



Gender, Environment and Sustainability: The Journey from 'Silent Spring' to 'Staying Alive'

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Abstract

The globally shared vision for sustainable development has a strong gender dimension that highlights the need to continue identifying gender equality and women's empowerment as a core development goal. Since women have different rights (formal and traditional) over resources and decisions governing them than men do, a gender differentiated approach is required to redress some of the inequities. A woman's position in the family and community, and her political participation, determine to a large extent her control over environment-related decisions. The roles and contributions of certain women environmentalists - Rachael Carson, Gaura Devi, Wangari Maathai, Vandana Shiva, Medha Patkar and others are discussed in view of environmental stability and sustainability. Considering different global initiatives, taking women's needs into account and strengthening women's leadership and participation in environment and sustainability crises is vital. Women can be powerful actors for change in the transition to sustainable energy and their involvement in the design, distribution, management and consumption of resources can go a long way in reaching internationally agreed development goals.

Keywords: Sustainable Development, environmental stability, gender equality, resource management, women environmentalists.

Introduction

Sustainable development requires pursuing economic, social and environmental objectives as interconnected development goals. It is critical that gender equality - a human right as well as a catalytic force for achieving all development goals - is central to this pursuit. The globally shared vision for sustainable development has a strong gender dimension that highlights the need to continue identifying gender equality and women's empowerment as a core development goal and as a catalyst for reaching all other goals and objectives.

According to UNEP, the discussion of Gender and Environment is based on two precepts:

Gender mediates human/environment interactions and all environmental use, knowledge and assessment; and

Gender roles, responsibilities, expectations, norms and the division of labour shape all forms of human relationships to the environment.

These two broad principles manifest themselves in a variety of environmental relations and interactions, including:

- Gender differences are evident in the use and management of natural resources, and unequal relationships in the family,

community etc. mediate women's access to resources;

- Gender differences are evident in livelihood strategies that are rooted in particular uses of the environment;
- Gender differences are evident in knowledge of the environment, knowledge of specific resources, and of environmental problems;
- Gender differences are evident in responsibilities for managing, owning or stewarding resources and in rights to resources;
- Gender differences are evident in encounters with the environment, in perceptions of the environment and in perceptions of the nature and severity of environmental problems;
- All of the above contribute to the gender differences that are evident in accountability, stewardship, and action for the environment.

(UNEP: Gender and Environment)

Women's work often involves collection of water and fuel; gathering plant and animal products and the management of agricultural, grazing and forest lands and also of fisheries. The level of education is relevant, but so is traditional and conventional expertise (Sen, 2015a). In particular, there is a need to recognize indigenous knowledge systems, which are often ignored by formal education systems (Sen, 2014a). At the same time, because of their limited access to education women may be ignorant about less traditional environmental issues such as the safe use of agrochemicals, and how to deal with water pollution and waste disposal.

Access to and control over resources and their benefits is another critical issue. Since women have different rights (formal and traditional) over resources and decisions governing them than men do, a gender differentiated approach is required to redress some of the inequities (Sen, 2014b). A woman's position in the family and community, and her political participation, determine to a large extent her control over environment-related decisions such as harvesting and cropping methods, allocation of benefits including income, and conservation and environmental regeneration operations

(Sen, 2015b). It follows that this also influences the inclusion, or lack thereof, of women's visions, perceptions and priorities in decisions, processes and institutions (Neeffjes, 2000).

As Wichterich (2000) and others have shown, globalization trends have wrought rapid changes in global and local economies, societies and cultures, as well as in the environment and in gender positions in societies. Exclusionary practices by wealthier groups often prevent the poor from having access to basic services, including ecosystem services such as clean water, fuel and food products. (UNEP: Women and the Environment, 2004)

Some people, including many women, have clearly suffered under economic liberalization and privatization regimes (Sen, 2011a).

According to the World Bank in 1991, "*Women play an essential role in the management of natural resources, including soil, water, forests and energy...and often have a profound traditional and contemporary knowledge of the natural world around them*". In the early 1970s an interest in women and their connection with the environment was sparked, largely by a book written by Esther Boserup entitled, '*Woman's Role in Economic Development*'. In the 1980s, policy makers and governments became more conscious of the connection between the environment and gender issues. Changes began to be made regarding natural resource and environmental management with the specific role of women in mind.

However, the women, environment and development debate (WED) began in the early 1970s largely due to the oil crisis. In Mexico-City, in 1975, at the First World Conference on Women, **Vandana Shiva**, scientist, environmentalist and author introduced the issue of **women and the environment**. Concern was raised about the depletion of forestry resources as people began to realize that those resources were finite. Women's role in agriculture and their role as wood and fuel users began to come under scrutiny. Soon, a major connection was made on the impact environmental development had on women. "*The women,*

environment and development debate (WED-debate) is anchored in a critical view of development policies where the link between modernization/ industrialization and technology on the one hand and environmental - deterioration on the other is focused". Schultz, Irmgard; et al. (2001)

Rachel Carson and 'Silent Spring'

Rachel Carson, a renowned nature author and former marine biologist with the U.S. Fish and Wildlife Service, published '**Silent Spring**' (1962), widely credited with spurring the modern environmental movement. Her book warned of the dangers of indiscriminate spraying of synthetic pesticides, prompting grass-roots activism that led to the creation of the Environmental Protection Agency (EPA) in 1970 and EPA's ban on most domestic uses of DDT in 1972.

Carson was happiest writing about the strength and resilience of natural systems. Her books '*Under the Sea Wind*,' '*The Sea Around Us*' (which stayed on the *New York Times* bestseller list for 86 weeks), and '*The Edge of The Sea*' were hymns to the interconnectedness of nature and all living things. Although she rarely used the term, Carson held an ecological view of nature, describing in precise yet poetic language the complex web of life that linked molluscs to sea-birds and the fish swimming in the ocean's deepest and most inaccessible reaches.

'**Silent Spring**,' which has sold more than two million copies, made a powerful case for the idea that if humankind ruined nature, nature would in turn ruin humankind. "*Our heedless and destructive acts enter into the vast cycles of the earth and in time return to bring hazard to ourselves,*" she wrote. We still see the effects of unfettered human intervention through Carson's eyes – in fact, she popularized modern ecology. "*Every once in a while in the history of mankind, a book has appeared which has substantially altered the course of history,*" Senator Ernest Gruening, a Democrat from Alaska, told Carson at that time.

"*Silent Spring is such a watershed event. Very few books have had the same impact on public policy,*" says William Souder, author of

'*On A Farther Shore: The Life and Legacy of Rachel Carson.*' "*It's the fault line between conservation, which dominated the first half of the 20th century and today's more politically divisive environmentalism.*"

Carson took four years to complete '**Silent Spring**.' It meticulously described how DDT entered the food chain and accumulated in the tissues of animals, including human beings, and caused genetic damage and cancer. A single application on a crop, she wrote, killed insects for weeks and months, and not only the targeted insects but countless more, and remained toxic in the environment even after it was diluted by rainwater. Carson concluded that DDT and other pesticides had irrevocably harmed birds and animals and had contaminated the entire world food supply.

'**Silent Spring**' begins with a myth, '**A Fable for Tomorrow**,' in which Carson describes "a town in the heart of America where all life seemed to live in harmony with its surroundings." Cognizant of connecting her ideal world to one that readers knew, Carson presents not a pristine wilderness but a town where people, roads and gutters coexist with nature - until a mysterious blight befalls this perfect place. "*No witchcraft,*" Carson writes, "*no enemy action had silenced the rebirth of new life in this stricken world. The people had done it themselves.*" Perhaps the book's most haunting and famous chapter, "**A Fable for Tomorrow**," depicted a nameless American town where all life - from fish to birds to apple blossoms to human children - had been "*silenced*" by the insidious effects of DDT. "*There was once a town in the heart of America where all life seemed to live in harmony with its surroundings ... Then a strange blight crept over the area and everything began to change... There was a strange stillness... The few birds seen anywhere were moribund; they trembled violently and could not fly. It was a spring without voices. On the mornings that had once throbbed with the dawn chorus of scores of bird voices there was now no sound; only silence lay over the fields and woods and marsh.*"

Carson knew that her target audience was mostly women. She relied upon this ready

army of concerned citizens both as sources who discovered robins and squirrels poisoned by pesticides outside their back doors and as readers to whom she had to appeal. The indelible image of a squirrel lying dead was described thus: *"The head and neck were outstretched, and the mouth often contained dirt, suggesting that the dying animal had been biting at the ground."* Carson then asks her readers, *"By acquiescing in an act that causes such suffering to a living creature, who among us is not diminished as a human being?"*

Gaura Devi and Chipko Movement

The first recorded instance of a woman trying to safeguard the environment relates to about 300 years ago when, in Rajasthan, India, a woman **Amrita Devi** protested to the felling of trees by for building a palace for the Maharaja of Jodhpur. She died in the attempt, which was followed by large-scale protests by the local villagers. As the story goes, the king promised never again to ask the local villagers to supply timber. Amrita Devi belonged to the Bishnoi community, which is known for its love of nature.

In India, the **Chipko Movement** in the Uttarakhand region of the Himalayas is often treated as a **women's movement to protect the forest ecology of the Uttarakhand** from the cruel axes of the cutters. However the reasons behind women's participation were more economic than ecological. In fact, the economic and ecological interests of Uttarakhand are so interwoven that it is difficult to promote one without promoting the other and hence the emergence of the slogan *"Ecology is permanent economy."*

In Hindi the word **Chipko** means *"to stick"* or *"to embrace"* or *"to hug"* and that is what the Uttarakhand women did in the 70s to save the trees. The Chipko Movement was a non-violent movement based on the Gandhian philosophy of peaceful resistance and aimed at protection and conservation of trees and forests from being destroyed. It was the strong uprising against those people, who were destroying the natural resources of the forests and disturbing the whole ecological balance.

The landmark event in this struggle took place on March 26, 1974, when a group of female

peasants in Reni village, Hemwalghati, in Chamoli district, Uttarakhand, India, acted to prevent the cutting of trees and reclaim their traditional forest rights that were threatened by the contractors of the state Forest Department, and transpired hundreds of such grassroots level actions, throughout the region.

When the Forest Department announced an auction of thousands of trees in the Reni Forest overlooking the Alaknanda River, which had already flooded disastrously, one woman- **Gaura Devi** organized the women of her village to protect the trees from the company that won the auction. They physically prevented the tree felling, and thus forced the Uttar Pradesh government to investigate. Two years later, the government placed a 10-year ban on all tree felling in the area. Later on the ban was imposed in Himachal Pradesh, Karnataka, Rajasthan, Bihar, Western Ghats and Vindhyas. Following this, women prevented felling in many other forests all along the Himalayas. They also set up cooperatives to guard local forests, and to organize fodder production at rates that would not harm the trees. Within the Chipko movement, women joined in land rotation schemes for fodder collection, helped replant degraded land, and established and run nurseries stocked with species they selected. By the 80s, the movement spread throughout India, and led to the formulation of people sensitive forest policies and stopping of open felling of trees.

Several books were written on Chipko Movement one of which was, *"Emancipated Women-Folk of Uttarakhand"*, brought out by the Himalayan Action Research Centre, Dehradun. An abridged version was recounted by C.S. Lakshmi in her article in *'Hindu'*, Lessons from the Mountains: The Story of Gaura Devi. An excerpt reads –

"A wise person once said that forestry is not about trees. It is about people. No one has realized this more than the women of the Uttarakhand region. Everyone by now knows about the Chipko Movement. But not many know about the women of the Uttarakhand region who have made it their lifetime mission to leave undestroyed forests for their children and grandchildren...One woman whom future

generations in Uttarakhand are not likely to forget is Gaura Devi who has mobilized the women of this region to protect their natural heritage.”

The Chipko protagonist Gaura Devi is a living legend in the Himalayan region. Her story has been told to children in the hill region down the years. Gaura Devi was not educated in the conventional sense but had great traditional wisdom. She was actively involved in the panchayat and other community work. She was asked to be the president of the Mahila Mangal Dal. It was the first of its kind to be established. Its responsibilities were ensuring cleanliness in the village and the protection of community forests.

After Reni, in 1975, the women of Gopeshwar, in 1978, of Bhyundar Valley (threshold of Valley of Flowers), of Dongari-Paitoli in 1980, took the lead in protecting their forests. In Dongari and Paitoli, the women opposed their men's decision to give a 60 acre oak forest to construct a horticulture farm. They also demanded their right to be associated in the management of the forest. Their plea was that it is the woman who collects fuel, fodder and water. The conservation of the forest is a life and death issue for her. Hence, she should have a say in any decision about the forest. Now they are not only active in protecting the forests but are also in afforesting the bare hill-slopes. The Chipko movement led to the emergence of a series of environmental groups and movements across the country, making the people aware of the need to conserve the environment and biodiversity (Sen, 2008).

As a diverse movement with diverse experiences, strategies, and motivations, Chipko itself inspired environmentalists both nationally and globally and contributed substantially to the emerging philosophies of **Eco-feminism** and **Deep Ecology** and fields of community-based conservation and sustainable mountain development. (Bora and Sivaramakrishnan, 2019).

Ecofeminism and Feminist Environmentalism

The term 'ecofeminism' was coined by Francoise d'Eaubonne in 1974. Ecofeminism

is seen as the connection of the environmental movement and the feminist movement. It is one which combines multiple social movements. Academics and activists like Vandana Shiva (India), Ariel Salleh (Australia), Maria Mies (Germany) and Gloria Goldstein (USA) are regarded as important representatives of ecofeminism.

Ecofeminism can be defined as a “value system, a social movement, and a practice... (which) also offers a political analysis that explores the links between androcentrism and environmental destruction. It is an “awareness” that begins with the realization that the exploitation of nature is intimately linked to Western Man's attitude toward women and tribal cultures...” (Birkeland, 1993). According to the ecofeminists, one also needs to realize the inter-connectedness of all life processes and hence revere nature and all life forms. Humans should not try to control nature, but work along with it and must try to move beyond power-based relationships. For ecofeminists, therefore, the domination of women and nature is basically rooted in ideology. In order to overcome this, one needs to reconstruct and reconceptualize the underlying patriarchal values and structural relations of one's culture and promote equality, non-violence, non-hierarchical forms of organization to bring about new social forms. Ecofeminist theory has brought into sharp focus the links between development and gender. It has highlighted the fact that the violence against nature and against women is built into the dominant development model.

However, critics like Rosi Braidotti and Bina Agarwal argue that ecofeminism has focused too much on ideological arguments and failed to address power and economic differences which also contribute to differentiation among women, and that ecofeminists also tend to overestimate the idea of harmonious, ecological, and traditional societies. These ecofeminist images of women, in fact “retain the patriarchal stereotypes of what men expect women to be. “(They)...freeze women as merely caring and nurturing beings instead of expanding the full range of women's human potentialities and abilities”(Biehl 1991). “The use of metaphors of women as 'nurturing' – like the earth, and of the earth as female

abound are regressive rather than liberating women” (Biehl 1991). They only reinforce stereotypes.

Bina Agarwal suggests ‘**feminist environmentalism**’ as an alternative concept. This concept insists that the link between women and the environment should be seen as ‘structured by a given gender and class/caste/race organization of production, reproduction and distribution’. Her approach is similar to ‘feminist political ecology’, and emphasize material relations and their structuring of gender relationships. These are particularly expressed in dynamic and cumulative gendered knowledge of environment, sciences and technologies. What these arguments seem to overlook is that concepts of nature, culture and gender are “historically and socially constructed and vary across and within cultures and time periods” (Agarwal 1992). This essentialism presents women as a homogeneous category, both within countries and across nations. It “fails to differentiate among women by class, race, ethnicity and so on.” (Rao, 2012)

Wangari Maathai and Green Belt Movement

“Trees are alive, so we react to them in very different ways. Often, we get attached to a tree, because it gives us food and fodder and fuel for our fires. When you plant a tree and you see it grown, something happens to you ... You see the relationship between a person and the environment. It is wonderful to see that transformation, and that is what sustains the movement!”

Wangari Maathai

The **Green Belt Movement** (GBM) was founded by Professor **Wangari Maathai** in Kenya on Earth Day, 1977 under the auspices of the National Council of Women of Kenya (NCWK) to respond to the needs of rural Kenyan women who reported that their streams were drying up, their food supply was inadequate, and they had to walk miles to get firewood for fuel and fencing. GBM encouraged the women to work together to grow seedlings and plant trees to bind the soil, store rainwater, provide food and firewood and receive a small monetary token for their work.

The Movement always sought to address gender disparities, self-sufficiency and the role

and power of women in environmental protection. The trees provide women with shade and windbreaks for crops, improved water resources, food and income (women are paid for seedlings that survive), as well as skills and autonomy. “Implicit in the act of planting trees is a civic education, a strategy to empower people and to give them a sense of taking their destiny into their own hands, removing their fear ...” according to founder Wangari Maathai.

Since its founding, the Movement created a national network of thousands of village nurseries, designed to combat creeping desertification, restore soil health and protect water catchment areas. Several million trees were planted by the Movement’s thousands of women members. While some trees have been harvested, millions more (including native fruit trees) still stand. Later, the Movement’s work expanded to include issues of food security and the production of native foods, such as millet and groundnuts, many of which were abandoned in favour of fast-growing, more ecologically demanding crops for export, such as coffee, tea and flowers. (UNEP: Women and the Environment, 2004)

Shortly after beginning this work, Professor Maathai saw that behind the everyday hardships of the poor were deeper issues of disempowerment, disenfranchisement, and a loss of traditional values. The GBM instituted seminars in civic and environmental education, now called Community Empowerment and Education seminars, to encourage individuals to examine why they lacked the organization to change their political, economic and environmental circumstances. Integrating the physically disabled population and the young people who left school represented another objective of the GBM. Organizers hoped that by becoming involved, these individuals would be encouraged to remain in their communities, rather than migrating to urban areas in search of jobs or charity.

Consequently, the GBM began to advocate for greater democratic space and more accountability from national leaders. It fought against land grabbing and the encroachment of agriculture into the forests. It contested the placement of a tower block in Uhuru Park in

Nairobi and extended its reach internationally to campaign and advocate on climate change, the importance of Africa's rainforests in the Congo, to initiate the *mottainai* campaign - an effort to instill the notions of "reduce, reuse, recycle" in Kenya and around the world - and has partnered with the UNEP in its Billion Tree Campaign.

In 1981, the GBM got its first significant funding when the United Nations Development Fund for Women (UNIFEM) provided "seed money" that transformed the effort from a few tree nurseries to a large number with thousands of seedlings. The UNIFEM support also "**helped us mobilize thousands of women**" whom Maathai calls "**her foresters without diplomas**." In 1986, Maathai took her idea region-wide; with funding from the UNEP, the GBM launched the Pan African Green Belt Network. The Network offered training and hands-on experience to grassroots environment and development groups. A large number in Ethiopia, Tanzania, Uganda, Rwanda and other African countries have integrated the Green Belt Movement's approach. Over the years, the GBM has incorporated other community activities. Among these are cultivation of more nutritious, indigenous food; low-tech but effective ways to harvest and store rainwater; training in entrepreneurship; and providing information on reproductive health and HIV/AIDS prevention.

After being awarded with the Nobel Peace Prize in 2004, Professor Maathai and the Green Belt Movement were recognized worldwide. Prof. Maathai was appointed Goodwill Ambassador for the Congo Basin Forest Ecosystem, the world's "second lung" after the Amazon Rainforest. Her four books ('**The Green Belt Movement**', '**Unbowed**', '**The Challenge for Africa**', and '**Replenishing the Earth**') and the documentary 'Taking Root: The Vision of Wangari Maathai' expanded on and emphasized the key concepts behind the Green Belt Movement's work and approach.

Vandana Shiva and 'Navdanya'

In 1987, **Dr. Vandana Shiva**, founded the Research Foundation for Science, Technology and Ecology, which led to the creation of **Navdanya** in 1991, a national movement to

protect the diversity and integrity of living resources, especially native seed, the promotion of organic farming and fair trade. **Navdanya** means "**nine seeds**" (symbolizing protection of biological and cultural diversity) and also the "new gift." In today's context of biological and ecological destruction, seed savers are the true givers of seed. This gift or "dana" of Navadanyas (nine seeds) is the ultimate gift – it is a gift of life, of heritage and continuity. Conserving seed is conserving biodiversity, conserving knowledge of the seed and its utilization, conserving culture, conserving sustainability.

For the last two decades **Navdanya** has worked with local communities and organizations serving many men and women farmers. Navdanya's efforts have resulted in conservation of more than 2000 rice varieties from all over the country and have established more than a hundred seed banks in several states across the country. Thousands of farmers are primary members of Navdanya. In 2004 Shiva started Bija Vidyapeeth, an international college for sustainable living in Doon Valley.

The **Navdanya Movement** also known as the '**Nine Seeds Movement**' seeks to empower local Indian farmers to move away from growing any genetically modified organism (GMOs) on their land and return to organic, chemical-free practices. Navdanya means nine crops that represent India's collective source of food security. The main aim of the Navdanya biodiversity conservation programme is to support local farmers, rescue and conserve crops and plants that are being pushed to extinction and making them available through direct marketing.

Navdanya fights to eliminate the commercialization of indigenous knowledge also known as 'Biopiracy'. Navdanya addresses multiple other international issues including climate change, food security, misapplication of technology, food sovereignty, fair trade, and many others. Biopiracy refers to the use of intellectual property systems to legitimize the exclusive ownership and control over biological resource and biological products and processes that have been used over

centuries in non-industrialized cultures. Navdanya started the crusade against biopiracy with the Neem Campaign in 1994 and mobilized a huge signature campaign against neem patents and filed a legal opposition against the USDA and WR Grace patent on the fungicidal properties of neem in the European Patent Office (EPO).

The patent on Neem was revoked in May 2000 and it was reconfirmed in 2005 when the EPO revoked in entirety the controversial patent adjudging that there was “no inventive step” involved in the fungicide patent, thus confirming the ‘prior art’ of the use of Neem (Brinker, 2009).

In 1998, Navdanya started a campaign against Basmati biopiracy and achieved a confident win in 2001. The next major victory against biopiracy for Navdanya came in October 2004 when the European Patent Office in Munich revoked Monsanto’s patent on the Indian variety of wheat “Nap Hal”. This was the third consecutive victory on the IPR front after Neem and Basmati.

Dr. Vandana Shiva describes the fight against agricultural biotechnology as a global war against a few giant seed companies on behalf of the billions of farmers who depend on what they themselves grow to survive. She contends that nothing less than the future of humanity rides on the outcome. Shiva, along with a growing army of supporters, argues that the prevailing pesticides, fossil fuels, and a seemingly limitless supply of cheap water, place an unacceptable burden on the Earth’s resources.

In the past quarter century, she has turned out nearly a book a year, including “**The Violence of the Green Revolution**,” “**Monocultures of the Mind**,” “**Stolen Harvest**,” and “**Water Wars**.” In each, she has argued that modern agricultural practices have done little but plunder the Earth. In 1993, Shiva received the Right Livelihood Award, often called the alternative Nobel Prize, for her activism on behalf of ecology and women. *Time*, the *Guardian*, *Forbes*, and *Asia Week* have all placed her on lists of the world’s most important activists. In 2010, she was awarded the Sydney Peace Prize for her commitment to social justice and her tireless efforts on behalf

of the poor. Beloit College, Wisconsin, honored Shiva with its Weissberg Chair in International Studies, calling her “**a one-woman movement for peace, sustainability, and social justice**.”

Dr. Vandana Shiva is a woman whose work is focused on embracing not only the principles of feminism, but also the principles of ecology. In fact, as an Ecofeminist, she sees these two movements as interconnected and believes that the worldview that causes environmental degradation and injustice is the same worldview that causes a culture of male domination, exploitation, and inequality for women. Vandana Shiva titles her feminist theory “political,” or “subsistence” ecofeminism, to differentiate it from the more spiritually focused ecofeminism popular in Western countries. Her work has dealt with “third world” women, whose lives are adversely affected by the forces of corporate globalization and colonialism (Brinker, 2009).

Medha Patkar and ‘Narmada Bachao Andolan’

Narmada Bachao Andolan (NBA) is the most powerful mass movement, started in 1985, against the construction of a huge dam on the Narmada river. Narmada is India’s largest west flowing river, which supports a large variety of people with distinguished culture and traditions ranging from the indigenous (tribal) people inhabited in the jungles to a large number of rural population. NBA announced the arrival of the India Greens, protesting against destructive development. According to many environmentalists “*One of the largest and most successful environmental campaigns, Narmada Bachao Andolan began with a wide developmental agenda, questioning the very rationale of large dam projects in India.*” The campaign against the construction of dams on the Narmada River is “*symbolic of a global struggle for social and environmental justice,*” while the NBA itself is a “*symbol of hope for people’s movements all over the world that are fighting for just, equitable and participatory development.*” Though the NBA has yet to achieve the goals for which it has so tirelessly fought, its victories against the mammoth odds have earned it the reputation of being one of the most dynamic social movements of our

time and one that the government continues to expend considerable resources to fight against.

Led by one of the prominent women environmentalists **Medha Patkar**, it has now been turned into an International protest, gaining support from NGOs all around the globe. Protestors are agitating the issue through mass media, hunger strikes, massive marches, rallies and several documentary films. Patkar spent most of her time among the adivasis in the remote and rugged Satpura hills of Maharashtra. Over the years, her oratorical and organizing skills helped build the trust of many local people and also attracted a committed coterie of young activists to come to the valley. These activists, who included engineers, social workers, and journalists, were to play a vital role in the Narmada movement. Early in 1986, the activists and Maharashtra villagers set up the Narmada Dharangrast Samiti (Committee for Narmada Dam-Affected People). The NDS villagers refused to be moved out or to cooperate with dam officials in any way until their resettlement demands were met.

Medha Patkar felt that the hydro project would devastate human lives and biodiversity by destroying thousands of acres of forests and agricultural land. On the other hand it would deprive several thousands more of their livelihood. In her opinion, the water and energy could be provided to the people through alternative technological means, which would be ecologically beneficial.

Some instances of women's initiatives

In Japan, in the 1950s, the Nakabaru Women's Society and Sanroku Women's Society protested strongly against pollution from industries and power plants in the Tobata region. This resulted in major pollution prevention measures taken by the local government and corporations. In Brazil, the women's organisation Ação Democrática Feminina Gaúcha (ADFG) was founded in 1964. It later developed into Friends of the Earth-Brazil. Its main objective was to promote social change for equal opportunities, but since 1974 it became actively involved in environment protection, mainly through protests against chemical-based agriculture,

and lobbying for environmental protection laws. In Thailand, Tunjai Deetes helped establish the Hill Area Development Foundation, which has initiated sustainable development efforts in several villages of five tribal groups. As a result of her leadership and dedication, many of the hill tribes have developed into self-reliant communities that presently serve as national models in sustainable agriculture and resource conservation.

Mei Ng worked diligently to promote environmental awareness throughout China. Her message of sustainability and eco-friendliness reached millions of people in spanning nearly 15 provinces. Mei Ng is an advocate of responsible consumption, renewable energy utilization, and sustainable development through the women and youth of China. Mei Ng strives to mobilize women to defend the environment and to bring environmental education to all parts of China. She founded the Earth Station, Hong Kong's first renewable energy education centre and has been well received by policy makers and citizens alike.

Maria Cherkasova began to work for the Red Data Book for the Department of Environmental Protection Institute. She researched and preserved rare species until she became the editor of USSR Red Data Book. She co-founded the Socio-Ecological Union, which soon became the largest ecological NGO in the former Soviet Union. In 1990, she became director of an organization, which arranged activities in an extensive range of ecologically related areas on both domestic and international fronts. Later Cherkasova shifted her focus on protection of rights of children to live in a healthy environment.

The Global Scenario

In 1945, the United Nations Charter reaffirms "the equal rights of women and men" in its preamble. Article 55 c declares: "The United Nations shall promote universal respect for, and observance of, human rights and fundamental freedoms for all without distinction as to race, sex, language, or religion." 1975 witnesses the First United Nations World Conference on Women and associated NGO Forum in Mexico City; the

start of the United Nations Decade for Women: Equality, Development and Peace. In 1985, The United Nations Third World Conference on Women and associated NGO Forum in Nairobi reviews and appraises the achievements of the United Nations Decade for Women. It produces the Nairobi Forward-looking Strategies, which recognize women's role in environmental conservation and management. At the Third World Conference, UNEP organizes a special event on women and the environment and nominates senior women advisers on sustainable development.

The United Nations Conference on Environment and Development in 1992 produces the Rio Declaration and Agenda 21, as well as the Convention on Biological Diversity, the United Nations Framework Convention for Climate Change and the United Nations Convention to Combat Desertification. The meeting recognizes women as a "**major group**" in sustainable development and makes specific provisions to advance their position. These include chapter 24 of Agenda 21, entitled "Global Action for Women towards Sustainable Development", along with 145 other references.

Rio Principle 20 reads: "**Women have a vital role in environmental management and development. Their full participation is therefore essential in achieving sustainable development**". At the Millennium Summit in New York in 2000, all 189 United Nations Member States commit themselves to establishing a better, healthier and more just world by 2015. The Millennium Declaration promises "**to promote gender equality and the empowerment of women as effective ways to combat poverty, hunger and disease and to stimulate development that is truly sustainable**". The Declaration's eight Millennium Development Goals include Goal1, eradicate extreme poverty and hunger; Goal3, **promote gender equality and empower women**; and Goal 7, ensure environmental sustainability

The World Summit on Sustainable Development in Johannesburg (2002) issues the Johannesburg Declaration and Plan of Action. It confirms the need for gender analysis, gender specific data and gender

mainstreaming in all sustainable development efforts, and the recognition of women's land rights. The Declaration states: "**We are committed to ensuring that women's empowerment, emancipation and gender equality are integrated in all the activities encompassed within Agenda 21, the Millennium Development Goals and the Plan of Implementation of the Summit**" (WEDO, 2002).

The eleventh session of the United Nations Commission on Sustainable Development (2003) decides that "gender equality will be a cross-cutting issue in all forthcoming work up until 2015."

Diverse Women for Diversity (DWD) - an international movement started in the mid - 90s seeks to defend diversity, peace and democracy from the growing threats of monoculture, war, totalitarianism and fundamentalism. Women of different regions have organised as Diverse Women to provide an alternative voice at the World Food Summit in Rome (1996) WTO meetings in Seattle in 1999, the World Bank meetings in Prague in 2000, the Convention on Biological Diversity in Bratislava (1998) and Nairobi (2000) and Rio+10 at Johannesburg (2002). Women leaders who have founded the movement have provided alternatives to a global economy dominated by capitalist patriarchy and have pioneered the resistance to genetic engineering at the scientific and movement level.

In India, DWD articulates its commitment to diversity and non-violent technology through the National Alliance for Women's Food Rights, which has spearheaded the movement against genetic engineering by taking up issues such as dumping of GE soya, destruction of the domestic mustard oil industry, and policies that lead to the destruction of natural sources of vitamin A to make way for genetically engineered rice and mustard. DWD organizes the Third International Women and Water Conference held at Navdanya's Bija Vidyapeeth in 2005. The Conference witnessed the confluence of 75 women representatives from 15 nations. The women representatives take a pledge to work together, to form a network,

communicate with each other and to wage a war against water barons.

They also vowed to honour and revive the spiritual connection with water, to take responsibility towards stewardship of water, to work towards the equitable access to and sustainable use of water and to raise awareness through education (Sen, 2013).

The Mission Ahead

Recognizing that access to sustainable energy services is central to addressing many of today's global development challenges and for achieving the Millennium Development Goals (MDGs), a growing focus on energy as a key development issue has emerged within the international community (Sen, 2011b). Access to clean, affordable, sustainable energy is thus an enabling factor for economic development and poverty reduction as well as for achievement of internationally agreed development goals, including ensuring environmental sustainability and promoting gender equality. At the same time, access to energy services can be argued to be a human right in itself. In the context of the post-2015 development agenda, considerable attention is being drawn to issues of energy within the UN-system with, among others, the designation by the United Nations General Assembly of 2012 as "International Year for Sustainable Energy for All", and the Secretary-General's "Sustainable Energy for All" (SE4ALL) Initiative.

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The SE4ALL initiative aims to ensure universal access to modern energy services, double the global rate of improvement in energy efficiency and the share of renewable energy in the global energy mix by 2030. It highlights that women can be powerful actors for change in the transition to sustainable energy and that their involvement in the design, distribution, management and consumption of sustainable energy solutions is a critical pathway for reaching the MDGs as well as the objectives of the SE4ALL initiative and "The Future We Want."

Taking women's needs into account in energy interventions and strengthening women's leadership and participation in sustainable energy solutions are critical in the transition to sustainable energy for all and to reaching internationally agreed development goals.

As natural resources become more and more limited on our finite planet, a shift in our worldview will become compulsory. Vandana Shiva's vision for a combined movement to end oppression of both women and nature is part of the answer to how we can achieve sustainability on this earth and find our place as a species. We must acknowledge and reconcile that we are part of the larger web of life that provides for our survival, making it imperative that we protect that fragile web of life, not as dominators - men over women or humans over nature - but in peaceful co-existence with every other life form on the planet.

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