Name: Rodrick Ndi

Affiliation: University of Dschang

**Department:** English Law

Faculty: Dschang School of Law and Political Science, University of Dschang

Box: P.O Box 66, Dschang.

**Country: Cameroon** 

Email: <a href="mailto:impeccabletitigo@gmail.com">impeccabletitigo@gmail.com</a>

**Tel:** + (237) 677174930/676113708

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# Subject chosen: GENDER DIMENTIONS OF VULNERABILITY TO CLIMATE CHANGE AS WELL AS GENDER DIMENTIONS OF NATURAL RESOURCES

#### Abstract

Women are disproportionately affected by climate change effects. The primary burden of natural resource management is on women, making them more vulnerable than men to the impacts of climate change, with great pressure on their adaptive capacities. Gender dimensions of vulnerability to climate change as well as gender dimensions of natural resources weighs more on women and the girls, therefore, in other to harnessing Africa's population for sustainable development, gender vulnerability to climate change as well as gender change as well as gender dimensions of vulnerability to natural resources should be addressed. This paper is out to discover why there is gender bias by climate change impacts and why are women and girls more vulnerable to the

impacts of climate change? This paper uses a wide range of materials for its realisation. The result of this work is that women and girls are more vulnerable to climate change as well as natural resources in Africa.

Keywords: Gender/vulnerability/climate change/natural resources/women/girls

## 1. Introduction

Climate change is a global challenge that burdens all of humanity, but they are not affected the same. The world's poor, majority of who are women, are affected indiscriminately than others. The distinct impacts of climate change on men and women are evident in settings that are also affected by violent conflict, political instability and economic strife (Mayesha Alam, Rukmani Bhatia & Briana Mawby: 2015). Around the world, women tend to be marginalised from political and economic power and have limited access to financial and material resources, mostly in areas affected by conflict, post conflict or less economically developed settings, which make worse their defenselessness to the impacts of climate change.

Women who form the highest part of the population of the world gender wise are mostly affected by the impacts of this global challenge-climate change, and are not represented in decision-making equally or policy and programmatic design. Men and women do different work, have differentiated access to resources like natural resources, land ownership-which is the most common in Africa, financial disequilibrium and information and experience natural disaster different from the male gender. While climate change affects everyone, marginalised groups like women and girls are mostly affected because of socio-economic problems, such as poverty and limited access to natural resources. The girls and women bear the greatest burden of climate change and are disproportionately affected compared to men (Nicholas Wedeman and Tricia Petruney: 2018).

This paper focuses on the vulnerability of African women to climate change as well as vulnerability of natural resources linked to women. This paper therefore is out to examine why African women are more vulnerable to the effects of climate change. To understand this subject, it will be essential to be abreast with meaning of some concepts.

- **1.1.Gender**: It is the identification of male/masculine, female/feminine. Or the sociocultural phenomenon of the division of people into various categories such as "male" and "female", with each having associated clothing, roles, stereotypes, etc Gender refers to the socially constructed norms, roles, and relations that a given society considers appropriate for men and women. Gender determines what is expected, permitted and valued in a woman or a man in a determined context (World Health Organisation: Undated).
- **1.2. Vulnerability**: The IPCC defines vulnerability as the "degree to which a system is susceptible to or unable to cope with, adverse effects of climate change, including climate variability and extremes" (IPCC: 2018). "Vulnerability is a function of the character, magnitude and rate of climate variation to which a system is exposed, its sensitivity and its adaptive capacity". Also, vulnerability is the propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt (Oliver C. Ruppel: 2018). Vulnerability is equally understood as social, economic, political, cultural and other factors which make specific groups more susceptible to adverse change (Sam Sellers: 2016).
- **1.3.Climate change**: Article 1 of the United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as "a change in climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods". The Intergovernmental Panel on Climate Change (IPCC) on it part, defines climate change as that, which encompasses any change in the state of the climate that can be identified statistically for example and that persist for an extended period, typically for decades or longer. It can be noted from the definitions that the sole cause of climate change is human activities that is anthropogenic activities that changes the composition of the earth.
- **1.4. Natural resources**: It is any source of wealth that occurs naturally, especially minerals, fossil fuels, timber, land, etc.

This paper therefore will examine general vulnerabilities of climate change and those specific to gender (women).

#### 2. General vulnerabilities of climate change

Climate change poses threats to women, children, handicaps, indigenous people and natural resources in Africa and above all, gender injustices within the continent.

## 2.1. Children

Climate change is an issue of equity as it impacts specific groups more than other. Although it has an impact on people everywhere those who have contributed less, to greenhouse gas emissions are most affected. These groups of people are among others children and future generations (Jan Van de Venis and Birgitte Feiring: 2016, at 6).

Climate change is expected to increase existing health risks and to undermine support structures that protect children from being injured. The extreme state cause by climate change may also lead to the de-schooling of the little girls and boys and the early marriage of girls in particular since parents are lacking to feed them and take this as a way to relief the burden and stress of climate change effects on them. For instance, after the hurricane in Bangladesh, the families of the village of Barguna decided to marry their daughters precociously or at early age because of their precarious living conditions. 50% of the girls therefore left school. In remote villages, the degree is between 70-75% (Pauline CHABBERT & Marcela de la PENA VALVIDIA: 2015).

Severe weather conditions and scarcity of safe drinking water are major causes of malnutrition and infant and child mortality in Africa. Likewise, increased stress on likelihoods will make it more difficult for children to attend school. Girls will also be affected adversely as routine household chores, like fetching firewood, and water, require more time and energy when resources are scarce.

#### 2.2. Indigenous people

Indigenous people are not left untouched. They live in marginal lands and fragile ecosystems, which are particularly sensitive to changes in weather. Climate change can force them to migrate and cause displacement of the population, as we know that they live in dry-lands (among most

vulnerable communities), as a result of water scarcity. Such populations whose rights are poorly protected are likely to be less well-equipped to understand or prepare for the unforeseen of climate change; they would be less able to lobby effectively for government or international action; and are more likely to lack the resources needed to adapt to expected change in their environment and economic situation, thus, their vulnerability. The national and international writings chain the fact that the correlation between the livelihood of these groups and the quality of their natural resources is too connected because they depend on their natural resources and their low capacity to adapt to the high level of vulnerability of their inhabitable environment, specifically in the northern, coastal and mountainous areas of Cameroon (Joseph Armathe Amougou & Patrick Forgab: 2018). Vulnerability studies show that almost all forest landscapes in Cameroon are affected by the phenomena of vulnerability and climate change. The consequences are very much felt since the indigenous people live mainly on natural resources (Augustine B. Njamnshi: 2018).

#### 2.3. Development sectors vulnerability

Many development sectors are vulnerable to the effects of climate change. These sectors clearly identified in the national Climate Change Adaptation Plan (PNACC), which also details the extent of their vulnerability. The development sectors concerned here are the:

- Agriculture;
- Livestock;
- Fishery and aquaculture;
- Forestry, sylviculture and wildlife;
- Water, sanitation and health;
- Energy, mining and industry;
- Urban development and public works;
- Tourism;
- Hydroelectric generation; and;
- River transportation (Augustine B. Njamnshi: 2018).

It follows from the above list that some sectors, although emitters and potential carbon sinks at the same time, are under certain conditions also vulnerable to the effects of climate change, in particular to increase in temperatures; changes in rainfall patterns in terms of quality, intensity and frequency; extreme climate events like droughts, floods, severe winds, erosions, fire, etc, and lastly, the sea level rise (Joseph Armathe Amougou & Patrick Forgab: 2018). The vulnerability of Cameroon's energy sector to climate change repercussions stems from its high dependence on hydro power generation and biomass. The projected decline in water resources would continue to disrupt electricity production unless the installed capacity from other sources and new hydro plants is increased. In Cameroon, there are increasing problems of heat-related ill-health, especially during hot seasons when there are no means for protective and adaptive actions such as air conditioning and water supply. Heat exposure can affect physical and mental capacity and lead to heat exhaustion or heat stroke in extreme cases (Augustine B. Njamnshi: 2018).

#### 3. General overview of vulnerability linked to women

Climate change affects more severely the people least responsible for greenhouse gas emissions and those with the most limited capacities to adapt to it. The majority of the poor are women who represent 70% of the 1.2 billion people with an income under one (1) dollar a day. Consequently, being a woman worsens the vulnerability of climate change shocks and the changes in the environment and the economy, mainly in rural settings where the livelihoods of women and their families depend largely on natural resources like water, forest products for energy and medicine and income, agriculture, etc., highly dependent on climate hazards. Women are victims of climate change which affects them in differentiated manner (Pauline CHABBERT & Marcela de la PENA VALVIDIA: 2015). Women are vulnerable to gender-based violence during natural disasters and during migration. Girls are likely to drop out of school when household incomes and resources are depleted by climate change. Rural women are expected to bear the brunt of considerable negative effects on agriculture and deteriorating living conditions in rural areas. This weakness is exacerbated by factors like unequal property rights (Oliver C. Ruppel: 2018). Before 1882, women were considered as property and therefore, as advocates at that time put it, property cannot own property. Till date, in Africa, women are looked upon as property. Women are excluded from decision-making and have difficulties in accessing information and financial services.

Women and girls make up the vast majority of the world's displaced population, and most of them have been forced to flee because of conflict, and the risk they would face due to climate change-induced displacement are comparable. Migration and displacement are mostly very dangerous for women and girls. In order to reach a country where they can seek asylum, many rely on smugglers, resort to desperate measures, and endure perilous routes. Gender equality is decisive to the fight against climate change. The primary way of fraying the problems of climate change is to create a milieu against which women and girls are empowered to safeguard the environment. The resources and options available to women to adapt to climate change are highly limited by the inequalities affecting women; illiteracy is more frequent than among men, limited economic power owing to a lesser access to land ownership and credit. While one woman in seven in the world suffers gender-based violence, these increase in post-disaster situations or in relief camps themselves, because of post-disaster effect.

#### 3.1.Vulnerability of women to land as a natural resource

The resources and options available to women to adapt to climate change are highly limited by the inequalities affecting them like illiteracy, which is more frequent as oppose to men; limited economic power owing to a lesser access to land ownership and credit. This can be justified in the sense that most women in Africa were and are still considered by some as property and as such, they conclude that property cannot own property. Also, because of poverty, women in Africa cannot afford money to buy and register land in Africa. In most African land legislations like Cameroon, the procedures to obtain a land certificate is so cumbersome, time consuming and costly, which therefore women can afford all these. Equally, corruption, administrative bottleneck, is some of the reasons that hinder women access to land, and thus, their rights to own property are violated. They are under-represented in the new technologies sector and careers in engineering everywhere in the world, which limits their participation in the management of innovatory technologies applying to climate change (Pauline CHABBERT & Marcela de la PENA VALVIDIA: 2015).

The increase of the frequency and intensity of climate change disasters like drought, storms, fires, floods, ice melt, changes the cycle of seasons. The United Nations Office for Disaster Risk Reduction (UNISDR) mentions a report on countries, which states that a greater number of

women than men died following natural hazards and that this disparity is seriously connected to the inferiority of the socio-economic status of women as compared to men.

In most societies like Africa where the woman's place is considered to be in the "kitchen" and as some consider them as mainly to bear children, survival skills are taught more to boys than to girls. While access to information and education on climate change issues are relevant to face up to them, women are vulnerable to information on the subject, and their capacity to recover from the shocks is therefore lower (Pauline CHABBERT & Marcela de la PENA VALVIDIA: 2015).

Land is an important resource for women. Having rights to land can revamp their ability to access capital, derive income, protect household food security and offer them security in times of hardship. With secure land tenure, individuals and groups gain greater incentive to invest in soil conservation, plant trees, and eschew deforestation. It is proven via research that when women own land, they do not only have more secure livelihoods, they also gain status, have greater bargaining power within their households, and in some contexts, are less likely to experience domestic violence. The irony is that most land tenure systems in Africa and Cameroon in particular are gender bias that dictates unequal access, use, ownership and control. Hitherto, women land rights are ignored as a key piece of climate change action and development. Therefore, because of the discrimination of land rights on women, it is critical to secure land tenure rights for women. Through the provisions of legal land rights, marginalised populations living in poverty are better able to access new funding sources and opportunities, which can promote efforts to curb climate change and ease the receipt of compensation when land is taken for conservation purposes or when climate change induced disasters destroy fields and homes. Enforceable land rights will improve the management of natural resources while boosting the economic status of women (Nicholas Wedeman and Tricia Petruney: 2018).

## 3.2. Gender, climate change and water

Women are discriminated upon by climate change as far as water is concern in that they travel for long distances to get water of which the hygienic conditions of is at times health negative. This therefore violates their rights, affects their health, and even leads to dead thereby the right to life put on debate table. Equally, water shortage affects the women whose household

activities are limited, they take more time to fetch water and this even leads to violent amongst them because of survival of the fittest as who to collect water first.

In many countries, women are responsible for collecting water for the family. If there is less water because of drought, women will have to travel longer distances in order to find water. This will affect the work load of women and the time they have for other issues. There is also the risk that young girls have to quit school in order to help their mothers to fetch water (Anne Bonewit & Rosamund Shreeves, EPRS: 2015). The above, therefore make them vulnerable to the ''heat'' of climate change. This can be visible in arid regions such as Turkana region of Northern Kenya, etc., where residents had to collect water from dry riverbeds during a period of prolonged drought. Thus, the right to water and sanitation, right to health, fundamentally, right to life (Jan Van de Venis and Birgitte Feiring: 2016), right to food, right to adequate standard of living are all at risk in Africa because of the horrors of climate change.

Water scarcity compromises hygiene, mostly for women and girls, who may need it for purpose uncommon to men, especially during pregnancy and menstruation. Because of limited access to health facilities, low awareness of risks and social and cultural norms that make women primary caregivers for family members, they are likely to bear the brunt of these type of health problems (Mayesha Alam, Rukmani Bhatia & Braina Mawby: 2015).

## 3.3. Forest

The exploitation of forest is mostly carried out by men to the detriment of women. Women are concerned with the forest for fuel wood. Thus, there is differentiation to access of natural resources between men and women within communities. As forests are cut down, the loss of tree cover increase soil erosion, decreases agricultural productivity, and increases the burden of gathering forest natural resources and water. Women in particular in the rural communities depend on forests for food, firewood, fiber, timber, material for crafts, animal fodder, and medicinal herbs, all specifically collected by women. Due to deforestation, women must work harder to secure resources and feed their families. Deforestation is today affecting livelihood across Africa especially Cameroon, Sudan, Tanzania, Kenya, Mali, etc., where women and children collect between 60-80% of all domestic fire wood supplies. In Zanzibar Tanzania, as trees are cut down indiscriminately or discriminately, women and girl child must cover long

distances to gather firewood, and poor households spend up to 40% of their income on fuel (Mayesha Alam, Rukmani Bhatia and Briana Mawby: 2015).

As for wood, since the rate of forest exploitation is on the rise, wood for energy is therefore scarce, thereby causing them to move for distances before they lay hands on some for energy. The need for women to form a union to nurse seedlings and plant trees to maintain/hold firm the soil, store rainwater, and provide food and fire wood is imperative. Such union will not only address climate change, but many young girls, women, men, etc will be employed either temporary or permanently to take care of the trees. It will equally increase income for women and improve their water and food security. This therefore will reduce gender vulnerability to climate change and other societal violent inflict on them. Women are also working to fight the negative environmental and socioeconomic effects of deforestation. In the Democratic Republic of Congo for instance, the Women's Earth and Climate Change Network International (WECAN) is partnering with the synergy of Congolese Women's Associations (SAFECO) to raise the awareness of deforestation and to empower local indigenous women to adapt to and mitigate the effects of deforestation. WECAN and SAFECO run training programs to discuss reforestation techniques and sustainable practices among local women, who then implement and spread those practices in their communities. This equally applies to women in Mali, the Bioresources Development and Conservation Programme-Cameroon (BDCP-C), too, with similar aims (Mayesha Alam, Rukmani Bhatia & Briana Mawby: 2015 and Joseph Armathe A. & Patrick Forgab: 2018).

Also, pregnant women are at risk to climate change effects in the sense that when flood or drought occurs in a particular area, they are easily affected since they are unable to react immediately to the incident by escaping the area. Equally, the heightened risk of violence caused by climate change makes women fearful of venturing out, which this has resulted in women and infants dying in childbirth because women were unable to safely access medical care for fear of being attacked (Nicholas Wedeman and Tricia Petruney: 2018). In areas affected by disaster like flood, drought, fire, severe winds, erosion, etc, women are mostly affected and therefore vulnerable, as the supply of health products and services is even more deficient than in normal situations. This lack of care can lead to a rise in the maternal and child death rate. Furthermore, only very rarely do emergency shelters offer services and hygienic materials for women. For

example, in Ethiopia, where climate change is leading to food or water shortages, social norms, especially in rural areas, are worsening malnutrition among girls and women as they eat only after feeding the rest of the family, which by implication means that there is no food for them (Pauline CHABBERT & Marcela de la PENA VALVIDIA: 2015).

Although climate change has no terminus which impacts the whole planet, the consequences followed by it affect women than others in Africa. Women make up an average of about 43% of the global agricultural work force, with women farmers producing as much as 90% of the Africa continent's food supply. This therefore justifies the reason to address the needs of women in climate change policy which if not, food security will be at stake.

Another line of vulnerability of gender (women and girls) connection of climate change is predominantly in charge of unpaid household chores and care-giving in Africa and mostly in rural communities, their lives are directly affected by the changes that follows as a result of climate change. Their domestic duties can require more time as a result of climate related water shortages, reduced mobility, deforestation, and less time is available for schooling or unpaid work. Women's pots can get burn on fire because of lack of water and their search for it with the pot on fire. This is worsening during the dry season where there is an acute water shortage as can be seen in the stream that maintain the population of the Santa town found in Mbei village, North West Region. During the dry season and early raining season, the flow of the water is compared by inhabitants of that area as urine flow. Inhabitants attest that in the 1990s, it was totally dry and today, it is almost getting dry too.

Women are more likely than men to die during and in the after effects of fire incident, disasters, floods, their socio-economic marginalisation increases their vulnerability after natural disasters just mentioned (Mayesha Alam, Rukmani Bhatia & Briana Mawby: 2015).

### 3.4. Agriculture

Agricultural vulnerability to climate change depends on cropping practices and access to land, as well as the use of farming inputs and tools. Individuals who have access to land, water, fertiliser, and other inputs, as well as who adopt sustainable agricultural practices are more likely to adapt to the impacts of climate change, yet access to and knowledge of these tools and practices is gendered. Climate change can influence agriculture, through a rise in temperature, more severe weather, and drought. In many settings women are less likely to possess the knowledge and financial capital needed to improve their farms. Moreover, new technologies that are intended to improve adaptive capacity may not have gender-equalising outcomes (Sam Sellers: 2016).

Crops and livestock can be very sensitive to changes in the climate. The effect might be that a certain crop that is produced and the yield high in certain area will not be so or will not do well again in that same geographical area. The most impacted sector of climate change in Cameroon for instance is agriculture, water resources, energy, health, biodiversity, etc, which should be consider as endangered sector and given more attention when taking adaptive measures. Across Cameroon, unpredictable rain, droughts, heat waves, floods, fires and other extreme weather events are to be attacked for low farm inputs. Along the coast, sea-level rise is expected to unfavourably affect agriculture production and productivity (Augustine B. Njamnshi: 2018). There is no gainsay that in Africa just like in other developing countries, women work in agriculture or are responsible for producing food for the family, which this makes them to rely on natural resources for livelihood. Because of lack of economic resources to empower them economically in order to harness productivity, create jobs and food security, these women cannot invest in an irrigation system which their hope therefore is the rain. The accessibility of natural resources is influenced by climate change. If harvest fails or diminishes because of climate change, the money these women will earn will be less and will also have less food for their families. Their health and that of their families will be at risk because of malnutrition, etc (Anne Bonewit & Rosamund Shreeves, EPRS: 2015).

Often, women who manage their own farms still have to ask the men to mediate in ensuring water for their farms, fulfilling labour obligations, which lead to transaction costs. Irrigation intervention in the past even further weakened women's economic resource-base as irrigation agencies have been the strongest adherents and promoters of the norm that irrigation water should only serve men's businesses (Sandra Manata & Irina Papazu: 2009).

Women are more dependent on natural resources and agricultural activities than men. Women often grow, process, manage, and market food while men are responsible for cash cropping and larger livestock. This point however, shows that women likelihoods are more exposed to unpredictable nature and the challenges posed by changes in precipitation patterns, and because of their limited access to the labour market, far more dependent than men on agricultural yields (Sandra Manata & Irina Papazu: 2009). Across Cameroon, water shortages are more frequent and widespread, with great impact on agricultural productivity (Augustine B. Njamnshi: 2018).

## 3.5. Women and property right-natural resource as land dispute

Before 1882, the Common Law like the Continental Civil Law System imposed on married couples a special legal regime governing the ownership of matrimonial property. But, whereas, the Civil Law establish a "community of property" between the spouse, the Common Law, with some limits, effectively subordinated all the wife's property and earnings to the husband's ownership and control. Thus, the wife's chattels vested absolutely in the husband, including those acquired by her own earnings; the earnings themselves also belonged to the husband. The wife's freeholds become subject to the husband's control on marriage, and he was entitled to leasehold income and to the leasehold themselves if the wife predeceased him (Simon Tabe Tabe: 2019). Thus, it is visible that women use to and in some communities in Africa, still lack legal assets and rights to property, which leaves them few resources with which to rebuild their lives. Livelihood scarcity leaves women to head households without the social material resources to do so, and as women travel greater distance to collect the resources to support themselves and their families, they are more prone to attack and abuse (Mayesha Alam, Rukmani Bhatia & Briana Mawby: 2015).

Several factors make women, particularly poor women, especially vulnerable to the adverse effects of climate change. Women have limited adaptive capacities than men, and their livelihoods tend to be highly dependent on natural resources, which in turn sensitive to climate change and its impacts. Generally, women have lower levels of access to resources like information, land, assets, education and development services to capture opportunities to diversify their livelihood options and to lesson dependences on strained natural resources (Senay Habtezion: 2013).

## 4. Conclusion

The challenges of the 21<sup>st</sup> Conference of the Parties to the United Nations Framework Convention on Climate Change held in Paris in 2015 had the objective of limiting the several negative effects of climate warming which threaten the survival of our planet and its present-day 7 billion inhabitants. A good understanding of the challenges by all and the involvement of each and everyone are essential to reduce the vulnerabilities and strengthen the capacities. The recent assessment report from the Intergovernmental Panel on Climate Change (IPCC) describe how observed and predicted changes in climate will adversely affect billions of people and the ecosystems, natural resources, and physical infrastructure upon which we all depend on. These harmful impacts include sudden-onset events that pose a direct threat to human lives and safety, as well as more gradual forms of environmental degradation that will undermine access to clean water, food and other key natural resources that sustain mankind (UNEP: 2015).

In Africa, climate change has several negative repercussions on gender. Most if not all parts of Africa have witnessed changes in weather patterns over recent years, due to the rampant occurrence of storms, fires, drought and floods. The effect of this is felt in many areas like the destruction of property, loss of crops, livestock and settlements and above all makes a group vulnerable to its demises (Oliver C. Ruppel: 2018)

Climate change affects more severely the people least responsible for greenhouse gas emissions, the poor and marginalised segments of society who have limited capacities to adapt to it and have fewer resources and lesser access to policy and decision making process (Senay Habtezion: 2013). The majority of the poor are women who represent 70% of the 1.2 billion people with an income under a dollar daily.

The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) adopted in 1979 provides an insightful framework for linking climate change with the protection of women from harms caused by climate-related weaknesses, and the advancement of gender equality, including the ability of women to lead alongside men in pursuit of sustainable solutions. In the Sustainable Development Goals, gender is integrated into the goals, and gender equality serves as a key subject. As climate change accelerates migration and displacement, women are mostly subject to abuse and deprivation (Mayesha Alam, Rukmani Bhatia & Briana Mawby: 2015), particularly in the rural scenery where the livelihoods of women and their families depend greatly on natural resources like agriculture, water, land, forest, forest products,

etc, dependent on climate hazards (Pauline CHABBERT & Marcela de la PENA VALVIDIA: 2015).

Capacity-building efforts to augment women's opportunities climate change initiatives can also boost women's knowledge of issues and ability to take leadership or decision-making positions, which in turn leads to changing social norms and outcomes, and increased economic growth. Recognition of the gender-differentiated impact of climate change in the framework of COP21 agreement is the first step setting in place adapted and effective solutions, as well as long-term policies to address climate change that will increase the resilience capacities of women by supporting their empowerment, their access to rights and challenging gender unfairness (Pauline CHABBERT & Marcela de la PENA VALVIDIA: 2015).

Thus, there should be gender adaptation planning. Adaptation here involves changes in lifestyle, behaviour, and risk management which can include actions such as changing the mix crops, plant varieties, livestock and fish species; modifying irrigation and flood control systems; implementing pest and disease management programs, expanding health systems, developing infrastructure; climate proofing domiciles, communities and capital stock against the depredation of tremendous weather events; relocation and migration. Adaptation moves that do not take gender balance into consideration may indirectly be promoting "gender down". Equally, the land tenure systems of developing countries should be framed to be gender balance so that women will not be considered as property, which this will help them to be empowered economically, job creation, food security and this will help them to use their traditional knowledge to help combat climate change. Women too should be financed which this can reinforce gender balance and the economic empowerment of women. Should gender dimensions of vulnerability yo climate change as well as gender dimensions to natural resources be treated fairly, this is going to empower women economically, create jobs, ensure food security and above all reduce climate change impacts through harnessing Africa's population for sustainable development.

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