INDIGENOUS WOMEN BIODIVERSITY NETWORK

TELLING OUR STORIES IN THE IMPLEMENTATION OF KUMMING MONTREAL BIODIVERSITY GLOBAL FRAMEWORK

Acknowledgement

I am pleased to present this second booklet from the Indigenous Women's Biodiversity Network. This publication showcases a variety of case studies that offer valuable insights and perspectives from Indigenous Women on the Kunming-Montreal Global Biodiversity Framework. We are proud to continue fostering our connections and strengthening our network. Reflecting on our journey, we remain motivated and resilient, overcoming challenges and staying true to our mission.

We extend our deepest gratitude to all the Indigenous Women who contributed their case studies for this booklet. We appreciate your generosity in sharing your stories, photos, and information with us. Special thanks to the International Indigenous Forum on Biodiversity for your unwavering support and guidance. We also express our heartfelt appreciation to AYNI/FIMI Leading from the South for your support, which has enabled us to expand our reach to the Indigenous Women's Biodiversity Network in the African region.

To IUCN, thank you for partnering with us our joint efforts will serve as a learning process on gender issues for many Indigenous Women and young leaders. A sincere thanks to AIPP and your partners for sharing your case studies with us. To all the Indigenous Women of the Biodiversity Network, I salute you.

Lucy Mulenkei

Executive Summary

Indigenous Women play a critical role in facilitating community development across social, economic, and environmental dimensions, drawing on their unique perspectives, cultural knowledge, and leadership qualities. Their contributions encompass cultural preservation, sustainable resource management, economic empowerment, health promotion, education, and capacity building, all of which contribute to the ongoing well-being of their communities.

At the heart of Indigenous Women's contribution to community development is their dedication to preserving and revitalizing cultural heritage. They act as custodians of traditional knowledge, passing down ancestral wisdom, languages, and practices to future generations. Even amidst social and environmental challenges, Indigenous Women nurture resilience and cohesion among community members, fostering a sense of identity and pride through cultural ceremonies, storytelling, and communal events.

Indigenous Women also hold leadership roles within their communities as matriarchs, elders, and advocates for Indigenous rights. Their leadership is characterized by inclusivity, consensus-building, and a commitment to the collective welfare of the community. They advocate for community-driven development initiatives and the recognition of Indigenous rights by bridging traditional governance structures with formal institutions.

Sustainable resource management is integral to Indigenous Women's stewardship of the environment. With centuries of experience and intimate knowledge of local ecosystems, they apply traditional ecological practices to promote biodiversity conservation, water security, and food sovereignty. Through sustainable activities such as agroforestry, seed saving, and land stewardship, Indigenous Women ensure the resilience and sustainability of community livelihoods.

Economic empowerment is crucial for advancing Indigenous Women, providing pathways to independence, self-determination, and improved well-being. However, they face numerous challenges, including limited access to education and skills training, land tenure insecurity, discrimination, and insufficient access to financial resources and markets. These structural barriers perpetuate cycles of poverty and exclusion, hindering the full realization of Indigenous Women's potential as agents of change and sustainable development, and violating their rights.

Economic empowerment extends beyond increasing income; it involves enhancing agency, independence, and dignity. When Indigenous Women gain control over economic resources, they can invest in education, healthcare, and other essential needs for themselves and their families. This empowerment enables them to take more active roles in community development, environmental conservation, and cultural preservation, contributing to the overall resilience and prosperity of Indigenous communities and the establishment of sustainable communities and a healthy planet.

The Indigenous Women's Biodiversity Network (IWBN) believes that the implementation of the Kunming-Montreal Global Biodiversity Framework (KMGBF) requires more than simply focusing on targets. Full and effective participation, capacity building, and awareness-raising are essential,along with a holistic and human rights-based approach to ensure the success of this process.

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Acronyms

- CBD- Convention on Biological Diversity COP-Conference of Parties
- FPIC- Free Prior and Informed Consent
- IPFCC-Indigenous Peoples Forum on Forum on Climate Change IWBN-Indigenous Women Biodiversity Network
- SDGs- Sustainable Development Goals
- SBILC- Subsidiary Body on Indigenous and Local Communities UNDRIP- United Nations Declaration on the Rights of Indigenous Peoples UNFCCC- United Nations Framework Convention on Climate Change
- AIPP - Asia Indigenous Peoples Pact
- AHS - Antigua Barbuda Horticultural Society
- CBD- Convention on Biological Diversity
- CEDAW- Convention on the Elimination of All Forms of Discrimination Against Women
- COP-Conference of Parties
- DRC- Democratic Republic of Congo
- EPPB- Evolutionary-Participatory Plant Breeding
- FPIC- Free Prior and Informed Consent
- FPP -Forest Peoples Program
- IPFCC-Indigenous Peoples Forum on Forum on Climate Change
- IWBN-Indigenous Women Biodiversity Network
- KMGBF- Kunming-Montreal Global Biodiversity Framework
- MBOSCUDA - Mbororo Social and Cultural Development Association
- NDC- Nationally Determined Contributions
- NTFP- Non-timber forest products
- PPB- Participatory Plant Breeding
- SDGs- Sustainable Development Goals
- SBILC- Subsidiary Body on Indigenous and Local Communities
- SIDA - Swedish International Development Agency
- UNDRIP- United Nations Declaration on the Rights of Indigenous Peoples
- UNFCCC- United Nations Framework Convention on Climate Change

Overview of Indigenous Women's Biodiversity Network

Background

The Indigenous Women's Biodiversity Network (IWBN) was established in 1998 during the 4th Conference of Parties (COP) to the Convention on Biological Diversity (CBD). Its inception marked a pivotal moment in recognizing the indispensable role of Indigenous Women in biodiversity conservation efforts worldwide. At its core, the IWBN aims to amplify the voices of Indigenous Women and bring their issues to the forefront of international discussions on biodiversity. By providing a platform for dialogue and collaboration, the IWBN facilitates a community of practice centered around key themes: Indigenous Women, Traditional Knowledge, Policy, and Biodiversity Conservation. This network serves as a conduit for sharing knowledge, experiences, and best practices among Indigenous Women from all seven regions of the world.

Regional representation is a fundamental aspect of the IWBN, ensuring that the diverse perspectives and priorities of Indigenous Women from Africa, Asia, the Arctic, North and Latin America, the Pacific, and Russia are adequately represented. This inclusivity fosters a deeper understanding of the unique challenges faced by Indigenous Women in different contexts and promotes more comprehensive solutions to address them.

Capacity building is another cornerstone of the IWBN's work, as it seeks to empower Indigenous Women to actively participate in biodiversity conservation efforts and policy formulation processes. Through leadership training, gender equality promotion, and the integration of traditional knowledge, the network equips Indigenous Women with the skills and resources needed to effect positive change in their communities.

IWBN plays a crucial role in advocating for policy changes and influencing decision-making processes at the international level. By engaging with governments, intergovernmental organizations, and other stakeholders, the network seeks to ensure that policies and initiatives are inclusive, equitable, and effective in addressing the needs and priorities of Indigenous Women.

Collaboration and partnerships are key to the IWBN's success, as it works closely with Indigenous organizations, non-governmental organizations, research institutions, and government agencies to advance its objectives. These partnerships facilitate knowledge exchange, resource sharing, and collective action towards achieving biodiversity conservation goals.

In essence, the Indigenous Women's Biodiversity Network (IWBN) serves as a powerful advocate for Indigenous Women's rights and contributions to biodiversity conservation. Through its collaborative efforts, the network strives to create a more inclusive and sustainable future where Indigenous Women are recognized, respected, and empowered as key stewards of the Earth's natural resources.



Guardians of Culture, Stewards of The Land, And Agents of Change

By IWBN Team

Indigenous Women play a vital role in their communities worldwide. Their identity is expressed through their cultural heritage, social dynamics, and historical experiences. They are key to preserving and revitalizing Indigenous cultures, as they are the bearers and transmitters of traditional knowledge, language, and customs. Amid the challenges of cultural assimilation and erosion, Indigenous Women pass down ancestral wisdom, historical narratives, and rituals to younger generations, ensuring the continuity of their cultural identity.

Indigenous Women serve as leaders, decision-makers, and agents of change within their communities. Resilience, resourcefulness, and a deep commitment to their roles define their leadership. They have successfully bridged the gap between contemporary issues and traditional systems, advocating for Indigenous Peoples' rights, social equity, environmental justice, and contributing to effective governance structures and social movements.

As stewards of natural resources and traditional territories, Indigenous Women possess unique and intimate knowledge of local ecosystems and sustainable land-use practices. Their experience enables them to engage in environmental conservation, protecting biodiversity, ensuring water security, and fostering climate resilience. Through traditional ecological knowledge and community-based initiatives, they work to sustain the land for future generations.

Economically, Indigenous Women contribute significantly to household economies and community development through activities such as subsistence agriculture, artisanal crafts, and small-scale entrepreneurship. Despite systemic barriers and inequality, they demonstrate resilience and creativity in generating income, building assets, and supporting their families. Economic empowerment programs for Indigenous Women aim to increase access to resources, markets, and skills training, while promoting self-sufficiency and financial independence.

Indigenous Women are central to community health and wellness as caregivers, healers, and advocates for holistic health approaches. They offer culturally sensitive healthcare, traditional healing practices, and health education programs that address disparities and access barriers. Integrating physical, mental, emotional, and spiritual aspects of health, they promote wellness and resilience within their communities.

Education is another crucial area where Indigenous Women play a transformative role. They advocate for access to quality education that respects Indigenous knowledge, language, and cultural values. As educators, mentors, and role models, they inspire the younger generation to seek opportunities that enable them to reach their full potential. They engage in educational initiatives that promote cultural resilience, intergenerational knowledge transmission, and critical thinking skills to navigate complex social and environmental challenges.

Across diverse regions, Indigenous Women face interconnected challenges rooted in historical injustices, systemic marginalization, and environmental degradation. In Africa, they contend with insecure land rights, gender-based violence, and limited access to education and healthcare. In Asia, issues of land displacement, environmental degradation, and discrimination hinder their participation in decision-making and resource access. Arctic Indigenous Women are disproportionately affected by climate change, loss of traditional knowledge, and socioeconomic challenges.

In North and Latin America, Indigenous Women face high rates of violence, threats to land rights from resource extraction, and struggles to preserve their cultural heritage. In the Pacific, they are increasingly vulnerable to climate change-induced displacement, food insecurity, and lack of access to clean water and sanitation. In Russia, Indigenous Women confront the loss of traditional lands, health disparities, and challenges in revitalizing their languages and cultural practices.

These challenges highlight the urgent need for comprehensive, inclusive solutions that address the rights, well-being, and empowerment of Indigenous Women worldwide. The Indigenous Women's Biodiversity Network (IWBN), established during the 4th Conference of the Parties to the Convention on Biological Diversity, provides a critical platform for amplifying the voices of Indigenous Women in international biodiversity conservation discussions. Through collaboration, advocacy, and capacity-building, the IWBN addresses the unique challenges faced by Indigenous Women and promotes more inclusive, sustainable approaches to biodiversity conservation and climate resilience.

Many Indigenous Peoples live in isolated and remote communities, where their livelihoods are deeply intertwined with their environments"biotic, cultural, and abiotic"with climate being a central factor. They inhabit diverse ecosystems such as savannas, coastal sites, grasslands, islands, and forests. According to World Bank report (2006), more than 1.6 billion people around the world depend on varying degrees on forests for livelihoods and at least 350 million of theses live inside or close to dense forests, largely dependent on these areas for subsistence and income while about 60 million Indigenous Peoples are wholly dependent on forests.

A majority of the Indigenous People's population are Indigenous Women. Indigenous Women have close knit ties to their ancestral lands and have indisputable knowledge of their ecosystems. Their identity is deeply rooted in their cultural and spiritual practices which are stipulated in their customary laws. Indigenous Women have vast knowledge in various fields such as forest conservation, farming, art and craft and as traditional healers despite having never undergone any formal training in a classroom set up. Some of them are scientists by default only that they cannot explain scientifically why they do things in a particular manner. They are a heritage and economic asset to countries that avail them the platform to share their expertise.



Group Photo During IWBN Side at COP 16 in Cali, Colombia.

The Classroom of Life

Roxana Auhagen Collaboration: Pirawan Wongnithisathaporn, AIPP and the community of Huay Ee Khang

In the Indigenous Karen village of Huay Ee Khang, in the mountainous north of Thailand, all life starts in the forest. When a baby is born, its umbilical cord is placed in a bamboo container and hung on a healthy fruit tree.



"De Paw Thoo" ["Umbilical Cord Forest"] designates the area in which bamboo containers with umbilical cords are hung on trees. This forest has a size of 64 ha and is also used as a learning site.



"This way, the souls of the baby and the tree are intertwined throughout their lifespan and nobody is allowed to cut the tree," explains the village chief, Noraeri Thungmueangthong.

The forest is our community supermarket

We have been using our beliefs, culture, and knowledge systems to sustainably manage our resources from generation to generation. Indigenous Women have a crucial role in our communities as we know where to find food and medicines " and how to collect and preserve them. Without us Women, the forest cannot be maintained , says Noraeri, who considers the forest as the community supermarket .







In Karen villages, like in many other Indigenous communities, knowledge and skills in natural resource management are traditionally held by Women.



In 2016, Noraeri initiated Ker Nue Mue, or Women's Forest, to create a space for Indigenous knowledge transmission, food production and supplementary income generation. The village's "natural forest classroom" encompasses an area of 9.6 hectares in which a variety of Indigenous tree and plant species used for herbal medicines, cloth dying, and food production have been introduced. Here, community members, especially young girls, can acquire knowledge and skills in natural resource management, traditionally held by Women.

Noraeri looks ahead with confidence:
"In the long run, the Indigenous Women's Forest will be the main source of our income, especially regarding the expected sales from bamboo products and our woven fabrics. Plants and seeds from the forest are also used for the traditional dyeing craftmanship" knowledge which has been passed on from generation to generation.

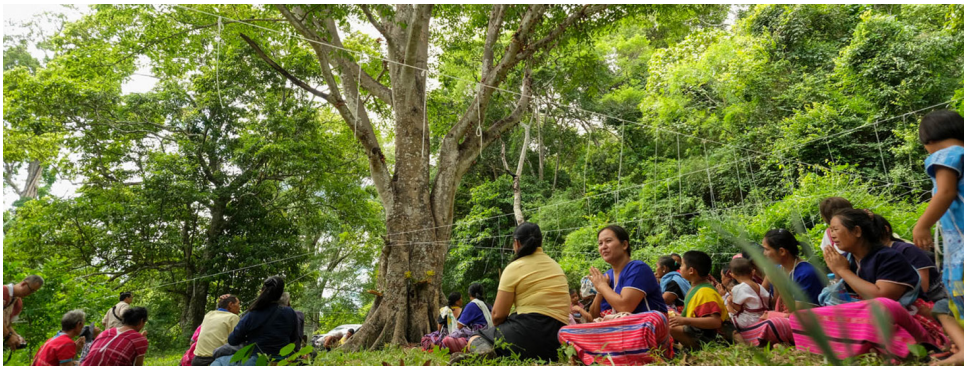






Trees have souls like humans

For Noraeri and the other Women of the village, the forest however represents much more than a source of knowledge, food, and income generation. We humans are just one element of nature and as such, we are deeply interconnected with the forest on a spiritual level. according to the Karen belief system, everything in nature, such as water, forests, and fire, has a spirit. Before engaging in any agricultural activity, the spirits need to be consulted to seek their permission , says Noraeri.



Huay Ee Khang villagers and neighbors from nearby villages in Chiang Mai, Thailand are participating in their traditional ritual to inform the guardian spirits before releasing fish into Mae Wan stream.



Srijan Sriauengdoi, who is the accountant of the village and a mentor of the youth group, concurs: "When I was younger, I saw the forest as a source of fresh air, filled with interesting animals and food. As I grew up, I had the chance to learn everything about its ecosystem and how to use it for rotational farming. Now that I am getting older, I often go to the forest to find peace. I feel there is something powerful and sacred there, something that words cannot describe."

"There is something powerful and sacred in the forest, something that words cannot describe" srijan sriauengdoi, huay ee khang village accountant



Sixty-two-year-old Saisuda Sriauengdoi is the village elder and holds all the knowledge relating to local seeds and herbal medicine. For her, trees have souls, like humans. “The forest means everything to us, above all happiness, food, and spiritual wellbeing. Without the forest, there would be no water. Without the water, there would be no farming. And without farming, there would be no life.”

Saisuda wishes to see Women and men equally respected and sharing roles and responsibilities in the village. “Until now, men have been relying on us to do the big part of the daily work. I would like our community to grow more united, with men and Women of all generations pulling together. This way, we can be a leading example for others.”



Mindsets take time to shift

Even in matrilineal Indigenous communities like the Karen, it is the men who are usually granted roles as leaders and representatives of their communities and who are expected to provide the main source of family income. “It takes time for mindsets to shift”, Noraeri says. “In our culture, female leadership is usually seen as a bad thing. Women cannot be leaders. If a woman becomes a leader, our people believe that bad things will happen, that there will be no rainfall, or the harvest will turn out poorly.”

Since 2019, Noraeri has proven the village wrong: “Men are still doubting my capacities, but I feel it is getting better. They have learned to respect me. After all, I have been elected by my people and I refuse taking on the role of serving and pleasing that is usually assigned to Women in our culture. I want to inspire other Indigenous Women and show them that we are powerful!”





Revival of old rituals

Customary rules regulate the hunting and harvesting of non-timber forest products (NTFPs) in Huay Ee Khang. “We tell our husbands and male community members not to collect forest products or hunt during breeding time. Pregnant animals cannot be hunted, and we are making sure that there is enough time for animals and plants to rest and restore”, Noraeri states.

“About ten years ago, outsiders came to our river and electrocuted fish in great numbers, almost wiping out all water creatures” Noraeri recalls. Since then, the community has undertaken several efforts to demarcate a fish sanctuary for about three kilometers along the Mae Wang waterway and developed regulations for the protection of underwater life. “In addition, we regularly practice a Karen ritual, Sue Thee Anee, to express gratitude and apologize to the water spirit as well as asking for blessings from the spirit.”.

The Women also make sure to integrate ancestral practices in the management of village’s natural resources. Apart from upholding forest conservation, they have revived ancestral practices of water management, based on Indigenous belief systems.





Sue Thee Anee is a Karen ritual to express gratitude to the water spirit.



Keeping the culture alive

When asked what she aspires to, Noraeri pauses and smiles: “I have already fulfilled my biggest dream by serving my village. We have done our best to keep our culture and identity. The only thing I am missing is the recognition by our government, to protect our Indigenous way of life and to determine our own future. All we want is to live our life in dignity and security.” Although Thailand adopted the United Nations Declaration on the Rights of Indigenous Peoples, it does not officially recognize the existence of Indigenous Peoples in the country.



Noraeri and the other Women fear that their ancestral rituals and practices may at some point be lost, since more and more young people move to the cities where they are detached from their identity and culture. “Our children are studying and working in the city, just to become the slaves for other people”, she deplores. “My only wish is to see our youth returning to the village. Here, we have all the resources available for them to be the true owners of their lives!”







Mrs. Keka Kloomtua



Mrs. Saisuda Sriauengdoi



Mr. Tarichi Pateewibul



Mrs. Kula Amornchartttiphan



Mrs. Saaey Rakyingprasert



Mrs. Prasom Thungmueangthong



Mrs. Ley Wasansookjai



Mr. Suhae Daorakyipfa



Mrs. Srijan Sriauengdoi



Mrs. Noraeri Thungmueangth

This photo story is part of a multimedia series showcasing the work and realities of Indigenous Peoples across Asia and illustrates aspects of the study. The rights, roles and contributions of Indigenous Peoples in NDCs: Experience from Asia undertaken by the Asia Indigenous Peoples Pact (AIPP) and the Forest Peoples Programme (FPP) over the past two years. The report was supported by UNDP, the UN-REDD Programme, the Development Cooperation Section of the Embassy of Sweden in Bangkok and the Swedish International Development Agency (SIDA) through Swedbio at the Stockholm Resilience Centre and looks at ways in which the promises made by governments under the first round of NDCs (Nationally Determined Contributions) have been translated into real strategies, policies, laws, and to what extent they include Indigenous People's rights to their land, forests, waters, and territorial management across Asia.

Roxana Auhagen Collaboration: Pirawan Wongnithisathaporn, AIPP and the community of Huay Ee Khang, Chiang Mai, Thailand. Translator : Jutaporn Panyakom
Photo: Lakpa Nuri Sherpa, AIPP and Nakarin Manaboon from the Indigenous Media Network (IMN). Layout: Phnom Thano
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Driving Community Development Through Cultural Preservation, Sustainable Practices, And Inclusive Leadership

By IWBN Team

Indigenous Women play a vital role in fostering community development across social, economic, and environmental dimensions. Their unique perspectives, cultural knowledge, and leadership qualities are instrumental in intertwining cultural preservation, sustainable resource management, economic empowerment, health promotion, education, and capacity building, all contributing to the continuous well-being of their communities.

At the core of Indigenous Women's contributions to community development is their unwavering dedication to preserving and revitalizing cultural heritage. As custodians of traditional knowledge, they pass down ancestral wisdom, languages, and practices to future generations. Despite ongoing social and environmental changes, Indigenous Women nurture resilience and cohesion among community members, fostering a sense of identity and pride through cultural ceremonies, storytelling, and community events.

Indigenous Women are key participants in community leadership and governance, often serving as matriarchs, elders, and advocates for Indigenous rights. Their leadership is marked by inclusive, consensus-building, and a commitment to collective welfare. They advocate for community-driven development initiatives and the recognition of Indigenous rights, bridging traditional governance structures with formal institutions.

Sustainable resource management is integral to Indigenous Women's stewardship of the environment. Their centuries-old experience and intimate knowledge of local ecosystems enable them to use traditional ecological practices to promote biodiversity conservation, water security, and food sovereignty. Through sustainable management of resources, including agro-forestry, seed saving, and land stewardship, Indigenous Women ensure the resilience and sustainability of community livelihoods.

Indigenous Women also lead economic empowerment initiatives that promote community development, providing pathways to financial independence and social mobility. Engaging in traditional livelihoods such as weaving, artisan crafts, bead work, and subsistence agriculture, as well as participating in modern sectors like small business ownership and social enterprise, they contribute to household incomes and community welfare. In response to the increasing demand for resources due to population

growth, Indigenous Women have adopted alternative livelihoods to reduce dependence on natural resources, ensuring that future generations can meet their needs. Access to financial resources, skills training, and market opportunities enables Indigenous Women to generate income, build assets, and improve their livelihoods, thus accelerating the achievement of sustainable development goals (SDGs).

Indigenous Women prioritize community health and well-being by serving as caregivers, healers, and advocates for health equity. They address health disparities and access barriers by offering culturally sensitive healthcare, traditional healing practices, and health education programs. Their holistic approach integrates physical, mental, emotional, and spiritual aspects of health, promoting wellness and resilience across generations.

Education and capacity-building initiatives led by Indigenous Women foster lifelong learning and intergenerational knowledge exchange within communities. As mentors, teachers, and role models, they inspire youth and other community members to pursue educational opportunities and fulfill their potential. These efforts focus on developing leadership skills, promoting cultural relevance in education, and strengthening community resilience in the face of social, economic, and environmental challenges.

The contributions of Indigenous Women to community development are dynamic and interconnected. Their roles encompass cultural preservation, sustainable resource management, economic empowerment, health promotion, education, and capacity building. Their leadership, wisdom, and commitment to collective well-being are essential to fostering resilience, sustainability, and prosperity within Indigenous communities. Recognizing and supporting the leadership of Indigenous Women is crucial to advancing inclusive and equitable development that respects Indigenous rights, values, and aspirations.

Valuing Indigenous knowledge, traditional economies, and the contributions of Women to household and community economies is key to promoting economic empowerment. By supporting initiatives that integrate traditional practices, cultural heritage, and modern technology, opportunities can be created for Indigenous Women to leverage their unique strengths and assets.

Economic empowerment is critical for advancing the rights, well-being, and agency of Indigenous Women. Addressing structural barriers and implementing targeted strategies to promote their economic participation and leadership can unlock the full potential of Indigenous Women as agents of change, drivers of sustainable development, and custodians of cultural heritage. Investing in the economic empowerment of Indigenous Women is not only a matter of social justice but also a strategic imperative for building inclusive, resilient, and equitable societies.

Economically, Indigenous Women play a key role in the agricultural, tourism, artisan crafts, and small-scale entrepreneurship sectors. Climate change has driven them to explore alternative sources of income to reduce over reliance on forest resources, which are dwindling due to population growth. Limited access to natural resources has prompted Indigenous Women to supplement subsistence farming with other income-generating activities. Additionally, as many men migrate to urban areas in search of income to support their families, Indigenous Women have taken on a larger share of the economic burden. Despite systemic barriers and inequalities, they have demonstrated resilience and innovation in generating income, building assets, and supporting their families' livelihoods.



Indigenous Women in Pokot undertaking land restoration activities through planting of trees ans aloe vera plants.

INDIGENOUS WOMEN ARE AT THE CENTER OF ECOSYSTEM RESTORATION AND FOOD SECURITY



Indigenous women are producers and processors of food in their communities. They use their innovation to ensure the availability and security of food for their families .



Kitchen gardens and tree planting provides food security and economic empowerment for Indigenous women.



Indigenous trees are vital for Indigenous Women because they provide food and medicine. They collect, preserve, exchange and plant Indigenous seeds in their homes and provide seedlings for re-forestation efforts



Indigenous women learn from each other the use of natural resouces such as the Aloe plant that has different uses such as medicine for both animals and people.



It is critical to involve our elders in different activities becasue they provide invaluable knowledge and information through Intergenerational knowledge exchanges.



Indigenous communities use and share their ancient knowledge in ecosyste restoration and reducing desertification by planting Indigenous trees and ground cover plants.

Custodians Of Biodiversity

By Lucy Mulenkei and IWBN Team

Indigenous Women across the globe have long been the silent stewards of biodiversity, quietly nurturing and protecting the natural world upon which their communities depend. Their profound connection to the land, inherited through generations of ancestral wisdom, imbues them with a unique understanding of ecosystems and the delicate balance of life within them. Despite facing numerous challenges, including gender inequality and systemic marginalization, Indigenous Women continue to play a pivotal role in conservation efforts, embodying resilience, wisdom, and unwavering dedication to safeguarding biodiversity for future generations.

At the heart of Indigenous Women's conservation efforts lies a rich variety of traditional knowledge passed down through oral traditions, rituals, and lived experiences. This knowledge encompasses a deep understanding of local ecosystems, seasonal cycles, and sustainable resource management practices. Through centuries of close interaction with the land, Indigenous Women have cultivated a profound respect for nature's intricacies, recognizing the interconnectedness of all living beings. This holistic worldview forms the foundation of their conservation ethos, guiding them in harmonizing human activities with the natural world.

In many Indigenous cultures, forests are not merely a collection of trees but sacred spaces teeming with life and spiritual significance. Indigenous Women, as the primary gatherers of forest resources, have a vested interest in preserving these vital ecosystems. Indigenous Women have been at the forefront of resistance against deforestation, logging, and extractive industries. Through grassroots activism, land stewardship initiatives, and legal advocacy, they have asserted their rights to ancestral territories and challenged destructive development projects that threaten biodiversity and Indigenous livelihoods. Indigenous Women's traditional knowledge extends beyond conservation theory to practical applications in sustainable agriculture, land management, and resource utilization. Through agro ecological farming methods, such as horticulture planting and crop rotation, they maintain diverse agricultural landscapes that enhance soil fertility and resilience to climate change. Moreover, their intimate knowledge of medicinal plants, wild edibles, and traditional food systems contributes to the preservation of biodiversity and cultural heritage. Embracing Indigenous practices, communities can achieve food sovereignty while safeguarding biodiversity hotspots and mitigating the adverse effects of industrial agriculture.

Indigenous Women across the globe have long been the silent stewards of biodiversity, nurturing and protecting the natural world upon which their communities depend. Their deep connection to the land, inherited through generations of ancestral wisdom, gives them a unique understanding of ecosystems and the delicate balance of life within them.

Despite numerous challenges, including gender inequality and systemic marginalization, Indigenous Women continue to play a pivotal role in conservation efforts, demonstrating resilience, wisdom, and unwavering dedication to safeguarding biodiversity for future generations.

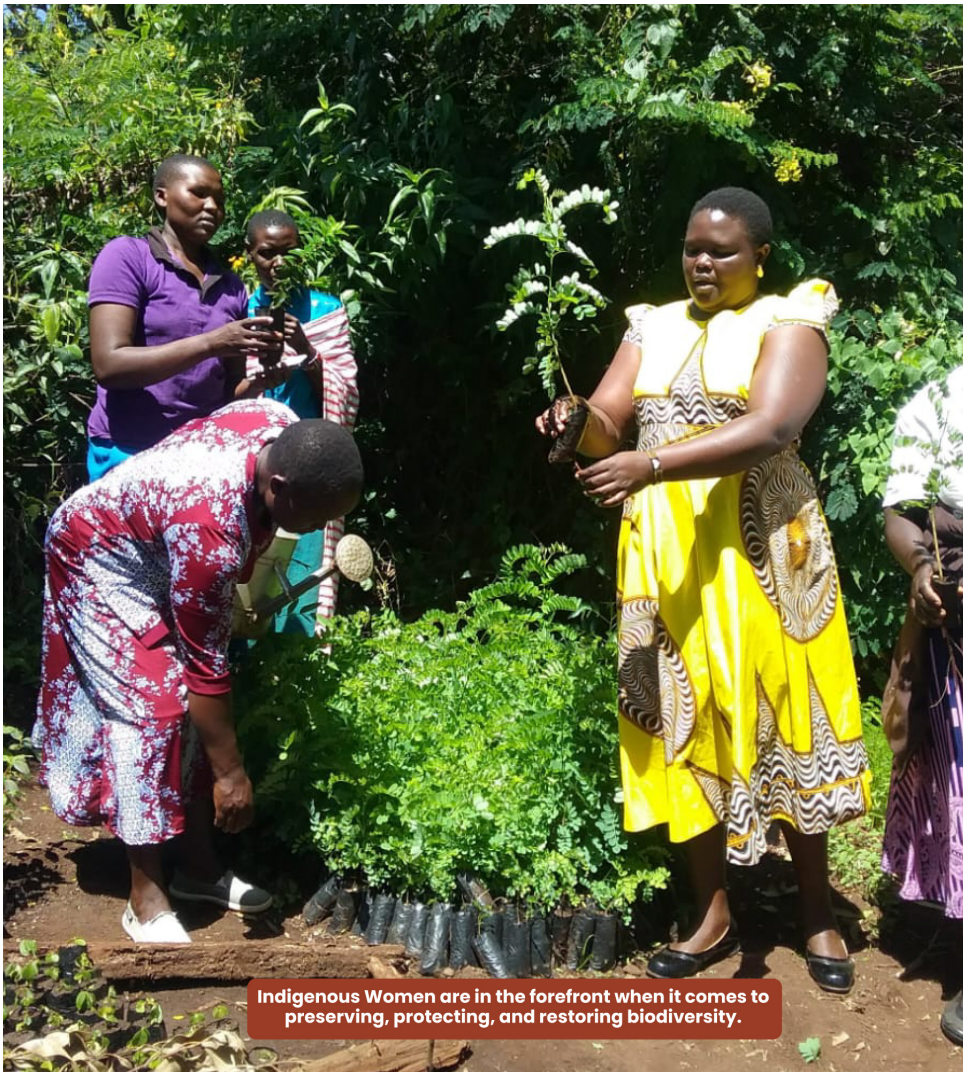
At the core of Indigenous Women's conservation efforts lies a rich repository of traditional knowledge, passed down through oral traditions, rituals, and lived experiences. This knowledge encompasses an intimate understanding of local ecosystems, seasonal cycles, and sustainable resource management practices. Through centuries of close interaction with the land, Indigenous Women have cultivated a profound respect for nature's intricacies, recognizing the interconnectedness of all living beings. This holistic worldview forms the foundation of their conservation ethos, guiding them in harmonizing human activities with the natural world.

In many Indigenous cultures, forests are not simply a collection of trees, but sacred spaces teeming with life and spiritual significance. As the primary gatherers of forest resources, Indigenous Women have a vested interest in preserving these vital ecosystems. They have been at the forefront of resisting deforestation, logging, and extractive industries, often through grassroots activism, land stewardship initiatives, and legal advocacy. By asserting their rights to ancestral territories and challenging destructive development projects, they work to protect biodiversity and sustain Indigenous livelihoods.

Indigenous Women's traditional knowledge extends beyond conservation theory to practical applications in sustainable agriculture, land management, and resource utilization. Through agroecological farming methods such as horticulture planting and crop rotation, they maintain diverse agricultural landscapes that enhance soil fertility and resilience to climate change. Their expertise in medicinal plants, wild edibles, and traditional food systems also contributes to the preservation of both biodiversity and cultural heritage. By embracing Indigenous practices, communities can achieve food sovereignty while protecting biodiversity hotspots and mitigating the harmful effects of industrial agriculture.

Despite their invaluable contributions, Indigenous Women face intersecting forms of discrimination and marginalization, often hindering their participation in decision-making processes and limiting their access to resources. Gender-based violence, limited educational opportunities, and land tenure insecurity are among the barriers they confront in their conservation efforts. However, their resilience and collective strength have propelled them to the forefront of environmental movements, where they continue to demand recognition of their rights, knowledge, and leadership. Through grassroots organizing, alliances with supporters, and advocacy at international forums, Indigenous Women amplify their voices and assert their indispensable role in biodiversity conservation.

Indigenous Women stand as beacons of hope in the struggle to preserve Earth's biodiversity amid unprecedented environmental challenges. Their intimate connection to the land, rooted in centuries of Indigenous wisdom, offers invaluable insights into sustainable living and holistic conservation practices. As we face the existential threats of biodiversity loss and climate change, it is imperative to listen to the voices of Indigenous Women, honor their knowledge, empower their communities, and forge partnerships based on mutual respect and solidarity.



Indigenous Women are in the forefront when it comes to preserving, protecting, and restoring biodiversity.

Preservation and Transmission of Traditional Knowledge

By Lucy Mulenkei and IWBN Team

Indigenous Women stand as pillars of wisdom within their communities, safeguarding centuries-old traditions, ecological knowledge, and cultural practices. Their essential role in preserving and transmitting traditional knowledge is vital to the resilience and continuity of Indigenous Peoples worldwide. This essay explores the multifaceted contributions of Indigenous Women in protecting traditional knowledge, highlighting their roles as cultural custodians, environmental stewards, and agents of cultural revitalization.

At the heart of Indigenous societies, Women play a central role in preserving and passing on cultural traditions. Through oral storytelling, ceremonial practices, and daily interactions, they convey invaluable knowledge about language, spirituality, and community values to future generations. From the craft of creating traditional textiles to the intricate rhythms of ancestral songs and dances, Indigenous Women act as living repositories of cultural heritage, ensuring that their rich traditions endure in a rapidly evolving world.

Indigenous Women also possess deep ecological knowledge, cultivated through generations of close interaction with their environments. Their intimate understanding of plants, animals, and natural cycles enables them to play a crucial role in sustainable resource management and biodiversity conservation. Whether through sustainable agriculture practices, the medicinal use of local plants, or the preservation of sacred sites, Indigenous Women's ecological wisdom provides a blueprint for harmonious coexistence with the natural world.

In the face of colonialism, cultural assimilation, and environmental degradation, Indigenous Women have emerged as agents of cultural revitalization and resistance. Through grassroots movements, language revitalization efforts, and intergenerational learning initiatives, they reclaim and revitalize traditional knowledge systems, reinforcing the resilience and strength of Indigenous cultures. From preserving languages to reviving traditional crafts and asserting Indigenous rights, Women are pivotal in reclaiming cultural autonomy and self-determination for their communities.

Despite their invaluable contributions, Indigenous Women often face intersecting forms of discrimination, marginalization, and violence. Colonial legacies, such as the erosion of traditional territories and the suppression of Indigenous languages and cultural practices, continue to threaten the preservation of traditional knowledge. However, the resilience, determination, and collective action of Indigenous Women have sparked transformative change, challenging oppressive systems and creating spaces where Indigenous knowledge can thrive.

Indigenous Women's role as custodians of traditional knowledge is not a relic of the past but a living, dynamic force that shapes the cultural, ecological, and spiritual fabric of Indigenous societies. Their resilience, wisdom, and leadership serve as beacons of hope in the struggle for cultural autonomy, environmental justice, and social equity. As we strive to build a more inclusive and sustainable world, it is essential to recognize and honor the invaluable contributions of Indigenous Women as the resilient guardians of traditional knowledge, ensuring its preservation and transmission for generations to come.



Indigenous Women are critical knowledge holders and play a vital role in the transmission and preservation of traditional knowledge.

Revitalization Of Knowledge of Moon and Lunar Cycles Among Indigenous Women

By Julia Hochwald (from the Matrekhin clan, Sami Indigenous)

Solar and lunar cycles have always played a major role for the Indigenous people Sami, who are traditionally closely connected to Mother Earth. In the Arctic parts of Norway, Sweden, Finland and Russia, there are still Sami who practice communion with the forces of nature and live according to nature's cycles, honoring ancestors, healing the human soul, strengthening the spirits of the area to protect the region, and much more.
The whole Murmansk SÃ¡mi calendar depends on the sun and the moon in one way or another, and it differs from others in that it has 13 months in a year. The Moon in Sami mythology is a Woman who has a daughter - which shows intergeneration connection. The moon and lunar cycles have always been associated with Women, childbirth, rebirth of life, renewal of Nature, Biodiversity and Mother Earth. The traditional calendar for gathering medicinal plants, medical prescriptions, and treatments - for both humans and animals - also depend largely on the phases of the moon.

The Sami believe that by living a life honoring their family traditions and their clan,celebrating together with nature the solar days of the wheel of the year, then the strength and wisdom of the person will grow, then he will be protected and guided along the most favorable threads of fate. That is why more and more Sami Women are now engaged in the work of renaissance knowledge and ceremonies related to lunar cycles and the energy of renaissance.

"My mother taught me sewing, skinning, beadwork and purification rituals from childhood. Women do the processing of reindeer hides. With the help of reindeer veins, which replace threads, they sew winter and summer clothes made of reindeer skins, ounts, torbazas made of reindeer camus (paws), hats, mittens. The outfit is usually decorated with geometric ornaments made of strips of light and dark reindeer fur. A traditional amulet is "Rosette '' (round) made of leather, fur and beads. It can be seen on the national costumes of the Indigenous Peoples. The dwelling (yaranga or chum) is a prefabricated wooden frame (mobile frame) covered with reindeer skins and rovduga (reindeer skin) it used to be, now it can be covered with tarpaulin. A rite of domestic character, practiced by the Evene during migrations from one location to another - It is a whole complex of actions consisting of several stages, it is performed during ceremonial events. The rite of cleansing with smoke (rosemary plants, juniper, etc.) can be different, i.e. from the situation. In this case, where the photo (events) is a purification of well-being in general" Galina Nenets Indigenous woman

Nenets live in harmony with the nature of the far North and the Arctic, they appreciate every moment and element of life that surrounds them. They teach that the main thing is not material monetary achievements, but the spiritual wealth that Mother Nature provides.



Pictures showing Traditional practices of Nenets (Above) and Sami Indigenous (below) Women of Russia



INDIGENOUS WOMEN FROM RUSSIA SHARING THEIR KNOWLEDGE AND TRADITIONS ON SUSTAINABLE USE OF THEIR NATURAL RESOURCES





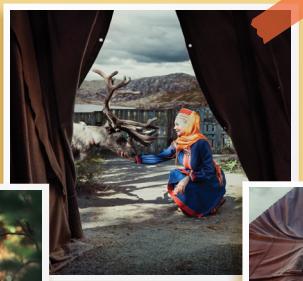


This is the last generation of women of Achaivayam village, who lived and were brought up by their mothers traditionally in the tundra herding reindeer. They have no one to pass on their experience, their skills, their knowledge of how they sew and put up a tent

"My mother taught me sewing, skinning, beadwork and purification rituals from childhood."

Women do the processing of reindeer hides. With the help of reindeer veins, which replace threads, they sew winter and summer clothes made of reindeer skins, ounts, torbazas made of reindeer camus (paws), hats, mittens









Indigenous Women And Land Tenures Rights

By IWBN Team

The survival, development, identity, and self-determination of Indigenous Women are closely tied to the recognition of their rights to their territories and natural resources. Indigenous Women depend on their ecosystems in performing their gender roles, and they suffer greatly from the destruction of forests and limited access to, and control over, land and other resources.

Governments have established legal frameworks that interfere with traditional tenure systems and Indigenous institutions, which Indigenous Women have historically used to govern and manage their natural resources. These interventions have led to distrust of government projects and initiatives, as they deprive Indigenous Women of their rights to manage and benefit from forest resources. The nationalization of forests, which institutionalizes state control over forest resources, poses additional threats. This approach has created contradictions in resource management, and in extreme cases, Indigenous Women are denied access to forests or granted only limited access, leading to mismanagement and the neglect of traditional conservation practices. The cumulative impacts of industrial logging and aggressive conservation projects have further eroded the traditional way of life, including hunting and gathering, that has been sustained through generations.

Customary laws governing land ownership among Indigenous Women often discourage land rights for Women, as most land is controlled by men. Many Indigenous Women do not assert their legal right to their husband's property, either due to a lack of knowledge or understanding of how to claim what is rightfully theirs. Additionally, property inheritance rules for Indigenous Women are often fragile, temporary, and imperfect. Cultural practices and socialization processes have perpetuated gender inequalities in land ownership, further marginalizing Indigenous Women.

The Indigenous Women's Biodiversity Network (IWBN) has undertaken significant initiatives to address these challenges related to land ownership, resource management, and the preservation of Indigenous Women's cultural identity and roles. One of IWBN's core activities is amplifying the voices of Indigenous Women in international forums. By ensuring their active participation in major biodiversity discussions, such as the Convention on Biological Diversity (CBD) Conference of Parties (COP) meetings, the IWBN brings attention to the unique challenges Indigenous Women face and highlights their invaluable contributions to biodiversity conservation.

This advocacy ensures that the perspectives of Indigenous Women are integrated into global conservation policies and strategies, making them more inclusive and reflective of their needs and knowledge. To counter the destruction of forests and limited access to land, the IWBN facilitates the sharing of traditional knowledge, experiences, and best practices among Indigenous Women worldwide. These exchanges are enabled through visits, allowing Indigenous Women to learn from one another and strengthen their collective capacity to manage natural resources sustainably. The network's commitment to regional representation ensures that the distinct challenges and priorities of Indigenous Women from Africa, Asia, the Arctic, North and Latin America, the Pacific, and Russia are heard and addressed.

In addition, the IWBN provides leadership training and promotes gender equality, empowering Indigenous Women to participate actively in biodiversity conservation and policy-making processes. By equipping them with essential skills and resources, the IWBN helps Indigenous Women become influential advocates for sustainable resource management within their communities, countering the negative impacts of nationalization and industrial logging on their traditional ways of life.

The IWBN also engages with policy processes to ensure Indigenous Women's voices are heard in the development of biodiversity policies. This involvement is critical for securing legal recognition of their rights and promoting policies that support sustainable and equitable resource management. By advocating for the recognition of Indigenous land tenure systems, the IWBN works to protect the land rights of Indigenous Women and oppose policies that restrict their access to land and resources. This advocacy helps safeguard their traditional ways of life and ensures that they can continue to manage and benefit from their natural resources effectively.

The IWBN addresses gender inequalities perpetuated by customary laws and social practices that discourage land ownership rights for Women. By raising awareness about these issues and providing education on legal rights, the network empowers Indigenous Women to assert their rights to land ownership and inheritance. This empowerment is crucial for breaking the cycle of gender inequality and ensuring that Indigenous Women can fully participate in and benefit from the management of their natural resource.



Kaqchikel Mayan Women are the pillars in the conservation and transmission of ancestral traditional knowledge



Ceremonia Maya de inicio de ciclo del calendario maya Cholq'ij, donde piden al Creador y Formador por un año de paz, abundancia y sabiduría



guardians and transmitters of knowledge for forest management, food production and preparation, and their own medicine



Mujeres Mayas Kaqchikel cultivan plantas medicinales haciendo uso de sus conocimientos tradicionales y generando la economía comunitaria



The Kaqchikel Mayan women from Patzún, Chimaltenango in Guatemala are developing a process of transmitting knowledge to new generations in their own indigenous languages



Young indigenous women from Patzun, Chimaltenango are developing a process of exchange of experiences and knowledge with elderly women, to develop an inventory of medicinal plants and other species that are essential for health and spirituality from the Kaqchikel Mayan language.



Indigenous Children learn that mother earth and the universe are a whole that interact in balance and harmony, this knowledge is preserved in the language and can be lost when the language is lost



Indigenous Women and Education

Indigenous Women traditional knowledge, values and practices collectively build on fostering community resilience for both present and future generations. They achieve this through intergenerational transference of their knowledge orally which involves people listening, observing and communicating with others. They facilitate education at the most basic human level which is an infant until adulthood. They tutor their young in their native languages, pass on the moral codes of society and advice on the nutritional uptake of healthy foods. They also are richly endowed with factual stories on historical events which cannot be compared to reading from the books.

Indigenous Women have great skills in weather prediction that they have acquired over the years by closely monitoring their farmlands. Their daily encounters with ecosystems to ensure food production equips them with knowledge in change of flowering seasons of plant species and migration of various bird species which inform the upcoming weather patterns. Further, this knowledge determines the type of seeds they use for the planting seasons to ensure viability and food production security. Overall, Indigenous Women use biodiversity indicators to foretell weather conditions.

Indigenous Women have a rich knowledge regarding the diverse medicinal resources found in the forests. Their gender roles require them to regularly access the forests and their natural resources. They are well informed on the collection methods, processing and use of the medicinal herbs and plants. Indigenous Women make a conscious effort in ensuring that this knowledge is passed on to the younger members of their community. Also, due to their direct dependence on forests, they take their children with them to the forests to educate them on wild fruits and various conservation techniques.
Tourism also provides Indigenous Women with a platform to educate both local and international tourists about their cultural and religious beliefs, practices, and values. The

Indigenous Women host their guests in their households where they are oriented on their daily mode of life. Those inclined to scientific research visit the forests under the guidance of the Indigenous Women who help them explore Indigenous species and the biodiversity within their ecosystems thus integration of modern science with traditional knowledge.

Challenges Faced By Indigenous Girls In Accessing Education: A Case Study Of The Pokot Community In Kenya

Extracts from a Case Study by Daisy Chepkopus, supported by FIMI

Indigenous Pokot girls in Kenya face a complex interplay of cultural, economic, and systemic barriers that significantly hinder their access to education. These challenges are deeply rooted in traditional norms, economic hardships, and inadequate policy implementation, creating a cycle of inequity that limits their potential and stifles community growth.

Cultural norms within the Pokot community often prioritize early marriages and household duties over formal education for girls. From a young age, they are tasked with responsibilities such as childcare, cooking, and fetching water, leaving little time or energy for their education. This gendered division of labor perpetuates inequality, as boys are typically given priority when educational resources are limited. Moreover, education systems often operate in languages that are unfamiliar to Pokot girls, making it difficult for them to engage in class and perform academically. The lack of culturally appropriate curricula further alienates them, eroding their sense of identity and connection to their education.

Economic challenges compound these cultural obstacles. Many families in the Pokot community live in poverty and struggle to afford the direct costs of education, such as school fees, uniforms, and supplies. When faced with limited resources, families often deprioritize girls' education in favor of immediate household needs like food and shelter. Girls are also seen as valuable contributors to the household economy, performing essential tasks such as farming, herding, and caring for younger siblings. These opportunity costs discourage families from sending girls to school, reducing their chances of academic success.

Geographic isolation exacerbates the difficulties Pokot girls face. Many villages are located far from schools, requiring girls to travel long distances, which exposes them to risks of harassment and physical harm. The lack of infrastructure in these areas not only limits access to education but also amplifies the challenges of daily life. Without nearby schools, the logistical and safety concerns of traveling discourage families from allowing their daughters to pursue education.

Systemic and policy-related issues further hinder the educational opportunities for Pokot girls. National policies often fail to consider the unique cultural and socioeconomic realities of marginalized communities like the Pokot. Laws designed to protect girls' rights and promote education are poorly enforced, leaving harmful practices such as

early marriages unaddressed. Additionally, the lack of community involvement in policymaking results in strategies that are neither effective nor contextually relevant. This disconnect between governance and local realities undermines efforts to improve educational access and outcomes. Efforts to protect cultural heritage can sometimes inadvertently devalue formal education, creating internal conflicts for girls between their desire for education and their cultural responsibilities. Without sufficient support from their communities or educational institutions, girls often feel pressured to choose cultural conformity over academic aspirations.

Addressing these challenges requires a multifaceted and long-term approach. Building schools closer to remote villages and improving transportation systems can reduce the distance and risks associated with accessing education. Culturally inclusive curricula that integrate Indigenous knowledge and values can make education more relevant and meaningful for Pokot girls. Financial support in the form of scholarships, free school supplies, and other targeted interventions can help alleviate the economic burden on families. Establishing boarding facilities for girls can provide a safe and supportive environment where they can focus on their studies.

Community involvement is crucial to the success of these initiatives. Engaging parents, local leaders, and girls themselves in the design and implementation of policies can ensure that solutions are both culturally sensitive and practical. Strengthening the enforcement of laws protecting girls' rights and tailoring national policies to reflect local realities are essential steps in bridging the gap between governance and community needs.
The challenges faced by Pokot girls in accessing education are deeply interconnected, requiring comprehensive and coordinated efforts to address them. By investing in education and creating an environment that supports girls' aspirations, we can break the cycle of poverty, foster gender equity, and empower communities to thrive. Holistic solutions that integrate infrastructure development, policy reforms, financial assistance, and cultural engagement are vital to ensuring that Pokot girls can access education, realize their potential, and contribute to the resilience and progress of their community.
Put the Recommendations in bullet points.

Recommendations

To tackle the obstacles that Pokot Indigenous girls face in accessing education, the following recommendations are put forth:

- Create Policies for Inclusive Education: Governments should develop and implement policies tailored to the educational needs of Indigenous girls, ensuring the preservation and advancement of their rights. Families should be encouraged to support their daughters' education through financial aid, scholarships, and other incentives.

- Boost the Infrastructure of Education: Invest in the construction and maintenance of schools in Pokot villages to make them accessible, secure, and well-equipped

with essentials such as textbooks, technology, and restrooms. Provide transportation services to ease the journey for girls who live far from schools.

- Remove Financial Obstacles: Introduce financial assistance initiatives for households to alleviate the economic burdens that often compel girls to drop out of school. Conditional monetary payments to families that keep their daughters in school can further incentivize education over early marriage or child labor.

- Promote Cultural Sensitivity and Community Engagement: Collaborate with the

  Pokot community to highlight the importance of girls' education while respecting and integrating Indigenous knowledge and cultural practices. Involve community leaders and elders in advocating for girls' education and addressing cultural norms tha hinder educational opportunities.



Indigenous girls face multiple barriers that hinder their access to education and comprehensive and coordinated efforts are required to ensure they are able to access quality education

Climate Change Mitigation and Adaptation

By Phiphian Jeptoo

In the global fight against climate change, Indigenous Women stand as key actors, leveraging their traditional knowledge, leadership, and resilience to mitigate and adapt to the impacts of environmental degradation. Their roles encompass a wide array of activities, from preserving biodiversity to advocating for climate justice. This essay examines the indispensable contributions of Indigenous Women to climate change mitigation and adaptation efforts, highlighting their unique perspectives and approaches. Indigenous Women serve as custodians of biodiversity, drawing upon their deep understanding of local ecosystems and traditional practices. Through sustainable land management techniques such as agroforestry, rotational grazing, and seed saving, they promote biodiversity conservation and ecosystem resilience. Preserving native species, protecting natural habitats, and restoring degraded lands, Indigenous Women mitigate climate change by enhancing carbon sequestration and maintaining ecosystem services vital for human well- being. At the core of Indigenous Women's contributions to climate change mitigation and adaptation lies traditional knowledge, passed down through generations. This wealth of wisdom encompasses sustainable resource management practices, weather forecasting techniques, and Indigenous technologies adapted to local environmental conditions. Indigenous Women integrate traditional knowledge with scientific approaches, offering holistic solutions that address the interconnected social, ecological, and cultural dimensions of climate change. Indigenous Women play central roles as community leaders, organizers, and educators in climate change mitigation and adaptation efforts. Through grassroots initiatives, Women-led organizations, and community-based projects, they empower their communities to take action against climate change. Building local resilience, fostering climate-smart practices, and advocating for the rights of Indigenous Peoples, they ensure that communities are better equipped to withstand the impacts of climate change and contribute to global climate solutions. Indigenous Women are powerful advocates for climate justice, raising awareness about the disproportionate impacts of climate change on Indigenous communities and marginalized groups.

They challenge extractive industries, destructive development projects, and policies that undermine Indigenous rights and exacerbate environmental degradation. Through political activism, legal advocacy, and participation in international climate negotiations, Indigenous Women demand recognition of Indigenous rights, traditional knowledge, and self- determination in climate action agendas. In the face of climate change, Indigenous Women demonstrate remarkable resilience, drawing upon cultural traditions, spiritualpractices, and community solidarity to adapt to changing environmental conditions. Preserving cultural identities, languages, and traditional ways of life, they strengthen community cohesion and adaptive capacity. Indigenous Women's holistic approach to adaptation integrates cultural values, social networks, and environmental stewardship, offering lessons in resilience that are invaluable in the face of uncertainty and change.

Indigenous Women play pivotal roles in climate change mitigation and adaptation efforts, leveraging their traditional knowledge, community leadership, and advocacy for climate justice. Their contributions are essential for building climate-resilient communities, protecting biodiversity, and promoting sustainable development pathways that prioritize environmental integrity and social equity. As we confront the challenges of climate change, let us recognize and support the invaluable role of Indigenous Women as agents of change, guardians of biodiversity, and stewards of cultural resilience for future generations.

In the global efforts to combat climate change, the voices and experiences of Indigenous Women are essential, as they bring unique perspectives and solutions to the negotiation table. Beyond being frontline communities most affected by climate change, Indigenous Women possess traditional knowledge, resilience, and a deep understanding of the interconnectedness between humans and the environment. This essay delves into the critical role of Indigenous Women in negotiating climate change mitigation and adaptation strategies, highlighting their participation, expertise, and advocacy for environmental justice. Indigenous Women actively engage in climate negotiations at various levels, from local and national forums to international platforms such as the United Nations Framework Convention on Climate Change (UNFCCC) conferences. As representatives of their communities, they advocate for the inclusion of Indigenous perspectives, concerns, and solutions in climate policies and agreements. Through lobbying and diplomatic efforts, Indigenous Women push for the recognition of Indigenous rights, the protection of traditional territories, and the implementation of community-led adaptation and mitigation strategies.

At the heart of Indigenous Women's participation in climate negotiations lies the pursuit of justice for Indigenous Peoples and the protection of their rights. They advocate for the recognition of Indigenous land tenure systems, the right to free, prior, and informed consent (FPIC) in decision-making processes, and the safeguarding of cultural heritage and traditional knowledge. Raising awareness about the disproportionate impacts of climate change on Indigenous communities, they urge policymakers to prioritize Indigenous rights and support Indigenous-led climate solutions that respect sovereignty, self-determination, and cultural integrity. Indigenous Women bring invaluable traditional knowledge to climate negotiations, offering insights into sustainable land management practices, ecosystem- based adaptation strategies, and Indigenous technologies for resilience-building. Their expertise in natural resource management, biodiversity conservation, and climate-smart agriculture enriches discussions on climate change mitigation and adaptation,providing context-specific solutions that are rooted in cultural values and local ecosystems. By bridging the gap between science and traditional knowledge systems, Indigenous Women promote more holistic and effective approaches to climate action. Indigenous Women advocate for gender-responsive climate policies that recognize and address the unique vulnerabilities and capacities of Women in climate-affected communities.

Guardians Of Forest Ecosystems And Catalysts For Sustainable Practices

By The International Alliance of Indigenous and Tribal Peoples of the Tropical Forests Team

Environmentally, Indigenous Women have lived through the era of climate change and can narrate in detail the physical observations they have made over the years in regards to their daily activities and life experiences that are heavily reliant on the fragile ecosystems. They have pioneered transference of traditional practices aimed at protecting and sustaining forest ecosystems from one generation to another. Forests are a resource base governed by traditional knowledge and values that are deeply embedded in culture and spirituality. Indigenous Women influence the accessibility and consumption of the available natural resources within the forest ecosystems. Indigenous Women are governed by existing structures in their communities thus there exist elaborate roles on how they apply their traditional knowledge in effectively managing forest ecosystems. Their customary laws also require them to equitably share the available natural resources in the forest ecosystems failure to which there are repercussions outlined to the transgressor. The Indigenous woman is socially dependent on roles that have been ascribed to her depending on her rights and responsibilities delineated to particular forest areas and the available natural resources in that site. This is well illustrated in forest sections where Indigenous Women collect firewood or fetch water from springs, streams and wetlands within the forest ecosystems.

Indigenous Women have a symbiotic relationship with the forest ecosystems. The forest ecosystems provision services in the context of cultural services, food services, supporting services and regulating services. The regulating services include control of diseases and floods, water and air purification whilst supporting services involve soil formation and recycling of nutrients. As for the cultural services offered by forests, they are learning, recreational and spiritual centers whereas as for the food services, they provide water, nutritional elements and fuel for the Indigenous woman.

The forests reinforce traditional and religious practices of the Women who dwell in or adjacent to them. Ceremonial practices such as passage of rites which influence their value, belief and cultural systems are held within the forests. Other areas are set aside as shrines for spiritual purposes which illustrates their intimate interactions with nature. The forests are also a source of their livelihood and thus the Indigenous woman is heavily invested in forest conservation measures for the benefit of her kin. This contributes to an Indigenous woman having the least ecological footprint.

Indigenous Women identify with forest ecosystems as dwelling units or primary sources of their livelihoods. However, with the onset of climate change over the past years the livelihood of Indigenous Women is under threat which has been exacerbated by policy frameworks which lack a comprehensive understanding of an Indigenous woman. Privatization of forest land, introduction of state laws, exclusive forest conservation initiatives and profit oriented development schemes has led to limited control, use and accessibility to various sites that provide Indigenous Women with natural resources rendering them prone to poverty. Some Indigenous Women have entirely relocated to urban areas to fend for their families. As a result, norms, values and knowledge integrated in traditional structures to enforce appropriate forest management practices by the Indigenous woman have been compromised.

Climate change has resulted in a significant decrease in food production because of the erratic rainfall that interrupts the agricultural cycles. Under the duress of climate change, the Indigenous woman has succumbed to use of alternative seeds that are more adaptable to the ever-changing weather patterns so as to obtain produce at the subsistence level. This has led to the erosion of traditional knowledge of native seeds and their preservation in preference to the high yielding modified seeds which are being massively recommended especially because they require less water for growth. Deforestation, which was facilitated by a shift from a subsistence economy to a cash economy, has also been a great contributing factor to the unpredictable weather patterns. Indigenous Women forest management values inform practices such as afforestation and re- afforestation of Indigenous species for the holistic continuity of communal life. However, in the face of privatization of forests which encourage deforestation has led to loss of Indigenous tree species hence prioritizing fast-growing trees for economic purposes while curtailing the rights of Indigenous Women from natural resources. This has increased the Indigenous Women's vulnerability to climate change impacts especially because they do not have resources needed to adapt to prolonged periods of drought and floods that strike their homes.

Climate change has also influenced the capacity of engagement of Indigenous Women in conservation efforts. Previously, Indigenous Women had been marginalized from discussions and initiatives geared towards environmental conservation due to the patriarchal systems that govern their way of life. Moreover, decision making was not a role assigned to Indigenous Women in their households. However, with the migration of most men to urban areas to optimize provision for their families and research which has provided crucial evidence in relation to Indigenous Women and success rates in conservation initiatives they have been enrolled in, has empowered them as conservation advocates.

Indigenous Women have become more active in participating in forest conservation forums and asserting their rights for their views to be taken into consideration without disruption of the existing community structure. Strict guidelines are usually stipulated from the onset of these initiatives with the approval of village elders enabling the Indigenous

Women to fully participate in formulating, planning and implementing forest policies. In Kenya, the Wangari Maathai green belt movement works with Indigenous Women in the villages to promote planting of trees. This has led to the initiation of tree planting projects in the villages with Indigenous Women being in the forefront of engagements on how to roll out such programmes. Such partnerships have led to incentives that promote social amenities of their localities such as boreholes.

Climate change has resulted in the loss of valuable water sources that are an integral to the maintenance of ecological balance as well as the survival of the Indigenous Women communities. Streams, rivers and wetlands have completely dried up or are on the verge of drying up thus increasing the vulnerability of Indigenous Women due to the exceedingly long and hot dry seasons. In some cases, Indigenous Women have interpreted the significant reduction of the volume of water in their springs, streams, rivers and wetlands as a sign of wrath from their creator hence blaming themselves considering the fact, they are tasked with the role of fetching water for household consumption and protecting their water sources.

Harnessing traditional knowledge and innovative practices for ecosystem sustainability and food security

Indigenous Women play a vital role in adapting climate change mitigation measures due to their high dependency on the ecosystems in their performance of their productive and reproductive roles. They have a unique way of interacting with the ecosystems that enables them to seek nature-based solutions especially whereby food production is at risk. Indigenous Women are able to pick on very subtle indicators within their environment that would not be easy to detect thus through their family networks, they discuss various mitigation measures which promote the sustainable use of natural resources while protecting the integrity of the ecosystems to ensure continuity of their communities. Indigenous Women manage the energy source for their household. Firewood has been the main source of fuel for cooking purposes which they collect from the forests. Over the years, Indigenous Women have started using improved wood burning stoves which need less firewood and produce less smoke. They also improve the Indigenous Women's health, reduce their daily workload and contribute to sustainable management of forests.

Over the years, Indigenous Women have started using improved wood burning stoves which need less firewood and produce less smoke. They also improve the Indigenous Women's health, reduce their daily workload and contribute to sustainable management of forests. Alternative sources of fuel also enable Indigenous Women to eradicate air pollution at a household level while protecting the health of the young girls and Indigenous aged Women from the smoke emanating from the burning firewood. Indigenous Women have been establishing self-help organizations amongst themselves which represent them in climate change discussions and mitigation actions that directly impact their lives.

This is enhancing Indigenous Women's adaptive capacity to climate change through alternative agricultural practices and livelihoods. Further, the self-help organizations are actively advocating for the participation of Indigenous Women in planning and making decisions on community forestry programmes.

Indigenous Women are also providing local governments with native seeds for reforestation purposes with the aim of restoring biodiversity. Indigenous Women through their self-help organizations own tree nurseries and seedlings to facilitate tree planting projects. Indigenous Women possess geographical information on the location of watersheds. Planting trees around the watersheds has been a key aspect in mitigating climate change and protecting the water sources of Indigenous Women. Indigenous Women have also adopted the use of commercially improved seeds to boost their food production capacity. They are now planting crops which require less water and grow over a short period of time. Establishment of community defined forest rules and regulations, which are implemented and monitored by Indigenous Women has resulted in the decline of deforestation practices while promoting principles of diversity, respect and sustainability of our forests to curb climate change. Indigenous Women are also vigilant in monitoring, reporting and preventing illegal activities within the forests so as to protect their communal heritage from adverse climatic conditions.

Indigenous Women have also adapted climate smart agricultural practices which aim at achieving sustainable agricultural development for food and nutrition security under a changing climate. These practices include; Agroforestry which involves planting of trees together with crops on the farm. The trees reduce runoff of erosion, enhance soil fertility, aid in sequestering carbon, provision fruit, fodder, fuel, shade and act as wind breakers. No -till or minimum tillage advocates for tilling up the soil only where the seeds are supposed to germinate thus minimum disturbance to the soil facilitating a component of conservation agriculture. Practicing conservation agriculture which aims in maintaining a permanent organic soil cover from cover crops, inter crops and organic residues which enable control of the water retention capacity of the soils. Diversifying crop rotation is another aspect of conservation agriculture.Use of cover crops that ensure the fields are covered by vegetation that protects soil from eroding between crop production cycles. Some cover crops also improve fertility of the soils and eradicate pests. Crop residue mulching which involves leaving crop material on the field after harvesting to improve soil texture, prevent erosion and encourage water filtration. Planting stress tolerant crops adapted to drought, floods, salinity and pests. Construction of terraces that slow runoff water on sloped land and increase water absorption. Investing in small scale rainwater harvesting systems and water recycling systems that enable year-round vegetable cultivation.

Indigenous Women are guardians and transmitters of their traditional practices and cultural expressions



Loom weaving is a traditional craft passed on through generations of indigenous women in the Cordillera.



Honey collection by indigenous women home gardeners in Baguio City



Traditional tattooing is a cultural expression among the indigenous peoples of the Cordillera. It has also become a source of livelihood for tattoo artists in Baguio City.



Making footrugs out of scrap cloth is a way of earning a living, while sustaining indigenous values of wasting nothing and making the most out of available resources.



A pleasure to meet Indigenous women from Darwin during the the UN Ecosystem Restoration in September 26-30, 2023, Darwin, Australia

Antigua Barbuda Horticultural Society

By Ruth Spenser

The Antigua Barbuda Horticultural Society (AHS) is committed to advancing the art and science of gardening with a focus on biodiversity protection and conservation. Through local knowledge systems, the AHS promotes resilience and sustainability in horticultural practices. Horticulture, broadly defined, involves the cultivation of plants for food, medicine, beverages, and beauty, while also preserving the environment. More precisely, it encompasses the cultivation, processing, and sale of ornamental plants, flowers, vegetables, and fruits, as well as plant conservation, landscape restoration, soil management, garden design, and plant propagation.

AHS's community seed bank exemplifies its vision of conserving local biodiversity. The cultivation, processing, and sale of plants and seeds contribute to landscape restoration and environmental sustainability. The seed bank conserves native seeds that have adapted to local soil, drought, and heat conditions, reflecting AHS's commitment to preserving Antigua's unique flora.

This project not only benefits the island's biodiversity but also supports the tourism industry by providing a vibrant, green destination for both visitors and locals. The site, rich with native plants, allows people to learn about local flora, its history, and medicinal uses. The creation of the first community seed bank on the island stands as a testament to AHS's efforts in biodiversity conservation.

AHS shares sustainable gardening practices and adheres to native biodiversity principles in the development of its gardens. There is widespread involvement and recognition of these efforts across the island, with outreach extending regionally and internationally. The society has also created an Indigenous Medicinal Herb Garden and has worked to preserve local trees and shrubs, collecting seeds from plants located at Agave Gardens.

In addition, AHS has been invited to contribute to the development of the new Government House garden, assisting with planning, sourcing plants, organizing training workshops, and developing community gardens. The society has also supported member gardens and local farmers. AHS has participated in capacity-building tours in St. Vincent, Barbados, and Chelsea, and has partnered with other NGOs and community groups to provide training and encourage youth involvement in agriculture and horticulture.

AHS actively engages youth and children, introducing horticulture as both a hobby and potential career path. By fostering interest in horticulture at an early age, AHS aims to benefit neighborhoods, families, and the wider community. Educational efforts begin at the primary school level, with classes designed to attract a broad audience, including faculty and parents.

The Seed Saving Bank preserves and conserves seeds native to Antigua and Barbuda, ensuring biodiversity and sustainability for future generations. Through a network of individuals committed to protecting and sharing local flowers, herbs, vegetables, and seeds, AHS provides education and raises awareness about the value of heritage seeds. The plants propagated by AHS are part of the local knowledge aimed at fostering resilience and sustainability.

The seed bank safeguards the island's genetic resources, preserving natural seed stocks that are non-GMO and adapted to local conditions. These seeds have been used for generations, providing food, beverages, medicine, and more. With food security under threat, AHS is actively partnering with farmers and local stakeholders to educate the younger generation about the importance of today's actions in securing the future health and well-being of the community.



Ruth Spencer sharing her experiences during the IWBN side event in Geneva, Switzerland

COMMUNITY LED INITIATIVES IN RESTORATION OF NATURE AND BIODIVERSITY IN ANTIGUA



Barnes Hill Community Development Organization is pushing for Community ownership, protection critical for ecosystem restoration processes,Intergenerational transfers of knowledge and local development processes for learning about the restoration of nature and biodiversity.



Stones ponds used by the elders were dug out and used to store water



At the Organic Farmers of Five Islands egg production facility once sees how waste items are being repurposed. The entire floor of the facility is covered with wood shavings from carpentry and joiner shops and this material absorbs all the solid and liquid waste from the chickens becoming an excellent source of fertilizer.



Members of the IIFB at the Caribbean-NBSAP meeting in Guyana



Educational Field trip have been taking place at the sites where early childhood centers with children aged 4-5 yrs. as well as primary students are vising the site and the children are asking questions, learning and seeing and going home and telling their parents.



Members of the Swetes Village Uncovered (SVU) group has brought back to life the history and culture of the village linking it to Biodiversity



The One LUV Rastafarian Community-Bio-digestor system that serves 35 families in their community

Indigenous Women And Food Security

The Indigenous woman plays a critical role in the agriculture sector. They hold agro-ecological traditional knowledge that facilitates food production systems which support regeneration, preservation of land and natural resources. The agro-ecological food systems are designed to complement and maintain the social resilience of the communities, their cultural and spiritual identity, promote sustainable use of natural resources while ensuring food and nutrition security. Indigenous Women sustainable agro-ecological principles have been identified as tools that can be implemented to guide policy making in the agriculture sector, provide biological control methods to control diseases and pests, provide information on key elements of healthy ecosystems via bio-indicators and identifying viable native seeds for Indigenous species.

Decades of research on shifting cultivation have demonstrated that this food production system enables greater carbon sequestration than other forms of land use, enhances biodiversity, and is in-situ conservation of crop genetic resources, among other benefits, and therefore offers important lessons for climate change response strategies. Indigenous Women practice shifting cultivation, rotational agriculture and seasonal cropping which are vital in ensuring increased yields for food security purposes. In the whole agriculture cycle, they perform the majority of the tasks from weeding to harvesting making them the primary food producers, gatherers and managers. This can be explained by the increasing number of migrations by men to urban areas in search of alternative means of livelihood hence significantly increasing the Indigenous woman role in food production and agriculture.

Indigenous Women have established traditional methods that ensure food security such as planting of kales, banana plantations and fruit bearing trees near and around their homesteads. This has inspired the art of kitchen gardens in our modern society. They also can easily identify edible wild fruits, vegetables and weeds which supplement their homestead-based agriculture. Some also plant medicinal plants in their backyards instead of having to venture into the forests in search of the herbs. The Indigenous Women also possess the knowledge on where to find wild fruits, nuts and berries which they gather or harvest from the forests and process them for consumption. Indigenous Women apply food processing traditional skills such as use of particular stones to ground flour to prepare a variety of meals. This is a common routine in most Indigenous Women households that guides the consumption patterns of the community. In anticipation of harsh environmental conditions, Indigenous Women harvest, gather and collect various crops which are then dried in the sun and stored for future consumption facilitating food security. Indigenous Women also prepare organic manure for their field by collecting their livestock's dung, kitchen waste, agricultural residue and fodder from the forest. They grow

vegetables using compost manure which they themselves prepare. Indigenous Women produce organic agricultural products for their families and the community at large.

Advocacy and Policy Engagement: Indigenous Peoples advocate for policies and programs that support their rights to land, resources, and cultural heritage, recognizing the intrinsic link between land tenure security and food security. They engage with governments, international organizations, and civil society groups to promote Indigenous land rights, sustainable resource management practices, and equitable access to food and nutrition. Through advocacy and policy engagement, Indigenous communities seek to address the underlying drivers of food insecurity and promote more inclusive and sustainable food systems.

Indigenous Peoples play a vital role in ensuring food security through their sustainable agricultural practices, preservation of crop diversity, management of natural resources, promotion of community resilience and food sovereignty, adaptation to climate change, and advocacy for rights-based approaches to food security. By valuing Indigenous knowledge, respecting traditional practices, and recognizing the contributions of Indigenous Peoples to global food systems, policymakers and stakeholders can support efforts to build more resilient, equitable, and sustainable food systems for all.



"Rooted in tradition, Indigenous Women sow the seeds of sustainability and resilience as they plant trees, nurture both culture and conservation of environment."

A Case Study Of Economic Empowerment Of Indigenous Mbororo Women of Cameroon Through Agroecological Friendly Food Production And Marketing.

By Aishatou Ali -MBOSCUDA, Cameroon

Mbororo are a semi-nomadic pastoralist group primarily located in Cameroon and neighboring countries. They are traditionally divided into three main subgroups based on cattle color, bowl decoration, and migratory patterns: the Aku-en, Bodaabe, and Jafun-en. The economy of the Mbororo-Fulani in the early 19th century was primarily based on livestock, particularly cattle. Cattle ownership served as a significant indicator of wealth and social status within the community. However, selling cattle was generally avoided due to the economic importance of the livestock for milk and butter production.

In Cameroon, Mbororo communities are spread across the country under the authority of four Lamidats (paramount traditional institutions). These Lamidats are located in Fuigil (North Province), Lompta (Adamaoua Province), Sabga (North West Province), and Didango (West Province).
Mbororo Women in particular often face challenges related to poverty, low literacy rates, and social exclusion. Their nomadic lifestyle and marginalization can make them vulnerable to displacement, attacks, and looting, particularly in regions affected by conflict or land disputes. They are underrepresented in decision-making bodies, such as the parliament, senate, and key government ministries. Their primary concerns include economic stability, social welfare, and access to education for their children, which are essential for improving their overall quality of life.

The role of Mbororo Women in the communities is to look after the household such as cleaning, fetching wood ,cooking, and taking care of children . In addition to house chores Mbororo Women are responsible for milking the cow for sustenance by selling the milk and its products to the local markets, in order to pay for ˜gainakos ‘(herdsmen), ˜jangali’ (cattle tax), and purchase of cloth, household goods etc. The Indigenous Mbororo Women are largely marginalized in Cameroon. The limited role of Mbororo Women has created dependence on their husbands to meet their needs which has resulted into gender-based violence and disparity for the Women. In addition, early and forced marriages, high rate of divorce, physical and mental torture are but among problems the Women go through causing high rate of depression.

Mbororo Women, like many other pastoralist communities, often have limited access to and control over land, which is typically managed through male kinship structures. This can hinder their economic opportunities and decision-making power.

Illiteracy rates among Mbororo Women are high in both formal and informal sectors, limiting their educational and professional opportunities. Mbororo Women engaged in agriculture and livestock production are especially vulnerable to the effects of climate variability.

To address these challenges, the Mbororo Social and Cultural Development Association (MBOSCUDA) has implemented a range of projects aimed at:

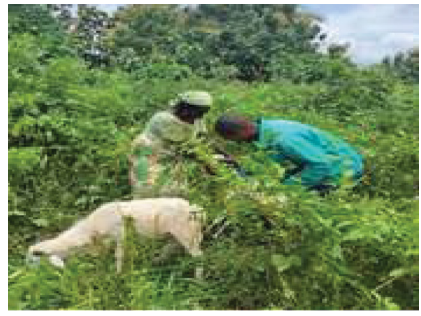
- Increasing income and food security: Promoting sustainable sheep rearing, small-scale vegetable gardening, and crop production to enhance economic opportunities and ensure food self-sufficiency for Mbororo Women.
- Addressing gender-based violence: Raising awareness about gender-based violence, providing capacity-building support for survivors, and working with communities to foster a more equitable environment.
- Tackling climate change: Promoting agro-ecological practices that reduce greenhouse gas emissions and mitigate the effects of climate change on Mbororo communities.
- Ensuring food security and nutrition: Supporting sustainable agricultural practices and promoting access to nutritious food.
- Improving land access and control: Empowering Mbororo Women by increasing their access to and control over land resources through various project initiatives.
- Feeding The Community Mbororo Women Become Innovative to Change the Traditions Of Men Dependency.

The primary goal is to empower 100 Mbororo Indigenous Women across five regions of Cameroon through sustainable agriculture and advocacy. The initiative will focus on sheep production, vegetable gardening, and marketing, with the aim of increasing their income and enhancing their overall livelihoods.









The goat and sheep projects was one of the well accepted and easy to be handled by the women as they properly handle and manage them as well look for a market and negotiate the prices without third party exploitation.

Specific Objectives

1. Economic Empowerment: To increase the income of 100 Mbororo Indigenous Women by 50% through sustainable agriculture practices.

2.Food Security: To enhance food security for Mbororo Indigenous Women and their families by promoting diversified crop production and livestock rearing.

3. Gender-Based Violence Awareness: To raise awareness about gender-based violence perpetrated against Mbororo Indigenous Women and provide support services for survivors.

Outcomes

- Land Access and Control: To increase access to and control over land resources for Mbororo Indigenous Women in project areas.
- Increased income and improved livelihoods for 100 Mbororo Indigenous Women. Enhanced food security for Mbororo families.
- Increased awareness of gender-based violence and improved access to support services for survivors. Increased access to and control over land resources for Mbororo Indigenous Women.
- Strengthened capacity of Mbororo communities to advocate for their rights and interests.

The project is providing comprehensive support to 100 Mbororo Indigenous Women in 10 communities across 5 regions of Cameroon. By constructing 100 sheep barns and distributing materials for modern, suspended sheep pens, the project is empowering these Women to engage in sustainable agriculture. The collected manure from the sheep pens will be used for vegetable gardening and crop production, ensuring a sufficient and nutritious food supply for 100 households.

This initiative aims to increase Women's income through agricultural sales, reduce their dependence on men for financial needs, and address gender-based violence perpetuated by economic inequality. Collaborative efforts between men and Women are crucial for project ownership, sustainability, and fostering a more understanding community. The project aligns with General Recommendation 39 of the CEDAW Committee, which calls for state action to prevent and address discrimination against Indigenous Women and peoples. By addressing issues of gender-based violence, economic inequality, and Women's land rights, the project contributes to the empowerment and well-being of Mbororo Indigenous Women.

The project's primary objective is to ensure a reliable and high-quality food supply for 100 beneficiary households. By empowering Women through sustainable agriculture, the project aims to increase their income and reduce their financial dependence on men. Additionally, it seeks to address gender-based violence stemming from economic inequality. Collaborative efforts between men and Women are essential for project ownership, sustainability, and fostering a more understanding community.

General Recommendation 39 highlights the urgent need for state action to address discrimination against Indigenous Women and peoples. The CEDAW Committee recognizes the multifaceted challenges faced by Indigenous Women and girls, including gender-based discrimination, violence, and violations of their rights to self-determination, territories, natural resources, free, prior, and informed consent, culture, and a clean, healthy, and sustainable environment.

The project with Mbororo Indigenous Women aims to tackle issues related to gender-based violence, economic inequality, and the land rights of Women and girls.

100 mbororo Indigenous Women have been provided with materials for the construction of modern sheep pens/barn for their sheep suspended for easy collection of manure used for vegetable gardening and crop production. Starting a new life changing and making a difference in their lives

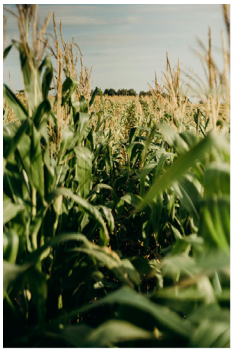
Hawa is starting a new agricultural venture after receiving 4 sheep from a project. She plans to use the sheep manure as a natural fertilizer to grow local leafy vegetables like huckleberry and cabbage. Additionally, she will cultivate crops such as maize, beans, cocoyam, and cassava organically, without the use of chemical fertilizers. This approach will ensure that the produce is healthy, nutritious, and safe for consumption

To ensure sustainability of the project; The project is spread in 10 communities, 10 sub divisions and 05 Regions of Cameroon to ensure many communities feel the impact of the project. Secondly the theory of passing- on the gift is applied where the100 mbororo Indigenous Women beneficiaries will give the same number of sheep given to them to another 100 Women beneficiaries in their communities after 12 months of production
The project has been designed to promote sustainability by reaching out to various





communities in Cameroon. Specifically, it will cover 10 communities, 10 sub-divisions, and 05 regions to ensure that the project's impact is felt across many different areas. Additionally, the project incorporates the "passing-on the gift" concept, where the 100 Mbororo Indigenous Women beneficiaries will each pass on the same number of sheep they receive to another 100 Women beneficiaries in their communities after 12 months of productivity.







Indigenous Women Health And Food Nutrition

Indigenous Women have long been recognized for their deep knowledge of herbal medicine, offering a natural alternative to the pharmaceutical industry. Their understanding of various plant structures and their uses"whether consumed raw or prepared through methods like boiling"enables them to treat a wide range of ailments. Indigenous Women can easily identify medicinal tree species and understand how they interact with other Indigenous plants. Their remedies not only address health issues but also provide high nutritional value with minimal or no side effects. These treatments often involve a combination of fruit juices, tree sap, peels, and seeds. Additionally, Indigenous Women possess expertise in using natural beauty elements like aloe vera, which are safer compared to chemically produced beauty products.

Many Indigenous Women live well into their nineties or even longer, prompting worldwide studies on the factors contributing to their longevity. Their ability to remain in good health and continue caring for themselves and others well into old age is a stark contrast to the current generation, which often faces health challenges at a younger age. Indigenous Women take their community roles seriously, passing on knowledge about nutrition and balanced diets to ensure that the meals served in their households meet the specific needs of different age groups.

Their longevity can also be attributed to their consumption of natural, non-genetically modified foods and their use of traditional food preservation techniques that do not rely on chemical preservatives. They often use renewable resources like solar energy for preservation, further promoting sustainability. The water they consume comes from natural, uncontaminated sources such as springs, rivers, and streams. Living close to natural ecosystems like forests, Indigenous Women benefit from clean air, food, and water, all of which contribute to their long, healthy lives.

Indigenous Women also play a critical role in maternal care. Trained midwives, often Indigenous Women, assist in childbirth in scenarios where health facilities are inaccessible or when expectant mothers choose to deliver at home. Modern Women are increasingly opting for home births under the care of midwives trained in both Indigenous knowledge and modern science. These midwives help bridge the gap in maternal care, especially in areas with poor infrastructure, insecurity, or adverse climatic conditions.

For Indigenous Women, traditional medicine encompasses the totality of knowledge, skills, and practices based on Indigenous beliefs and experiences, used to maintain health, prevent illness, and treat physical and mental ailments. Traditionally, the causes of illness are viewed differently than in Western medicine, with beliefs rooted in witchcraft, sorcery, and superhuman forces. However, today, Indigenous Women continue to rely on

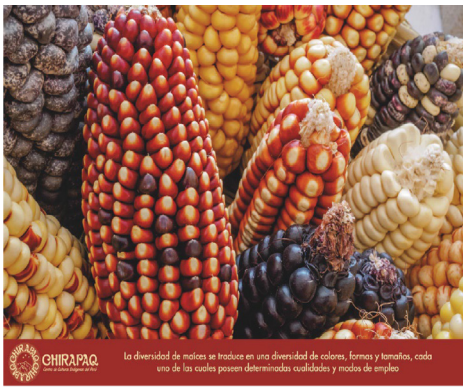
traditional medicine, as it is more accessible, affordable, and culturally acceptable than Western medical practices.

Through their involvement with the Indigenous Women's Biodiversity Network (IWBN), Indigenous Women have enhanced health and nutrition in their communities by promoting traditional knowledge and sustainable food practices. The IWBN serves as a platform for Indigenous Women from diverse regions to share experiences and collaborate on initiatives that prioritize community well-being.

A key contribution of Indigenous Women in the IWBN is the preservation and promotion of traditional knowledge related to food and nutrition. They draw upon centuries-old practices to maintain a deep understanding of local ecosystems and the nutritional value of traditional foods. Through storytelling, ceremonies, and community gatherings, they ensure that this knowledge is passed on to younger generations, preserving cultural heritage and promoting food sovereignty.

Indigenous Women within the IWBN also advocate for sustainable food practices that prioritize both environmental and human health. They support agroecological farming methods such as polyculture, agroforestry, and crop rotation, which promote biodiversity, improve soil health, and reduce dependence on harmful chemical inputs. These practices strengthen local food systems and provide access to a diverse range of nutritious foods.

In addition, Indigenous Women are at the forefront of efforts to protect and preserve traditional food sources, including wild game, fish, and edible plants. By advocating for the sustainable management of natural resources and the protection of ancestral lands, they help ensure the continued availability of these vital food sources for future generations. Through community-led conservation and land stewardship initiatives, they promote ecological balance and safeguard the nutritional security of their communities.





BIODIVERSITY IS A SOURCE OF DIVERSE FOODS AND LIVELIHOOD FOR INDIGENOUS PEOPLES IN PERU.



La diversidad de cultivos asociados en torno al maíz, provee una diversidad de alimentos que contribuyen a la diversidad alimentaria indígena



Los niños forman parte activa en el proceso de recolección de las mazorcas como parte de su socialización en el trabajo colectivo y la identificación de variedades de maíz



La mashua, es un tubérculo presenta una gran diversidad, y se encuentra entre los principales alimentos de las comunidades altoandinas



Los pueblos amazónicos emplean diversas plantas de los bosques para el teñido de las telas con las cuales confeccionan diversas prendas



Entre las diferentes técnicas empleadas para conservar las mazorcas, el secado bajo sombra se facilita gracias a las temperaturas y sequedad del clima andino



Tanto la yuca como la sachapapa, en sus múltiples variedades, son la base de la alimentación de los pueblos amazónicos



To Assess Environmental and Socio-Economic Impacts Of Cemtech Cement Industry On Pokot South Indigenous Women.

by Phiphian Jeptoo Kiprotich IWBN, A case study by FIMI



The environmental and socio-economic impacts of the Cemtech Cement Industry on the Indigenous Women of Pokot South, Kenya, are evaluated in this study. The study has three main goals: first, to find out how the cement industry contributes to the income generation of Indigenous Women; second, to identify the benefits of infrastructure development to these Women; and third, to identify the environmental effects of cement production on natural resources and ecosystem services that are vital to these Women's livelihoods. In order to guarantee cultural sensitivity and encompass a range of viewpoints, the research utilizes intercultural techniques like body mapping, storytelling, singing, and interviews. These techniques offered a thorough understanding of the living realities and ways that Indigenous Women adapted to the changes brought about by industry. The results show that the Pokot South has both possibilities and problems from the Cemtech Cement Industry.

For many Indigenous communities around the world the consequences of industrialization, and in particular, the destruction of agrarian lands in the commercial pursuit of the mineral resources which lie beneath, have brought major social, environmental and economic changes (Namu, 2015). The areas most impacted are education, health, economic mainstay, the environment, social structures, and human security (Isidro, 2015). Mining activities have negatively affected the social fabric and core existence of mining stakeholders and Indigenous people who engage in conflicts because they consider

mining as a source of individual gratification and accumulation of wealth by a few people.

The wealth generated from the extraction and sale of natural resources has not always resulted in positive outcomes. In some cases, it has contributed to a poor quality of life. For example, in Africa, the rising cost of building materials and the constant importation of cement have driven the rapid development of cement factories (Busuyi et al., 2008). However, cement production is known to have significant negative impacts on both the environment and human health in both developed and developing countries (Ambasht, 1982; Harley, 2007).

One such facility, the Cemtech clinkerization plant, is located at the Sebit limestone deposits in Kipkomo sub-county, Pokot South, West Pokot County, Kenya. The plant is affiliated with Cemtech Limited, a subsidiary of the Devki Group of Companies. Initially launched in 2010 under the Sanghi Group of India, the project was acquired by Simba Cement in 2019. The Cemtech plant is estimated to produce 6,000 metric tons of clinker daily, which is the primary raw material used in cement manufacturing. Clinker is formed by heating limestone and minerals at high temperatures, resulting in small nodular aggregates.

Research Objectives

Overall Objectives

- To Assess Environmental and Socio-economic Impacts of Cemtech Cement Industry on Pokot South Indigenous Women

Specific objectives:

- To identify the income generation patterns for Indigenous Women resulting from the presence of the cement industry among Pokot households.
- To identify Infrastructural development that accrue to Indigenous Women as a result of the establishment of Cemtech cement industry
- To identify the environmental impact of cement production on natural resources and ecosystem services critical to the Indigenous Women livelihoods.

Intercultural methodologies, including songs, body mapping, storytelling, and interviews, were employed to gather data and insights from the Pokot South Indigenous Women. These methodologies were chosen for their ability to capture diverse perspectives and ensure cultural sensitivity in the research process.

Indigenous Women in West Pokot County, Kenya, possess a deep understanding of their surrounding ecosystems, honed through generations of close interaction with the land. Their intimate knowledge of plants, animals, and natural cycles play a crucial role in sustainable resource management and biodiversity conservation. However, with the onset of the Cemtech cement industry a disruption of the interconnectedness of the Indigenous Women and their surrounding environment is set to take place.

The establishment of the Cemtech cement industry presents a case study assessing the social and economic dynamics of Pokot South Indigenous Women. The industry exhibits an interplay between benefits to the community and the looming detrimental factors which ought to be mitigated. The benefits include the cement factory being a poverty alleviation tool by provision of employment opportunities, improved security of Sebit area and urbanization due to the infrastructural development taking place.

The negative factors associated with the existence of the cement factory include a breakdown of cultural practices, urbanization amidst high levels of poverty, Indigenous Women having limited skills in the industry and development under the risk of environmental hazards. The environmental hazards include noise pollution, dust pollution, water pollution and land degradation.
Intercultural methodologies applied provided valuable insights and perception that informed on how Indigenous Women are adapting to the establishment of the cement factory. Data was mainly generated through body mapping, listening to songs, conducting interviews and engaging in story telling sessions with the Indigenous Women.

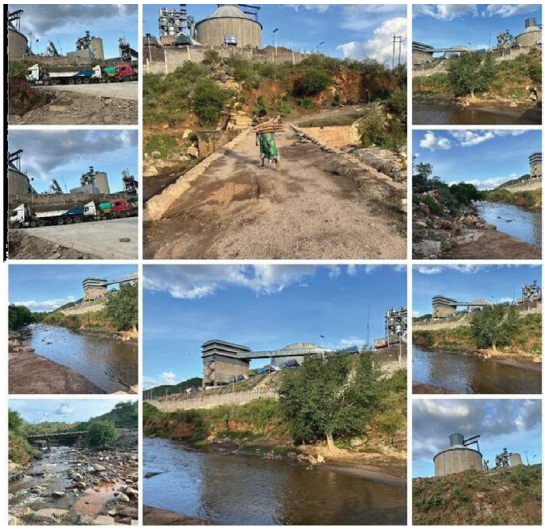
Pokot South is a region characterized by its rich cultural heritage and dependence on natural resources for livelihoods. The introduction of the Cemtech Cement Industry has brought both opportunities and challenges to the community, reshaping traditional ways of life and raising questions about sustainable development and cultural preservation. Indigenous Women play a crucial role in the socio-economic fabric of the Pokot South community. Their perspectives and experiences offer unique insights into the impacts of the cement industry on household incomes, access to resources, and cultural practices. Understanding and addressing the concerns of Indigenous Women is essential for promoting inclusive and sustainable development in the region.

Overtime, the Sebit region is also susceptible to climate change due to the increased release of carbon dioxide fumes emanating from the factory. This will result to change in weather patterns, affect biodiversity and affect the economic livelihoods of the Indigenous Women in the long run. It therefore justifies to undertake the research so as to inform the stakeholders and policy makers on a holistic approach to mitigate detrimental climate change effects and avail the Indigenous Women a platform to integrate their Indigenous knowledge to enhance adaptability measures to sustainable development.

Conceptual framework of reference from the feelings of Indigenous Women

The following factors provide guidelines aimed at protecting Indigenous Women's rights, promoting cultural integrity, and ensuring environmental sustainability in the face of industrialization, ultimately fostering inclusive development beneficial to all stakeholders:

Incorporation of Free, Prior, and Informed Consent (FPIC): Ensuring that Indigenous Women are involved in decision-making processes before industrial projects are initiated helps prevent illegal displacement and guarantees equitable compensation. FPIC is crucial in protecting Indigenous Women's rights and ensuring they are not marginalized in the name of development.



Integration of Cultural Dynamics in Industrialization: Indigenous Women have a deep connection to their environment, which influences their roles within the community. Their unique knowledge of the ecosystem can be leveraged to address environmental concerns that arise from industrial activities near their communities. This ensures that cultural considerations are respected and incorporated into industrial processes.

Design of Work Policies for Health and Safety: Industries must implement policies that prioritize the health and safety of Indigenous Women working in or near industrial sites. This includes providing health insurance coverage and necessary safety equipment, ensuring that Women are protected and supported in the workplace.

Research findings and discussion Social-economic impacts findings

The research identified three major social-economic factors:

1. Employment
2. Infrastructural development
3. Income generation patterns

This research adopteda detailed descriptive design to gain an in-depth understanding of the impacts of Cemtech cement factory on Indigenous Women. Data was collected through songs, body mapping, storytelling and interviews. Songs involved keenly listening to praises and criticism addressed in regards to the presence of the cement industry in their ancestral land while body mapping involved visualizing how the impact of the factory made them feel in various parts of their body which clearly highlighted the issues that were of concern. Storytelling involved establishing a good relationship and an

enabling environment with Indigenous Women which made them comfortable to narrate their views based on their perceptions on certain matters without interruptions or use of guided questionnaires. On the other hand, interviews involved collecting information from Indigenous Women by use of structured questions.

Employment

The Indigenous Women expressed their concerns through songs regarding employment in the Cemtech cement factory during community forums. The songs appreciated the initiative of the government to set up the factory while disclosing issues that were affecting them. Most of the grievances they highlighted were geared towards inequality in payments, low ranking roles, prolonged hours of working with minimum wages and lack of proper feedback mechanisms and action to address issues they had pointed out at their workplace. Other songs were filled with gratitude especially for the Women who had realized self- employment opportunities around the vicinity of the factory such as establishing small hotels and shops.

By use of body mapping, the most marked body part by the Indigenous Women was the head indicating the mental distress that came about as a result of being employed in the factory. After reporting to work they are still held accountable by their customary laws to ensure their households are in order unlike their male counterparts who are entitled to rest. Some Women depicted the aspiration to rise to managerial roles while displaying the customary linkages that were holding them back. Others seemed to be satisfactorily content with employment at the factory considering the harsh pre- existing weather conditions that it shields them from. It was also very interesting to note that some Women indicated foreign objects on their hair which were affiliated to other communities. On further probing, this indicated the observations the Indigenous Women had made at their work place whereby there was a disparity in job opportunities for the local Women versus the non-natives.

Whereby Indigenous Women of Pokot South were assigned labor- intensive jobs with several factors attributing to this situation such as high illiteracy levels, lack of necessary skill-set and required experience. Dialogues were held amongst Indigenous Women gatherings. Grandmothers living around the factory were more receptive to the storytelling sessions. They were glad that the factory is facilitating supplementary modes of livelihood amongst the young Women considering the strain on the available natural resources. They recalled how challenging it was for them to find viable means of additional income while their husbands were away. They also believe the factory provision of employment is aiding in protecting the moral fabric of the family unit because men no longer have to relocate to urban areas to fend for their families and the Women are experiencing relief on taking up the leadership role in their family.

Interviews were administered amongst Indigenous Women working in and around the factory and those not working in the factory but living nearby the factory.

There was a collaborative response on gender sensitivity in regards to employment. The male counterparts seem to have more opportunities at the factory, higher-ranking roles are preserved for them and thus better pay. Most Women also expressed the desire to be exposed to more training programmes that would equip them with skills to gain promotion at the workplace and engage in business ventures related to cement production.

Key employment issues for Indigenous Women

Indigenous Women face discrimination in hiring, promotion, and workplace treatment based on their gender and ethnicity. Cultural stereotypes and biases contribute to unequal treatment and opportunities within the cement industry work force. Indigenous Women are disproportionately concentrated in low-skilled and low-paid positions within the industry, with limited opportunities for career advancement or skill development. Occupational segregation along gender and ethnic lines perpetuates inequalities in employment and income. Indigenous Women encounter unsafe working conditions, inadequate protective equipment, and exposure to hazardous materials in certain roles within the cement industry. Occupational health and safety concerns disproportionately affect marginalized workers, including Indigenous Women, who lack the power or resources to advocate for their rights. Indigenous Women have limited access to benefits such as healthcare, maternity leave, and social security within the cement industry workforce. Structural barriers, including informal employment arrangements and lack of legal protections, prevent Indigenous Women from fully accessing or exercising their rights in the workplace.

Infrastructural development

As the Women sang, they laid some fabrics on the ground and walked over them while carrying wood on their backs indicating how movement from one place to another had improved. The songs also pleaded with the stakeholders involved to ensure the infrastructural development does not interfere with the natural systems such as the forests and water sources. By use of body mapping, Indigenous Women marked their feet mostly, showing the ease of accessibility from one place to another. They also marked their eyes showing appreciation for the electricity cables that had been installed allowing for proper lighting around the area.

The Women described how difficult it was for them to access crucial government services and social amenities that have been brought closer to them by infrastructural development. However, they felt there was an infringement on their rights especially when it came to decision making processes on proposed sites of infrastructural development. Another concern that was illuminated upon was the erosion of their culture due to influence from other cultures by the natives involved in infrastructural development. Indigenous Women disclosed that security had greatly improved due to the infrastructural development. They were also displeased with the displacement from their ancestral lands that occurred in place of the infrastructural development.

Key infrastructural issues for Indigenous Women

Infrastructural development projects have led to the displacement of Indigenous communities from their traditional lands, affecting Indigenous Women's access to resources, cultural sites, and livelihood opportunities. Land rights and tenure security are critical issues for Indigenous Women, who face marginalization and exclusion from decision-making processes related to land use and development. Improved infrastructure such as roads, schools, and healthcare facilities have enhanced Indigenous Women's access to essential services and opportunities for socio-economic development. Infrastructure development projects have resulted in significant environmental impacts, including deforestation, habitat loss, and pollution, which adversely affect Indigenous Women's health, livelihoods, and cultural practices.

Indigenous Women, as primary caregivers and custodians of natural resources, bear a disproportionate burden of environmental degradation and climate change, further exacerbating gender inequalities and vulnerabilities. Infrastructure development has posed threats to Indigenous cultural heritage sites, sacred lands, and traditional knowledge systems, undermining Indigenous Women's cultural identity, autonomy, and well-being. Indigenous Women play vital roles in preserving and transmitting cultural traditions, languages, and ecological knowledge, which are essential for community resilience and sustainability in the face of rapid social and environmental change.

Income generation patterns

Traditional songs reflected the diverse income generating activities that have been in existence in the community from the ages of their forefathers. It was quite clear that with the establishment of the cement industry the Women hoped the stakeholders would venture into empowering their income generating activities directly or indirectly. This would translate to the cement factory also facilitating market research programmes for cement products that would act as income generating activities for the Women.

Participants in the body mapping sessions visually represented their income generating activities by indicating small beads around their necks, wrist and their feet to showcase their beadwork. Others drew kales around their stomach and marked the mouth illustrating how they engaged in subsistence farming both at the household level and for the nearby local markets. Some drew cattle all over the body map highlighting the significance of livestock rearing in their culture which they hoped the Cemtech factory would invest in by collaborating with other investors to help them secure profitable livestock markets as one of their adopted community projects. The body maps revealed the interdependence the Indigenous Women exhibit with various traditional income generating activities which were heavily reliant on the available natural resources and with the environmental changes at play, the factory can equip the Women with adaptable measures to facilitate the continuity of their activities.

Storytelling offered a very unique perspective on the position of an Indigenous woman engaging in income generating activities. Previously, a woman was looked down upon if she engaged in other activities apart from those adhered to caregiving and looking after her household. Overtime due to economic hardships, the patriarchal community accepted the notion that a woman can significantly contribute to the household income without neglecting her cultural roles. A woman's identity was closely knit to the roles assigned to her as she stepped into womanhood. As young girls they learnt through apprenticeship from their grandmothers on how to efficiently execute roles such as gathering edible fruits from forests, preserving surplus milk and harvesting medicinal plants. All these activities present potential mechanisms of income generating activities with the establishment of the right systems. The cement factory can complement the efforts of the Indigenous Women by provisioning credit funds to Women who want to explore other markets such as making yoghurt from the surplus milk and selling of medicinal plants and edible forest fruits to herbalists.

Interview data provided further insights into Indigenous Women's experiences involvement in income generating activities. One of the major challenges they are facing is determining the profitability scale of their income generating activities. It was also very interesting to note that majority of the Women engaging in these activities had not attended school yet they were very enthusiastic about venturing into businesses.

They also felt held back in making decisions for their income generating activities as they have to consult with their husbands on each step they intend to make. Another issue was that if the venture ended up being very successful the men would possess the activity and force the woman to initiate another or to settle to her household duties. However, they were optimistic that with the establishment of the factory, it would bring about a market boost for the various economic activities they engaged in.

Key income generating pattern for Indigenous Women

Indigenous Women face barriers to accessing land, credit, markets, and other resources necessary for income generation, limiting their opportunities for economic empowerment and self-reliance. Structural inequalities in land tenure, inheritance rights, and financial services disproportionately affect Indigenous Women, who lack secure land tenure and formal property rights. Indigenous Women encounter challenges in accessing markets, obtaining fair prices for their products, and participating in value chains that are often dominated by larger, more powerful actors. Limited access to transportation, storage ,and market information hinders Indigenous Women's ability to market their products and negotiate favorable terms of trade.

Indigenous Women's roles as caregivers and household managers intersect with their income-generating activities, leading to time constraints, double burdens, and limited opportunities for economic advancement. Unpaid care work, including childcare, eldercare, and domestic chores, often falls disproportionately on Indigenous Women, constraining their ability to participate in paid employment or entrepreneurial ventures.
Social and cultural norms shape Indigenous Women's choices, opportunities, and outcomes in income generation, influencing their access to education, training, and employment opportunities. Gendered divisions of labor, expectations of Women's roles and responsibilities, and stereotypes about Indigenous Women's capabilities constrained their economic agency and mobility within the community and society at large.





Environmental Impacts

As the Indigenous Women sang, they made various outcries as they mentioned the impact the factory would have on their natural resources. They constantly pressed on their ears as they sang indicating the noise pollution they had to endure from the factory. The songs also expressed how their ancestors may punish them by disrupting the norm of their weather patterns because of allowing the intrusion of natives into their ancestral lands.
The Indigenous Women body mapping sessions visually represented the environmental changes which they had observed overtime such as land degradation, soil erosion and loss of biodiversity by marking their eyes. They also depicted a loop imagery running from their head through all their body parts up to their feet illustrating their intimate connection to the environment and how the cement factory was affecting that interconnectedness. This could be explained by the fuel demand the cement factory would have from the forest whereas the community is highly dependent on the same fuel for their household consumption thus exerting pressure on the forest resources. They also frequently marked their hearts and indicated some thorns in it illustrating how insulted they felt by being ignored by the stakeholders to highlight the role of traditional knowledge, cultural practices, and Indigenous governance systems in promoting environmental resilience and sustainability.

The Indigenous Women shared personal reflections on their experiences with the environmental change. They narrated how pure the air was before the inception of the cement factory and how they have to constantly deal with the dust particles escalating both respiratory and eye infections. They explained in details how they would be woken up early in the morning by the birds but currently the most prevalent sound they wake up to is the noise emanating from the cement factory. They also expressed their fears on the environmental resilience of their land due to the accumulated effects of the cement factory overtime. As custodians of the forests, they explained some species were resistant to the natural disturbances presented by the cement factory while others may be adversely affected to the extent of being extinct from their habitats. Endemic plant and animal species would be the most affected because they are very sensitive and require specific environmental conditions and the slightest disruption of their habitats could expose them to the risk of being wiped out.

The Indigenous Women main environmental concern was their water sources especially due to the anticipation of the high-water volumes the cement factory would be drawing from their rivers. Another issue they highlighted about, was the discharge of effluents from the factory into their water sources considering their livestock also consume the same water. They live under constant fear of disease outbreaks which can cause massive losses of their livestock.

They also felt held back in making decisions for their income generating activities as they have to consult with their husbands on each step they intend to make. Another issue was that if the venture ended up being very successful the men would possess the activity and force the woman to initiate another or to settle to her household duties. However, they were optimistic that with the establishment of the factory, it would bring about a market boost for the various economic activities they engaged in.

Key Environmental issues for Indigenous Women

Indigenous Women face challenges in accessing clean and safe water for drinking, cooking, and sanitation due to pollution from cement production activities. Contamination of rivers, streams, and groundwater sources can pose health risks and threaten traditional water-dependent livelihoods such as agriculture, fishing, and livestock rearing. Indigenous Women witnessed the loss of forests, woodlands, and other natural habitats due to deforestation, land clearing, and quarrying for raw materials used in cement production.

Loss of biodiversity, soil erosion, and habitat fragmentation can impact Indigenous Women's access to medicinal plants, wild foods, and other forest resources essential for their health and well-being. Indigenous Women are exposed to air pollution from cement kilns, dust emissions, and vehicle traffic associated with cement production, leading to respiratory problems, allergies, and other health issues. Poor air quality can affect Indigenous Women's ability to engage in outdoor activities, work in agriculture or construction, and care for their families, particularly young children and elders. Indigenous Women experience the impacts of climate change, including changes in rainfall patterns, temperature extremes, and natural disasters, which can affect food security, water availability, and livelihood resilience. Climate change adaptation strategies require Indigenous Women's participation and leadership in community-based initiatives such as agroforestry, soil conservation, and water management, which build on traditional knowledge and practices for environmental sustainability.

Conclusion

Indigenous omen are accustomed to a predictable way of life as stipulated in their cultural roles and rules. The Cemtech clinkerization plant has definitely caused a disruption of the West Pokot Indigenous Women way of life socially, economically and environmentally.

Social impacts have led to reversal of roles whereby Indigenous Women are actively engaged in fending for their families by seeking formal employment which was previously reserved for their male counterparts and limited to undertaking subsistence agriculture. Economically, the Indigenous Women are still struggling with the high rate of poverty prevalent in Sebit area. This is despite securing employment opportunities at the factory which can be attributed to their lack of skills in the cement manufacturing sector and further exploitation of their availability and provision of cheap labor force.

Economically, the Indigenous Women are still struggling with the high rate of poverty prevalent in Sebit area. This is despite securing employment opportunities at the factory which can be attributed to their lack of skills in the cement manufacturing sector and further exploitation of their availability and provision of cheap labor force. Environmentally, the Indigenous Women are at a risk of losing their sources of livelihood due to displacement from their ancestral lands and further degradation of their land because of the cumulative effects of the establishment of the clinkerization plant. They are also at a high risk of being exposed to health problems such as poor eyesight and respiratory issues because of the impurification of the air by dust particles from the factory.

Overall, operationalization of the Cemtech cement factory has heavily influenced the perception of West Pokot County which was associated with conflicts due to scarcity of livestock production resources such as fodder and water. The community prospects to immensely benefit from the clinkerization plant which has brought about urbanization of Sebit area. However, the cement factory ought not to rake in profits at the expense of Indigenous Women without focusing on poverty alleviation amongst its workforce.

Recommendations

- Strengthen the Link Between the Cement Industry and the Agriculture Sector: Offer incentives and funding to promote domestic processing and product finalization activities within the Sebit locality. This will create employment opportunities and optimize the use of locally available resources. Indigenous Women can engage in meat processing as a value-added activity, reducing the need to transport livestock to urban areas for similar processes.
- Formulate Employee Welfare Policies: Improve employee welfare through corporate social responsibility initiatives, including better terms of service such as maternity leave and protection against occupational hazards through comprehensive health insurance coverage.
- Bridge the Gender Disparity Gap: Promote vocational training and continuous skills development for Indigenous Women, enabling them to participate more fully in technical aspects of cement production. This will provide more employment opportunities for Women and help meet evolving labor market demands.
- Engage Indigenous Women in Decision-Making: Involve Indigenous Women in decisions about development and environmental conservation in the Sebit area. Their Indigenous knowledge, passed down through generations, is valuable for ensuring sustainable development.
- Facilitate Land Rehabilitation: The cement factory should take responsibility for rehabilitating land that has been mined for limestone to mitigate further land degradation and promote environmental sustainability.



Indigenous Women and Policies

The Convention on Biological Diversity (CBD) recognizes the vital role of Women in the conservation and sustainable use of biological diversity. It affirms the need to ensure the participation of Women at all levels of policymaking and implementation for biological diversity conservation. It also provides for a specific framework for the participation of Indigenous Women in the programme of work on the implementation of Article 8(j), the CBD article on traditional knowledge of Indigenous and local communities. Many countries fail to recognize the importance of giving Indigenous Women an opportunity to participate in forums involved in making policies revolving around climate change, loss of biodiversity and the Indigenous people as a community. The policy makers tend to ignore the core principles guiding the community structure of the Indigenous woman and their assigned roles. Indigenous Women have been brought up in communally owned lands and this has been the tradition from one generation to another. The existing natural resources in their ecosystems belong to the community and no single person can claim sole proprietorship. This has ensured communal integrity and cohesion in protecting their homelands but exposes the Indigenous Women to loss of rights on land ownership due to implementation of certain policies which they themselves are not aware exist.

Alternatively, the policies are formulated without their input of the perspective they hold on various issues especially concerning environmental matters. In other scenarios the consent of the Indigenous Women in regards to policies that influence her livelihood options is completely ignored or very little research is carried out to understand the impact of implementation of certain policies. Indigenous Women live under customary self-governance systems which are unable to shield them from government policies that promote development projects which threaten their livelihood. The persons who formulate such policies lack a comprehensive understanding of the role of the customary self-government systems which are a key identity of Indigenous Women and supports their social cohesiveness and livelihoods. Policies formulated lack to take into consideration and integrate the customary self- governance systems to inform their implementation so as to safeguard the rights of Indigenous Women who are custodians of the existing fragile ecosystems.

The Role of Indigenous Women In Participatory- Evolutionary Plant Breeding In Wheat And Barley

By IWBN, Iran

Biodiversity in general, and agrobiodiversity in particular, are crucial for adaptation to climate change, for resilience, and for human health as related to dietary diversity. The biodiversity of wheat and barley are the two important crops in Iran and is threatened by an increased frequency of drought and climate change. Participatory Plant Breeding (PPB) has been promoted for its advantages of increasing participatory selection efficiency, variety adoption, and small-scale farmers' empowerment, and for being more socially equitable and gender-responsive than conventional plant breeding.

Increasingly participatory methods have allowed farmers to play a more significant role in the decision-making process shaping the crop breeding agenda. Nevertheless, gender-specific preferences for traits, including cooking and processing characteristics, are often not determined until the final stages of variety evaluation or release, and even then, they are seldom prioritized " impacting adoption rates.

Using a case study of wheat and barley in Iran, this research aimed to analyze researchers' perspectives on gender-responsive breeding, as well as the extent to which integrating Women's needs into the dissemination process can have a positive impact on empowerment pathways. The literature review and key informant interviews suggest that engaging both Women and men regarding new plant variety traits and accounting for their differentiated needs and preferences in product profiles , has the potential to meet farmers' demands better and, thus, increase adoption rates of released varieties and consequently enhancement of biodiversity. Further research and collaboration are required to systematically develop product profiles that are gender-specific to enable inclusive agricultural transformation.Wheat and barley are among the most important staple foods, originally exploited, cultivated, and domesticated in West Asia, between the Eastern shores of the Mediterranean Sea and Western slopes of the Zagros Mountains, at the beginning of the Holocene epoch. Almost all wild progenitors of the domesticated species of wheat and barley naturally grow in Iran, a Western Asian Country, and were frequently exploited by the residents of the Iranian plateau throughout history. Every aspect of grain cultivation and its technical difficulties pushed human societies to develop more and more efficient methods of cultivation, irrigation, storage and preservation, food preparation, trade and commercialization, and scientific exploration and invention (Ghahremannejad et al, 2021).



Evolutionary-Participatory Plant Breeding (EPPB) (Murphy, et al.. 2004) represents a dynamic and inexpensive alternative breeding approach where breeders and scientists partner with farmers and provide them with seeds of mixtures of a broad and diverse range of selected genetic material from national and international gene banks (including landraces, to plant in their fields.

During the past few decades, some plant breeders have begun to test and adopt innovative approaches to crop improvement that are closer than conventional plant breeding to farmers' traditional practices of crop diversity management, which take plant breeding back to farmers' fields. These approaches have been labeled Evolutionary Plant Breeding (EPB) strategies. Evolutionary plant breeding was first introduced in the 1950s, based on a broadly diversified germplasm, and a prolonged subjection of the mass of the progeny to competitive natural selection in the area of contemplated use (Suneson 1956) Evolutionary populations or mixtures (EPs) planted and harvested continuously in the target environments, and through natural selection and natural crossing in crops, genetic composition of the crop population harvested is continuously changing. Genotypes better adapted to the changing climate trends and local environmental and farm conditions (soil fertility, pests, and diseases, agronomic practices, droughts, floods, salinity, temperature, photoperiod, etc.) will progressively become more frequent. Through natural selection, supported by farmers' selection, crop populations become evolving gene banks within farmers' fields.

Women and men have different roles in agricultural production systems and consequently have different specialized knowledge about crops and food preparation. Women have long been known for their specialized knowledge of seeds and the foods made by them. At the global level, In many cultures, Women are the main conservers of agricultural biodiversity and understand the ecological processes around them. However, the movement from the cultivation of traditional varieties to crops with high economic value has been chiefly made by men who had control over land, water, and other production resources, and the role of Women in this sector has been neglected (IPES FOOD, 2016). The consequence of this process is the cultural erosion and loss of traditional knowledge related to landraces, local agricultural products, native livestock breeds, the culture of cooking food, & local diets (Amekawa, 2011). In this regard, gender differences should be taken into consideration.

When Women's preferences are understood and considered, this can result in the adoption of varieties with added transformative interventions (Ceccarelli et al., 2003; Weltzien et al., 2005; Witcombe et al., 2006).

Thus, equipping agricultural researchers, decision-makers, and project designers with the tools and knowledge of innovative gender-transformative practices and creating accountability for serving Women and men will be key (Kristjanson et al., 2017, p. 1). Compared to other food crops, wheat and barley require considerable postharvest handling and processing: and proper storage. Breeders have made vast strides in developing and releasing improved wheat and barley varieties to boost yield, climatic resistance, and nutritional qualities. However, challenges to widespread adoption remain.

Understanding how Women contribute to agricultural value chains can help adapt existing tools and look critically at narratives around Participatory Plant Breeding (PPB) to enhance the effectiveness of breeding programs in contributing to nutrition and food security. This paper also looks at whether the process of engaging Women in participatory breeding contributes to empowerment pathways. The following questions set the stage for discussions with researchers, looking specifically at the development of PPB of wheat and barley development in Iran: how are evolutionary plant breeding and researchers responsive to possible differences between men and Women? Can engaging Women in the selection of and priority-setting activities for developing new wheat and barley varieties contribute to improved adoption rates and, thus, to improved food security?

This case study combines gray and secondary, peer-reviewed literature with key informant interviews. Search criteria for secondary sources included the key debates and theories surrounding the impact of budding gender-responsive approaches to agriculture, particularly PPB. The aim was to situate this qualitative research in the broader debates surrounding PPB and the relationship between gender, wheat and barley production, and food security. The literature reviewed was inductively coded and systematically structured based on major thematic categories that emerged, which allowed for an organization of interview responses within these prominent themes. Key informants included members of organizations working on wheat and barley crops, as well as national and international university researchers. A semi-structured interview format allowed the interviewee to take the interview beyond the prepared discussion guide. The 15 conducted interviews averaged 40 min each, remaining open to emerging questions.

All responses were anonymized to allow interviewees to respond honestly, but Free, Prior, and Informed Consent (FPIC) to publish has been obtained from all participants. Interviews were transcribed and analyzed, applying thematic analysis to identify patterns and draw.





focus Group Discussion Session and presenting different varieties of Wheat and Barley

Indigenous Women contribution as breeders to the conservation of biodiversity in Iran

Crop breeding offers the potential to support sustainable agricultural production in a changing climate (Chapman et al., 2012; Tester & Langridge, 2010), and improve food security and nutrition (Christinck & Weltzien, 2012; Zaidi et al., 2019). The adoption and thus impact of improved crop varieties, however, depends on the tangible benefits they provide for the men and Women involved in their production, processing and marketing (Tufan et al., 2018, p. 7). For decades, breeding programs have prioritized common denominator traits such as yield and disease resistance, following a one-size-fits-all approach in setting breeding agendas to reach the maximum number of farmers and witness the most remarkable production improvements (Teeken et al., 2018). The poor suitability for traditional processing and other quality characteristics of some new varieties for consumer products may, however, play an essential role in preventing their wider adoption (Lucht, 2015). Breeding is a long and expensive process and requires tradeoffs and decision-making regarding what traits are prioritized (Klapwijk et al., 2014; Weih, 2003). Therefore, breeders increasingly engage in participatory evaluations where farmers can test new varieties and register their preferences. Nevertheless, even in more participatory approaches to breeding, gender-specific preferences for traits, including cooking and processing characteristics, are often not determined, and seldom prioritized in breeding programs (Asrat et al., 2010).

Responsible for the preparation of meals, Women are gatekeepers to food security for their household, and often have different trait preferences than men. Women are involved in every step of the value chain: from seed selection, field tilling, sowing, weed removal, and harvesting, to sales and further processing. However, due to societal norms and the added burden of unpaid housework and caring for children and the elderly, Women often have less access to markets, information technologies, credit, and inputs, limiting their ability to participate in decision-making (Doss, 2018)

Accounting for gender dynamics and differentiated preferences can help increase the adoption of varieties that will help strengthen food and nutrition security (Tufan et al., 2018). Therefore, there is a need for greater understanding [of] how differences in the roles and resources, power, and status of men and Women affect their preferences and technology adoption decisions (Ashby, 2018, p. 11).

The first step for breeding climate change and biodiversity-oriented varieties, therefore, is to know and consider all the players in the value chain. Women have specific knowledge about crops that is often different from men's. They often use different parts of the plants daily than men and have detailed knowledge of quality and processing characteristics.

Each stage in a participatory breeding program involves a product advancement decision " whether or not to advance candidate materials to the next breeding stage. The first stage of product design is critical for determining outcomes, as this is when the beneficiary population and the improvements needed are defined, and demand is considered (Ashby & Polar, 2019). The challenge is how to systematize relevant information about gender differences in preferences, needs, and priorities, in a way that breeders can factor into their trait prioritization and product profiles (Ashby & Polar, 2019, p. 13).

Indigenous Women's Participation in Decision-Making Issues Related to Evolutionary Plant Breeding at The Local Level

Women play a dominant role in the production, processing, and marketing along the wheat and barley value chain, providing a significant number of the labor involved in Iranian wheat and barley production. Often labeled a Food security crop , wheat and barley represent an essential food and subsistence crop and also serve as a means to generate independent income for Women. Whereas both men and Women are involved in the production, the processing is mainly done by Women. Almost all interviewees described Women as being necessary stakeholders in the priority-setting for new or changed traits due to their prominent role in the wheat and barley value chain. They dominate wheat and barley production, processing, and marketing. In terms of how Women make decisions in terms of wheat and barley processing, it's pretty single-handed.

Processing wheat and barley, mainly for food, is a woman's responsibility. However, today this task has become very weak due to market intervention. The skill for processing is more in the hands of Women. Women convert wheat and barley into valuable products such as bread. Women in Iran were found to spend more time and labor-oriented toward wheat and barley production for household consumption than men. With low access to resources, Women rely on their own labor for processing activities for consumption. Given Women's traditional time poverty (Grassi et al., 2015), they only process small quantities, requiring varieties suited for in-ground storability.



Women have a crucial role in recognizing flavor.

Agricultural inputs and information are thus particularly important for Women, yet Women farmers tend to have less access to land, agricultural extension, formal education, and financial services (Akter et al., 2017; Diiro et al., 2018; Doss et al., 2017; International Fund for Agricultural Development, 2015; World Bank, FAO, IFAD, 2009). Women are majorly involved in the processing and cooking of wheat and barley products. Yet Women's involvement in the production of wheat and barley is limited by their control or ownership of land, which is patrilineal.

Increasing Women's control over resources in general increases the well-being of a family, including improved nutrition and education (Van Den Bold et al., 2013; Quisumbing et al., 2015). Several interviewees spoke about the central role Women's voice in the breeding process can play regarding food security: If we breed toward Women's preferences, we can achieve food security. Processing is mainly done by Women. Thus, their trait preferences are distinct. The cooking qualities of the final product are quite important for Women, as well as in-ground storability. Along the wheat and barley value chain in Iran, disparities remain in the gendered division of labor, as well as in Women's access to and control over the use of land, inputs, and profits. Men and Women in some parts of Iran farm on separate plots, with Women concentrating on production for household consumption and local markets, while men dominate commercial production. In contrast, some communities largely undertake wheat and barley production on plots shared between men and Women, and when asked about decision-making, they said they take these together. Cultural norms dictating Women's roles or ability to voice their opinions within a community are noted by interviewed researchers as critical constraints to the success of participatory breeding. Substantial regional differences exist, which determine social dynamics. In some parts of Iran, Women will not talk in front of their husbands, so they can't express their preferences.





Both women and men have their own important perspective in choosing crop varieties

Gender-differentiated trait preferences several interviewees pointed to different trait preferences between Women and men, and diverse agroecological conditions as determining adoption trends of new varieties. Plant breeding can bring great benefits to farmers if it helps achieve relevant gains (Christinck et al., 2017). Preferred traits vary across agro-ecological and socio-economic conditions and are impacted by highly gendered production goals (Christinck et al., 2017). This is supported by a general observation across 39 varietal preference studies of six different staple crops examined by Christinck et al., that men tend to focus more on production and marketing-related traits, and Women much more on traits that are related to post-harvest processing and food preparation (Christinck et al., 2017, p. 5). Several of the traits preferred by Women, such as ease of threshing and ease of harvest, are clearly associated with Women's farming responsibilities and time poverty. Other quality traits of cooking time, taste, and grain color reflect Women's commitment to food preparation. On a national scale of wheat and barley producers in Iran, it seems that for Women, processing traits are crucial. taste and smell is Women's top preferred trait, whereas men consider agronomic traits more important. Taste and smell , for example, were deemed unimportant by men. This is supported by interviewees based on their fieldwork: Due to their role in cooking, Women are more specific about their desired characteristics.



Women want varieties that smell well, for example. If asked about cooking, men will say, ˜ask my wife'. Men wish for varieties that produce fast money " high yield and early maturity. Overall, Women attached greater importance to cooking and processing traits than men.

A number of interviewees suggested that there is still a long way to go before breeding programs become truly participatory. Notably, a gap in involving Women was identified. On paper, these things are coming up. But those would be more directly addressed if Women had an input earlier in the process. Quite often, the criticisms you hear from breeders is that it's all very well, but there are too many preferences to breed for. The big challenge is to be flexible and to be able to create combinations of characteristics in varieties that meet different needs.

Interviewees described how a lack of Women's priorities reflected in traits pushed forward in the breeding agenda was catalyzed partly by frustrations of breeders and food scientists who just want to know trait rankings without digging deeper into how Women view crops themselves and how their unpaid household duties, for example, play a role in determining how they prioritize traits. If "small threshing machines become available and we will have threshing machines in all villages", then it doesn't make sense anymore to take threshing ability into account in setting breeding objectives.

Empowering Indigenous Women Through Gender-Responsive Plant Breeding

Engaging Women in varietal testing, and determining what traits to breed for, gives Women a greater voice, and advances their position in communities, empowering them to participate in decision-making. We can't talk about Women being empowered in biodiversity conservation and restoration if they are not engaged in the decision-making of how and what characteristics the technology they use needs to have. If I am not able to choose what asset I am able to use, where, and how, how am I empowered and influence at all?

Women's assessment of varietal performance depends critically on their access to essential production inputs (land, capital, knowledge, fertilizer and pesticides, outside labor). Importantly, varieties that may perform well under ideal laboratory conditions, with fertilizer, irrigation, and controlled temperature, do not necessarily fare as well in unique socio- ecological contexts, especially in marginal areas (Vernooy, 2003). If a new plant trait changes her requirement for a potentially expensive input, such as varieties that rely on higher applications of water or fertilizer to outperform current varieties, Women do generally not have the incentive to reallocate their income away from school fees and medicine to buy it (Ashby & Polar, 2019, p. 22).

Time poverty is an important aspect of gender inequality for consideration in EPB. The introduction of new varieties, in addition to the new management practices these require, frequently changes the amount and type of work to be done (Doss et al., 2017).

The assessments of trait preferences highlighted in both the literature and by interviewees

show that Women value traits that alleviate or at least do not increase the burden of unpaid work and drudgery on small farms " factors that are highlighted in time poverty literature (Blackden & Wodon, 2006; Grassi et al., 2015). For Indigenous Women, household responsibilities already give them less time to spend on their crops or take their produce to market (Gates, 2019, p. 177). New plant traits can further increase the burden of work on small farms and decrease the returns to Women's unpaid labor. For example, ease to threshing is a common trait preferred by both Women and men due to the associated reduction in labor and time spent before cooking or processing. Women are considering their children and cooking time. They want varieties that they can peel with ease. However, interviewees also brought up concerns regarding labor-saving technology for Women. While mechanization can decrease labor and time-use, it can also mean decreasing Women's power over the process, or have unintended consequences, such as exposing Women to harmful smoke (Kawarazuka et al., 2018). While it saves time for Women, threshing equipment is very expensive for most smallholder Women to purchase and challenging to maintain (Kawarazuka et al., 2018). The equipment itself is regarded as masculine in nature. When equipment is built, gender concerns are not considered " most are so heavy that they can only be operated by men.



Women's assessment of varietal performance



Measurement of required traits of wheat plant by women in the experimental field

Conclusion

Participatory and Evolutionary Plant Breeding offers the potential to link farmer preferences, as well as their knowledge, with scientific improvements for enhanced food and nutrition security. However, this case study of wheat and barley in Iran reveals that interviewed breeders and social scientists in agricultural development agree that there is a gap in integrating farmers', particularly Women's, needs and preferences into the breeding agenda. Adaptive crop varieties and biodiversity conservation among crops will only be successful if we consider the multiple roles of Indigenous Women in agriculture. Survey data from the literature and qualitative key informant interviews show that engaging both Women and men in the selection of and priority-setting for desired traits has the potential to improve the adoption of the best varieties and that their differentiated needs and preferences have not been taken into consideration under traditional breeding approaches. Although this study generally focused on wheat and barley, it should be noted that the role of Women in different agricultural products is very different, but what is common in all these products is the little or negligible access of Women to the market. To improve the design and impact of breeding programs, for practical, gender-responsive, and end-user-driven implementation, this study highlights the need for further research examining the effects of gender integration into breeding priorities.

Understanding the impact of choices made by breeding programs on diverse users supports policy changes that allow for transformative changes along the entire value chain of agricultural biodiversity. Giving Women a voice and, thus, choice in the decision-making process regarding what traits to breed for has implications on better understanding how technology adaptations affect empowerment indicators of control over production decisions and outputs, biodiversity conservation, and control over the use of profits, as well as Indigenous Women's knowledge.

Case Study From Mali (Sahel) On The Contribution Of Indigenous Women, Traditional Knowledge And Sustainable Customary Use In Biodiversity Conservation To The Agenda Of The Global Biodiversity Framework

By Oumou Dicko and Addidiatou Saumana

Background

Mali is a large landlocked country in Africa, located in the Sahel region, covering an area of 1,241,238 km². Its population is estimated at 22,395,485 people, of whom 49.7% are Women, 47.9% are young people under 15 years old, and 49.9% are between 15 and 64 years old. With an annual population growth rate of 3.6%, the majority (73%) live in rural areas. Mali has a low-income economy, lacking diversification, and is highly vulnerable to fluctuations in raw material prices. The country's high population growth, with a fertility rate of 5.88 children per woman, combined with the impacts of climate change, poses serious threats to agriculture and food security.

Douentza, a new administrative region covering 23,481 km² (29.7% of Mali's total area), has one of the lowest population densities. It is home to diverse ethnic groups, including the Fulani, Dogon, Bambara, SonrhaÃ¯s, Bozos, Tuaregs, Mossis, and Bellas.

Although Indigenous Peoples have contributed the least to climate change due to their sustainable lifestyles and minimal carbon footprint, they are among the most affected by its impacts and by the measures taken to mitigate or adapt to it. These effects are particularly harsh on marginalized, discriminated against, and economically disadvantaged groups. In this context, Indigenous Women bear the heaviest burden, as they are primarily responsible for providing water, food, and care for their families. They must travel increasingly long distances to find water sources and care for growing numbers of sick family members. Additionally, they face challenges from unpredictable planting seasons, disrupted cultural ceremonies, reduced harvests, floods, and many other consequences of climate change.

General Objective:

Develop case studies that showcase the contributions of Indigenous Women and their traditional knowledge to the sustainable use of biodiversity and conservation, within the context of the Global Biodiversity Framework implementation process.

Specific Objectives:

- Present the case studies at the Twelfth Meeting of the Ad Hoc Open-ended Intercession Working Group on Article 8(j) and Related Provisions of the Convention on Biological Diversity, scheduled for 12-16 November 2023 in Geneva, Switzerland.
- Produce a publication featuring the case studies to be shared at the 16th Conference of the Parties to the Convention on Biological Diversity in 2024.
- Promote dialogue between Indigenous Women and representatives from governments, academia, and other sectors to highlight Women's contributions to biodiversity conservation.
- Facilitate the International Dialogue with Indigenous Peoples, Local Communities, and Relevant Stakeholders on the implementation of the Kunming-Montreal Global Biodiversity Framework and the Gender Action Plan, scheduled for 9-10 November 2023 in Geneva, Switzerland.
- This study is regional in scope, focusing on the new administrative region of Douentza, which consists of 6 circles, 17 districts, and 24 municipalities.

Indigenous Women's contribution to biodiversity conservation

The contributions of Indigenous Women to this study as well as the messages they deliver represent different responses to multiple activities carried out by these Indigenous Women from different communities in the Douentza region.Indigenous Women's Customary Sustainable Use Practices

It is important to identify sustainable customary uses for a variety of reasons; The studies provide very clear evidence of the traditional occupation and use of territories by communities and can help them to assert their rights of access, control and use of these territories and resources. They also provide a solid foundation for the development of community-based land and resource management plans. Research also contributes to the maintenance and revitalization of traditional knowledge, practices and skills, and to a better understanding of the role of forest peoples in biodiversity management.

The activities carried out by Indigenous Women are:

Firewood collection

Indigenous communities are highly dependent on forest products. In the face of low agricultural productivity, forest products, particularly fuelwood, provide additional income for Indigenous Women. Collection is limited to that of dead wood, and firewood collected in the forest is sold to traders who export it to other areas.

Traditional weaves



Making mats from palm leaves or grass stalks is a skill possessed by Indigenous Women. They were mainly engaged in making of mats. For many pastoralists' wives and pastoralist-farmers, this type of activity was the main source of personal income before the drought. Making mats for houses and tents took up most of their time.

Construction of habitats and decorations



Growing Edible Vegetables

Market gardening is a very popular activity among Indigenous Women, crops such as okra, sorrel, lettuce, cabbage, beetroot, carrot, turnip, parsley, pepper, onion, tomato, shallot, bean, pea, garlic, watermelon, melon, chili, squash, zucchini, mint, lemongrass are exploited in the country and even in the interior of the country

Wild Plants

Several wild plants serve as regular sources of food and often provide greater nutritional value than cultivated plants. The following examples illustrate the important role these plants play:

Adansonia digitata (Baobab) " orowi (Fulfulde): The fresh young leaves make an excellent vegetable, and when dried and powdered, they are commonly sold as an ingredient in various dishes and sauces.

Boscia senegalensis " guiguila¨ (Fulfulde): Its seeds, used during times of scarcity, are rich in protein. However, due to the presence of toxic substances, proper preparation is required before consumption.

Shea Tree " kaaredja¨ (Fulfulde): The fruits are eaten directly, and the butter extracted from the almond is the main source of vegetable lipids in rural areas. Shea almonds and butter are also important export commodities for Mali.

Parkia biglobos " n'daneeri (Fulfulde): The carbohydrate-rich pulp of its fruit is consumed fresh or as porridge after drying. The seeds are used to make "Maari," a condiment traded widely across the sub-region. The pulp is also used as dietary flour in Europe.

Zaban (foogi), Tamarind (Jamba), and Wild Grapes (falfaadja¨) (Fulfulde): These fruits are eaten directly, used to prepare beverages, or serve as fermenting agents in cereal porridge.

Borassus aethiopium: The bud is eaten raw, while the boiled fruit is consumed, and the wood is highly valued for construction.

Detarium microcarpa " konkedja¨ (Fulfulde): The fruit is sucked for its pulp, which is also used to make dumplings.
Nymphea sp. " taamba¨ (Fulfulde): The fruit is eaten raw or boiled.

Wild Grasses: Common in the diet of northern regions, these grasses contain about 10% protein, almost as much as rice.

Cyperus rotundus " Urdi (Fulfulde): This plant is used as incense.

Corchorus sp. " fakohoi: The leaves of several species are processed to create an ingredient used in "black sauce."





Rearing of small ruminants

Indigenous Women play an important role in the selection of breeding animals. Indeed, milking puts them in daily contact with the cows, and gives them the opportunity to observe the animals up close. When it comes to animal reproduction, Women apply their own criteria when it comes to prioritization. They regularly share the information they have with their husbands and with other men in the village. The Women keep a close eye on the animals, including their health. They provide care for sick animals, prepare the medicines used in their treatment and also treat animals in the case of minor illnesses. They are also responsible for eight-day-old calves, their mothers, etc. Women manage milk-related operations and control income from the sale of dairy products (butter). Women and children sometimes own their own animals, which are then managed by the integrated with that of the herd. Women have control over their own animals. External influences: when men leave the farm to look outside for As an additional income, Women are taking on increasing responsibilities in the management of the herd.

Indigenous Women's participation in biodiversity decision-making at the local, regional, national, or international level.

Indigenous Peoples, and particularly Indigenous Women, are often excluded from meaningful participation in national and international discussions on climate change adaptation and mitigation. Despite the fact that the decisions made in these forums directly affect their lives, lands, water, and resources, their rights are frequently overlooked. Many climate change measures are implemented at the expense of Indigenous Peoples' rights, lands, biological diversity, and territories.

It is therefore crucial to raise awareness about the specific effects of climate change on Indigenous Women, who rely on biological resources to support their families and sustain their cultural practices. Equally important is drawing the attention of policymakers, international organizations, and the general public to these issues, ensuring that Indigenous voices are heard and considered in the decision-making process.

Indigenous Women's traditional knowledge with a focus on health

The term "Indigenous Peoples' knowledge" refers to the knowledge and skills accumulated and refined over generations, which guide Indigenous societies in their interactions with the environment. This knowledge encompasses the use of plants and animals in traditional pharmacopoeia. Various parts of plants"such as leaves, bark, flowers, roots, or the entire plant"are utilized for medicinal purposes, as well as parts of animals, including skin, fat, horns, and flesh.

Efforts are currently underway to harness the medicinal potential of plants for scientific use in the production of pharmaceuticals and to improve health coverage for populations. Medicinal plants are widely used not only in rural areas but also in urban settings, with many people relying on these traditional remedies. It is commonly believed that every plant has healing properties. These plant-based substances are applied in both human and veterinary medicine.

For example, powdered elephant ivory is believed to cure rheumatism, and its skin is used to treat certain skin conditions. Placenta extracts are thought to address female infertility and aid in difficult childbirth, while semen is used for treating male infertility. Hyena fat is traditionally used for ear infections, and its meat is believed to cure blindness. Python meat is said to be a remedy for certain forms of jaundice.
The focus is on the loss of land and language and the impact on biodiversity

Many Indigenous Peoples and local communities actively manage their customary lands and waters in ways that effectively conserve them. These means deserve to be more widely recognized and supported. This positive relationship is exemplified by customary activities and practice and knowledge are actively conserved by Indigenous Peoples and communities through customary rules and laws that guide and restrict their use. In addition, communities are increasingly active in species monitoring and early identification of problems or threat. Indigenous Peoples and local communities also contribute to the maintenance of genetic diversity, particularly through their agricultural practices, which often provide important lessons for broader strategies for the protection of the genetic diversity. Maintaining crop diversity on farms and related wildlife species is closely linked to food security and security revenues. In this regard, Indigenous Women play particularly important roles, as they often make critical decisions about Seed varieties to be saved, propagated or disposed of. Livestock farming communities (pastoralism) are essential to ensure the survival of different species, helping to preserve the genetic diversity of farm and domestic animals.

Recommendations

- Increase Training Opportunities: Provide more training opportunities for Indigenous Peoples and local communities, with a focus on engaging traditional knowledge holders.
- Strengthen Support for On-Farm and In-Situ Conservation: Improve support for conservation efforts carried out by Indigenous Peoples and local communities, particularly on farms and in natural habitats.
- Develop National and Local Plans: Formulate national and local plans, along with specific targets, to ensure the effective implementation of the Action Plan for Sustainable Customary Use of Biodiversity Conservation.
- Support Indigenous Appeals: Actively support the appeals and initiatives of Indigenous Peoples and local communities.



Indigenous Women collect, properly store, and exchange seeds to ensure the preservation of genetic diversity.

INDIGENOUS WOMEN IN AFRICA USE THEIR LANGUAGE TO TRANSMIT TRADITIONAL KNOWLEDGE AND PRACTICES



The Fulani Indigenous Peoples in Mali value milk as precious and spiritual and is used not only for sustenance but for ceremony and as a source of income



Indigenous children learn their language and traditions through different programs carried out in the community and through practice during events and ceremonies.



Livestock is a source of food and wealth for pastoralist communities and the goat is a highly resistant animal and its milk is of high value and is used for medicinal purposes.



Intergenerational exchange in Burkina faso transmiting knowldge of herbs and spices, their importance, uses and processing to the younger generation.



Traditions are an integral part of community for the Nuba Indigenous peoples in Sudan and the women use language, songs and artifacts to preserve and relay traditional knowledge and practices.

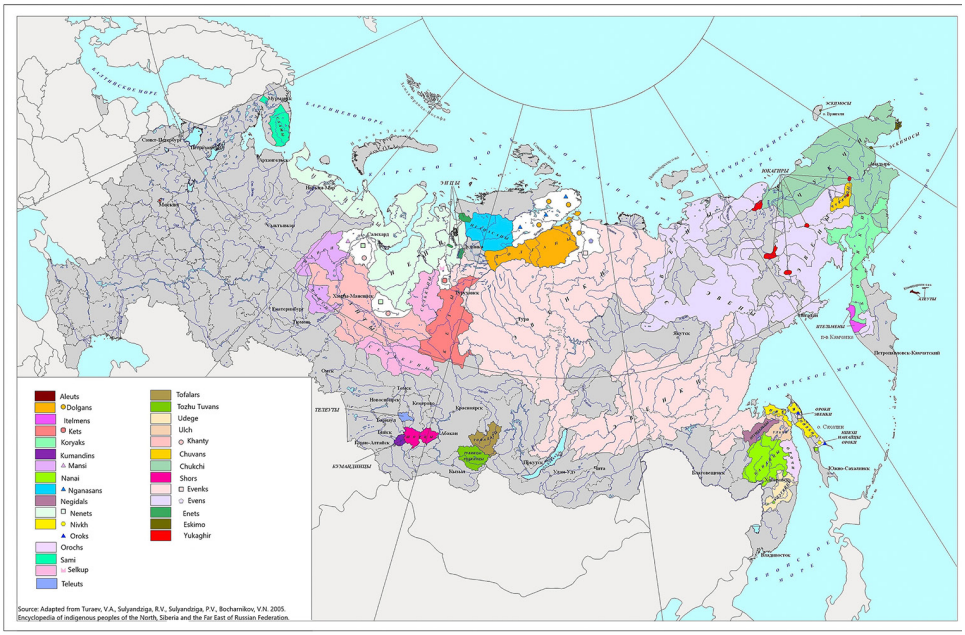


Bambuti Indigenous Women from Democratic Rebuplic of Congo making briquettes as an alternative source of energy to contribute towards protecting their forests.



Indigenous Fulani women in Burkina Faso come together to make their traditional pottery that they use in their homes and as a source of income.

Indigenous Women of Russia.



About the importance of wild berries for arctic Indigenous Peoples
Blue Honeysuckle By Victoria Firsova

Photos by Freepik are used in the material.

I live in the Magadan region, in the North-East of Russia. The territory of the Magadan region is a forest-tundra and mountainous landscape, on this territory live about 6 thousand Indigenous small-numbered peoples of Russia, mainly Even, Orochi, Chukchi, Koryak, Kamchadal's. In summer time we have a lot of wild berries ripening: blue honeysuckle, blueberry, cloudberry, knyazhenika berry, currant, cowberry, rosehip.

Indigenous Women prepare a lot of wild plants and mushrooms for the long winter, including berries, which grow in abundance on this territory and in a short summertime - three months, have time to ripen. Blue Honeysuckle grows in the forest near the river and in swampy places where there is plenty of water. The taste of honeysuckle is sweet-sour and aromatic.

Honeysuckle berries ripen first, at the end of July. The harvest is not always good, it all depends on precipitation in winter. In the traditional calendar there is an omen - if there is a lot of snow at the beginning of winter, then the harvest of honeysuckle will be rich and good. The berry grows on bushes, sometimes very tall and necessarily on the banks of the river, and wet places.



Honeysuckle is very rich in vitamins and trace elements, which are very lacking in the cold and harsh Northern climate. Its taste is sweet and sour, it is my favorite berry. It is hard to pick it, because at this time it is hot, there are a lot of mosquitoes and gnats. Northern berries are very important to Indigenous Peoples, so they are always harvested in many different ways. I love honeysuckle because of its aroma and sweet and sour taste. Traditionally, honeysuckle is used to make jams, morsels, vareniki (pirogy) and pies. This berry has a lot of microelements and vitamins, which are very useful for the body

Unfortunately, more and more industry is coming to our Northern region, and therefore the state of ecological environment also affects the northern berry crop. Technogenic waste from the mining and production of gold mining, which our area is rich in, gets into the rivers, and the berry in these places dies. To solve this problem, Indigenous Women initiated a program to plant these berries in other territories, as well as replanting them to their homestead plots, so that they could be saved and preserved. It turned out that wild bushes of honeysuckle are very well cultivated and take root along arms and lakes, remote from industry, as well as on house-side moistened areas. In this way, Indigenous Women save wild species from extinction, while preserving traditional knowledge about these species, traditional methods, technologies, recipes, including medicinal and health-improving ones.

It turned out that wild honeysuckle bushes are very well cultivated and take root along clean rivers and lakes far away from the industry, as well as in water areas near houses. We take wild bushes that are particularly fruitful, with large berries, and carefully transplant them. When transplanting, we take only a part of the bush, so as not to disturb or kill the main bush - it remains in its place for further growth. New seedlings require mandatory abundant watering, without adding any fertilizers, because honeysuckle bushes like abundant clean water. This is hard but very important work that Women do to save the species. After the first few years of good care and abundant watering, the honeysuckle starts to grow and give a steady harvest. On flowing riverbanks, the honeysuckle is always sweeter and larger.

Cloudberry by Valentina Sovkina.

Pictures by Valentina Sovkina.



I was born in Lovozero, in a large family of reindeer herders and fishermen, Sami by nationality. From childhood I was close to my grandparents, they took me with them both to the tundra and to the lake. I learned all the wisdom of life from them. I learned my first life lessons from them: if you want to take something, ask the mother of the earth for permission, and if you take it, thank her, if you pick berries, thank the place. Our gratitude is not big - if you have picked berries, put three berries on the anthill. I have never changed these habits, and I taught them to my children.I will tell you about our berry cloudberry. It is called sunny, amber of the tundra, queen of the Arctic, royal berry. And these are not just random names. Cloudberry in our Sami language is I[gmj, Luemann. Literally, it would translate as - the Power of Place, the Power of the Earth.

Cloudberry refers to a type of perennial rather rare herbaceous plants. It belongs to the genus Rubus, in simple words - raspberry. The correct Latin name is Rubus chamaemorus. Cloudberry fruits are suitable for eating both raw and processed. Cloudberries prefer peat bogs and swampy forest areas, moss, and moss-lichen tundra. Indirect signs of places where cloudberries can grow are its inhabitants - Siberian grouse and white partridges.



Cloudberries are very much honored by us. As my grandmother used to say: Cloudberry is a sweet berry, for its sake you bow down to the earth". Where fruits, vegetables and herbs do not grow, cloudberries serve as a source of microelements necessary for the body (the so-called hematopoietic series - magnesium, calcium, cobalt, potassium, iron, phosphorus, aluminum, silicon, etc.). For example: in cloudberries vitamin C, 4 times more than in an orange and 2 times more vitamin A than in carrots. 75 grams of these golden-yellow berries satisfy the daily human requirement for vitamin C.

There are certain rules for picking berries, especially cloudberries. You can't take all the berries, you must leave some for the birds and animals. All northern peoples follow these rules. The berries are taken ripe, standing on a stalk with separated sepals. Cloudberries are often used with fish, caviar, fish oil. And this is not by chance. It contains organic acids. In modern cuisine, when fish is cooked, it is sprinkled with lemon. Here and cloudberry helps the stomach to digest fatty fish. Indigenous Women are doing a lot of work on this berry: from monitoring the places where it grows and the impact of climate change on the seasonality of the berry, to the semi-popularization of traditional dishes made from cloudberries, and the preservation of traditional medicinal recipes with them.

Russian Indigenous Women's Website



During the pandemic, Indigenous Women activists created an initiative group to communicate and activate during this difficult time. The group was made up of very different representatives " craftsWomen, fishermen, gatherers, entrepreneurs, journalists, psychologists. All of them had great experience of work, many of them were leaders of local social movements and had done a lot of work in the regions, villages, settlements. As a result of communication, the idea of creating a website was developed, where there will be stories about all existing Women's initiatives, stories from life, connection with nature and even reminiscences and reflections on various topics. Thanks to Daria Egereva activism, this idea was freshly developed, resulting in the creation of a unified space where Women can share stories about what they are doing, what they do, what they succeed well and what they are dreaming. The main mission is to unite Indigenous Women and their initiatives for sustainable development of Indigenous Peoples of Russia, to assist those who need support. This website is not just for Women, it is about Women and the work they do. All the material is collected by Women, written with a female audience in mind, but that doesn't mean that a male audience won't be interested in reading us - the site will be of interest to any audience.

A lot of our Indigenous Women are engaged in the preservation of language and culture, reviving holidays and traditions, but at the same time they work hard to provide for their families and children. Many Women have several types of income, they work in traditional industries, but they also work part-time in additional specialties, so the topics that are raised on the site are very different.

This is a unique site that talks about the activities of Indigenous Women in Russia, tells the individual stories of hearth keepers, social activists, artists, entertainers, entrepreneurs, and others whose lives are closely linked to their land, nature, traditional knowledge, language, and environment and biodiversity. The site also contains information on the Center for Support of Indigenous Peoples of the North's project on the development of Women's entrepreneurship. An entire section is devoted to Indigenous Women entrepreneurs who are engaged in the development of their communities through the provision of goods and services, such as the production and sale of traditional foods such as dried meat, berries, medicinal pickings of wild herbs and more.



Picture from the page of website https://IndigenousWomen.ru/

A sad story of a nation passing away: last generation of Women of Ahaivayam village

By Asya Uskova

The village of Achaivayam. Chukchi, a nomadic people of Kamchatka and Chukotka, are the original inhabitants of the village. Traditionally, when migrating, Women put up a national dwelling. They sew together reindeer skins and cover poles with them, leaving a hole for a chimney at the top. This is how it used to be. The photos show the place where people moved to live from the settlement for the whole summer. Before there were a lot of tents here. Fish was dried on hangers. Women were sewing reindeer skins. Now two elderly Women go alone to remove the only tent from the field. It's only been standing for one month. The Women told me that they want to remove it. They feel sorry for their precious structure, which is spoilt in vain by the rains. These Women have no one to pass on their experience, their skills, their knowledge of how they sew and put up a tent. Today's young girls seek to acquire knowledge in the city in higher educational institutions.

This photo is a testimony of the last generation of Women of Achaivayam village, who lived and were brought up by their mothers traditionally in the tundra herding reindeer. One of the Women in the picture is illiterate. She never went to school because her parents wanted their daughter to help them in their nomadic life.



Photos by Ekaterina Kulakova







Biodiversity Conservation by Indigenous and Rural Women in Bunyakiri. Case of the "choko" Phenomenon in The Village of Kambaka

By Daniel Mabengo Ngimbi, ANAPAC – DRC and Taylor Buzima, Maarifa wa ya mama vijijini – DRC

Introduction

In the eastern part of the Democratic Republic of Congo (DRC), specifically in South Kivu, Kalehe, the local community of Kitembo has long observed an intriguing natural event known as the "Choko" phenomenon. This migratory movement of fish between the Loo River and a small river called "Choko" has been a regular occurrence, providing a crucial food source for the riparian community. The event has been observed since the early 1980s, yet its causes, characteristics, and significance have only recently become the focus of research. This study was initiated to deepen our understanding of the phenomenon and to promote sustainable behavior in conserving aquatic ecosystems.

Objectives

The main objectives of this study are to:

1.Understand the reasons behind the "Choko" phenomenon, its importance, and its characteristics.

2.Raise awareness among local communities on behaviors that contribute to the sustainability and conservation of aquatic ecosystems.

3.Document the spiritual and cultural connotations of the phenomenon.

Features

1.The phenomenon <Choko> has Some spiritual connotations :
When there is a situation of social instability, that is, a conflict or dispute between the members of the community either related to inheritance or inheritance, this phenomenon stops.
When catching fish, it is forbidden to use metals that can injure the fish: machetes, arrows, knives or spears at the risk of seeing the phenomenon stop.
Before the fish arrive in the small river, there must be a heavy rain accompanied by lightning. These are the signs that warn the community of the beginning of this phenomenon.

In addition to the above, the phenomenon also takes into account the quality of nature around the rivers.

We therefore initiated this study to allow us to understand all the aspects around this phenomenon and to raise awareness among communities on the modes of behaviour to adopt for the sustainability and conservation of aquatic ecosystems in the region.

The Central Role of Women in Agriculture









In the community of Bunyakiri, Women play a pivotal role in agriculture, natural resource management, and food security.

Importance of Tree Domestication

The domestication of trees, including the adoption of exotic species, offers new economic opportunities for the community.This study revealed that deforestation around the small rivers in the region negatively impacted the local fish population, as the fish lost access to essential food sources such as caterpillars and exotic fruits.

Recognizing the importance of tree conservation, the Women of Bunyakiri took the initiative to restore the ecosystems surrounding these waterways. Their efforts led to noticeable improvements in the local environment

Other Potential Contribution of Indigenous Women

Women in the Bunyakiri community play a significant role in the domestication of exotic tree species through various means, including:

***Traditional Knowledge*:**

Women possess extensive knowledge of local plants, their uses, and properties, which is crucial for the successful domestication of exotic tree species.

***Labor*:**

They provide essential labor for agricultural activities, contributing significantly to the planting, cultivation, and maintenance of these tree species.

***Processing and Marketing*:**

Women are often involved in the processing of forest products and play a key role in their marketing, helping to generate income for their households and communities.

Knowledge Transmission:

Women are vital in passing on traditional knowledge and agricultural practices to future generations, ensuring the continuation of sustainable practices

Challenges Faced by Women

Despite their important contributions, Women in the region face numerous challenges, including:

- Limited Access to Resources: Many Women have restricted access to essential resources such as land, credit, seeds, and agricultural inputs, limiting their ability to expand their agricultural activities.
-
- Discrimination: Gender-based discrimination often limits Women's participation in decision-making processes, reducing their influence in agricultural and community affairs.
- Work Overload: Women frequently juggle farm labor with domestic responsibilities, leading to a double workload that can affect their productivity and well-being.
- Contextual Challenges in Eastern DRC:
- The eastern DRC faces unique challenges, including armed conflict, food insecurity, and land degra- dation. These factors further complicate the lives of Women engaged in agriculture and natural resource management.

Strengthening Women's Role in Domestication of Exotic Tree Species

To enhance the role of Women in the domestication of exotic tree species, the following actions are recommended:

- Capacity Building:Provide training on cultivation techniques, nursery management, and marketing to equip Women with the skills needed to improve their agricultural practices.
- Improving Access to Resources:Facilitate access to land, credit, seeds, and agricultural inputs to empower Women and expand their agricultural activities.
- Promoting Gender Equality: Implement policies and programs that promote gender equality in the agricultural sector, ensuring Women have equal opportunities and representation in decision-making.
- Recognizing Their Contributions: Acknowledge and value Women's traditional knowledge and labor, which are crucial to the success of agricultural and conservation efforts in the region.



Showcasing sustainable energy efficient briquettes made by Indigenous Women.

WAMAMA VIJIJNI FROM DRC WORK TOGETHER TO ENSURE THEY USE THEIR TRADITIONAL KNOWLEDGE AS THEY MULTI TASK ENSURING FOOD SECURITY, PROTECTING FOREST AND CONSERVE THEIR BIODIVERSITY



Women clearing and weeding the vegetable garden together to ensure a good yield



Community members working together to till and prepare the land in readiness for planting



Community members taking care of their Cassava plants in the forest



Community members venturing into the forest together



A woman Harvesting groudnuts from her garden.



Women showing a bountiful harvest of Cassava after months of waiting.

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