



MAKING MISSION LiFE GENDER RESPONSIVE

HOUSEHOLD CONSUMPTION AND WOMEN

JANUARY 2023

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Disclaimer:

While this report does incorporate data sources from global indexes such as Global Gender Gap, 2022 and national level family health survey among other databases there is room for bias in the data due to the simplification of the gender dynamics in the binary. The unavailability of a recent nation-wide census has also created room for gaps in the research. This report however is meant to be a reference to look at the importance of incorporating gender mainstreaming in policy.

Introduction

The adversity of climate change has become increasingly apparent in the past few decades with rising temperatures, anomalies in the weather, more frequent occurrences of floods, droughts, and forest fires among the other range of issues that have emerged. While climate change causes economic challenges, it has also posed a serious human right threat. Research also provides ample evidence to show that the climate change challenges, and adverse impacts are very often disproportionately borne by women.

India has been no exception to the challenges posed by climate change. Although the country has time and again taken measures to go beyond its international responsibility to commit to endeavors to mitigate climate change. At many international forums India is now also being considered a 'climate leader' with new & improved policy interventions, alliances, missions, and a stronger push for climate finance promise by developed countries.

In the year 2021, the Hon'ble Prime minister of the nation and flagbearer of this mission has announced the mission LiFE at the UN Climate Change Conference COP 26.

The mission is launched in partnership with the UN India, the United Nations Environment Programme, UNDP, and other international partners.

The idea behind the mission is clear:

to promote the Lifestyle for Environment with a call to bring individual behaviors at the forefront of the global climate action.

The Lifestyle for Environment or LiFE mission as it has also been referred to, is a way of projecting the confidence in the sustainable approach of the common people in India towards consumption and production. However, this may be an oversimplification of the aspirations of this initiative which is not only meant to reform the Indian approach but also, strengthen India's position as a climate leader further to inspire other nations to join the movement. The mission which is still in its nascent stage also proposes for a circular economy.

Circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing, and recycling existing materials and products for as long as possible. ¹ The importance of this model in the Indian context is not lost, in fact, the process for adopting a circular solar economy for the country is already underway to focus on long-term sustainability. With the LiFE mission the focus on the circular economy is to expand to household level consumption, as highlighted by Niti Ayog. Through this mission the government aspires to replace the now growing 'use-and-dispose' mindset in consumption to more mindful and deliberate utilization. ²

Further this mission has also set the government to launch a platform to invite global research papers, ideas that showcase empirical and scalable solutions for the adoption of sustainability practices. The vision of the mission is to create and nurture a global network of individuals, namely 'Pro-Planet People (P3)', who will have a shared commitment to adopt and promote environmentally friendly lifestyles. ³ As a global movement initiated by India, the mission has the capacity to make the country a frontrunner in the climate leadership. This can further be

¹ Circular economy: definition, importance and benefits, European Parliament, New, 2015.

² Lifestyle for Environment, Niti Ayog available at <https://www.niti.gov.in/life> (last accessed on 20 October 2022).

³ Id.

strengthened by enhancing certain key elements under the mission. In India, women have been historically and traditionally considered the primary care takers of the family. For generations knowledge has been shared among women on traditional medicine practices, sustainable living, and more intrinsic family values of sharing & reusing. Even today, women shoulder a greater burden of the unpaid care economy in household and with the central focus with the new mission being households, women need to be brought into the picture as frontrunners of this campaign.

Women as a community have always been involved in environment conservation practices and movements in India. Some of the most prominent environment conservation movements in the world such as the Chipkoo movement, the Narmada Bachao Andolan and Silent Valley Movements which are also central to the history of environment conservation in the country had seen the participation of women in large numbers. The likes of Sundaralal Bahugana, Bachni Devi and Sugatha Kumari are often associated with these movements.

By counting women in specifically, the government can ensure that the mission can not only strengthen the practice at the household level in the country, but it can also enrich the example of the model provided by India by closing gender gaps. While closing the gender gap is not only just, but it will also further enforce the ideas promoted through the mission & enhance the action of a circular economy.

What can be understood from a finer look at the LiFE mission is its attempt to decolonize the ideas of development by adopting traditional pathways to sustainability through lived experiences and practice. The country leadership has expressed that they believe that this practice of 'use and dispose' is not found in the social fabric or the tradition of consumption in India, it is a borrowed practice and must be addressed to focus on long term solutions for sustainable development which can only be carried forward with the endeavors made by the common people. In carrying this socio-economically strengthened idea of development the role of women & children cannot be ignored and thus, it is important to bring forth gender responsiveness to the LiFE mission.

The sustainable development goal (SDG) 5 also focuses on gender equality and aims to empower women & girls which is pointed to the fact that gender equality forms a major base to cover to achieve sustainable development. Across the globe, various studies have shown that women generally tend to prioritize recycling, organic buying, and energy efficient transportation in fact in comparison to men, women have been shown to prefer public transport options more. ⁴ If these global studies are to be taken at their face value, it would not be wrong to conclude that with making LiFE mission gender responsive the policymakers are not setting out for something impossible to achieve, in fact, including gender specific initiatives will only strengthen the core focus on their agenda. While in India, the challenge of gender-based data gap exists in this respect, it is not a baseless assumption that women are generally considered the central part of households. They are found playing the part of the major caretaker in the family in different roles and so their commitment to finding solutions could lead to an increased strength in pushing the wagon of sustainable consumption on the road to economic development.

⁴ Women and SDG 12- Responsible Consumption and Production: Ensure sustainable consumption and production patterns, Gender, and the Environment: Building Evidence and Policies to Achieve the SDGs, OECD Library.

Mission LiFE- Lifestyle for Environment

The seed for the LiFE-Lifestyle for Environment Mission has been sown by the Prime Minister of the country, Shri Narendra Modi at Glasgow Conference of Party meeting in the 2021. In his speech he stated that this global mission has the capacity to be massive and can create lasting impacts in sectors such as- 'Fishing, Agriculture, Wellness, Dietary Choices, Packaging, Housing, Hospitality, Tourism, Clothing, Fashion, Water Management and Energy.'⁵



Even though the mission is currently in its nascent stage, the pillars for the mission are continuing to be strengthened. At the current stage, the LiFE mission aims to build a mass movement by putting focus on individual & community behaviors, build platform for global idea sharing and to adopt social norms that are climate-friendly and daily household practices of different culture to drive the campaign.⁶

As a global programme, the mission envisions three core shifts in a collective approach towards sustainability to be done in three phases⁷:

Phase I-Change in Demand

To influence a change in the demand behaviour. Through nudging individuals around the world to adapt simplistic practical environment-friendly actions in their day-to-day activities.

Phase II- Change in Supply

The Phase I is set to influence a shift in the large-scale individual demand. This shift can be used to nudge industries and markets to respond to the revised demands through tailor supply and procurement set out under Phase II.

Phase III- Change in Policy

The LiFE Mission aims to be adopted as bottom-up approach. By influencing the demand and supply dynamics of India and the world, the long-term vision of the mission is to trigger shifts in large-scale industrial and government policies that can support both sustainable consumption and production.

The Prime Minister launched the Mission LiFE officially at the Statue of Unity, Gujarat on October 20, 2022, along the UN Secretary-General Antonio Guterres who visited India for the launch. The event was marked by the presence of other high officials and led to the unveiling of the logo for the mission. In his address, the PM highlighted the mantra to promote the ideology behind this mission- *Prakriti Rakshati Rakshita—that is, those who protect nature, nature protects them*. The focus of the mission has been drawn to include a circular economy model in key areas of basic household consumption including water, transport (fuel usage), food, electricity, waste management and to promote recycling and reusing.

Mission LiFE is designed with the objective to mobilise at least one billion Indians and other global citizens to take individual and collective action for protecting and preserving the

⁵ National Statements by Prime Minister Shri Narendra Modi, Media Center, MEA, November 02, 2021.

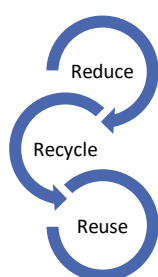
⁶ Niti Ayog *supra* note ii

⁷ MoEFCC & Niti Ayog, LiFE: Lifestyle for Environment Brochure, 2022.

environment in the period 2022 to 2027.⁸ Within India, at least 80% of all villages and urban local bodies are aimed to become environment-friendly by 2028.⁹

Circular Economy Model for India

At the launch of the mission, the PM has urged individuals to focus on reduction, reduce and recycle. He also stated that 'circular economy' is a major part of the Indian culture and lifestyle. While for majority purpose of this report the understanding of the circular economy(CE) has to be taken from the consumption aspect on the household and individual levels, the implications of a circular economy begin right from the production phase-according to Ellen MacArthur Foundation, around 80% of environment impact is determined at the design stage.¹⁰ For any product to be reusable it has to be reliable, durable and able to preserve quality over longer period of times. The increased life of a product can often times



lead to a direct decrease in waste generated from it. Although this may be beneficial in the longer scheme of things from the environmental perspectives, it does have economic implications as well. On one hand, for products that are designed for environment, there can be obvious disadvantages to the producers, for instance, if any producer integrates a product with an extend life span this will result in extension of the disposal periods which will reduce in revenue for the producer due to the decline in repurchases. With new policy obligations on producers

for extended producer responsibility these challenges are meant to be addressed. On the other hand, CE is also considered to offer opportunities for economic progress. For instance, taking the example of a mobile phone as a product- an increase in reusing & refurbishing of an older product has shown to increase accessibility to lower income groups especially in India at a lesser cost who otherwise might not have been able to purchase a primary phone. This not only reaps welfare benefits but also through enhanced connectivity opens new professional opportunities. With the Covid-19 pandemic mobile connectivity also developed a new meaning for education, professional workspaces among other activities.

What is the circular economy model? How can it contribute to sustainability?

By its generic definition a circular economy model is 'the natural economic system which respects the fundamental functions of the environment as supplier of natural resources, receiver of waste, and as direct provider of utility.'

A new economic model for India, shifting from a linear to a circular economy is expected to reap benefits in the form of a reduction in both resource spending and greenhouse gas emissions.

In a study that linked circular economy and sustainable development¹¹ through an assessment of the Sustainable Development Goals (SDGs), it was assessed that in consideration of Goal 8

⁸ PIB Delhi, PM & UNSG Launch Mission LiFE at Statue of Unity, Gujarat, Niti Ayog, MoEFCC, Government Gujarat Organized the Launch of Mission LiFE, October 20, 2022.

⁹ Id.

¹⁰ Hans Wiesmeth, The circular economy-Understanding the concept, Implementing the Circular Economy for Sustainable Development, 2021

¹¹ Circular Economy for the SDGs: From Concept to Practice, General Assembly and ECOSOC Joint Meeting, Draft concept and Programme of the 73rd Session, UN organization.

which relates to -‘promotion of sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all’- circular economy principles can be considered highly beneficial. With the promotion of recycling and repair sectors in the new economic model, it is set to create new employment opportunities in these sectors.

Under its initiative for an ‘Aatmanirbhar Bharat’ the government announced the need to shift to a development model that leads to optimum utilization of resources which was aimed at eliminating waste and push for continual use of resources.¹² The report highlighted that with only 2% of the world’s landmass and 4% of freshwater resources, a linear economy model of ‘Take-Make-Dispose’ would constrain India’s manufacturing sector and, consequently, the overall economy and narrowed on 11 focus areas from the manufacturing end which include- Municipal Solid Waste and Liquid Waste, Scrap Metal (Ferrous and Non-Ferrous), Electronic waste, Lithium Ion (Li-on) Batteries, Solar Panels, Gypsum, Toxic and Hazardous Industrial Waste, Used Oil waste, Agriculture Waste, Tyre and Rubber Recycling and end-of-life Vehicles (ELVs).¹³

The government has also launched other initiatives to promote sustainable households in the country. For instance, in the year 2016 the Pradhan Mantri Ujjwala Yojana (PMUY) to promote liquid petroleum gas for cooking in households at subsidized rates. The government claimed that 80 million connections had been subsidized.¹⁴ However, the mission has not been able to penetrate all regions across the country especially the North Indian rural households.

Partially the reason attribute to this has been the interlinkage between gender inequalities present in households. A growing literature finds that while women are primarily responsible for cooking and food choices, it is men who are the ultimate financial decision makers. Due to these inequalities very often men might not be aware of the benefits and ease of cooking on gas and thus would not be less likely to adopt LPG.

Furthermore, the SDG 12 deals with ensuring sustainable consumption and production products with a worldwide scope. The goal highlights some figures that estimate that annually, one third of all food produced equivalent to 1.3 billion tonnes worth around \$1 trillion- ends up rotting in the bins of consumers and retailers, or spoiling due to poor transportation and harvesting practices.¹⁵ In India, a UN estimation shows that while nearly 190 million undernourished the food wastage in the country amounts to ₹92,000 crores per annum.¹⁶ Apart from food wastage, energy consumption is a primary concern at household level. UN estimate shows that if people worldwide switched to energy efficiency light bulbs the world would save US \$120 billion annually.¹⁷

The foundation of a circular economy lies in sustainable consumption and production thus, the model in itself aids the concept of sustainability. With this clear example of how women could be enablers of change and key players in sustainable consumption it is also important to look at the participation of nature of women in the economy in India.

¹² Niti Ayog, Govt Driving Transition from Linear to Circular Economy, PIB, March 18, 2021

¹³ Id.

¹⁴ Sangita Vyas et al, Gender and LPG use after government intervention in rural north India, OSF, September 11, 2021.

¹⁵ Goal 12: Ensure sustainable consumption and production patterns, SDG, UN Org

¹⁶ Food Waste in India, Chintan Environmental Research and Action Group available at <https://www.chintan-india.org/sites/default/files/2019-09/Food%20waste%20in%20India.pdf> (last accessed on 28 October, 2022).

¹⁷ Goal 12 *supra* note xii

Economic Participation of Women in India

When talking about the economic participation of women the foremost requirement is to delimit the indications used to measure economic participation in ordinary parlance. The reason behind this is the nature in which women are often involved in the economy; a large number of women especially in India work outside the formal economy. Current estimates show that female participation in the formal labour force is at only 24 percent (lowest in developing nations.)¹⁸ However, at the same time women have high percentage (91%) of daily unpaid work.¹⁹ In the year 2019, the Ministry of Statistics & Programme Implementation conducted a Time Use Survey in India for the first time with the objective of measuring the participation of men & women in paid and unpaid activities.²⁰

The data from the survey reveals that women participate in significantly less numbers in the formally employed sector in the country in both urban and rural areas. It also further looks at the average time spent by persons engaged in the employment related activity-while men spent on average between 430-514 minutes in a day in such activities, women spent 317-375 minutes in both rural and urban settings. On the other hand, women spent as much as 132-301 minutes and 138- 293 minutes in unpaid domestic and caregiving services for household members while men only spent an average of an hour and half on either activity in both urban and rural settings.²¹ While this is attributed to the role that women play at the household level which is that of the central caregiving figure, what it also goes to show is that since a majority part of the day of women is taken up by caregiving activity this limits their participation in the formal economy for these reasons as well.

The participation in formal economy however is not the only determining factor of accounting for women in the economy. Even beyond the unpaid care economy there is an informal care economy in India which constitutes of a large percentage of women domestic works engaging in paid activities related to housekeeping, cooking, babysitting, etc. These large percentages of women working informally below the minimum wage levels often play the role of the sole bread earner in the family as well where the male counterparts are sometimes found to be engaging in criminal activities or explicit usage of drugs & alcohol.

At the same time, women are often the key decision makers in the family for domestic activities as well for instance mothers often decide the food consumption right from the purchasing of the raw vegetables, meat, fish, etc to the preparation of the meal. Other primary purchasing decisions such as shopping for clothes also often falls into the task list of the female in the house even in patriarchal households where the decisions are made by the leading male figure of the family. This is the basis for why women are key players in the discourse on sustainable consumption at individual and household level in India and it would be a big loss to not incorporate gender mainstreaming agendas to the LiFE mission.

¹⁸ India introduces economic reforms to improve women's access to markets and financial assets, Growing Economies through gender parity, Council on Foreign Relations,

¹⁹ *Id.*

²⁰ PIB Delhi, NSS Report: Time Use in India-2019 (January-December 2019), September 29, 2020

²¹ *Id.*

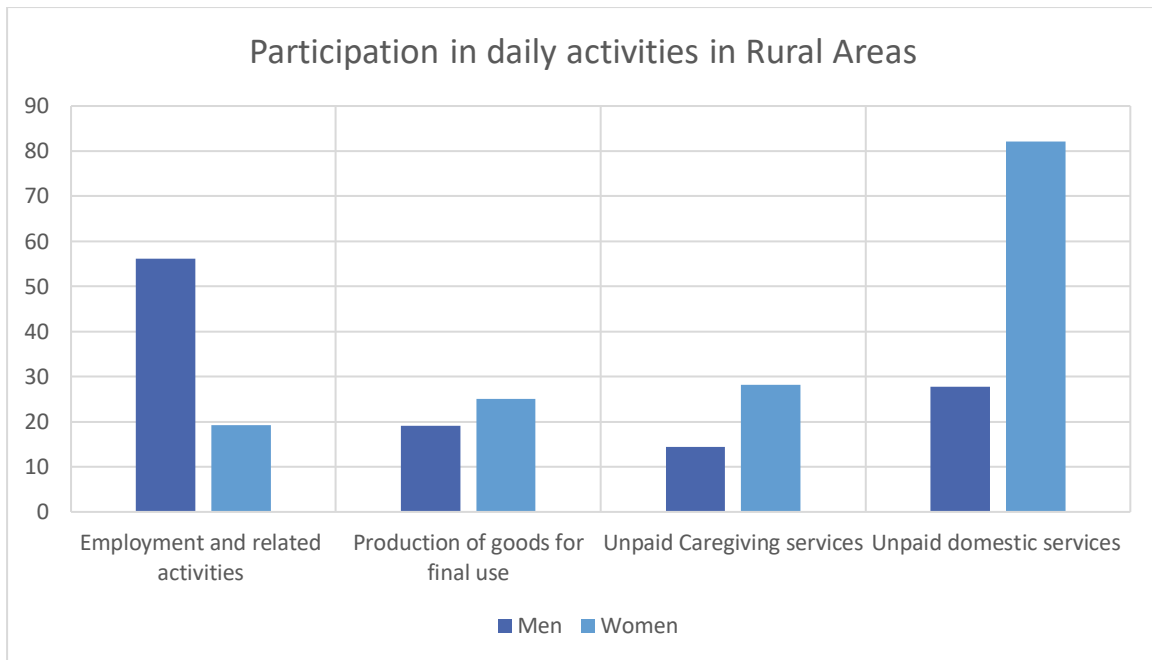
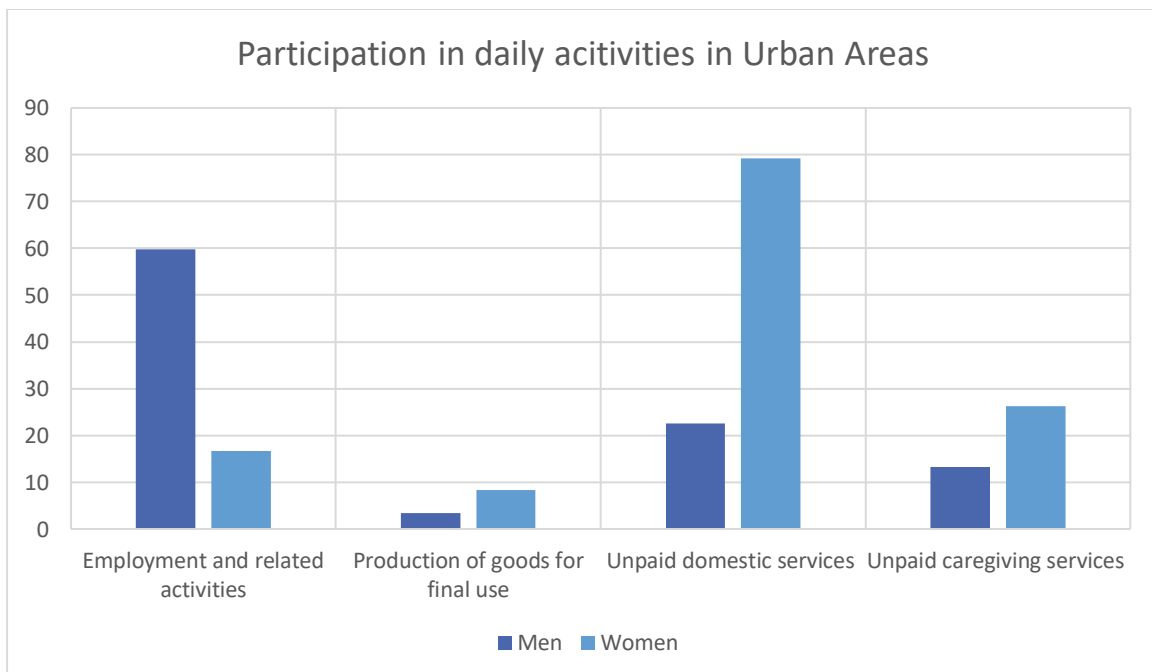


Figure 1 Source: NSS Report: Time Use in India-2019, PIB Delhi



With the conditions revolving around the economic participation of women in the society as a primary household figure, it is important to draw upon data sources to look at the involvement of women at the household consumption level to measure the steps to be taken under the LiFE mission to ensure the success of the initiative.

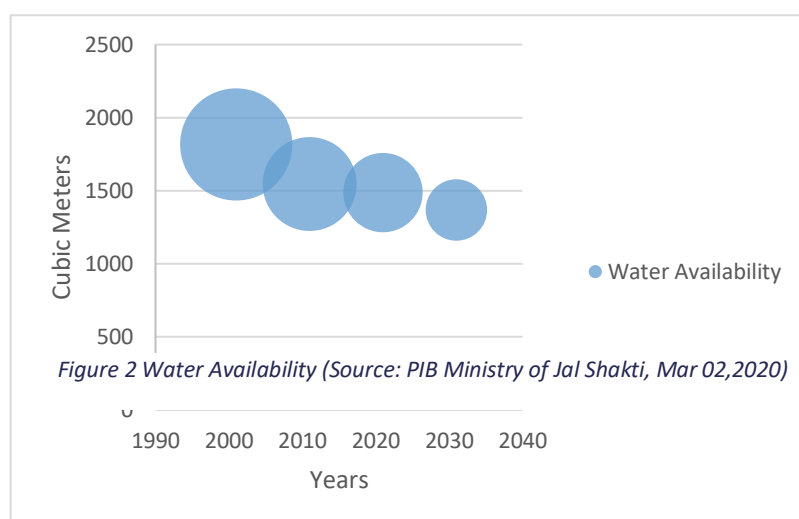
In this report, we will look at some of the key areas that have been highlighted under the mission and correlate their consumptions with patterns found across the gender binary.

Water

The LiFE Mission highlights water as one of the key areas to focus on due to the emerging scarcity of clean accessible water. The issues that arise from water scarcity are multiple such as economic development, sustained water supply, equity and social justice, water financing, pricing, governance and management.²² While these issues in itself present pertinent challenges, water scarcity also brings forth an agenda of gender justice. In rural India collecting and carrying water are women's responsibilities.²³ Women in some regions, travel ten miles a day making approximately six trips a day to gather and transport water by carrying loaded bars or buckets on their heads. These trips cause not just a loss of time, they also lead to an increase in a number of health related issues for women. On one end, the water scarcity is strongly linked to climate change and thus there is a strong push for conservation measures. The government of India through the Ministry of Jal Shakti estimated that average annual per capita water availability in the year 2001 and 2011 was assessed as 1816 cubic meters and 1545 cubic meters respectively which may further reduce to 1486 cubic meters and 1367 cubic meters in the year 2021 and 2031 respectively.²⁴

At household level, water is used for a range activities from washing utensils, clothes, etc., to hygiene. Unlike other countries, such as the United States, the lifestyle in India is centred around mindful usage of water. For instance, in many households in India, washing utensils and clothes is done manually without using a dishwasher or washing machine even today. Unlike in other countries such as the United States, even in cases where a washing machine is used for domestic laundry, it uses cooler water and dries on clothesline (which is common practice in most middle income groups in the country), this reduces the CO₂ emissions from the activity from 3.3 kg of CO₂ to just 0.6kg.²⁵

Women are often the main caretakers in the family and are tasked with the activities described above which may include the domestic laundry and utensils in the house. Therefore, it is essential to keep women in the loop when discussing sustainability or conservation measures. In fact, women should be the primary resource group for household level conservation measures due to the nature of their role in the family.



²² Abdul Shaban & R N Sharma, Water Consumption Patterns in Domestic Households in Major cities, Economic & Political Weekly, Vol 42, Issue No. 23, June 09, 2007.

²³ Alexandra Barton, Water in Crisis-Women in India, The Water Project available at <https://thewaterproject.org/water-crisis/water-in-crisis-india-women> (last accessed on November 02, 2022)

²⁴ PIB, Per Capita Availability of Water, Ministry of Jal Shakti, March 02, 2020.

²⁵ Christine Ro, The hidden impact of your daily water use, Smart Guide to Climate Change, Environment, BBC, March 27, 2020.

Food

Food security remains a top global issue even today, the recent report jointly published by the Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development (IFAD), the United Nations Children's Fund (UNICEF), the UN World Food Programme (WFP) and the World Health Organization (WHO) painted a grim picture of the world, it claims that as many as 848 million people were affected by hunger in 2021; 46 million people more from a year earlier and 150 million more from 2019.²⁶ Keeping this in mind, food has been highlighted as one of the key areas under the mission LiFE. In the Global Hunger Index, India ranks 107 out of 121 with a score of 29.1 (which is marked in the serious range). On the other hand, the problem of food wastage is also a prominent one. The Food Waste Index Report 2021 published by the United Nations Environment Programme claims that nearly 50 kg of food is thrown away per person every year in Indian homes.²⁷ This means that the problem of food security is not one related to the unavailability or scarcity of food resources, it is in fact, a failure of the supply chain mechanisms and unmindful consumption patterns. When talking about food security, what often gets ignored is the impact of gender inequality, the gender-equality dedicated entity of the UN, UN Women estimates that 60 per cent of chronically hungry people are women and girls. The role of women in the cycle of food production to food consumption is major yet it simply gets side lined because of the lack of readily available gender based data. On average, women make up about 43 per cent of the agricultural labour force in developing countries.²⁸ In India, the number is even higher-according to Niti Ayog, agriculture value chain engages women at all levels from production-pre-harvest to post-harvest processing, packaging to marketing. In rural communities, agriculture and allied sector 80 per cent of all economically active women are engaged out of which 48 per cent are self-employed farmers.²⁹

The push towards sustainable food production and consumption is not new for India, in 2017 the government pushed the agenda when Food Safety and Standards Authority of India (FSSAI) launched the "Save Food, Share Food, Share Joy" initiative. The objective of the initiative was to "to promote food donation, stop food waste and food loss in the country." At household level, women bear the major burden of the food related activities as well. The United Nations General Assembly at its 75th session in March 2021 declared the year 2023 as the International Year of Millets (IYM 2023). This gives India an added advantage to emerge as a global leader in sustainable food consumption as it is one of the largest producers of millets in the world. The Union Minister of Commerce and Industry, Consumer Affairs, Food and Public Distribution and Textiles Shri Piyush Goyal called for exploration of newer international and domestic markets for millets.³⁰

Women being the primary caretakers in the family are responsible for the procurement of raw vegetable, cooking, etc. These roles attributed to women can be used as a tool to promote millet in the household diets across the country. However, some areas of the

²⁶ FAO, UN Report: Global hunger numbers rose to as many as 828 million in 2021, July 06, 2022 available at <https://www.fao.org/newsroom/detail/un-report-global-hunger-SOFI-2022-FAO/en> (last accessed on November 10, 2022).

²⁷ Thomas Zacharias, *India has a food wastage problem. Here's how individuals can make a difference*, Indian Express, April 07, 2021.

²⁸ UN Women, Fact & Figures.

²⁹ Dr. Neelam Patel and Dr. Tanu Sethi, *Rural Women: Key to New India's Agrarian Revolution*, Niti Ayog, December 2021.

³⁰ PIB Delhi, *India must strive to become the global capital of millers*: Shri Piyush Goyal, Ministry of Commerce & Industry, 05 December, 2022.

relationship between women and food needs focus as well for instance, in many households women are treated as second class citizens due to the deep rooted patriarchy, in this regard women's food consumption is often neglected. Women often eat after their male counterparts in families delaying and restricting their nutritional intake.

This duality of women's role in the food production & consumption cycle needs to be accounted for when taking measures to increase sustainable consumption.

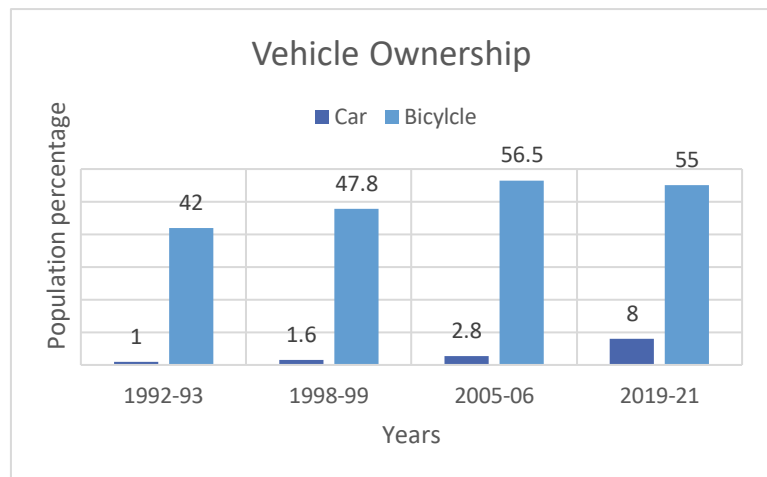


Figure 3 Data Source: National Family Health Survey

Transport (Fuel Usage)

Fuel Usage is increasingly becoming a more central concern in the sustainable practices discourse. With alternate means such as electric vehicles being introduced in the market to challenge the usage of conventional fuel usage for transportation. India ranked as the fourth-largest petroleum consumer in the world following China, the United States, and Russia.³¹ USAID, Clean Air Catalyst which is a global partnership launched in 2020 to find lasting solutions to air and climate pollution is currently working in three pilot cities including Indore, India.³² The study used gender analytics approach to air pollution to understand the differences in the men and women mobility pattern. It revealed gender inequalities also shape transport choices, for instance, if a family owns a car-the male head of the household is more likely to use it, leaving women and children to rely on alternatives.³³ Thus, women in either "no-choice walkers" particularly in low-income walkers or may be more frequent users of public transport as compared to men.

An interesting observation from *Invisible Woman*, a book focusing on the of gender segregated data gap, a study conducted on mobility in London in 2015 highlights that due to the primary caretaking responsibilities borne by women their travel is encumbered by shorter trips combined together to take care of children and elder family members.³⁴ In 2018, India was considered to be one of the fastest-growing car markets in the world, the vehicle ownership rate has since been expected to grow at a staggering rate. However, according to the NFHS-5 conducted among 6,64,972 families only 7.5 per cent Indian families (with a higher percentage of 14 per cent families in cities) own a car whereas 86.7 per cent of households own a two-wheeler. The survey conducted by the Ministry of Health and Family Welfare also found that as many as 55 percent of Indian household have a bicycle thus enhancing sustainable transport practices in India by a large degree. This can be a result of the economic

³¹ Fuel Efficiency, Transport, Bureau of Energy Efficiency as mentioned on November 14, 2022.

³² Clean Air Catalyst, Urban Links, USAID available at <https://urban-links.org/project/clean-air-catalyst/> (last accessed on November 15, 2022)

³³ Women, Transportation, and Air Pollution in India, Asia, USAID, Clean Air Catalyst available at <https://urban-links.org/insight/women-transportation-and-air-pollution-in-india/> (last accessed on November 15, 2022).

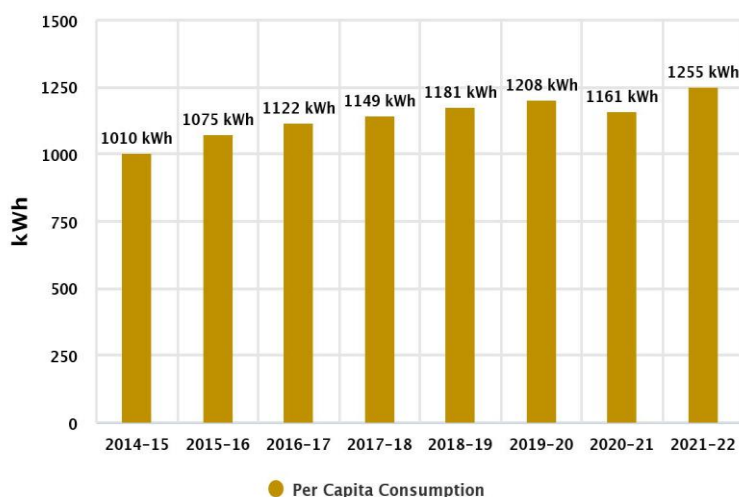
³⁴ Caroline Criado Perez, *Invisible Women: Data Bias in a World Designed for Men*, pp 56, 2019.

slowdown in the country and experts expect the vehicular emissions to grow in the coming years as more people are lifted out of poverty. (data: NFHS car ownership). Yet primarily even in the households that do have car ownership, the primary user is the male member in the family. The women are thus often pushed to use other modes of transportation including public transport and pedestrians paths. It is thus cardinal to consider women's movement patterns when the task to make public transport accessible is taken up by the government.

Electricity

For the second largest population in the world, India's energy consumption remains fairly low compared to other countries. As can be seen in the figure below, the per capita consumption in India as of 2020 stands at 1161 kWh which is less than one third of the average annual residential electricity sales per capita in the US in the same year.³⁵ The low electricity consumption can be attributed to many lifestyle traits commonly found in the average families in the country. Statista, which is a German company specializing in market and consumer data studies the penetration of home appliances in the Indian households. Even in 2018, high electricity usage appliances such as air conditioners, washing machines and refrigerators had a penetration rate of 4.5, 13 and 33 per cent respectively.³⁶ The government interventions through agencies such as the Bureau Energy Efficiency (BEE) under the Ministry of Power have also increased the awareness of energy efficient appliances. The BEE has a grading system called the Energy Efficiency Ratio (EER) for home appliances and British Thermal Unit (BTU) specifically for Air-Conditioners. The BEE rating uses Star Labels to show a product's efficiency which help consumers save money and energy.

Figure 4 CEA Dashboard Energy Consumption



A study conducted by the World Bank in the Residential Consumption of Electricity in India which used a household module of the India Low Carbon Growth Study to project the numbers of electric appliances in use in the residential sector to fiscal 2031-32. The study which was published in 2008 accounted that approximately 30 per cent of the total residential electricity was for lighting followed by refrigerators, fans, electric water heaters, etc. and 4 per cent of

total residential electricity is used for standby power—a small amount of power consumed by modern appliances when they are not actively turned on.³⁷ Promoting an attitude to switch off appliances when not in use can also save electricity consumption.

The question might arise on the importance of energy and gender integration in policy due to the unwariness of women's as key drivers of clean energy transition. A paper on the

³⁵ U.S Energy Information Administration (EIA), State Energy Data System, Electricity Data Brower from the

³⁶ Shangliao Sun, Household penetration rate of home appliances in India, 2018, Statista, February 14, 2022.

³⁷ MOEF & World Bank, Residential Consumption of Electricity in India Documentation of Data and Methodology, India: Strategies for Low Carbon Growth, Background paper, July 2008.

importance of gender perspective in household energy-saving behaviour makes a key observation in suggesting that women are involved in a higher percentage of energy activities in household chores but have less gender participation in energy decisions.³⁸ A energy-saving behaviour study also shows that women are 22% more likely to save energy as compared to men.³⁹ Under the SDG the accessibility to clean and affordable energy is recognized as a universal right, this idea of energy justice for sustainability is tied up with the goal 5 which highlights how gender is inseparable from the two. A study conducted in the capital of Nepal⁴⁰, provides that when energy conversation is promoted in lifestyle through the reduction in home appliances such as washing machines and cleaning this energy is substituted by human muscles (somatic energy) in completing household chores. Bringing in this direct connection of primary caregiving activities undertaken by women at the household level and the principles of energy conservation it can be concluded that women play a central role in bringing about these lifestyle change and should thus be acknowledged directly under these missions.

Waste Management

One of the most important aspect of a circular economy is waste management since sustainable waste management hierarchy is the one of the central means of contributing to the circular economy.⁴¹ In India, rapid urbanization poses a massive challenge to sustainable waste management. The urban population in the country is expected to grow to 600 million in this decade itself and India is set to generate 165 million tonnes of waste by 2030 and 436 million tonnes by 2050.⁴² Two essential principle of waste management are segregation of waste and resource recovery which both contribute to circular economy. Segregation of waste is the process of separation of waste types which help in facilitating the recycling and correct onward process.⁴³ The resource recovery process further allows for the material which can be reused or recycled into new products. At the household level, the idea of waste segregation is not a novel concept, a study of the urban community in Ujjain⁴⁴, India used three themes to understand the dynamics of waste segregation. The study used a thematic framework technique using the Motivation-Opportunity-Ability-Behaviour theory for analysis.⁴⁵ While employing behavioural economics the study looked at people's motivation to sorting and segregating household waste by spreading awareness of the environment impacts and threat of diseases. It found that most participants in the study were aware of the two dustbins for dry and wet waste, interestingly, many male household members stated that

³⁸ Bindu Shrestha et al, Review of the Importance of Gender Perspective in Household Energy-Saving Behavior and Energy Transition for Sustainability, Thermal Comfort and Energy Use in Buildings, November 12, 2021.

³⁹ Wen Hsiu Huang & Ming-Che Chao, Gender Differences in Energy-Saving Behavior, IAEE Conference Paper, New Energy Landscape: Impacts for Latin America, Rio, 2017.

⁴⁰ Bindu Shrestha et al, Role of gender participation in urban household energy technology for sustainability: a case of Kathmandu, Discover Sustainability 2, March 23, 2021

⁴¹ Bauyrzhan Biakhmetov et al, Chapter 33- Sustainable waste management and circular economy p545-554, Low Carbon Stabilization and Solidification of Hazardous Wastes, 2022.

⁴² Ministry of Housing and Urban Affairs, Circular Economy in Municipal Solid and Liquid Waste, June 30, 2021.

⁴³ The importance of waste segregation, Axil Integrated Services available at <https://axil-is.com/blogs-articles/waste-segregation/> (last accessed on November 18, 2022).

⁴⁴ Krushna Chandra Sahoo et al, Dynamics of Household Waste Segregation Behavior in Urban Community in Ujjain, India: A Framework Analysis, International Journal of Environmental Research and Public Health, 15 June 2022.

⁴⁵ Id.

the females were primarily responsible for household waste segregation.⁴⁶ It also led to observation of some key interventions that may be required such as accessibility of safe disposal and garbage collectors.

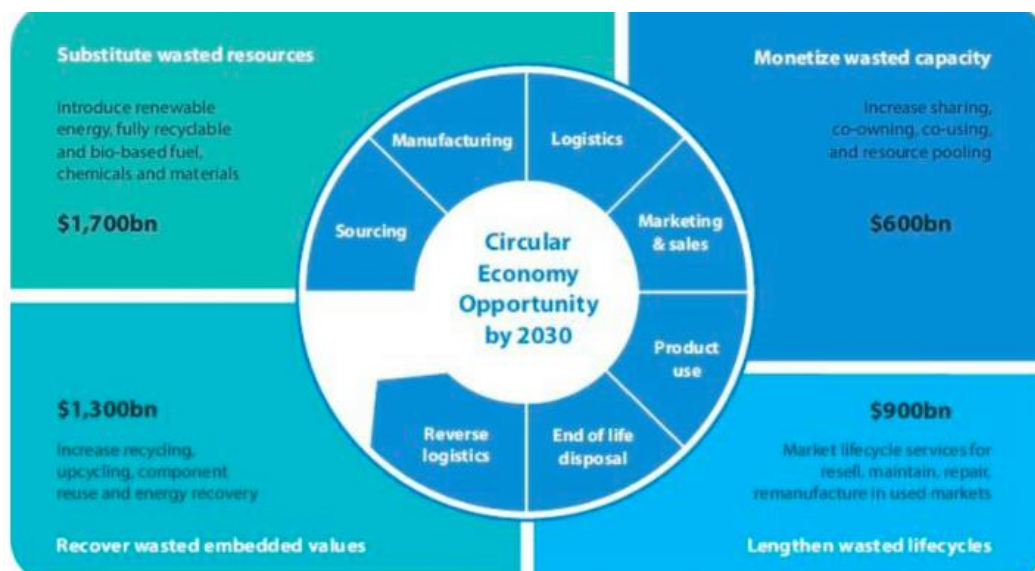


Figure 5 Value Realization Potential from Circular Business Models by 2030 (Source: Accenture 2019; Circular Economy in Municipal and Liquid Waste MOHUA)

For successful waste management, the first step is waste segregation that needs to start at the household level. A policy guideline by Niti Ayog highlights⁴⁷ the need for promoting behaviour change for strengthening waste segregation at source which reduces the need for secondary segregation which is much more capital, energy and land intensive. Currently India has six Solid Waste Management Rules, guidelines issued by CPCB, CPHEEO and other related agencies which prescribe utilization of waste material in some select sectors.⁴⁸ The MSW Rules support waste segregation by collection, setting up of MRFs, waste to energy and waste to composting plants. The Plastic Waste Management Rules 2016 suggest utilization of plastic waste in road construction.⁴⁹

Currently the waste segregation at source numbers in India remain low, even in the capital city of Delhi. The Delhi economic survey 2020-2021 found that waste segregation at source is being implemented in just 32% wards-94 out of 294 wards.⁵⁰

Recycling & Reuse

The slogan of 'reduce, reuse and recycle' which lies at the heart of the LiFE mission is a people centric three-pronged strategy for changing the collective approach towards sustainability. The slogan of the three R's has been in use in India for a fairly long time now and has often been used to denote a behaviour of conservation of resources through mindful consumption (reduce), reduction in waste (reuse) and repurposing old products to make new ones (recycle). The ideas of reusing and repurposing old items into new ones is imbedded in the Indian lifestyle in many ways. For instance, women in many parts of the subcontinent

⁴⁶ Id.

⁴⁷ Niti Ayog, Promoting Behavior Change for Strengthening Waste Segregation at Source, November 2021.

⁴⁸ Id.

⁴⁹ Id.

⁵⁰ Abhinav Rajput, Delhi: 'Waste segregation only in 32% of 294 civic wards', Indian Express, March 12, 2021

traditionally use scrap and old clothes to make cushion and duvets. Another traditional practice in India that has existed for decades if not more is a dealer who would buy scraps from home at reasonable rates also known as the *kabadiwala*. In present times, *kabadiwalas* frequent the lanes of residential areas and collect scrap paper, books, metals and other items from households that can be reused or recycled. This provided a middle channel for those households that could not manage the segregation of the waste at source. In fact, the waste collectors were included under the Solid Waste Management Rules, 2016 where the local authorities and village Panchayats of census towns and urban agglomerations were entrusted with the duty and responsibility to “(c) establish a system to recognise organisations of waste pickers or informal waste collectors and promote and establish a system for integration of these authorised waste-pickers and waste collectors to facilitate their participation in solid waste management including door to door collection of waste; (l) provide training on solid waste management to waste-pickers and waste collectors;”⁵¹ apart from the involving communities in waste management and promotion of home composting, etc.

With new categories of waste such as e-waste and more recently bio-waste which increased due to the pandemic, the efficient management of waste has increasingly become a challenge as well. The E-waste (Management) Rules, were also introduced in 2016 which superseded the previous 2011 rules. It aimed to ensure effective implementation and clear delineation of the role of the producers⁵² by introducing Extended Producer Responsibility.⁵³

Composting at home has become more frequently practiced in the past years with renewed interest with growth of kitchen gardens in the year 2020.⁵⁴ A home composting guide was prepared by the Ministry of Environment Forest and Climate Change (MoEF&CC), Government of India along with GIZ and TERI as technical partners under the “Development and Management of Waste NAMA(Nationally Appropriate Mitigation Action)in India in July 2020. The home composting guide provided insight for the composting process and its major elements, carbon: nitrogen ratio of some common organic waste materials, types of composters and their effectiveness based on size of households, etc. It is estimated that the waste to compost potential in the country stands at 54 lakh TPA(tonnes per annum).⁵⁵ 145 plants are currently operational with capacity for producing 13.11 lakh TPA. The waste to energy capacity is estimated at 541 MW.⁵⁶

These policy guidelines goes to show that while the policy directives and recommendations have continued to evolve, through the LiFE mission these can be brought under one umbrella of influencing behaviours to adapt these lifestyle changes and move towards household level sustainability. Thus, the LiFE mission does not only focus on new initiatives it brings together elements of existing policy to create an ecosystem of change through collective action. It inspires the common people to employ tools to aid the governments & international organization and join hands in this fight against climate change.

⁵¹ SOLID WASTE MANAGEMENT RULES, MOEFCC, 2016.

⁵² Priti Banthia Mahesh & Manjusha Mukherjee, *Informal E-Waste Recycling in Delhi: Unfolding Impact of two years of E-Waste (Management) Rules, 2016*, Toxic Link Delhi 2018.

⁵³ Extended Producer Responsibility (EPR) is a policy approach under which producers are given a significant responsibility – financial and/or physical – for the treatment or disposal of post-consumer products.

⁵⁴ Sweta Akundi, *Composting at home find renewed interest as kitceh gardens grow common in 2020*, The Hindu, November 16, 2020.

⁵⁵ Niti Ayog, *Promoting Behavior Change for Strengthening Waste Segregation at Source* supra note xlii.

⁵⁶ Id.

Impact of a gender responsive approach to LiFE Mission

Although LiFE Mission is a global movement, India is set to present itself as a leading example of the sustainable lifestyle proposed under it. It is imperative at this point to analyse what would be required to make this Mission a global success. The assertion for including women centric approaches to the mission comes with two set of agendas through this report. Firstly, according to the World Bank data the female total population of the country is 48.0 percent⁵⁷, which means that nearly half the population of the country comprises of women. Women play a major role in the economy in the organized and the unorganized sector including the key roles such as that of a primary level consumer, purchaser at household level, teachers in schools⁵⁸ (which put them in a positive behaviour enabling position) along with participating actively in the economy. Since women play such pivotal roles in shaping not just the economy but also how the coming generations approach this intersection of economy with the environment, it is imperative to include women in the decision making process and highlighting their roles at the consumption level as well.

This mission could also be a good avenue to create a well-rounded gender-environment nexus for India. Gender mainstreaming in environment-related domestic policies is essential because since women are under greater threat with environment degradation and climate change, they should also have a greater say. The concept of gender mainstreaming would also not simply mean bringing women in the fold of policy-making; it must also recognize the differences in needs, opportunities and capacities related to climate action.⁵⁹ The importance of bringing forth gender perspectives was also discussed at the recent climate conference, COP27 at Sharm el-Sheikh in 2022. A intermediate review was conducted on the implementation of the gender action plan as under the Paris Agreement and Katowice climate package acknowledging the important tole of the enhanced Lima Work Programme on Gender and its gender action in advancing gender equality and the empowerment of women and girls in the UNFCCC process.⁶⁰

Policy instruments are often used to stimulate behaviour change⁶¹, by creating a momentum or incentivising change. At the cusp of gender based policy planning lies the intersection of spatial planning, improving the accessibility of public spaces for all gender, safety and security concerns as well as a more nuanced approach to bringing differential needs to the forefront. It is not saying that women are separate from men in the conservation of the environment and consumption but only to engage with women, to unite the two genders to fight an equal battle.

To analyse what the potential impact of a country-wide approach in policy focusing on women could be, some case studies on gender parity in sustainability and conservation can be looked

⁵⁷ Population, Female (% of total population), The World Bank, 2021

⁵⁸ Trading Economics provides data from the World Bank which provides that the primary education, teachers in India was reported at 55.36% in 2020.

⁵⁹ Gender-Responsiveness Climate Action, Expert commentary on achieving gender-responsive climate action, IISD, COP23 available at <https://www.iisd.org/story/gender-responsive-climate-action/> (last accessed on December 01, 2022).

⁶⁰ Decision-/CP-27, Intermediate review of the implementation of the gender action plan, UNFCCC as available on https://unfccc.int/sites/default/files/resource/cop27_auv_14_gender.pdf (last accessed on December 01, 2022).

⁶¹ Lars Tummers, Public Policy and Behavior Change, Public Administration Review, Vol 79, Issue 6, October 01, 2019.

at. These studies have been selected to highlight three aspects of women's involvement in sustainable development planning that is through putting them in positions of relevance to shape implementation, to observing the different needs for women and recognizing their role in the society.

Community Training for Women In Rajasthan

Centre for Social Research(CSR-India), a non-profit organization based in New Delhi has been working with the women since 2012 in districts of Rajasthan, which is a state at a high risk of water scarcity due to its geographical location. Through the initiative, CSR engaged with women at different levels including Elected Women Representatives (EWR's), community members and leaders, technical experts, local practitioners, and government officials.

CSR-India highlighted that using through a gender responsive monitoring and evaluation system, the government can be aided in assessing the overall effectiveness of policy measures such as the national drought plan for instance and to also identify potential areas of improvement too.⁶²

For this initiative CSR-India partnered with Hanns Seidel Foundation to engender green governance in this arid region.⁶³ The programme was carried out in two phases which included an assessment period to streamline the needs of the target villages and a draft training module to build knowledge of water issues, understanding available government schemes and initiatives as well as conservation techniques as attested by the elected women representatives. The training programme also helped in creating a wave of change in the mindsets of the people in the villages which furthered practical results like the construction of dam increasing access to water.

Due to the increasing risk of water scarcity in the state, the government has supported many schemes such as the *Mukhyamantri Jal Swavlamban*. Further, the community level traditional conservation practices have also made a major contribution to slowing down the depletion of water sources in the region. Niti Ayog also stated that the state had restored 80% irrigation potential of identified bodies largely through community managed ponds and tanks.⁶⁴ Even with existing challenges such as that of lower literacy rates women have taken initiative to be involved. In Hinda, a village in Rajasthan women, Manju Soni is one of 25 'Bhujal Jaankars' meaning groundwater-informed which is a group of trained farmer-researchers who monitor groundwater levels under a village-level project for groundwater sustainability.⁶⁵ While, Soni is the only women among majority men, other women have taken key roles as water conservators in their households through traditional practices such as old rain water harvesting.

Since the 1970s, the mainstream development policy makers began to focus on women's gendered roles and experiences as water carriers and resource managers as a way of maximizing their participation in drinking water supply.⁶⁶

⁶² CSR, Gender and Climate, Twitter, June 17, 2022.

⁶³ Neeta Lal, Women show climate leadership to tackle water scarcity, India Climate Dialogue, September 30, 2014.

⁶⁴ Joychen Joseph, Niti Ayog lauds Rajasthan role in conservation of water, TOI, June 16, 2018.

⁶⁵ Sahana Ghosh, Bridging the gender gap through groundwater monitoring in a Rajasthan village, Mongabay, June 29, 2020.

⁶⁶ Kathleen O'Reilly, "Traditional" women, "modern" water: Linking gender and commodification in Rajasthan, India, *Geoforum*, Vol 37, Issue 6, November 2006.

What emerges as evidence from these initiatives is that while women are keen on actively participating in such programmes, however there are barriers that exist. With a gender focused lens on planning these initiatives, they can be made for inclusive and accessible to women. Even without low literacy among women in the region, the functional knowledge of local systems remains high thus if the training is made more focused on functional knowledge and overcoming the obstacle of a formal education more women can take on these roles in the future.

Sustainable Food Consumption Practices in South Indian Middle Class Households

Food security has become a central issue in the past couple of years and has been highlighted under the LiFE missions as well. It has been found that food security affects men and women differently due to their physical and economic access as well as dietary needs. In India, studies have been conducted to understand the complexity of dietary intake, anthropometric characteristics and food security status of Indian women.⁶⁷

One such study was conducted in the south Indian megacity of Bengaluru after the Covid-19 pandemic to analyse the shift in food consumption trends.⁶⁸ The study engaged social practice theory to understand food shopping practices, the rise in immune-boosting foods and the consumer demand for safe, healthy food as it relates to wider sustainable food transitions.⁶⁹ For the social practice theory, the term consumption is used to denote a series of actions including acquisition, preparation, eating and socializing. The study was conducted through qualitative interviews with middle class families because the Indian middle class are the key decision makers and consumers in the economy (40 % of the whole population⁷⁰) which puts them in the position to drive fundamental changes in the society.

The study revealed that the food consumption is greatly affected by the values, religious beliefs and practices at the household level. It further revealed that tasks assigned to women in the household also greatly influences food consumption practices. The problems of working class urban women are echoed throughout the research group who have highlighted that the food habits and nutrition are ingrained into daily practices of women. The attitude and behaviour practices for women in the society is now taken up by a majority of other activities including formally becoming part of the workforce which leaves little to no time for cooking activities, this has shifted to quicker meals which can often lead to more food wastage as well. Through the study, many respondents resonated with the impact that food wastage can have on environment and health. The consumer study showed various entry points for further deepening and supporting consumption behaviours.⁷¹

⁶⁷ Alice Sims et al, Food Insecurity and Dietary Intake among Rural Indian Women: An Exploratory Study, *International Journal of Research and Public Health* 18(9), 4851, May 1, 2021.

⁶⁸ Neda Yousefian et al, Shifts in Food Consumption Practices among Middle-Class Households in Bengaluru, India, *Food Security and Sustainability in the Global South*, October 20, 2022.

⁶⁹ Id.

⁷⁰ C. Dittrich, The changing food scenario and the middle classes in the emerging megacity of Hyderabad India, *The New middle class: Globalizing Lifestyles, Consumerism and Environmental Concern*; Lange, H., Meier, L., Eds.; Springer: Berlin/Heidelberg, Germany, 2009; pp. 269–280.

⁷¹ Neda Yousefian, *supra* note lxii.

Safe and Sustainable Transport in Delhi Metro

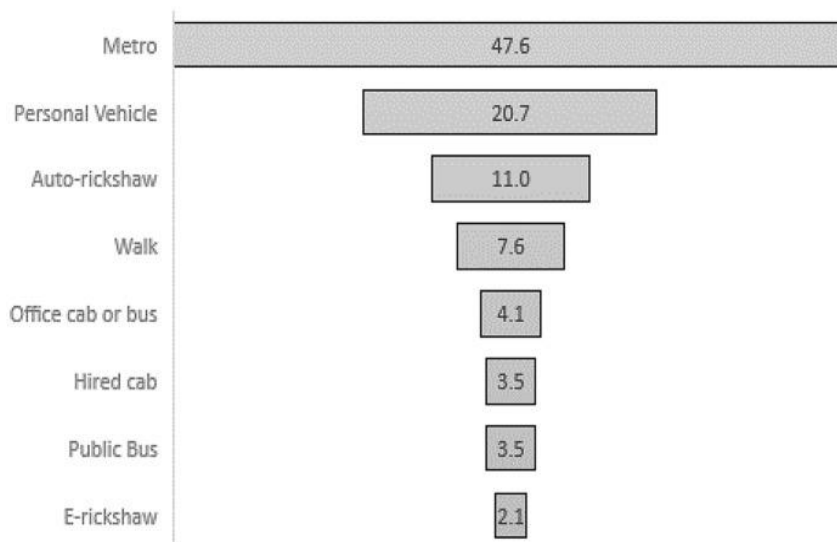
One of the key areas in which sustainability is proposed under the mission LiFE is transport. Under the proposed list of actions, one of the primary actions is the usage of public transport wherever possible.

The Delhi Metro which has been ranked as the second best metro systems in the world according to customer satisfaction in the year 2014⁷² by a survey conducted by CoMET Metro Benchmarking and Nova Group of metros is one of the most used modes of public transport. The Delhi Metro which was first started in the year 2002 (completed 20 years in 2022) is one of the largest connectivity metro systems in the world and has stood out as an outstanding example of Green Metro over the world.⁷³ The DMRC has undertaken several measures to promote long-term environment sustainability while also ensuring to promote fair charges and other commuter facing initiatives to increase access to the public transport system. In the year 2010, the DMRC made the announced for a reserved coach for women among concerns for safety and several complaints made by women passengers of harassment faced by them. The DMRC also marked areas on the platforms at all stations which were to be for women passengers only. Later in 2019, the first coach in the moving direction on all metro lines (with the exception of the Red Line) was reserved for ladies to make it more convenient and uniform. The DMRC has also taken measures to employ female officers⁷⁴ for frisking and security of the metro to make both the staff and commuters more gender sensitive.

A report by the International Labour Organization finds that limited access to safe transportation is likely to reduce labour force participation rate in developing countries by 16.5 percentage points.⁷⁵

The implications of DMRC's initiatives have been assessed by some studies that have looked into both statistical changes as well as the reflections in attitudes of frequent commuters. The metro has

eased women's commute, facilitating greater access to and participation in many economic



Source: Primary Survey

Figure 6 Working Women, Delhi Metro and Covid-19: A case study in Delhi-NCR, *Int Journal of Labour Economics*, May 28, 2021

⁷² Mail Today Bureau, Delhi Metro ranked second best Metro system globally, *Business Today*, September 29, 2014.

⁷³ Harveen Kaur, Delhi Metro: A roadmap to sustainable transport, *Offbeat, Expert Speak*, November 2016.

⁷⁴ Facilities for Women Passengers, Delhi Metro available at delhimetrorail.com (last accessed on December 21, 2022).

⁷⁵ S. Kühn et al, *World Employment and Social Outlook: Trends for Women 2017*. Geneva: ILO; 2017.

and socio-cultural opportunities by a mode which is not only affordable for most classes of travellers but is also fast & safe.⁷⁶ Estimates show that “33% of metro commuters are women”⁷⁷ and a growing number of working women in Delhi prefer to use the metro over other public transport options available in city. In a study to understand the status of working women metro usage in Delhi in the aftermath of the Covid-19⁷⁸ pandemic, the usage pattern of women in the metro was observed and commuters were thus classified into three categories-those using metro service on a daily basis for commuting to and from the office; those using it occasionally; and those who have never used it for this purpose. It was found that 47.6% of the respondents in this study were regular metro riders, while 28.3% used it occasionally.

In fact, the Delhi metro has also led to greater mobility for female students belonging to villages in the neighbouring areas of the capital. Some villages in the area have started private buses till the metro station, which start in morning and evening shifts with hourly intervals between two buses.⁷⁹

However, some concerns are still faced by women in metro usage. There is a age division in the frequent usage of the metro as it is found that older women find it less convenient and more time consuming thus those with the means, prefer to use a private vehicle. This is also reflective of women’s travel pattern which is often a combination of shorter care trips made to take care of younger children or older family members.

76 Sudesha Roy, Delhi Metro: More than a mode of transport, Women on Board, India Together, May 08, 2021.

77 Sengar, S. 2019. Delhi Govt Claims Free Public Transport For Women Will Ensure Safety, Will It Really Help? India Times. June 4. Available at: <https://www.indiatimes.com/news/india/delhi-govt-claims-free-public-transport-for-women-will-ensure-safety-will-it-really-help-368564.html>.

78 Deeksha Taya & Aasha Kapur Mehtal, Working Women, Delhi Metro and Covid-19: A case study in Delhi-NCR, International Journal of Labour Economics, 64(2): 389–413, May 28, 2021.

⁷⁹ Soumya Pillai, 20 years of Delhi metro: An era of safer, gender-sensitive transport, Hindustan Times, December 25, 2022.

Models & Theories for Gender Responsive Planning

At the heart of the LiFE mission lies the global commitment to meet the SDGs and the 2030 Agenda. It is the objective of the mission to help in streamlining and accelerating the momentum in reaching the SDGs. India has been performing well in some of the key areas of climate action and while it holds rank 121 among all countries, it has remained focused on certain goals including responsible consumption and production (Goal 12) and climate action (Goal 13). However, some major challenges remain for the country in terms of gender equality (Goal 5) where the ratio of female-to-male mean years of education and women's representation in the parliament has remained stagnant⁸⁰ and the number of women participating in the labour force has gone down in the past decade.⁸¹

India has been also been a strong supporter of the Beijing Declaration and Platform for Action which was adopted at the Fourth World Conference on Women which was held in Beijing in the year 1995. The Declaration focuses on some critical areas of concern which are women and the environment, women in power and decision-making, the girl child, women and the economy, women and poverty, violence against women, human rights of women, education and training of women, institutional mechanisms for the advancement of women, women and health, women and the media and women in armed conflict.⁸²

Most countries shared a review of the Beijing Declaration and Platform for Action including India's Report on the Implementation of Declaration, which highlighted schematic intervention, enabling legislations and amendments to the criminal code to make punishments more stringent as well as gender budgeting initiatives.⁸³

To achieve the objectives set out in the SDGs and the LiFE mission the country needs to now shift its focus from industry centric policy to a people based approach. A combination of social practice theory and behavioural economics must be employed by policy makers to create interventions that have a lasting impact in the consumption patterns in the country.

Some countries that remain on the top of the SDG country performance index such as Finland, Denmark, Sweden, Norway and New Zealand have made gender responsiveness a central point of their planning.

An example of Iceland can be taken to show how a progressive gender policy and enhanced climate commitments can be complimentary to one another. The coordination between the Nordic countries have allowed them to greatly enhance their climate commitments while not compromising on their development aspirations. In relation to its SDGs, Iceland has set up a Youth Council, the representation in which has been a female majority in the past couple of years. The Youth Council has been set up because the country is focused on making young people a part of the solution. From the recommendations of the youth council, some focus areas for the countries development has been streamlined which include Innovation in the education system, focus on mental well-being of youth, wetland recovery with high impact and low cost and to halt further heavy industry development.

⁸⁰ India, Sustainable Development Goals Index, Country Profile, Sustainable Development Report, Dashboard.

⁸¹ Ratio of female to male labor force participating rate (%) (modeled ILO estimate)-India, World Bank Data (last accessed on December 20, 2022).

⁸² The Beijing Platform for Action Turns 20, UN Women available at <https://beijing20.unwomen.org/en/about> (last accessed on December 22, 2022).

⁸³ India's Report, On the Implementation of Beijing Declaration and Platform for Action, 20th Anniversary of the Fourth World Conference on Women and the Adoption of the Beijing Declaration and Platform for Action, 2015.

In ensuring gender parity, the country has taken measures to not only support women in economic activities but also at the familial level by positively reinforcing a model to increase the proportion of fathers taking paternity leave.⁸⁴ Studies show that the adoption of the Act on Maternity/Paternity and Parental Leave has improved the position of women in the labour market. The country is also focused on closing the wage gap as it has historically been noted that the gap between earnings of men and women has resulted in pay cuts, unemployment and economic downturns that have affected women more dramatically and historically has led to increase in poverty.⁸⁵ Even in Japan, the country leadership had vowed to boost women in leadership and make a contribution of more than 42 billion yen till 2025 to the UN Women for resolving challenges to gender equality, development and peace.

Another one of the best examples of gender mainstreaming in planning comes from Austria. The Republic of Austria which is a country in the southern part of Central Europe is a developed social market economy and is among one of the richest countries in the world in terms of its GDP. In Vienna, which is Austria's capital and also the most populous city gender mainstreaming practice in policy began even before it was proposed in 1985 at global level and enshrined as the UN's global strategy for gender equality in 1995.⁸⁶ The planning was based on sex aggregated data such as postal surveys conducted by women's organization. One such postal survey conducted by the governing Social Democratic party led to a breakthrough revelation: roughly two-thirds of car journeys were made by men, while two-thirds of those on foot were by women. The perspectives of women were brought to the table to and the findings led to the developments such as Frauen-Werk-Stadt (Women-Work-City) which was a 357-unit complex made by women and completed in the 1997.⁸⁷ While the population size and density presents a lesser challenge in planning in Austria in comparison to a more populous country like India, the model adopted in Vienna has some key lessons that can be adopted in creating a gender inclusive approach to development.

It points out to the requirement of planning long-term solutions by creating room for women to both participate in decision-making and consider their differential needs. The first essential need that arises is to collect & access gender differentiated data to understand how the needs of women and men differ from one another. A large-scale survey was conducted in Vienna in 1999 by the City Women's Office on gender transportation use, which resulted in long-run focus on improving pedestrian access, from widening crosswalks to providing more lighting. The city has carried out more than 60 pilot projects with a gender lens on urban planning since the 1990s. It is also interesting to note that, Vienna has been ranked the greenest city in 2020⁸⁸ from over 100 countries based on its green public spaces as well as utilisation of renewable energy, air quality, public transport, markets as well as pedestrian access.

⁸⁴ Govt of Iceland, Iceland's Implementation of the 2030 Agenda for Sustainable Development, Voluntary National Review, June 2019.

⁸⁵ Emma Tkacz, Closing the Gender Wage Gap in Iceland, The Borgen Project, January 30, 2022.

⁸⁶ Elle Hunt, City with a female face: how modern Vienna was shaped by women, The Guardian, May 14, 2019.

⁸⁷ Id.

⁸⁸ Vienna- the world's greenest city, Austria available on <https://www.austria.info/en/in-harmony-with-austria/imperial-vienna/vienna-the-world-s-greenest-city> (last accessed on December 27, 2022).

Theories on Gender and Development

Six theories of gender and development exist in the academic discourse which include women in development (WID), women and development (WAD), gender and development (GAD), the welfare approach, the effectiveness approach, and mainstream gender equality.

- Women in Development (WID)

The women in development (WID) approach helped to ensure the integration of women into the workforce and increase their level of productivity in the economy. However this approach did not find acceptance in all parts of the world equally.⁸⁹

- Women and Development (WAD)

The women and development (WAD) approach originated back in 1975 in Mexico to discuss women's issues from a neo-Marxist and dependency theory perspective. The main objective of this theory was to explain the relationship between women and development in terms of their exploitation. It focuses on patriarchy and capitalism.⁹⁰

- Gender and Development (GAD)

This theory mainly dealt with addressing the roots of inequalities of both gender and class that create many of the practical problems women experiences in their daily lives which is different from the approach taken under WID which attributes the reason of inequality to essentially be the absence of women in decision making. This is one of the more widely accepted approaches in the global south.

- The welfare approach

It was a more generalised approach which was developed as a response to decolonization and political transitioning in most African and Asian countries around 1950s and 1970s.⁹¹ It has been viewed as an to work as a means for upliftment for women.

- The effectiveness approach (EA)

This approach originated in the 1980s and the ideas were linked to the concept surrounding WID, which was the inequalities women faced and how societies fail to acknowledge the impact of women in economic development. However, this approach differs from the WID because it goes beyond including women but also reinforces their level of productivity and effectiveness in the labour market.⁹²

- Mainstreaming Gender Equality (MGE)

It is the approach now widely understood as gender mainstreaming approach, it originated in 1996 at the 4th UN Conference on women in Beijing China as mentioned above. Gender mainstreaming ensures all gender issues are address and integrated in all levels of society, politics and programs.⁹³

⁸⁹ CN2COLLINS, The WID, WAD, GAD Approach on Gender Development, March 19, 2013.

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² *Id.*

⁹³ *Id.*

Overlapping Generations (OLG) Model for Access to Public Infrastructure

The overlapping generation model accounts for human and physical capital accumulation and attempts to look at inter-generation health persistence through women's time allocation between market work, child-rearing, and home production.⁹⁴ The model which is developed by Pierre-Richard Agénor and Madina Agénor uses factors such as physical capital, family's utility and income, home production and market production and human capital accumulation to analyse improved access for women to infrastructure services. Agénor makes some key propositions which are useful to this discussion in considering improved access to infrastructure services. Firstly, the model illustrates that access to an improved infrastructure service reduces women's time allocated to home production and raises time allocated to market work, own healthcare and child rearing. Secondly, it also analyses the propositions of reduction in gender bias in the home which improves women's education outcomes and has an ambiguous effect on female health status and the steady-state growth rate. The same can be seen in the reduction in gender bias in the workplace. Home production in this study includes cooking meals, laundry, cleaning the house, dishwashing, etc.).⁹⁵ While the model does address its own gaps of lack of adapting a "unitary" framework without associating intrahousehold allocation of income and not accounting for the family decision making process, it does highlight core issues in development planning. The analysis shows that women face many economic constraints in their productive activities that differ from their male counterparts and this aspect of development has received limited attention in the growth theory. It does highlight that access to public infrastructure raises the level of production of goods and education services for women however the intensive use of public capital by goods-producing firms can mitigate its economic benefits.

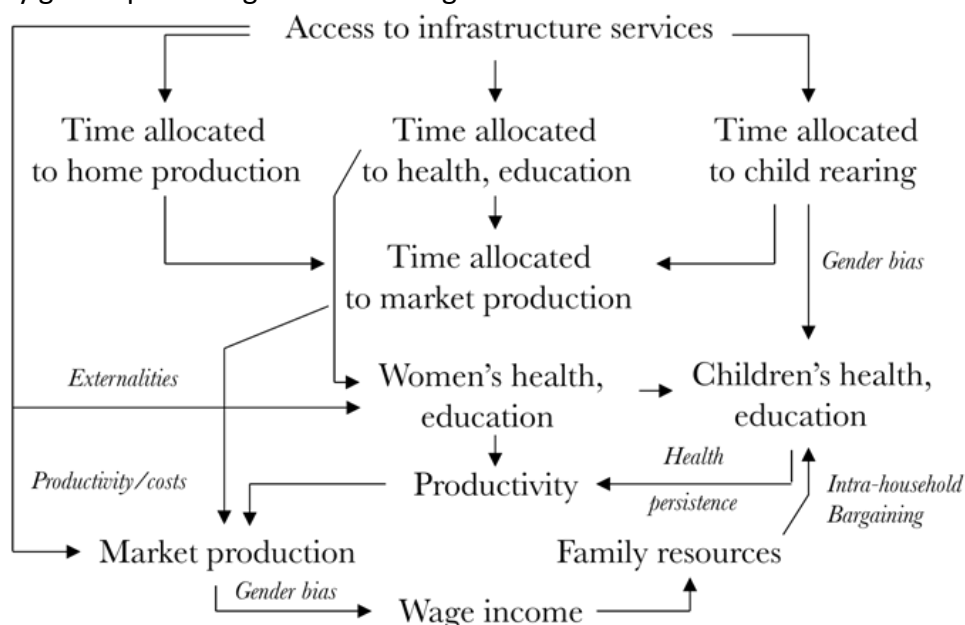


Figure 7 Main Linkages in the overlapping generations model

⁹⁴ Pierre-Richard Agénor, A computable OLG Model for Gender and Growth Policy Analysis, Discussion paper No. 169, Centre for Growth and Business Cycle Research, June, 2012.

⁹⁵ Pierre-Richard Agénor, Infrastructure, women's time allocation, and economic development, Journal of Economics, September, 2013.

The model has been used to study the long-run impact of policies aimed at fostering gender equality on economic growth in Brazil.⁹⁶ Brazil has made significant progress in reducing poverty and income equality in the past couple of decades. An analysis of the model for the country found that fostering gender equality, depending on infrastructure externalities creates in terms of women's time allocation and bargaining power may have a substantial impact on long-run growth.⁹⁷ It is found that generally promoting gender equality is not only desirable from social equity point of view but also for the economy.⁹⁸

Cultural Model of Household Energy Consumption

The cultural model of household energy consumption is based on a social theory which suggests that all forms of social life require a continuous flow of energy. This model was developed by Loren Lutzenhiser in 1992 to consider the development of demand-side research with an interest in conservation. The model is based on the theories forwarded by social theorists such as Cottrell, White and Adams who argue that energy and technology should be accorded a central place in the theory of social-cultural change.

In the theoretical sketch of the model the energy consumption is viewed from an angle of the interaction of various cultural groups and not individuals with the various ways of life. It is considered to be a macro-model which provides varied insight into the use of energy and technology by considering distinction between consumers which are marked by simple considerations such as gender, age, ethnicity, class, occupation and other social statuses.⁹⁹ The model was essentially used for the reference point of the US lifestyle analysis where the and by way of an illustration it looked at some indicative measures which can be used to see the energy requirement and consumption among different categorisation of couples. For example, (i) Retired working class couples based on spending majority of their time at home, short trips in neighbourhood and limited food habits, (ii) Middle-aged couples with typically one source of income, grown children, eating mostly home-cooked meals, travel to work and occasional long trips, (iii) low income rural families who may have older low efficiency cars, longer trips to town for services, spend more time at home, depend on home-grown food, (iv) Young urban families-invest in newer technology, varied food habits, travel for commuting, shopping and entertainment, etc. It reflected on various levels of energy use through households in restricted categories and while this may only be indicative in nature and not represent actual energy consumption, it can be used from a policy analysis perspective.

The model further also differentiates on a secondary stage on a cultural analysis aspect to identify differences between immigrants, executive families, low income seniors, gender and religious beliefs. At the third stage, it applies the acquired knowledge to estimate probabilities to forecast demand using culturally disaggregated models (in which the technology and consumption profiles of culturally-distinct consumer groups are used to model demand at various geographic levels, from utility service territories to whole

⁹⁶ Pierre-Richard Agénor & Otaviano Canuto, Gender equality and economic growth in Brazil: A long-run analysis, *Journal of Macroeconomics* 43, 155-172, 2015.

⁹⁷ *Id* at 172.

⁹⁸ *Id*.

⁹⁹ Loren Lutzenhiser, A Cultural Model of Household Energy Consumption, *Energy* Vol. 17, No.1, pp 47-60, 1992.

societies)¹⁰⁰ and to further produce culturally-sensitive estimates of energy efficiency program saturations and prospective energy savings as well as to evaluate the relative willingness of various consumer groups to study market behaviours, alter behaviours and promote conservations measures. In formulating this model, Lutzenhiser also appreciated the Asian cultures especially Japan in being energy-efficient while maintaining similar quality-of-life levels as that present in the United States of America in the same time period.

¹⁰⁰ Id.

Addressing women in LiFE Mission

The idea that inclusivity is a requirement in a conversation around sustainable consumption to find new solutions to strengthen the ideas is not simply to ask for a more gender responsive approach but it is also a requirement to fulfil the obligations of sustainability in principle. It is essential to recognize that women play a vital role as agents of development and employing a gender inclusive approach will also unlock full human potential to meet the goal. This report finds evidence to show that in many cases and regions where gender mainstreaming has been included in policy, the positive impact of the policy in practice has increased manifold. Further, some of the theories and models presented in the report, there is visible interrelation between sustainable growth and gender and many tools are present to make the two work together to ensure development.

In an attempt to understand the connection between sustainable consumption and gender, two main points can be deduced. Firstly, solutions focusing on sustainable consumption that focus on women and other marginalized groups free responsibility solely from men and socially privileged groups while they also can also focus on essential needs such as increasing women's time and workload in the home and caring for others, contributing to greater personal, economic, and professional impacts. Secondly, solutions directed at particular types of sustainable consumption can have greater implications on women's health and safety.¹⁰¹

The Mission LiFE is the first of its kind of intervention to be introduced in the country with a global outlook. In the different phases of the mission, it aims to focus on differential aspects of economic development by adopting a bottom-up approach to focus on demand (Phase I), supply (Phase II) and policy (Phase III). It is clear from the discussion that women could play an imperative role in all three phases of development of the mission.

A step by step approach to incorporate women in the mission could include the following:

1. Collection of Gender- Segregated Data

The first and foremost requirement for gender mainstreaming is the collection of gender specific data. While it is a challenge in a country with the population size as large as India to collect gender specific data for the whole country unless a study of the magnitude of the National Census is conducted. Yet data can be collected in smaller regional studies since is important to have gender segregated data for specific industries to highlight the importance on incorporating gender mainstreaming patterns. Policymakers and government agencies can employ tools to measure women's participation in the economy both formally and informally. This can be carried out by the participation and contribution of all actors including civil societies, women's groups and networks and other non-governmental and community-based organizations. Since the challenges of women operating in the society look different, it is important to do a qualitative assessment to understand attitudes as well as a quantitative assessment to highlight the magnitude of the issue to provide policy makers an basis to incorporate changes that allow gender mainstreaming. Data is used as the most important component to understand both the implications of a policy as well as the need for it and thus, the very basic requirement needs to be met in the first step towards revolutionizing public policy in India.

¹⁰¹ Bloodhart, B., & Swim, J. K. (2020). Sustainability and Consumption: What Is Gender Got to Do with It? *Journal of Social Issues*; Vinz, 2009

2. Focusing on women's consumption patterns

Differential needs of women also result in a different consumption pattern. Most policies show that men are regarded as the primary gender to understand the operation of society in general. However, it has been evidenced through this report that women differ in their needs and consumption. As discussed in the report, women's consumption patterns differ for a variety of reasons which may either be related to their biological needs, physical access or the form of their participation in the society and responsibilities. Focusing on women's consumption patterns can help in inspiring a positive behavioural and attitude change in the common masses which can be supported through policy. These influences can greatly affect the consumption in travel, energy use and food consumption as well as other specific industries such as fast fashion among others which is often comprised of a majority of female purchasers. Bringing out a key focus on women can also affect household level consumption as in many middle class households women play the role of the primary purchaser for most objects of daily needs including but not limited to food and clothing. Other evidence also shows that women have been shown to be more inclined towards adopting a sustainable approach to consumption and promoting environment friendly behaviour.

3. Integrating women in policy- household, schools and public spaces

Another important aspect is to highlight the role that women have continued to play in the economy. As discussed in the report, women have taken the majority burden of the unpaid care economy. It is only because of this central role, which is often not given due consideration that women play that there is the space and time available for their male counterparts to participate in the formal economy in full capacity. Women have often been disregarded in economic policy which has had a more industrial focus. While this approach to economic policy may be deeply flawed as well however, it is even more instrumental to integrate a women centric approach to policy when the target is household consumption. In the current scenario, women shape individual and collective behaviour in the society through social integration at many levels including schools and households. An increasing number of women are also participating more actively in the formal economy and thus it becomes essential to bring in gender mainstreaming policies for consumption. Integrating women in policy would also require there to be a push for more gender neutral domestic environment by allowing men to be more involved in the families through paid paternal leave & care duties taken by the male counterparts in the family.

4. Involving women in Decision Making

While identifying the need to integrate women in policy is essential, it is also important to focus on involving women in decision making. The government and policy makers should build a system to involve women organization and community level organization to participate in the process of both identification of key focus areas as well as invite sustainability solutions that resonate with women to be inculcate as part of the policy. As identified under the Beijing Declaration that explicit recognition and reaffirmation of the right of all women to control all aspects of their health is a basic requirement for empowerment. The government has already set up an initiative to invite ideas from individuals and groups on sustainability that can be adopted through the LiFE Mission, in the same manner the government can focus on inviting ideas which are focused on gender mainstreaming for sustainable consumption.



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