commission documents and recent policies like the MahilaKisanSashaktikaranPariyojana (MKSP) clearly articulate the "extensive" work of women farmers, the "multiple roles" they have in livestock management, the "pivotal" role of landless women farm labour and their "majority" in collecting non-timber forest products (XIth 5-year Plan). Women farmers constitute an increasing number of India's 85% farmers who are small and marginal. Yet, Women farmers own predominantly marginal lands and a few have small farm lands,

indicating that adaptive interventions for them will need to be tailored to their tiny holdings and lack of inputs and market knowledge. The National Gender Resource Centre in Agriculture (NGRCA) has been building awareness on gender issues and training extension workers, but neither gender budgeting, nor gender has been mainstreamed.

Indeed, agriculture has yet to incorporate gender budgets.

A recent analysis of (AF and CBGA, 2014) gender budgets in four States showed that Part A of the gender budget includes 100% allocations for women but no farm-based, livestock or forest-related scheme were being included here. Most of the schemes included here were subsidized nutrition schemes or with a focus on prevention of violence against women. In Part B, which includes schemes with 30% spends on women, livelihoods schemes were conspicuous by their absence. Gender budgets had been adopted in only two of the

**Fig. 3: Tasks of Women and Men Farmers**





States; the other two still worked with Women's Component Plans which are more limited and do not start from the planning stage onwards. Data was missing, ad hoc, did not meet the stipulated target and in agriculture, was mostly spent on training or subsidized schemes. In sum, gender budgets are not empowering for women farmers.

Another critical issue is that adaptive interventions like integrated farming, organic farming, roof rainwater harvesting or biogas are adding to women's labour and time investment. Adaptive programmes are not empowering women to shape interventions, own and control productive assets or be knowledgeable and mobile to link with markets. They do not even have the first call to water resources when their kitchen gardens and poultry become a lifeline of a family during climate stress periods. A recent study (AF and CSA, 2014) maps this for a sample of women farmers in four agro-climatic zones.

Studies by FAO (2011) reveal that closing the gender gap in agriculture will bring down the number of under-nourished people. This is critical in India, which houses the world's largest number of malnourished people. The study also finds that given the same productive resources as men, women would help increase farm yields by up to 30 per cent, leading to an increase in agricultural output by 2.5-4 percent, in developing countries. This would reduce the world's hungry people by up to 17 percent. Women can indeed save India's agriculture and in the wake of climate change they are indeed one of our great hopes.

### What needs to be done?

*A real measure of success will be when an irrigation officer, an extension worker or a forest officer respect women farmers as water experts or skilled farmers or forest product entrepreneurs, for their authoritative knowhow and long, first-hand experience.*

## Research

### Evaluation of farm policies and practices using a gender lens

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Not all farm policies are gender-just but, as stated earlier, there are several that provide space for active involvement of women to sit on decision-making tables and benefit by owning and controlling productive assets. As mentioned previously, some of these policies is including Joint Forest Management (JFM), Agriculture Technology Management Agency (ATMA), Integrated Watershed Development Programme (IWDP), Participatory Irrigation Management Scheme and National Rural Employment Guarantee Scheme have immense scope for gender mainstreaming at the implementation stage. In conjunction with the 10-point agenda identified in the first chapter, there is a need to:

- **Evaluate farm-based policies,** programmes and schemes including those in the fishing, livestock and forestry sector, **from a gender perspective** and in collaboration with gender experts; and the women affairs departments as far as possible. There is some available analysis but there is an urgent need to build on this for a complete and comprehensive understanding of where gender mainstreaming is easily possible within the existing plans, policies, programmes and schemes in each State. The evaluation needs to be done for both national and State-level schemes being implemented in a geographical area.
- **Map gender-disaggregated data in each agro-climatic zone** to ensure that benefits reach both women and men farmers, livestock managers, forest produce collectors and fisher folk.
- Undertake **evidence-based research to give productive inputs to women farmers** even if the land is not in their name or they are landless farm labour. For example, groups of farm women/women

labour are permitted to take farm inputs. A farm woman should be able to give an undertaking that she tills a particular piece of land and takes inputs against her tiller status.

- **Map women's knowledge and skills** in every agro-climatic zone. This needs to be done for all farm-related and allied activities. This will have a four-fold gender-responsive resilience use: (a) enable dovetailing good practices in programme implementation; (b) give women farmers the recognition and respect they deserve as specialists and experts, thereby fulfilling their strategic needs; (c) preserve their traditional knowledge that helps build climate-resilience and which is otherwise on the decline; and (d) augment extension workers' ranks by recruiting these women as trainers and for horizontal farmer-to-farmer learning as per the National Mission

on Sustainable Agriculture. *Given feminization of agriculture, distress male migration, the demographic dividend and more educated rural girls, agriculture education and training as a profession is a sunrise area for women farmers.*

- **Evaluate adaptive interventions from a gender lens**, mapping them against factors such as time, labour, workload, asset creation, decision-making and resilience. Egalitarian solutions need to be found for the heavier burden placed on women. Table 3 gives an indication of how adaptive interventions still help men more than women. The Table also gives options for some solutions to meet women's practical and strategic needs.

**Table 3:**  
**Gender-differentiated Impacts of Adaptive Agriculture**  
*With examples of gender-responsive interventions based on experiments*

<b>Adaptive Interventions</b>	<b>Differing Benefits and Burdens</b>	<b>Initiatives to Meet Women's Practical and Strategic Needs</b>
<b>Integrated/organic agriculture</b>	<p>More food and nutritional security for both men and women</p> <p>Women invest more labour, time</p> <p>No support from extension services, especially to women farmers</p> <p>Women do not participate in decision-making bodies</p> <p>Women do not get any credit, no control over any productive resources</p>	<p>Promote vermicomposting as rural enterprise for landless/ farm women</p> <p>Extension services/panchayats/blocks to provide organic manure, livestock &amp; fodder</p> <p>Extension services to promote coarse cereals</p> <p>Give weather information to women through radio, FM, cell phones</p> <p>Give rain gauges to women and synchronise with weather data</p> <p>Joint pattas(land titles)</p> <p>Panchayats to give vegetable/ fruit seeds &amp; other inputs for kitchen gardens</p> <p>Provide labour saving/productivity enhancing gender-friendly technologies</p> <p>Appoint women as krishididhis under ATMA</p> <p>Panchayat to create pool of agricultural tools with women's groups (under ATMA/MKSP)</p> <p>Half of panchayat committee members to be women</p>
<b>Traditional saline/drought/flood resistant seeds and animal species</b>	<p>More food security for both men and women</p> <p>Fodder, fuel available (not with HYV), Women preserve &amp; exchange seeds, Women can reclaim traditional knowledge</p> <p>Women invest more labour, time and get no decision-making power, assets.</p>	<p>Farm-to-lab knowledge transfer and training by farm women</p> <p>Provide clean power for cooking</p> <p>Appropriate seeds/animal species from PRIs/block</p>
<b>Roof rain-water harvesting (RRWH)</b>	<p>Women benefit more</p>	<p>All Indira AwaasYojana homes to come with RRWH in rural and urban areas</p> <p>Soft loans/matching grants to women for RRWH</p>
<b>Social forestry</b>	<p>Protection from erosion</p> <p>Water conservation</p>	<p>Policy on lease common/forest land to women's groups</p> <p>Village women/panchayat to decide tree mix</p> <p>More women on forests committees</p>
<b>Seed banks/grain banks/fodder banks</b>	<p>Resilience for both men and women</p> <p>Local/traditional seeds available</p> <p>Women's traditional knowledge can be recognized.</p>	<p>Mandatory in every panchayat through women's group policy</p>

*Source: Kapoor, 2011*

## Actions

### Build capacities, increase numbers of women farmers at all levels in programmes

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This will be the corollary of the above research but can be started without waiting for the research results to come it. A lot of this depends on inspiration and commitment both to gender mainstreaming and, more important, to promoting climate resilience in agriculture.

Most non-profits working on the ground on climate-resilient farm practices depend on women to take the tasks forward. Women are the first to be convinced of the viability of these practices and are willing to be torch-bearers (Kapoor, 2011). Government programmes, on the other hand, fail because they are not able to take with them the main farm workers – women who shoulder up to 70% of the agriculture work and most of the tasks related to livestock management, fisheries and forest produce collection.

### How can it be done?

- Involve panchayats, surveyors and data-crunching agencies to gather gender-disaggregated data at every panchayat, block and district level in each State so that **gender-disaggregated data becomes the cornerstone for implementing all schemes.**
- **Make ‘know your laws and programmes’** the campaign line for resilience within departments.
- **Encourage, recognize and reward ‘out-of-the-box’ thinking and actions** of implementing staff and agencies for mainstreaming gender and giving resilience a quantum jump.
- **Work closely with panchayats** to gather data, monitor local weather, converge schemes and funds, engage PRI committees and identify farm women

power. Climate change is an opportunity for line agencies and panchayat institutions to work together for self-preservation and common good.

- Work with panchayats to **lease common lands to groups of landless women farmers.**
- Build synergies between SHGs and panchayat committees so that **SHG members become part of panchayats** which hold the functional, administrative and financial power. *SHGs are enablers, not an end in itself for women’s empowerment.*
- Progressively **move towards equal gender representation** on all decision-making bodies and delivery agencies, including JFM and the extension department.
- Work in **collaboration with non-profit grassroots organizations** who mobilize farmers, especially women farmers, in a learning and sharing mode.
- **Prioritise women’s practical and strategic needs** while implementing all programmes, using the tools outlined above.
- Give **ICTs and technology support to women** to give weather information, reduce their burden and given them **options for rural entrepreneurship.** For example, owning vermin compost units, decentralized renewable energy generation stations, gender-friendly farm equipment, integrated farming training schools, et al. *The coming generations of daughters and daughters-in-law will take up farming only if it offers them quality of life and a dignified way of living.*

## Gender and Disaster Management

*'Women are the worst affected – they get no relief, no rehabilitation, and no dignity'*

### The Issue

For a woman, disasters bring with them a minefield of miseries. Mainly because women and girls do not see any hope of being attended to or regaining their lost livelihoods.

In floods, women and men are cooped up on highways, either without a roof on their head or under plastic sheets in tiny cubicles with no hope for privacy to feed a child or change clothes – if there is a change of clothes available at all. Toilets are either absent or far and in public areas. It is not possible to wash oneself because there is no water and public spaces are not conducive. Cooking fuel is unavailable unless one goes on boats, even rowing it oneself, or walks through slush somewhere far to get it.

Food that is given is inadequate and there is nothing nutritious for pregnant/lactating women or infants and children. Going to bed hungry is a common practice among women and even girls. Lactating women need more liquids/drinking water; women need sanitary napkins. This need or requirement is yet to be recognized by disaster management cells. Disaster management has been institutionalized from district-level upwards but it cannot go beyond immediate relief – and that too is geared towards men. Gender is yet to be mainstreamed.

During droughts, men and boys have the first claim over food even if women are pregnant or lactating or walking hours to get water and firewood. When food dwindles, men leave home leaving women behind to look for work and take care of the aged, the infirm and the young.

The same is true when cyclones lash villages. During the 2009 Cyclone Alia, men and all the young boys migrated from several Sunderban villages while women stayed behind in saline, water-logged villages. Women said they survived on their kitchen gardens and poultry. So did families in flood-hit Gorakhpur in Eastern Uttar Pradesh. However, poultry, vegetable seeds and manure are not on the relief list. Recent studies have shown that people do not leave their homes because of recurrent disasters. They leave their villages when disasters erode their livelihoods. For women, restricted to their house and immediate neighbourhood, the loss of community friendship and support leads to greater insecurities.

Indeed, recurring disasters are a 'way of life' for perhaps the majority of people in India. At least 12% of India's cultivable land is prone to floods, over two-thirds to drought and three-quarters of the 7500 km long coastline to cyclones. Following climate change, the menace is growing – disasters are becoming unpredictable, frequent and intense.

Where there are traditional practices of protecting livelihoods, people have learnt to 'live with disasters.' In Assam, for example, the *Thengalkacharis* women made the most of their kitchen gardens around their homes because these were on higher ground. This is where they grew vegetables, fruits, herbs, spices and kept their poultry. When floods came, they could quickly retrieve food and take it in the house to tide them over the difficult weeks. The Mishing women stored grain, seeds, salt, spices, vegetables, dried fish and even wine on platforms built in their *changghar*, the traditional homes built on stilts. A platform below the house served as shelter for their



animals. Traditional resilience was also made possible by women when they took to making handicrafts, local dresses and embroidered items to earn a livelihood when disasters made it impossible for them to grow farm crops. Relief and rehabilitation work has yet to recognize this alternative livelihood as a viable, resilient work option and offer inputs and market linkages for survival and economic well-being. Disaster management cells should take note of such traditional practices and replicate them across communities.

## What needs to be done?

### Research

#### What do women want? What can they teach?

- There is a **huge knowledge gap on women in disaster situations**. From relief to rehabilitation to restoration women's practical and strategic needs have never been mapped; nor their traditional knowledge which ensured survival of their families. The canvas is huge and each of the three R's offers multiple research areas.
- The other area to map and scale-up are **successful gender-responsive disaster resilient practices** initiated by non-profits, grassroot organizations and villagers. Some of these, like water wells and homes built on raised platforms in flood-prone areas have been adopted by government agencies in just a few pockets. These models have a huge potential to protect lives by ensuring survival, prevention of water-borne diseases and lowering the water burden of women during disaster situations. In some cyclone-prone areas, NGOs have successfully mainstreamed rescue and first-aid by teaching girls and boys in government schools to save lives. Children are able to save even adult lives by teaming up and using ordinary tools stored at home and in some public places. These include old tyres and packs of soft

drink bottles which are used as floats and life-jackets.

- A real challenge to overcome is **supply side barriers**. Given the frequency, potency and magnitude of disasters, how do relief, rehabilitation and restoration reach all? Paucity of relief material means air-dropping food packets or blankets which women and girls cannot run and access. Evidence-based research is required to inform and strengthen district-level disaster management cells in order to pull together an action plan that plugs supply side barriers where public, private and community agencies come together to meet mapped needs of men and women. Rehabilitation activities have to dovetail with energy and habitat (houses, transport, schools, hospitals, etc.) needs of women and men. Restoration activities have to look at resilient farm and non-farm options for both men and women.
- The above research is complimentary to mapping gender-based demand-side barriers, often a result of socio-cultural, economic and political factors. This will include understanding why cultural norms do not allow men and women to share shelter in some places but in other places they would be happy to share. Or, how women prefer rice and dal to biscuits and chips because children balk at unfamiliar food. Again this needs to be done at the level of every district, including panchayats to collect information.
- Research is also required on best delivery mechanisms. A lot of players deliver relief – government, private sector, religions organizations, non-profits, community groups, school/collage children, ordinary citizens. What is the best way to move forward to meet the real needs of affected women, girls, men and boys? Keeping in mind the differentiated vulnerabilities within each group – the aged, the infirm, pregnant, single, etc.

- Restoration requires a blueprint that will include all adult women, just like all adult men, as individuals who need a viable livelihood and public services.

### How can it be done?

- **Strengthened synergies with all sectors** – livelihoods, public health, education, energy and infrastructure—at the panchayat and district level. Else disasters will deepen the gender divide (Fig. 4) and increase migration or swelling of urban slums. Women and men will be able to rejuvenate livelihoods and access public services if gender-responsive restoration is given equal importance. Gender mainstreaming will ensure development; else the number of have-nots will keep increasing.
- District level disaster management plans, where formulated, are cross-sectoral and involve other departments in managing impacts like crop loss and disease outbursts. However, **all departments must also have gender-responsive relief, rehabilitation and restoration plans** within their departments and these should be in sync with the district-level plan. For instance, energy or education department seldom have well drawn out disaster management plans that can work in sync with district-level plans.
- Disaster management institutions are still being set up across the country. **Women and gender experts must be part of the decision-makers** in these structures at the State level and district level.
- The process for **integrating climate risks in disaster management must be made fundamental** to the operation of disaster management plans. This is because people are facing a lot of uncertainty with regard to disasters. Flood-prone villages are facing meteorological droughts and drought-prone villages are getting flooded because of downpours. Cities such as Mumbai are facing new disaster challenges. Mapping

gender-based vulnerabilities for climate risks and dovetailing these with disaster response (the three R's) is essential to climate-proof lives of women and men.

- Gender mainstreaming in disaster management must be backed by **gender budgeting at all levels** – relief, rehabilitation and restoration. Without adequate financing, none of the three R's would be gender-responsive.

Fig 4: Gender Gaps Multiply with Disasters



## Gender, Energy and Habitat

*'We want clean cooking energy, rural transport and safe homes'*

### The Issue

Women's twofold need for energy is different from men's needs. Of course, both men and women need energy to light up their homes and to cool or heat them in different seasons. But women need energy for their home-based productive work and for cooking. For women, their home is their workplace. This is where they process raw produce and run small household enterprises. For cooking, 85% of rural women, or over 850 million households, and 38% of urban women (NSSO, 50<sup>th</sup> Round) still use firewood, crop waste and cattle dung. Worse, women use these inefficient, 'smoky' fuels and breath toxic air. State climate plans focus on energy efficiency and renewable energy but women largely remain outside the ambit of energy solutions.

State climate plans advocate increasing use of clean and renewable energy. This includes solar, wind, geothermal and hydroelectricity. These currently constitute just 2 per cent of India's fuel mix so the potential is huge, compared to a fourth of India's energy mix being combustible renewable and waste. A large proportion of the activities proposed are towards using renewable for electricity, also rural electricity. There is very little on giving women clean cooking fuel, except in hill states which have been promoting use of LPG. Some plans also talk about continuing work on clean stoves. Considering women, more rural than urban, are using some of the most inefficient fuels, the State plans talk on energy efficiency is perhaps not so relevant as far as their current cooking fuels are concerned.

Yet, women need electricity for their work. For women, their home is their workplace. Many of them have small and medium enterprises and

use their homes for processing raw produce – chopping, drying and making value-added products. In urban areas too, women need electricity to do home-based work. Women entrepreneurs in the small and medium sector are growing. Much of the out-sourced piece-meal work from large companies is also done by women and girls at their home, including in urban slums.

Women's health is also linked to inefficient energy use. Apart from long walks, heavy headloads and exposure to natural elements and wild animals while collecting firewood, women's health is further threatened with the increase in use of biomass fuel in terms of total quantity used over the past decade. This is true of rural India though in urban India biomass usage has declined as women have shifted in large numbers to LPG. Rural women's quality of life is indeed threatened by their forced energy choice.

Clean fuel and energy efficiency are also key focus areas for transport and buildings, primarily in urban areas. Women, in rural and urban areas, disproportionately lack access to energy though there are no gender-disaggregated figures. But women are usually in domestic, low-end jobs and do not possess hi-tech gadgets. Even cell phones are owned more by men than women.

Women currently manage one-third of India's energy system. While planting firewood trees in leased forests is one solution, how can State plans mainstream gender in the energy and habitat sectors?

## What needs to be done?

### Research

#### What do women want? What can they teach?

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- Making **women renewable energy entrepreneurs** in rural and urban India. Women have managed biogas and solar systems successfully. They have also been effectively involved in operation and maintenance of biogas, hydro-electric and solar installations. Exploring this sunrise area of decentralized renewable energy business for women can empower women and lead to inclusive development.
  - Another area to map is **women's need for energy for their home-based work**.
  - Development of **gender-responsive energy indicators** for monitoring and evaluation of energy programmes is necessary.
  - Incorporation of **gender budgets in energy programmes** based on an estimation of women users.
  - Mapping **women's transport needs**: clean energy vehicles for use of women in residential areas (see Chapter 1), well-lit roads using renewable-powered lights and promotion of non-motorised vehicles like bicycle lanes will help women become more mobile.
- Women's need for electricity to enhance their livelihoods must be prioritized as women are more vulnerable than men – both with regard to energy poverty and because they are more likely to be employed in low-end, insecure jobs and need inputs to strengthen their work-based.
  - Women are seldom found on decision-making tables in the energy sector. This is an area that needs constant monitoring and reform as well as capacity building. Just like many more women are now found in the banking sector, energy programmes can promote participation of women at every level so that they can be involved.

## How can it be done?

- The energy sector is a very male dominated sector because women are not traditionally involved in building, operating or maintaining conventional or renewable energy installations. However, this is an areas where capacities can be built, especially because renewable lend themselves to decentralized functioning and can be installed and operated by women. Several energy companies now have women manning senior positions.

# Concluding Recommendations

*'All agencies bear a responsibility to mainstream gender in their work'*

## The Final Action Plan

Different institutions and authorities have to ensure gender-justice in the wake of climate change. The table below summaries the roles of different government and non-government agencies in mainstreaming gender while implementing the State Action Plans on Climate Change.

**TABLE 4: ROLES AND RESPONSIBILITIES OF GOVT. AND OTHER AGENCIES**

RESPONSIBLE AGENCY	POLICY AND PRACTICE RECOMMENDATIONS
<b>STATE DEPARTMENTS</b>	<p>Mandate gender-disaggregated baseline data based on gender-differentiated practical and strategic needs</p> <p>Set gender-specific objectives to meet the identified needs</p> <p>Set gender-specific indicators for meeting both practical and strategic needs</p> <p>Mandate gender-focused monitoring and evaluation including women's practical and strategic needs and notify DRDAs/PRIIs etc. to implement these</p> <p>Incorporate gender-specific capacity building of women and men across the board, horizontally across villages and vertically through the 3-tier governance structures, line agencies and other decision-making bodies.</p> <p>Incorporate collaborative working mechanisms with NGOs, PRIIs, government agencies and community-based organizations</p> <p>Earmark 'additional' financial resources for adaptation, energy and infrastructure development for women with gender budgeting based on gender-differential data</p> <p>Audit programme and resources in a gender-responsive manner</p> <p>Incorporate a gender-responsive communication strategy to inform and garner input from the general public with active participation of women in the public debates and feedback systems</p> <p>Promote a decentralized approach and mandate development of participatory and gender-just 'Local Action Plans on Adaptation' or LAPAs, at the Panchayat level, including energy and habitat as part of LAPAs.</p>
<b>STATE-LEVEL DEPARTMENTS OF ENVIRONMENT</b>	Partner, support and collaborate with State-level women affairs departments to involve them in building gender-responsive capacities, preparing IEC materials, and taking on climate change as their agenda.
<b>STATE-LEVEL WOMEN DEPARTMENTS</b>	Invest in building its own capacities on climate change adaptation and mitigation from a gender perspective.

	Partner and collaborate with Environment Departments
<b>DEPARTMENT OF SCIENCE AND TECHNOLOGY IN STATES</b>	<p>Increase the number of women scientists especially at senior decision-making levels by working on this in a Mission mode and taking forward the work started by the National Task Force for Women in Science.</p> <p>Involve women and women scientists to :</p> <ul style="list-style-type: none"> <li>➤ Recognise women's climate-related observed data at the local level through documentation</li> <li>➤ Collaborate with local women to collect and analyze climate-related data at every level – in the field, in the labs and in academic research</li> <li>➤ Scientifically validate women's traditional knowledge and then build on it</li> </ul>
<b>GRAM PANCHAYATS</b>	<p>Develop participatory and gender-just LAPAs including required additional resources</p> <p>Ensure double mainstreaming – incorporating gender and development aspects in all climate change adaptation programmes and incorporating gender and climate proofing in all development and poverty reduction schemes at the implementation stage</p> <p>Invest in building its capacities on climate proofing, including carrying out local measurement of climate variables and gender-disaggregated impacts of climate change keeping women centre-stage</p> <p>Collaborate with government agencies, relevant external agencies including NGOs, adaptation research institutions and user groups</p> <p>Implement adaptation plans in a participatory, holistic, gender-just manner with adequate additional resources</p> <p>Facilitate gender-responsive, participatory assessments, monitoring and evaluation of LAPAs in collaboration with user groups</p>
<b>DISTRICT RURAL DEVELOPMENT AGENCIES (DRDAs)</b>	<p>Strengthen 'women's wings' by investing in building staff capacities on climate change adaptation and empowering them through participation in decision-making at all levels.</p> <p>Ensure double mainstreaming – incorporating gender and development aspects in all climate change adaptation programmes and incorporating gender and climate proofing in all development and poverty reduction schemes at the implementation stage.</p> <p>Work closely with PRIs to roll out LAPAs.</p> <p>Involve and collaborate with relevant external agencies including NGOs, adaptation research institutions and user groups to implement climate change adaptation programmes.</p> <p>Engage in action research on climate change adaptation in collaboration with</p>



	<p>relevant players – PRIs, government agencies, adaptation research institutions including universities, NGOs and user groups</p> <p>Facilitate gender-responsive, participatory assessments, monitoring and evaluation of adaptation programmes and schemes; and also of development and poverty reduction schemes to assess for delivery on gender and climate change aspects.</p>
<b>ELECTED LEGISLATORS</b>	<p>Invest in their capacities on climate change adaptation as well as on gender-responsive solutions on clean energy and infrastructure.</p> <p>Close the gender development gap by actively participating in implementing adaptation and mitigation plans in their states and in their constituencies.</p> <p>Ensure availability of gender-disaggregated data.</p> <p>Secure development of LAPAs, keeping women centre stage</p> <p>Promote equal representation of women at all decision-making fora</p> <p>Integrate sustainability into decision-making and implementation within the DRDAs and inspire Panchayats to do the same</p> <p>Effectively deal with lack of coordination between local departments and the tension between the PRIs and local bureaucracy to promote a culture of holistic work towards LAPAs.</p>
<b>NON-PROFITS NGOs COMMUNITY ORGANISATIONS OPINION LEADERS</b>	<p>Mobilise women and men and build their awareness for collective action towards adaptation and mitigation</p> <p>Inspire vulnerable women and men to think ‘outside the box’ to innovate and evolve different ways of working towards adapting to climate vagaries</p> <p>Build capacities and hand-hold vulnerable people, especially women, in an on-going and sustainable manner.</p> <p>Promote women as drivers of change and build on women’s agency</p> <p>Networking across stakeholders to help deliver successful adaptation models to those most vulnerable to climate vagaries.</p> <p>Mandate a strong internal gender policy for the organization, addressing practical and strategic roles of women.</p> <p>Motivate staff to collaborate with government agencies and with adaptation research institutions to deliver holistic adaptation models that can be up-scaled.</p> <p>Adopt a strong gender-oriented advocacy agenda with the government and a strong gender-focused influencing role with adaptation and mitigation research institutions.</p>

*Source: Kapoor, 2011*

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