

# Integrating Climate Action and Communities Using the Landscape Approach

## *Lessons from the Green Belt Movement*



*Here in Africa, we are paying a high price for a rapidly changing climate - more droughts, food crises and it is set to get worse*

**Wangari Maathai**

## Summary

The Green Belt Movement (GBM) is an environmental organization which has been working with rural women and their communities for over 35 years and has planted more than **51 million trees**. Our findings echo the IPCC's findings that climate change in Africa is already disproportionately affecting vulnerable groups, particularly women and children. Rural communities in Africa already experience climate change including prolonged floods, unpredictable rainfall, crop failure, and famine. Communities need the skills, technology, and resources to build climate resilience.

Addressing gender inequality remains critical to achieving climate resilience. Some of the most effective efforts to address climate change are going on at the grassroots level far away from the negotiation tables. This is where the action takes place yet their voices are seldom heard. This report shares our experiences and lessons from forest carbon projects and integrated forest landscape approaches to climate change.

Forest resources remain a vital economic buffer for people living near and in forests. With an integrated approach that combines adaptation and mitigation techniques, such as land use planning, forest restoration, clean energy and permaculture initiatives, GBM is working with rural women and men to build resilience to climate change. We use a watershed-based approach to landscape restoration that keeps at its heart community livelihoods and empowerment.

Across Kenya's forested mountains, we select priority watersheds for restoration to improve ecological function, and support biodiversity and a sustainable future for communities. We have learnt that unless the needs and rights of local people are met then conservation and forest restoration efforts are doomed to fail. We have also learnt that rural women with the right training and support can be "green agents of change" and that there is a real opportunity emerging to revolutionise small-scale rural energy, natural resource use and entrepreneurship.



**Science has spoken. There is no ambiguity in their message. Leaders must act. Time is not on our side.**

U.N. Secretary-General Ban Ki-Moon on release of the 4th report from the Inter-governmental Panel on Climate Change.

## Building Community Climate Resilience



### Climate resilience definition

Climate resilience can be defined as the capacity of a socio-ecological system to *adapt*, reorganize, and evolve into more desirable configurations that improve the sustainability of the system, leaving it better prepared for future climate change impacts.<sup>1</sup>

The 5th IPCC report states that "strategies and actions can be pursued now that will move toward climate-resilient pathways while at the same time helping to improve livelihoods, social and economic well-being, and responsible environmental management."<sup>2</sup>

The Green Belt Movement's (GBM) strategy for climate resilience is a part of our integrated restoration approach, which focuses on the links between forest watersheds, women and energy. From our work with grassroots communities, GBM has found that climate resilience can only

be achieved through restoration of critical watersheds when there is full and effective participation by those communities.

While governments negotiate internationally for a fair and equitable deal on climate change, resources do not yet provide sufficient support at the grassroots to address climate change. GBM advocates for an equitable, ethical global climate deal that meets the needs of vulnerable communities. Change is needed in high polluting countries so fewer green house gases are produced, with resources directed to governments in the South to build the necessary infrastructure and governance systems. Communities need to benefit directly from funds created to reduce the impact of climate change. Our experience is that climate finance remains a serious challenge when working to build community resilience. There needs to be opportunities for **financing mitigation and adaptation measures** at the grassroots to build community climate resilience.

<sup>1</sup> [http://eprints.icrisat.ac.in/4245/1/AnnualReviewofEnvResources\\_32\\_395-419\\_2007.pdf](http://eprints.icrisat.ac.in/4245/1/AnnualReviewofEnvResources_32_395-419_2007.pdf)

<sup>2</sup> [http://ipcc-wg2.gov/AR5/images/uploads/WGIAR5-Chap20\\_FGDall.pdf](http://ipcc-wg2.gov/AR5/images/uploads/WGIAR5-Chap20_FGDall.pdf)

<sup>3</sup> <http://www.greenbeltmovement.org/sites/greenbeltmovement.org/files/GBM%20climate%20finance%20report%202011%20%281%29.pdf>

## Climate Financing

Over the past nine years, GBM piloted four different forest carbon mitigation approaches with communities. Our 2011 Report on *Community Forest Climate Initiatives*<sup>3</sup> outlines the key challenges for implementation of forest carbon projects. That report details how the viability of these projects depends on certain considerations, which are summarized here:

- **Upfront finance** is needed for project implementation, as well as funding for monitoring and maintenance by communities to ensure long term success.
- **An integrated approach** that includes biodiversity, livelihoods, food security, ecosystem functioning is needed, which does not prioritise carbon as the single criterion of success.
- **Full and effective participation of local communities** is needed in the design, development and governance of projects.

- **Effective institutional frameworks and governance** are needed to ensure long term sustainability of forest carbon projects.
- International policy and governance structures need to address the wider drivers of **deforestation** such as illegal logging, unreliable certification of forest harvests, unsustainable forest management, and disinterest at the consumer end about the source of timber.
- **Methodologies** that are accessible, easy to use, and accommodate the rights and requirements of communities and indigenous peoples living near and in forests are needed to ensure equitable benefit sharing.

Climate financing for mitigation will continue to be out of reach of communities who need it most unless the issues above are addressed. Bearing our experience with mitigation projects in mind, governments will need to create the necessary structures to ensure adaptation funds are accessible for rural communities.



## Forest Landscape Restoration



Since 2011 GBM has been piloting new opportunities and methodologies to meet both the mitigation and adaptation requirements of communities and to help achieve community resilience and low carbon development in Kenya.

### Forest landscape restoration definition

Forest landscape restoration is defined as “a planned process to regain ecological integrity and enhance human well-being in deforested or degraded landscapes.”<sup>4</sup> This approach integrates forest restoration with participatory landscape-level objectives.

In Kenya it is widely accepted that the loss of forest cover is a critical environmental and economic challenge. Cutting down forests in “water tower” catchments has reduced Kenya’s ability to irrigate farms and supply electricity. The bulk of Kenya’s electricity is generated using hydropower. According to the United Nations Environment Program (UNEP), deforestation in Kenya’s mountains deprives the economy of over 6 Billion KSH (£42M or \$66M) annually, and threatens more than 70% of the country’s water supply. Data show that Kenya’s water towers contribute more than 3.6 % of GDP.<sup>5</sup>

Most striking is that the economic benefits of retaining forest ecosystem services are four times more than the short-term gains of deforestation. Short-term approaches to watersheds have led to rising costs of water treatment and food production, and higher rates of waterborne illnesses. Furthermore, ecosystem fragmentation isolates populations of threatened species and leads to rapid loss of biodiversity.<sup>6</sup>

GBM’s integrated landscape approach carries out restoration activities along watersheds. For these activities GBM selected 30 priority watersheds in 25 counties in the five major mountain complexes in Kenya, namely: Mt. Kenya, Aberdare Ranges, Mau Forest Complex, Mt. Elgon, and the Cherangani Hills. GBM and its partners aim to bring about ecosystem rehabilitation while improving the livelihoods of communities. These restoration projects underscore the critical role of communities in ensuring the success of these activities, and the unique opportunity to build climate resilience and secure livelihoods using landscape restoration as a tool. Steps taken include: mapping priority areas for restoration, baselines for community forest conservation, and carbon mitigation and adaptation measures.

<sup>4</sup> Reitbergen-McCracken, J., S. Maginnis A. Sarre, 2007. The Forest Landscape Restoration Handbook. Earthscan, London, pp175

<sup>5</sup> <http://www.un.org/apps/news/story.asp?NewsID=43417#.VHRzYjSUfj>

<sup>6</sup> [http://www.unep.org/pdf/Montane\\_Forests.pdf](http://www.unep.org/pdf/Montane_Forests.pdf)

Watersheds matter to communities as they supply water and other essential natural resources. Education about people's interdependence on these ecosystems encourages community buy-in and commitment to long-term behavioural changes. Community groups in GBM plant indigenous species in sites chosen to restore water flow and to promote fauna and flora populations.

Some of GBM's ongoing restoration projects:

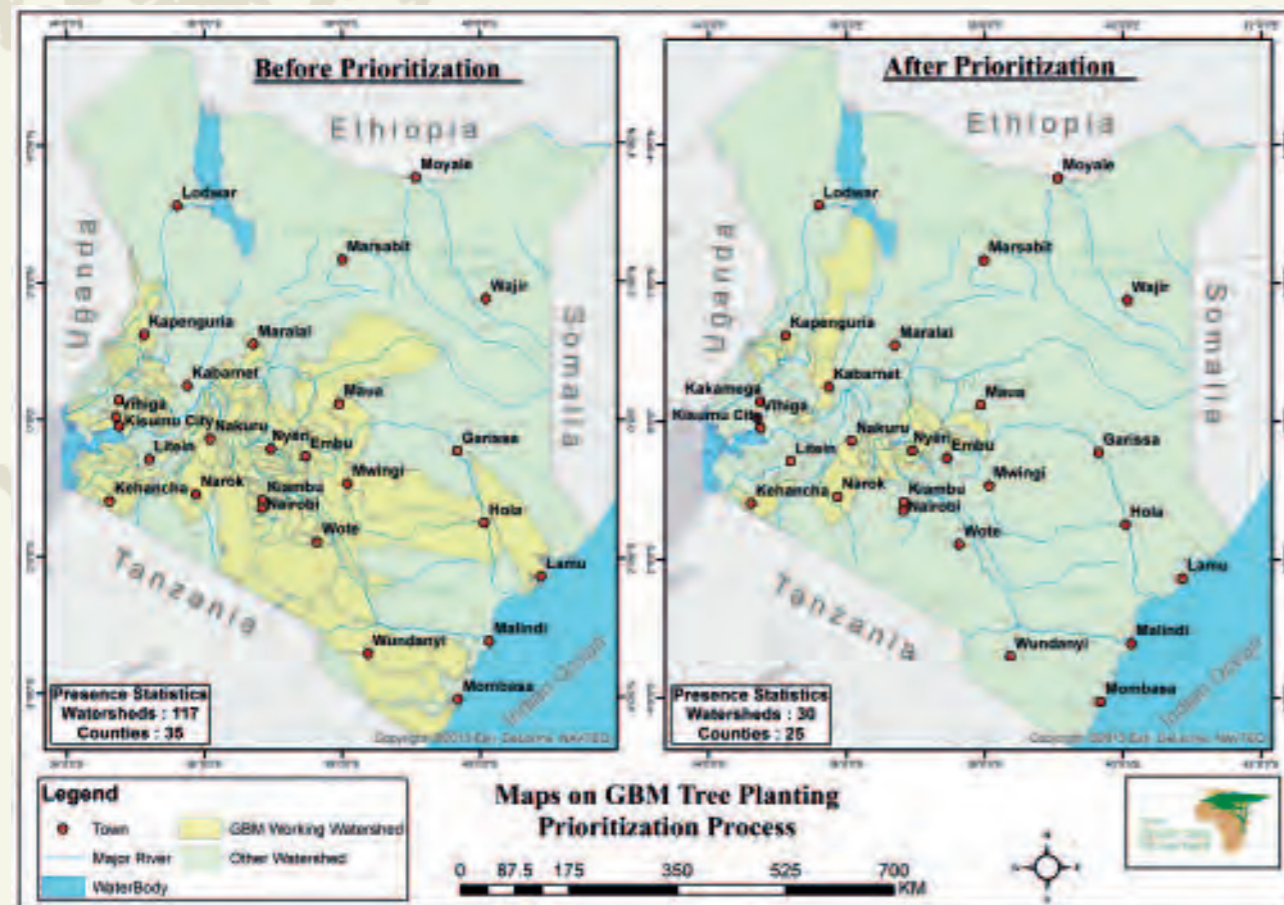
- In the Mau complex, GBM is working with the Ministry of Energy and the Kenya Forest Service to rehabilitate the Chepalungu block in the Migori Watershed. The project will rehabilitate over 155 hectares (ha) of forest that is a source of water for multi-users downstream including agricultural and other uses.
- In the Aberdares, GBM is restoring 70 ha in the Malewa watershed with communities in the Gatundu, Geta, and Wanjohi that is part of the source of the Tana river which is a major source of water for Nairobi and surrounds.
- GBM is has partnered with The Nature Conservancy in two other Aberdare watersheds, Sagana and Gura, piloting a Payment for Ecosystem

Services (PES) concept. Over 100ha will be rehabilitated to help restore water resources for the main Kenyan hydropower electricity plants.

- Forest restoration activities are being implemented in Kirisia forest (92,000 ha) in Samburu and Nakuru counties to control soil erosion, improve soil fertility, and enhance food productivity.



Preventing the further destruction of Kenya's forests and investing in their restoration and sustainability is one of the most cost-effective natural capital investments Kenya can make – this not only combats climate change, but also creates jobs, wealth, ensures water and food security, and helps to deliver Kenya's **Vision 2030**.



## Clean Energy: Healthier Communities and Forests

In Kenya, many rural people live on the margins of its remaining forests (6.8%). Over 65% of the total population relies on biomass energy – firewood and charcoal – for cooking and heating. As a result Kenya's forest ecosystems are hugely degraded and under threat, rural communities suffer from lack of access to fuel, and women, in particular, suffer negative health effects.

Clean energy technologies, particularly in the cooking, heating and lighting sectors, present alternative routes to energy for communities and provide both climate change mitigation and adaptation benefits. These solutions reduce emissions, particularly of black carbon, that result from the inefficient burning of biomass fuel. GBM works with communities to share the benefits of using clean energy, and to identify and address barriers to adoption and access.

Rural women are the primary users of clean technologies like solar lamps and cook stoves, and are at the forefront of adopting new technologies. GBM is working with the Partnership for Women's Entrepreneurship in Renewables (wPOWER) at the Wangari Maathai Institute for Peace & Environmental Studies, and the Global Alliance for Clean Cookstoves to help bridge the "last mile" in the supply chain to reach rural areas lacking energy access.

In partnership with the MacArthur Foundation, GBM is building the capacity of rural women leaders so that they foster natural resource management with-in their communities, and to help create entrepreneurship opportunities for women in the clean energy sector.



Training the community on clean energy and the benefits and economic value of bamboo

## Integrating Gender for Climate Justice

Socio-cultural values and norms continue to play a role in the perpetuation of gender inequality and act to lessen the impact of climate change responses. Climate change requires that women and men have access to information that enables them to deal with an uncertain environment. In Kenya historically land is owned, in the majority, by men, which means most rural women do not have land rights and are often not invited to decision-making meetings. Therefore initiatives that could make improvements to women's daily lives and build community resilience do not reach their intended recipients.

To integrate gender into our climate change strategy and support for women to reduce the challenges they face, GBM has training and interventions targeting women across its programme areas. GBM engages women directly by inviting both women and men to learn about the opportunities to build climate resilience at household level and the role women can play. As a result, involving women in planning, as well as climate mitigation and adaptation activities, means women have more reliable sources of water and better harvests which give new opportunities for income. This enables women to play a central and active role in creating climate resilience in their homes and communities.



**People around the world are suffering the effects of climate change now, and for these people climate change is an issue of justice. Women are living on the frontlines of climate change.**

Wangari Maathai



### A personal story: Climate change experience from the grassroots

Ann Wangari, is 50 years old and lives in the Kipipiri Nyandarua county, adjacent to the Aberdare Forest

*"I have seen many trees being cut down and used for timber by local farmers, leaving lots of open and poor [degraded] areas.*

*My community is now experiencing many weather changes and my farm and family are suffering. There is less rain coming and longer periods of drought. I can't grow as many crops and so there is less food to sell and for my family to eat.*

*The river and forest fountain nearby have dried up as there is little rain where I got my drinking and farm water from a few years ago".*

## Kenyan context for climate change policy

Responding to climate change will require policies at all levels international, national and sub-national to be effective according to the latest IPCC report.<sup>7</sup> The good news is that substantial policy developments in Kenya have been made. The Kenyan constitution (2010) elevates environmental and developmental issues as human rights, and effectively lays a firm foundation for climate change work under its new devolved structure. The Climate Change Bill and Action Plan put in place a regulatory framework for low carbon and climate resilient development. It has a mandate to mainstream climate policy through county level integrated development plans.

However, more needs to be done in building institutional capacity, developing county-level climate change strategies, and effective implementation and enforcement of climate change policies. Devolved climate action plans will allow for policy frameworks to operate at local ecological and stakeholder level. GBM seeks to support this process by helping to develop national and county level action plans, identify priority areas for landscape restoration, and address the issue of policy gaps on climate and the environment including crosscutting gender issues.

## Who we are

The Green Belt Movement (GBM) has been committed to working with grassroots communities since our founder Wangari Maathai first sat down and listened to rural women in Kenya in the 1970s. In response to the needs of rural women who reported that their streams were drying up, their food supply was less secure, and they had to walk further and further to get firewood, the Green Belt Movement was born. From our outset we encouraged women to work together to restore the integrity of their environment: grow seedlings and plant trees to bind the soil, store rainwater and provide food and fuel sources. Recognising that the everyday hardships that the women face including unemployment, water scarcity, deforestation and food insecurity are symptoms of deeper issues of disempowerment, poor governance, inequities, and loss of values. GBM has a network of over 4,000 community groups in Kenya who volunteer to protect their

natural environment through a wide variety of landscape and farm-based restoration projects. Our bottom up approach is community-led, empowering communities to know their rights and uphold them, and has planted more than 51 million trees.



**Protection of standing forests and other practical environment and community based measures to deal with climate change start with effective and transparent leadership at the top.**

Wangari Maathai

<sup>7</sup> [http://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR\\_AR5\\_SPM.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_SPM.pdf)

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