

National Action Plan for Climate Change – India: Climate Change, Gender and Innovation: Opportunities and Challenges

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Executive Summary

India is among the nations that is likely to be profoundly impacted by climate change across four key dimensions – monsoons, rising sea level along its coast line affecting 250 million + population, melting glaciers in the Himalayas impacting livelihoods and access to water for close to 900+ plains population and loss of forest cover and precious mineral wealth to support its coal driven development agenda. The National Action Plan on Climate Change (NAPCC) – India seeks to address precisely these challenges both in terms of reducing vulnerability and increasing resilience of its likely impacted population without sacrificing its development and growth goals and running well into 2017.

The action plan is spread across eight key missions namely – The National Solar Mission, The National Water Mission, The National Mission on Sustainable Agriculture, The National Mission on Enhanced Energy Efficiency, The National Mission on Sustainable Habitat, The National Mission for a Green India, The National Mission on Strategic Knowledge for Climate Change and the National Mission for Sustaining Himalayan Ecosystem. The detailed implementation plans, timelines, monitoring mechanisms, budget allocations and the programmes management are the responsibilities of respective ministries and they report into the Prime Minister's Council on Climate Change.

Critiques argue that the missions' detailing is removed from the true understanding of the vagaries of the people most likely affected by the impacts of climate change, prepared with a select few expert perspectives and disconnected from the grass root organizations to achieve their deliverables and not factoring gender considerations in their elaboration and implementation.

Well into third year and with specific focus on select few missions, the missions' seem to be in danger of being seen as paper tigers! To be able to address some of the pertinent arguments raised by critiques and to present fresh innovation and gender focused perspectives on the missions, an innovation brief approach is being taken here. This publication presents key highlights of two important missions namely – sustainable agriculture and water and integrated gender and innovation options to address the missions' goals.

Weaving the presented options into a logical whole, the national mission on sustainable agriculture warrants; a pilot 'Climate Innovation Center @ Gender and Agriculture' and the water mission; a combination of technology diffusion and micro enterprise incubation centers, new institutions and federated structures of multiple stakeholders backed by a strong technology led collaboration and co-ordination platform aligned along – technology, capacity, markets and policy axes.

The National Mission on Sustainable Agriculture- Can a Climate Refugee Class Creation be averted?

The National Mission for Sustainable Agriculture (NMSA), one of the eight missions under the NAPCC, lays emphasis on four key functional areas and ten important dimensions. Through these, the mission seeks to target both; the imminent challenges from the likely impacts of climate change on Indian agriculture and the more fundamental ones in food security, equitable access to food resources, livelihoods and economic stability at the national level. The mission seeks to achieve those objectives through strategic interventions at the agro climatic zones ranging from improved crop seeds, livestock and fish culture to livelihood diversification. The mission rightly acknowledges that the likely adverse impacts of climate change on Indian agriculture can lead to a new class of community called '**Climate Refugees**' comprising of people impacted by variable and extreme climate events.

A quick gauge indicates that large sections of such climate refugee population are likely to be women.

And hence a strong need to sensitize and advocate suitable components within the framework of the NMSA. For the purpose of illustration, the four functional areas and the ten key dimensions of the NMSA framework are shown below.

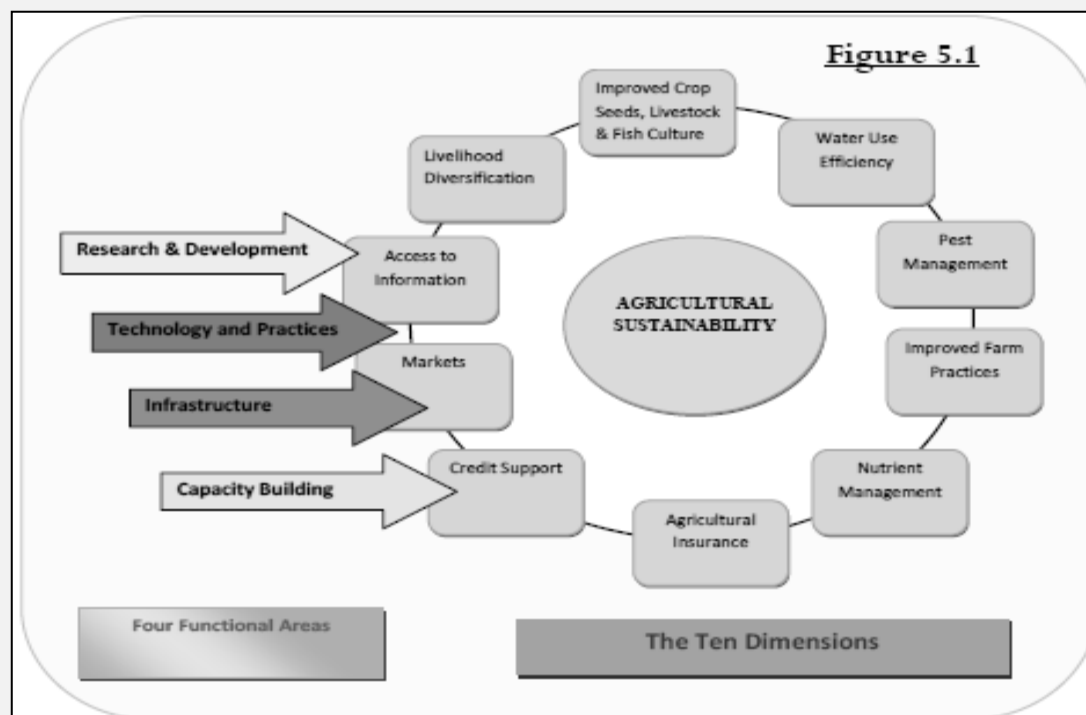


Figure 1: NMSA Function Areas and Dimensions

Source: Fig 5.1 - NMSA Draft, 2010

Following the framework and the ten dimension interventions, we suggest a set of gender sensitization components that have the potential for far reaching impact on the stagnating and climate threatened agriculture of India.

Mission Interventions	Our Suggestions on Gender Components
<p style="text-align: center;">Mission Intervention #1 Improved Crop Seeds, Livestock and Fish Culture</p> <ul style="list-style-type: none"> ✓ Promoting Use of Biotechnology ✓ Research and Promotion of C4 pathways in C3 plants ✓ Conserving Indigenous Genetic resources ✓ PPP in R&D, Management and Dissemination of Improved varieties ✓ Conserving 'Agricultural Heritage' 	<ul style="list-style-type: none"> • Increasing the pool of women plant breeders • Launching short courses in plant breeding technologies with special focus on women uptake • Up scaling Honey Bee like Networks to capture indigenous genetic resource conservation practices driven by indigenous women communities • Picking and developing Agriculture Heritage Sites that provide sufficient opportunities for women to not only participate but also to manage and conserve the heritage of such sites
<p style="text-align: center;">Mission Intervention #2 Water Efficiency</p> <ul style="list-style-type: none"> ✓ Promoting Water Use Efficiency in Irrigation ✓ Research and Development in the areas of energy efficient water systems ✓ Developing mechanisms for integrated management of rainwater, surface and ground water ✓ Policy Instruments for PPP ✓ Strengthen local institutions in managing water allocation and utilisation 	<ul style="list-style-type: none"> • Designing and developing watershed payment service models with a large role for women user groups in the watershed region • Disseminating and diffusing women friendly treadle pump technologies • Creating and supporting women user group driven basin management organization structures with adequate autonomy and funding

<p>Mission Intervention #3 Pest Management</p> <ul style="list-style-type: none"> ✓ <i>Efficient, safe and environmentally sound methods of pest management.</i> ✓ <i>Incentivizing Research, Commercial Production and Marketing of bio-pesticides</i> ✓ <i>Developing insect forecasting models</i> ✓ <i>Decision and Information Support Systems for Pest & Disease Surveillance</i> ✓ <i>Institutional Mechanism for Quick Response in case of disaster</i> 	<ul style="list-style-type: none"> • Exploring (and integrating) potential pathways to up scale the successful integrated nutrient and pest management programmes in the state of Andhra Pradesh to the national rural livelihood mission • Experimenting and devising adaptation packages within the NICRA(The National Initiative on Climate Resilient Agriculture) programme framework in a way that are suitable for mass adoption by women • Devising innovative adaptive social protection instruments that comprehensively address the vulnerabilities faced by women across social, political, economic, climate, demographic dimensions
<p>Mission Intervention #4 Improved Farm Practices</p> <ul style="list-style-type: none"> ✓ <i>Improved agronomic practices to reduce farm losses</i> ✓ <i>Conservation and Precision Farming</i> ✓ <i>Knowledge Management</i> ✓ <i>Soil Conservation, Bio-Fertilizer</i> ✓ <i>Policy Instruments for optimum Land Use</i> 	<ul style="list-style-type: none"> • Increasing the pool of women extension officers' and the KVK (Krishi Vigyan Kendra) base to devise and disseminate improved agronomic practices • Increasing the pool of women agronomists • Increasing the use of mass media such as short films and documentaries, community radios to spread the message of improved farm practices and disseminating them through the PRI /SHG mechanisms to reach a large section of women • Classifying bio-fertilizer production with appropriate industry class suitable for incentives and packages under the MSME(Micro Small Medium Enterprises) women centric schemes

<p>Mission Intervention #5 Nutrient Management</p> <ul style="list-style-type: none"> ✓ Strengthening services for promoting production and use of bio-fertilizers ✓ Developing nutritional strategies for managing heat stress in dairy animals ✓ Strengthening capacity of existing soil testing labs ✓ Quality standards and quality control system for raising confidence among users 	<ul style="list-style-type: none"> • Developing in situ soil testing kits, heat stress detection kits in animals for easy and wide spread use by women
<p>Mission Intervention #6 Agricultural Insurance</p> <ul style="list-style-type: none"> ✓ Developing various models for risk assessment ✓ Designing user-friendly decision support systems to help assess risks and develop region specific contingency plans ✓ Strengthening existing risk cover mechanism under NAIS and Weather Based Crop Insurance Scheme ✓ Implementing region-specific contingency plans based on vulnerability and risk scenarios 	<ul style="list-style-type: none"> • Designing and developing index based insurance schemes per vulnerability profiles of the impacted population (including women) and adopting them under the NAIS(National Agricultural Insurance Scheme). • Designing, developing, implementing climate smart women centric 'Adaptive Social Protection' programmes or alternately exploring avenues to integrate such approaches in the current set of national safety net programmes such as MGNREGA (Mahatma Gandhi National Rural Employment Guarantee)
<p>Mission Intervention #7 Credit Support</p> <ul style="list-style-type: none"> ✓ Developing new forms of credit assessment and risk management systems ✓ Promoting micro finance ✓ Developing mechanisms to enhance the flow of credit to critical infrastructure ✓ Up-scaling the Kisan Credit Card Scheme (KCCS) ✓ Designing customised credit policies and programmes to mitigate risks 	<ul style="list-style-type: none"> • Up scaling the Kisan Credit Card Scheme to include women farmers • Innovating on institutional models that bring to bear the collective bargaining potential of women. These could typically be exemplars in cooperatives, women SHG (Self Help Group) aggregations

<p style="text-align: center;">Mission Intervention #8 Markets</p> <ul style="list-style-type: none"> ✓ To formulate market-aligned Research and Development programmes ✓ Improving Supply Chain Efficiency ✓ Creation of new market infrastructure ✓ Supporting community partnerships in developing food and forage banks ✓ Strengthening access to quality and timely inputs by farmers for mitigating risks 	<ul style="list-style-type: none"> • Designing and developing women owned /managed hub-spoke models of food and forage banks • Discovering , adapting and up scaling successful private sector models with women as focus to drive down food supply chain inefficiencies (e.g. ITC’s sanchalak- samyojak model) • Increasing the women extension officers’ pool to drive down community needs and research disconnects • Designing and disseminating package of incentives for women owned/ managed food parks in close proximity to the food processing zones planned by the MoFP – GOI (Ministry of Food Processing – Govt. of India) • Developing and supporting adjunct ‘Food Innovation Centers’ in food processing zones so as to enable and catalyze innovations across food production, consumption and security dimensions. Such innovation centers could be driven by top notch women agricultural scientists in order to effectively meet the capacity building objectives of the mission
<p style="text-align: center;">Mission Intervention #9 Access to Information</p> <ul style="list-style-type: none"> ✓ Minimizing Information Asymmetry through ICT-based systems ✓ Public Private Partnership to develop technology based solution for providing farmers with information on price discovery, commodity arrivals, mandi prices etc. ✓ Building an ICT enabled Knowledge Management network ✓ To Create, Manage and Develop National Resource Portal 	<ul style="list-style-type: none"> • Creating a nationwide Agro-climate Learning Alliance to inter-connect players across the top 40 agriculture value chains and have women as key resource persons to drive both the content and collaborations necessary for the LA success

<p>Mission Intervention #10 Livelihood Diversification</p> <ul style="list-style-type: none"> ✓ Mitigating risks by supplementing income from Off-Farm activities ✓ Crop Diversification ✓ Crop-Livestock-Fisheries Farming System 	<ul style="list-style-type: none"> • Increasing the pool of women scientists to do Research/Development in climate smart crops and crop-dairy-fisheries farming systems • Capturing and disseminating small plot and climate smart cropping practices adopted by women across communities, regions and farming systems to ensure food security, livelihood diversification and farming systems sustainability
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Table 1: NMSA Mission: Gender Priorities

(Table 1 Mission Intervention Source: NMSA Draft, 2010)

While these are by no means exhaustive, they do present potential for impact on the Indian agriculture.

But to be able address such suggested NMSA framework components and further evolve them comprehensively across technology, policy, development, finance and awareness axes, one more step is needed and that is that of creating a new and pilot '**Climate Innovation Center @ Gender & Agriculture**' with a small budget allocation from the proposed INR 6500 crore Research/Development investment outlay over the XII plan period. For such a center an INR 50 crore allocation can be potentially set aside and detailed programme of priorities and action drawn up to achieve the desired results on the mission.

Climate change and gender connotations on agriculture cannot be ignored; more so, for a country as vast as India and a sizeable percentage of women depending on it for their subsistence. The issues and the interventions need to come center stage and must be comprehensively addressed.

In order that the climate refugee class creation is averted, some deft gender sensitization of the NMSA clearly seems the need of the hour.

The National Water Mission: Can the Climate Change, Gender and Innovation Issues be addressed seamlessly?

National Water Mission, one of the key missions under the NAPCC, is aimed at delivering on a) a comprehensive water database in the public domain b) assessment of climate change impacts on water resource c) promotion of citizen and state action on water conservation, preservation and augmentation d) increasing water use efficiency by 20% e) basin level integrated water resource management practices promotion.

Key features outlined in the Mission to achieve the aforesaid goals include review of national and state water policies, multipurpose water supply infrastructure augmentation, research on all aspects of climate change and water intersection themes, programmes for ground water re-charge, planning on the principles of integrated water resource management and convergence modalities among various water resource programmes and capacity building on water stewardship themes across the Panchayat raj institutions, urban local bodies and youth.

While the mission document volumes (I and II) outline in-depth strategies on the features mentioned above and rightly so, gender and innovation considerations are given a miss in the scheme of things to be delivered on the mission across the XI and XII plan period.

And to be able to comprehensively address the complex and inter-related issues of water, climate change, gender and innovation the mission could consider the suggestions outlined hereunder.

Recommended Strategies	Our Suggestions on Gender Components
0. Institutional Mechanism 0.1 Setting up of Mission Secretariat at MoWR for National Water Mission 0.2 Setting up of Climate Change Cells in States 0.3 Setting up of Climate Change Cells in various organizations in MoWR	<ul style="list-style-type: none"> • Ensure upto 30% representation of women in the institutional mechanisms
Goal 1 : Comprehensive water data base in the public domain and assessment of the impact of climate change on water resource	
I.1 Review and establishment of network for collection of additional necessary data	<ul style="list-style-type: none"> • Ensure creation of a large pool of women scientists to help build hydrological cycle models, Himalayan ecosystem, coastal region models • Encourage formation of women user groups to maintain the observation networks
I.2 Development / implementation of modern technology for measurement of various data (water	<ul style="list-style-type: none"> • Include gender dimensions in water information management systems

<p>resource information systems, water quality, basin wise water situations et.al)</p>	
<p>I.7 Projection of the impact of climate change on water resources - Projection of water resources availability as a result of impact of climate change which would inter-alia include the likely changes in the characteristics of water availability in time and space</p>	<ul style="list-style-type: none"> • Include gender considerations in various studies and projections of the impacts of climate change on water resources
<p>Goal 2: Promotion of citizen and state actions for water conservation, augmentation and preservation</p>	
<p>II.1 Expeditious implementation of water resources projects particularly the multipurpose projects with carry over storages</p>	<ul style="list-style-type: none"> • Incorporate gender impact assessment and remedial measures in the water supply augmentation projects
<p>II.2 Promotion of traditional system of water conservation - Expeditious implementation of programme for repair, renovation and restoration of water bodies in areas / situations sensitive to climate change by (i) Increasing capacity of minor tanks, and (ii) Rehabilitating water bodies, with changed focus</p> <p>II.3 Conservation and preservation of wetlands</p>	<ul style="list-style-type: none"> • Encourage women user groups to take charge of repair and restoration of the minor tanks and water bodies and conservation of wetlands
<p>II.4 Promotion of water purification and desalination techniques</p> <p>a. Research for development of cost effective water purification and desalination technologies</p> <p>b. Encourage PPP model for desalination-preparation of necessary guidelines etc</p> <p>c. Provide incentives for desalination – preparation of</p>	<ul style="list-style-type: none"> • Encourage research, development and incubation of low cost and widely diffusible and women friendly water technologies

necessary guidelines and initiation of necessary actions by the respective States and concerned central ministries	
II.5 Empowerment and involvement of Panchayat Raj Institutions, urban water bodies and primary stake holders in management of water facilities	<ul style="list-style-type: none"> • Ensure representation and empowerment of women (both user groups and elected representatives) across the mentioned institutions to manage water facilities
II.6 Promote participatory irrigation management	<ul style="list-style-type: none"> • Increase the pool of women farmers in the PIM (Participatory Irrigation Management)schemes
II.7 Systematic approach for coping with floods - Mapping of areas likely to experience floods, establishing hydraulic and hydrological models and developing comprehensive schemes for flood management & reservoir sedimentation	<ul style="list-style-type: none"> • Frame DRR (Disaster Risk Reduction)programmes with gender considerations
II.8 Capacity Building and awareness programme including those for Panchayat Raj institutions, urban local bodies dealing with water and primary users	<ul style="list-style-type: none"> • Ensure participation of women across all capacity building programmes
Goal 3 : Focused attention to over-exploited areas	
III.1 Physical sustainability of ground water resources	<ul style="list-style-type: none"> • Encourage women user groups to take charge of ground water and rain water harvesting programmes and entrust the maintenance of the same to such groups backed by relevant capacity build programmes
III.3 Intensive programme for addressing the quality aspects of drinking water particularly in rural area III.4 Sensitization of elected representative of over exploited areas on dimensions of the problems and to orient	<ul style="list-style-type: none"> • Entrust women user groups with water quality maintenance programmes and bring such programmes under the MNREGA (Safety Net Programme)ambit

investment under NREGA towards water conservation	
Goal 4 : Increasing water use efficiency by 20%	
IV.1 Research in area of increasing water use efficiency and maintaining its quality in agriculture, industry and domestic sector IV.2 Incentivize recycling of water including waste water	<ul style="list-style-type: none"> • Include gender considerations in various multiple use models of water • Provide incubation support for micro-enterprises in WATSAN (Water and Sanitation) and decentralized waste water treatment technologies. • Encourage the formation of vigilant women activist groups to ensure acceptable levels of waste water discharge and water quality maintenance in industrial clusters
IV.7 Promotion of water efficient techniques & technologies a. Promotion of micro irrigation techniques such as sprinkler and drip irrigation b. Expand “Farmers Participatory Action Research Programme”	<ul style="list-style-type: none"> • Capacity build - women farmers on water efficient technologies • Include gender considerations in the farmer participatory action research programmes
IV.8 Incentivize use of efficient irrigation practices and fully utilize the created facilities	<ul style="list-style-type: none"> • Encourage competition and devise award schemes for women water user groups involved in practicing efficient irrigation practices and water use efficiency programmes
IV.9 Promote mandatory water audit including those for drinking water purposes	<ul style="list-style-type: none"> • Encourage inclusion of women user groups in water audits and manuals preparation
IV.10 Undertake Pilot projects for improvement in water use efficiency in collaboration with States	<ul style="list-style-type: none"> • Ensure sufficient representation of women on pilot water use efficiency projects
IV.11 Incentive through award for water conservation & efficient use of water	<ul style="list-style-type: none"> • Devise and implement special award/reward schemes for women groups involved in water conservation and augmentation
IV.12 Adequate provision for operation & maintenance of water resources projects - Provision for operation and maintenance of the projects to be appropriately enhanced	<ul style="list-style-type: none"> • Ensure a reasonable number of O&M (Operation and Maintenance) projects are allocated to women user groups
Goal 5 : Promotion of basin level integrated water resources management	
V.1 Review of National Water Policy In consultation with the States	<ul style="list-style-type: none"> • Incorporate gender considerations in the review of national and state water policies and ensure wide representation of civil society organizations working in the realm of water and gender intersection themes.

V.4 Planning on principle of integrated water resources development and management	<ul style="list-style-type: none"> Ensure key river basin organization formations with women at the helm of RBO affairs.
V.6 Ensuring convergence among various water resources programmes	<ul style="list-style-type: none"> Incorporate gender considerations in convergence of programmes.

Table 1: NWM Recommended Strategies and Suggested Gender Components (Source - Specific Recommended Strategies: National Water Mission Revised Drafts, Volume I &II)

Summing up the suggestions across the strategy elements of the mission, it is evident that these broadly align along four axes – technology, markets, policy and capacity. And their realization can happen through a combination of technology diffusion and micro enterprise incubation centers, new institutions and federated structures of multiple stakeholders backed by a strong technology led collaboration and co-ordination platform. The crux of this thinking is presented in the following figure 1.

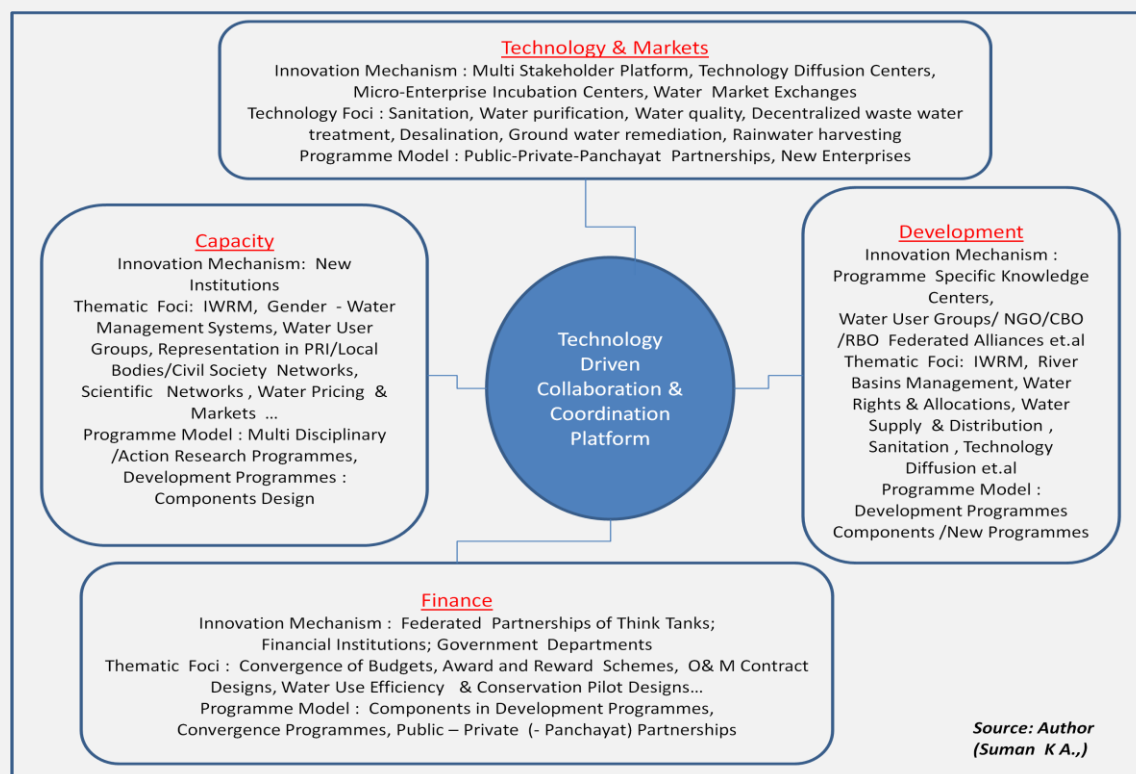


Figure 1: National Water Mission: Climate, Gender and Innovation Priorities

But to be able to achieve results along each of the pathways, the pre-conditions necessarily include bringing fragmented stakeholders together, substantial investments in defining gender dimensions, innovation mechanisms, new institutions, programmes and water technology missions, capacity building

especially on the principles of IWRM (Integrated Water Resources Management) and practical approaches to integrate them into planning processes, clarity on the convergence of various water programmes, appropriate award and reward schemes and efficacy in monitoring schemes.

A 10-15% of the mission budget seems a reasonable start point to get the pre-conditions work rolling. One wonders which other way would the NWM see?

Summary of Recommendations

On the NMSA:

- Increasing the pool of **women plant breeders** and launching short courses in plant breeding technologies with special focus on women uptake
- Up scaling **Honey Bee** like Networks to capture indigenous genetic resource conservation practices driven by indigenous women communities
- Picking and developing **Agriculture Heritage Sites** that provide sufficient opportunities for women to not only participate but also to manage and conserve the heritage of such sites
- Designing and developing **watershed payment service models with a large role for women user groups** in the watershed region
- Disseminating and diffusing **women friendly treadle pump technologies**
- Creating and supporting **women user group driven basin management organization structures** with adequate autonomy and funding
- Exploring (and integrating) potential pathways to up scale the successful integrated nutrient and pest management programmes in A.P to the national rural livelihood mission
- Experimenting and devising adaptation packages within the NICRA(The National Initiative on Climate Resilient Agriculture) programme framework in a way that are suitable for mass adoption by women
- Devising innovative **adaptive social protection instruments** that comprehensively address the vulnerabilities faced by women across social, political, economic, climate, demographic dimensions
- Increasing the pool of women extension officers' and the KVK (Krishi Vigyan Kendra) base to devise and disseminate improved agronomic practices
- Increasing the pool of women agronomists

- Increasing the use of mass media such as short films and documentaries, community radios to spread the message of improved farm practices and disseminating them through the PRI /SHG mechanisms to reach a large section of women
- Classifying **bio-fertilizer production with appropriate industry class** suitable for incentives and packages under the MSME ad women centric schemes
- Designing and developing **index based insurance schemes** per vulnerability profiles of the impacted population (including women) and adopting it under the NAIS (National Agriculture Insurance Scheme)
- Designing, developing, implementing climate smart and women centric Adaptive Social Protection programmes or alternately exploring avenues to integrate such approaches in the current set of national safety net programmes such as MGNREGA(Safety Net Programme)
- Up scaling **the Kisan Credit Card Scheme to include women farmers**
- Designing and developing women owned /managed **hub-spoke models of food and forage banks**
- Discovering , adapting and up scaling successful private sector models with women as focus to drive down food supply chain inefficiencies (e.g. ITC's sanchalak- samyojak model)
- Increasing the women extension officers' pool to drive down community needs and research disconnects
- Designing and disseminating package of incentives for women owned/ managed food parks in close proximity to the food processing zones planned by the Ministry of Food Processing – Government Of India
- Developing and supporting adjunct '**Food Innovation Centers**' in conjunction with the food processing zones so as to enable and catalyze innovations across food production, consumption and security dimensions. Such innovation centers could be driven by top notch women agricultural scientists in order to effectively meet the capacity building objectives of the mission
- Creating a nationwide **Agro-climate Learning Alliance** to inter-connect players across the top 40 agriculture value chains and have women as key resource persons to drive both the content and collaborations necessary for the LA success
- Increasing the pool of women scientists to do **Research/Development in climate smart crops and crop-dairy-fisheries farming systems**

- Capturing and **disseminating small plot and climate smart cropping practices** adopted by women across communities, regions and farming systems to ensure food security, livelihood diversification and farming systems sustainability

In sum, consolidating the above set of salient recommendations, results in a new institutional mechanism viz. '**Climate Innovation Center @ Gender and Agriculture**' requiring a small budget allocation of the proposed research and development budget for the XII plan period

On The National Water Mission:

Goal 0: NWM Institutional Mechanism

- Ensure upto 30% representation of women in the institutional mechanisms

Goal 1 : Comprehensive water data base in the public domain and assessment of the impact of climate change on water resource

- Ensure creation of a large pool of women scientists to help build hydrological cycle models, Himalayan ecosystem & coastal region models
- Encourage formation of women user groups to maintain the observation networks
- Include gender dimensions in water information management systems
- Include gender considerations in various studies and projections of the impacts of climate change on water resources

Goal 2: Promotion of citizen and state actions for water conservation, augmentation and preservation

- Incorporate gender impact assessment and remedial measures considerations in the water supply augmentation projects
- Encourage women user groups so as to take charge of repair and restoration of the minor tanks and water bodies and conservation of wetlands
- Encourage research, development and incubation of low cost and widely diffusible and women friendly water technologies
- Ensure representation and empowerment of women (both user groups and elected representatives) across the mentioned institutions to manage water facilities
- Increase the pool of women farmers in the Participatory Irrigation Management schemes

- Frame Disaster Risk Reduction programmes with gender considerations
- Ensure participation of women across all capacity building programmes

Goal 3 : Focused attention to over-exploited areas

- Encourage women user groups to take charge of ground water and rain water harvesting programmes and entrust the maintenance of the same to such groups backed by relevant capacity build programmes
- Entrust women user groups with water quality maintenance programmes and bring such programmes under the MNREGA (safety net programme) ambit

Goal 4 : Water use efficiency increase by 20%

- Include gender considerations in various multiple use models of water
- Provide incubation support for micro-enterprises in WATSAN (Water and Sanitation), decentralized waste water treatment technologies
- Encourage the formation of vigilant women activist groups to ensure acceptable levels of waste water discharge and water quality maintenance in industrial clusters
- Capacity build of women farmers on water efficient technologies
- Include gender considerations in the farmer participatory action research programmes
- Encourage competition and devise award schemes for women water user groups involved in practicing efficient irrigation practices and water use efficiency programmes
- Encourage inclusion of women user groups in water audits and manuals preparation
- Ensure sufficient representation of women on pilot water use efficiency projects
- Devise and implement special award/reward schemes for women groups involved in water conservation and augmentation
- Ensure a reasonable number of O&M projects are allocated to women user groups

Goal 5 : Promotion of basin level integrated water resources management

- Incorporate gender considerations in the review of national and state water policies and ensure wide representation of civil society organizations working in the realm of water and gender intersection themes.
- Ensure key river basin organization formations with women at the helm of RBO (river basin organization) affairs.
- Incorporate gender considerations in the convergence of various national/state programmes.

Summing up the above suggestions across the strategy elements of the NWM mission, it is evident that these broadly align along four axes – **technology, markets, policy and capacity**. In short, the climate change, gender and innovation themes can be seamlessly realized through a combination of technology diffusion and micro enterprise incubation centers, new institutions and federated structures of multiple stakeholders backed by a strong technology led collaboration and co-ordination platform.

Innovation Brief

This innovation brief series was written to share an opinion on what might entail in integrating the climate change, gender and innovation perspectives into India's national action plan on climate change, to contribute to public debate and to invite feedback.

The views expressed are those of the author(s) and not necessarily those of Change Planet Partners Climate Innovation Foundation (CPPCIF).

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