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## Nexus between climate change and environmental social work in Africa

Ezra Pedzisai, Sunungurayi Charamba and Rudo Mukurazhizha

### ABSTRACT

Disasters indiscriminately cause huge global economic losses worth tens of billions of dollars and often result in deaths of millions of people annually. As such, the on-going climate change is the world's biggest disaster, especially for the most vulnerable African countries that are less economically developed, dependent largely on primary industries, which are predominantly reliant on climate-controlled ecosystems as well as depend on rain-fed agro-based livelihoods characterised by abject poverty. Meanwhile, the social work profession caters for individuals, groups, and communities in responding to fast onset disasters affecting especially the marginalised, poor, and vulnerable. However, social work practice (SWP) seems to be more preoccupied with the outcomes of fast-onset disasters specifically centred on identifying beneficiaries in a bid to provide food relief, social safety nets, safe shelters, and providing psycho-social support to victims and survivors of these disasters than slow onset ones. The SWP seems to be silent about climate change despite corroborated scientific models confirming the increased frequency, magnitude, and severity of future tropical cyclones, floods, and droughts in the future. However, being more curative rather than preventive, contemporary SWP responds primarily to present crises whilst ignoring more serious future disasters. To connect SWP to climate change discourses, a literature review of previous sources of authority was utilised.

**KEY TERMS:** Africa, climate change, disaster, social work practice, vulnerability

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## INTRODUCTION

Climate change is a global phenomenon characterised by either global warming or cooling caused by both natural and man-made factors. It affects people diversely in both long-term and short-term. The on-going global warming is associated with increased frequency and magnitude of droughts, floods, tropical storms, landslides, pests, diseases, and extinction of species thus calling for imminent environmental and ecological justice. Thus, climate change affects people while social work assists the vulnerable population to cope and enhance their social functioning. To date, social work practice is reactive since it targets post-disaster human needs. Essentially, environmental social work provides a platform for both preventive and reactive interventions thus contributes to the fight against form of global disaster. It is a novel field of practice that can be preventive and proactive measures to anticipate, reduce and mitigate the negative impacts of climate change. The paper presents the important connection between climate change and environmental social work.

## BACKGROUND

Africa is highly vulnerable to climate change due to high exposure against low adaptive capacity (Niang et al., 2014; Boko et al., 2007). Furthermore, climate change is already worsening existing threats to human security with 8 out of 9 climate related risks posing medium to high risk in the African continent according to Niang et al. (2014: 1204). Zinyowera et al. (1997) also noted that energy remains a major challenge in the continent which is an additional challenge to highly sensitive water resources and coastal zones ecosystems (Niang et al., 2014). The consequences of climate change in the continent have serious implications for social work practice. Specifically, there is insecurity in food, energy, and health, while economic growth is minimal. Additionally, political instability, and rising poverty surmounts to low adaptive capacity and limited mitigation stances which imply high vulnerability, rising impoverishment and hence increasing social work practice burden. Therefore, the objective of this paper was to address the nexus between the two critical dove-tailing concepts connecting climate change impacts to social work practice in Africa thereby deriving important insights on the implications for implementation.

Climate change is a slow onset type of disaster which indiscriminately affects both the global North and South thereby showing that no one is safe from the associated risks (WHO, 2021). In view of the weak economic, diverse cultural and unstable political background, the African continent is highly vulnerable to the challenges of climate change with the majority being agrarian economies (Niang et al., 2014) hence the social work practice burden is likely to increase beyond the already strained resources capacity. Furthermore, there is clearly a lack in Africa of an organised regional adaptation strategy to climate change impacts which Niang et al. (2014) noted as still being in infancy. This fact remains true in Africa considering the current Sustainable Development Goal (SDG) number 13: Climate action; unlike in Europe with a clearly-defined roadmap that targets climate resilient community by the timeline date of the year 2030 (European Commission, 2021a). Meanwhile, Serdeczny et al. (2017) noted the existence of multiple social consequences of climate change in Sub-Saharan Africa. The WHO (2021) estimated climate change to reach a global average US\$3 billion per year by 2030, hence regarded as the largest calamity facing humanity. Climate financing was estimated between 30 and 40 USD billion per year even rising to USD 60 billion by 2030, which is unreachable resources are needed (Niang et al., 2014). As such, climate change is amongst the key thematic issues driving the SDG# 13.

Predictions by various climate change models based on temperature and precipitation parameterisation sub-divided Africa into five regions namely; the Mediterranean, Sahara, Western, Eastern, and Southern (Table 1). Except for East Africa showing an increasing precipitation behaviour, all the other four regions have a decreasing trend. The temperature shows an overall increase although with different degrees of magnitude. Floods, droughts and water scarcity have several negative human development implications that are to be addressed by social workers (Nyahunda, 2021) such as human loss, animal loss, destruction of crops and livelihoods.

Table 1: Model predictions on temperature and precipitation in five African sub-regions

Region	Predicted precipitation (mm)				Predicted temperature (°c)			
	MINIMU M	MAXIM UM	TREN D	COMME NT	MINIMU M	MAXIM UM	TREN D	COMME NT
<b>Mediterranean</b>	-71	32	-	Decreasing	3.2	6.7	+	Increasing
<b>Western</b>	-34	22	-	Decreasing	3.0	6.4	+	Increasing
<b>Sahara</b>	-57	59	-	Decreasing	3.3	6.4	+	Increasing
<b>Eastern</b>	-7	35	+	Increasing	2.7	5.8	+	Increasing
<b>Southern</b>	-49	54	-	Decreasing	2.8	6.3	+	Increasing

(Source: Created using information from Hewitson et al. 2014: 1160)

### Causes of climate change

Climate change is caused by either natural factors or human actions (IPCC, 2007). The greenhouse gases (GHGs) include carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), methane (CH<sub>4</sub>), nitrogen oxide (N<sub>2</sub>O), chlorofluorocarbons (CFCs), hydrochlorofluoro-carbons (HCFCs) (Moeletsi & Tongwane, 2015; Niang et al., 2014; Rogner et al., 2007). The anthropogenic GHG emissions have accelerated the rate of climate change (IPCC, 2007). The major sources of GHG emissions include transport, agriculture, manufacturing industry, deforestation, and from waste decomposition, among others (Rogner et al., 2007). The sources of GHGs include agriculture since mechanisation uses machinery that produce CO<sub>2</sub>, while farm animals produce CH<sub>4</sub>, and N<sub>2</sub>O from nitrogen based fertilisers (Tongwane & Moeletsi, 2018). Manufacturing industries also produce GHGs including CO<sub>2</sub>, and the transport sector is a major contributor to CO<sub>2</sub> emission accounting to nearly 60% by the year 2007 (Rogner et al., 2007).

Human basic needs and wants are associated with production systems that are sources of GHGs that exacerbate climate change progression (IPCC, 2007). Humans have to feed hence food security, travel using different transportation systems which currently use petroleum products emitting CO<sub>2</sub> which is an abundant GHG, shelter using different earth materials, energy to power industrialization which has not as yet clean and renewable broadly, domestic and transportation needs/requirements, relax or recreate. While the globe periodically undergo natural climate change in form of global warming (the current and on-going) and global cooling, however, the current climate change trajectory is blamed more on man than nature. The diverse actions of man including energy and food security (production, access, utilization and stability), economic development, industrial production of transportation, clothing, among others are important sources of GHGs.

Modelling scenarios with assumptions have projected spontaneous effects accelerating African continent warming (e.g., Hewitson et al., 2014; Niang et al., 2014). However, field data to use in model calibrate and validate models is a challenge (Niang et al., 2014). Diverse tools in research and development have therefore sought to apply remote sensing and geographic information systems (GIS) to understand global regional and national indicators of climate change, specifically global warming. The modelling scenarios on the future temperature and precipitation shows that Africa will be affected differently. For instance, Niang et al. (2014) categorised Africa into five distinct regions.

### Effects of climate change in Africa

There are diverse effects of climate change affecting humans in Africa. The climate change impacts on food security, health, manufacturing industry, environment, wildlife and plants (Niang et al., 2014). The widely acknowledged effects in Africa include rise in both minimum and maximum temperatures, that lead to sea level rise and hence coastal flooding that affects many coastal developments and investments. There is a likelihood of thermal discomfort due to heat waves and increased urban heat islands (Niang et al., 2014). An increase in extreme events associated with hazards and disasters such as tropical cyclones that may result in floods, heavy

precipitations, sea (Niang et al., 2014; Magadza, 2000). The WHO (2021) indicated that climate change threatens to negate gains of decades of development, which implies general impoverishment of African population with rising social challenges.

Furthermore, staple foodstuffs, heat waves, urban heat islands, thermal discomfort, and food security disequilibrium are threatening effects of climate change (Atwoli et al. 2022b; Shilling et al., 2020; Koubi, 2019). In Africa, crops are going to be negatively affected by climate change due to high temperatures against decreasing rainfall as predicted by models (Niang et al., 2014). Health, determined by cleanness of air, drinking water, and secure shelter is influenced by climate change (WHO, 2021). The WHO (2021) noted that within twenty years into 2050, 250 000 additional annual fatalities will occur due to climate change-related health challenges including malnutrition, malaria, diarrhoea, and heat stress. Ultimately, disease, death, impoverishment, extinction and possibly civil unrest, and wars can result in a world with larger population, more political power and more warfare resources and less united. For instance, wars, heat-related deaths, economic impoverishment and bereavements that significantly negate development gains and often result in child headed households hence there are serious implications to social work practice. The economic burden of national responsible authorities and governments increase, and social safety nets will likely be overwhelmed due to rising demand for resources for human survival and wellness.

Poverty prevalence especially in African countries worsens mental health and access to social services (Atwoli, et al., 2022b), with a background of rampant corruption, political unrest, colonialism, high dependency syndrome, widespread greedy, complex war resources, lack of cooperation, orphanhood, deteriorating quality of life and lifestyle, conflicts due to competition for resources, political intolerance, sea level rise, change in seasons in predominantly agrarian societies and cropping preferences in conservative grain crop subsisting (IPCC, 2007).

The interaction of climate change and social work can be illustrated as argued by Koubi (2019) who noted competition for land, jobs, health care, and social services induced scarcity and inter group conflicts. Koubi (2019) further argued that focus should be on interaction of socio-economic, and political and demographic settings to understand how conflict is brewed.

### **Mitigating the effects of climate change in Africa**

There are several actions that are responding to climate change in view of the serious repercussions that are predicted as a result of the on-going climate change being championed and pioneered by the UN (IPCC, 2007). There is international cooperation, as emphasised in SDG number 17 towards the drive to mitigate since the negative effects of climate change are threatening while at the same time trying to derive benefit from reduced climate change. The drive towards cleaner production often deploying the use of renewable energy (e.g., solar, hydro and wind), sustainable food security and industrial development. Rogner et al. (2007) indicated that energy expansion is most likely going to continue to grow, especially, for developing countries which include those in Africa. However, success in mitigation lies heavily in international, regional and national co-operations and actions plan implementation. An effective mitigation in Africa should be informed by an understanding of both present and future GHGs (Rogner et al., 2007). The deployment of appropriate technologies, especially clean energy (solar, hydro, wind electricity) as opposed to the use of non-renewable e.g. coal, thermal, intensify agriculture is important. For example, the WHO (2021) argued that reduction in emissions of GHGs while ensuring security in food and energy, efficient transport, is important to mitigate climate change. Rogner et al. (2007) also noted that the absence of policy instruments results in increasing CO<sub>2</sub> emissions and hence accelerating global warming. However, policy instruments are difficult to implement and enforce (Rogner et al., 2007). By the year 2030, the GHGs are predicted to reach a 90% maximum threshold using 2000 as the base year (Rogner et al., 2007).

### **Climate change adaptation in Africa**

Failure to effectively mitigate implies that adaptation needs to be scaled up. However, Niang et al. (2014) noted that in Africa, there are various adaptation challenges including low capacity, gaps, and needs. A continent rich in various resources is infested with pests and diseases for humans, animals and crops. For instance Niang et al. (2014) noted various challenges including agricultural pests, diseases and weeds. Additional examples include meningococcal meningitis, Hantavirus, HIV, heatwaves. The adaptations should focus on the predominant health related challenges which affect the majority of human beings especially in the fight against increased malaria, rift valley fever, *leishmaniasis*, tick-borne diseases (e.g., zoonoses), *schistosomiasis*, wildfires, droughts, Africa has low adaptive capacity (Niang et al., 2014). Non-climatic factors including armed conflicts, increasing population, widespread poverty, pollution, civil unrest, are also factors contributing to the worsening situation in Africa (Niang et al., 2014). African institutional frameworks that are geared for climate change adaptation are partly

determined by external institutions including the various UN organs especially the UNFCCC, the World Bank, and the IMF (Niang et al. 2014). Various players are also available including local leadership as custodians of indigenous knowledge systems (IKS), government ministries and relevant departments, non-governmental organisations (NGOs), and ecosystem based approaches (Niang et al., 2014). Rogner et al. (2007) argued that population growth, economic development, technological investment and utilisation clips improvement in energy and weaken the de-carbonisation efforts. However, technological transfer and innovations from outside African continent can help to adapt to the changing climatic conditions (Niang et al., 2014). Furthermore inside Africa, conservation agriculture is increasingly becoming an important agricultural adaptation strategy with great potential (Niang et al., 2014).

### Climate change and sustainable development in Africa

Sustainable development comprises of environmental, economic and social dimensions (Rogner et al., 2007). Therefore, properly designed climate change responses can be part and parcel of sustainable development, and the two can be mutually reinforcing. In turn, sustainable development paths can reduce vulnerability to climate change and hence reduce GHG emissions. Notably, the projected climate changes can worsen poverty and as such lead to the undermining of sustainable development (Rogner et al., 2007). Therefore, social work practice arguably should not wait to be responsive but a rather be preventive so that by acting early, the fight against climate change helps to reduce the potential impacts of the climate change as noted above.

The diverse consequences of climate change form an intricate relationship with various development forms which are the preoccupations of social work which has implications for social work practice. Notably, a two-fold relationship exists between climate change and sustainable development (IPCC, 2007). Specifically, climate change impacts on important natural and human living conditions and hence forms the basis for socio-economic development whereas on the contrary, priorities of society on SD affect GHG emissions as noted by the IPCC (2007) and Trenberth (2005). Therefore, such an important nexus has serious implications on societal welfare need scrutiny. Climate change affects sustainable development comprising of three dimensions namely economic, social and environmental (Omisore, 2018; Rogner et al., 2007). Therefore correctly designed climate change regulations aiming to reduce GHG emissions thereby also reducing vulnerability are important on the sustainable development discourse (Rogner et al., 2007). Predictions on climate change indicate future aggravated impoverishment and weakened sustainable development (Rogner et al. 2007), which consequentially results in serious social work practice implications, especially in least developed African countries. Furthermore, climate change is noted to negatively impact on food security situation in Africa (Niang et al., 2014; Knox et al., 2012). Therefore, global mitigation initiatives can partly enable sustainable development forecasts through effecting reduction climate changed-induced risks (Rogner et al., 2007) and other socio-economic situations leading to social work practice areas.

The effects of climate change include increase in frequency, duration and magnitude of extreme weather conditions which often result being disasters e.g., heat-waves, tropical storms, floods, drought, which are also associated with increase in disease vectors (e.g. mosquito, tsetsefly, *schistosoma*, ticks, etc), (WHO, 2021; Serdeczny et al., 2017; Niang et al., 2014; Magadza, 2000). In Africa, warming over the land is predicted, reduced precipitation on north and south western Africa while Sub-Saharan Africa is uncertain rainfall behaviour, ecosystems are already affected while there are substantial future impacts, water stress, increase disease burden (Niang et al., 2014). Global warming exacerbating health-related problems as livelihoods such as agriculture predominant in Africa are affected by droughts, landslides, floods and diseases thereby resulting in human suffering which leads to increased human suffering and vulnerability. For instance, for period 2030 - 2050, a projected climate change will affect about 250 000 additional fatalities per annum, due to diarrhoea, heat stress, hunger, malaria, bilharzia, and damage costs to the health sector alone to an approximate average US\$3 billion per year by 2030 (WHO, 2021).

Notably, climate change discourse cuts across all discipline divides, that is, it is a cross cutting challenge which is a cause for concern wherever human beings are; whether as individuals, in groups and communities (Nyahunda & Tirivangasi, 2021). There is a close connection between climate change and environmental social work which seems to be a flourishing new field of practice (Coates & Gray, 2012). If the social work fraternity is equipped with climate change knowledge, it will make individuals, groups and communities especially the vulnerable and marginalised to be prepared to mitigate and prevent the effects before their long term effects are felt in the long run. In essence conservation and preservation of the environment will definitely increase sustainable development and environmental justice thus benefiting future generations and reducing the outbreak of disasters. Therefore, the social work discipline embraces the natural environment rather than oversubscription to social environment as solutions to social work related problems can be achieved from the physical environment.



Climate change increases economic costs, vulnerability, food insecurity, health-related problems, coping capacity, heat-related diseases such as thermal discomfort and heat stress (Niang et al., 2014). That calls for a closer look at the nexus between climate change impacts and social work practice for possible earlier proactive rather than reactive interventions. The challenges to the easy control of climate change is that, it is a public good where everyone has free access (Halsnæs & Verhagen, 2007) hence subjected to the tragedy of the commons dilemma. Notably, both climate change and sustainable development can be strengthened jointly (Rogner et al., 2007). Developing countries largely depend on natural environment while they have less resources to cope with changing climatic challenges (European Commission, 2021b) e.g., those in Africa are hotspots of high susceptibility to climate change (Atwoli et al., 2022b). Furthermore, climate change disrupts mental health as a result of disturbance of the socio-economic structures that populations depend on for good health hence the necessity to fund research on interventions on mental health and climate change in Africa (Atwoli et al., 2022b). Therefore, the climate change–sustainable development discourse is important to understand environmental social work conceptualisation. Niang et al. (2014) noted the existence of data and research gaps on decision making to reduce vulnerability hence making positive impact on social work practice.

## ENVIRONMENTAL SOCIAL WORK

Environment is defined as part and parcel of the surroundings which can be social, physical and cultural. Environmental social work is defined as approach to social work practice founded on ecological justice principles (Nhapi, 2021). Environmental social work has been presented using different terminologies with green social work or eco-social work seeking to harmonize environmental justice and sustainability (Nyahunda et al., 2021). Human beings survive as part of natural and social environment. According to Harris and Boddy (2017), the person in environment has its roots since the inception of social work however the social environment has been given much attention (Zvomuya, 2017) at the expense of the physical environment. Currently, there seems to be environmental driven social work interventions and solutions to the individual and group needs. Human health and well-being is hinged on the human –environment interaction which is critical for social work.

Many studies in social work research targeting environmental social work are more aligned or biased towards the developmental track contribution of the physical environment (Matlakala et al., 2021; Nhapi, 2021, 2019; Nyahunda, 2021, Nyahunda et al., 2021). Mavhura (2020) identifies the following as components of a disaster risk management disaster preparedness, disaster response as well as disaster recovery and reconstruction of which the social workers are actively involved. The involvement of social workers in disaster reduction, risk reduction (Machimbidza et al., 2022) resilience, climate change (Nhapi, 2019; Nyahunda & Tirivangasi, 2019) sustainable agriculture, reduction of environmental degradation (Mathende & Nhapi, 2016) and pollution is being fully explored through a number of researches carried out. Therefore environmental social work is correctly positioned to play a critical role in developing and implementing preventive strategies to anticipate, mitigate, and react to the social and human dimensions of environmental challenges resulting from climate change.

## Climate change and environmental social work in Africa

Social work is transitioning from social control to social change (Muridzo et al., 2022) with the birth of diverse fields of social work such as environmental social work (Coates & Gray, 2012). Majority of scientists agree that human activities such as burning fossil fuels are responsible for increasing the rate of climate change. Human beings are also responsible for green house concentration where heat is trapped and not released from the Earth's atmosphere such as water vapour, CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and CFCs. The adverse effects of climate change in the long run will be mostly felt by marginalised and vulnerable people as individuals, groups or communities which are the clientele for social workers. There are connections between climate change and environmental social work with practice implications as shown on Table 2.

Table 2: Climate change social work issues

Economic sector (goal)	Causes of climate change	Effects of climate change	Social work issues
<b>Agriculture (to attain food security)</b>	GHG emission from; CH <sub>4</sub> from animal waste (cow-dung) and Rice farming producing CH <sub>4</sub> Use of farm machinery producing CO <sub>2</sub> Delivery of farm produce producing CO <sub>2</sub> Deforestation during land clearing	Global warming Sea level rise Heat waves Floods Droughts Tropical cyclones Heat stress Respiratory diseases Disease vectors (e.g. mosquito, tsetsefly, etc.) Animal diseases e.g. ticks, nagana, foot-and-mouth,	High disease burden including respiratory from pollution High Mortality Increased Bereavement Increase in Poverty Increased malnutrition
<b>Forestry (to extract forest resources)</b>	Construction of infrastructure and harvesting of timber to produce furniture	Deforestation Soil erosion	Increased prevalence of respiratory diseases due to degraded ecosystem services  Increased stress due to lack of natural based solutions, e.g., forest recreation and prayer facilities in tree shade
<b>Mining (to extract minerals)</b>	Land degradation during mineral extraction	Atmospheric pollution Land degradation	Increased respiratory diseases Increased climate related fatalities
<b>Power generation (to attain energy security)</b>	Burning of fossil fuels (coal/oil/natural gas) non-renewable wood fuel, producing CO <sub>2</sub> and CO	Atmospheric pollution due to thermal electricity generation using coal	Atmospheric pollution Increased respiratory diseases
<b>Transport (to move goods and services)</b>	Road and rail transport	Petroleum fuels and gases	Increased respiratory diseases Increased morbidity due to respiratory diseases
<b>Manufacturing (to produce goods and food)</b>	Industry using coal and gas	GHG emission Atmospheric pollution	Respiratory diseases Increased morbidity

With the above understanding of the climate change, the ultimate effects and the requisite social work practice implications can be derived.

### *Vulnerability*

Global warming in Southern African region in countries like Zimbabwe, Namibia, Lesotho and Malawi recurrent droughts have been documented (Abiodun et al., 2020, 2019; Maure et al., 2018; Lawal et al., 2019; Scholtz et al., 2012; Shongwe et al., 2009; Fauchereau et al., 2003). This affect human beings with heat wave, stress, diseases such as typhoid, diarrheal, cholera because of scarcity of water in reservoirs. For example the outbreak of cholera in Zimbabwe's high density suburbs in 2018 meant that social work had to respond and even lobby for clean water sources for human consumption and also engaging in primary intervention through educating communities on good personal hygiene (Ahmad et al., 2019).

### *Food security*

Climate change affects agricultural systems resulting in changes in quantity and quality of agricultural crops, livestock, forests, pasture, livestock, challenges of pests, weeds and diseases (Nhemachena et al., 2020). Water, food and energy are critical for human survival ,poverty reduction and fosters sustainable development (Mugumbate & Tawodzera, 2019) hence the need for preservation. In the African region demand for these is projected to be very high because of high population growth. This implies that SDGs like zero hunger, no poverty and good health and well-being of people are not attained and the social work through social protection schemes chip in to assist communities. In essence poverty is heavily felt in African region because of erratic and sporadic rainfall patterns.

### *Human displacement*

Floods and cyclones are long term effects of climate change which result in human displacement where infrastructure is broken down, water and sanitation leaving evacuation as the only option to reduce flood related fatalities. The social workers will provide psycho-social support in the fight against post-traumatic disorders as well as bereavement counselling for those who lost their relatives and beloved ones. Food handouts and clothing might be sourced from different resources systems. Problems like sexual, physical abuse and nutritional problems are heightened because of scarcity of resources to meet the needs of individuals, groups and communities. Outbreak of communicable and non-communicable diseases increase in the temporary settlements like the one for victims of Tokwe-Mukosi flooding in Chingwizi before being allocated their land (Mucherera & Spiegel, 2022). There is high demand for infrastructure development for displaced people posing a challenge to already economically overburden African countries.

### *Environmental degradation*

In Africa the proportion of high population is concentrated in rural areas (Mellor, 2014). Firewood is the major source of energy (Semenya, & Machete, 2019) and women also clear land for agriculture (Atinkut Asmare et al., 2022), cut down trees for building and roofing materials further causing deforestation which causes disequilibrium in the ecosystem which also provide natural solutions to human beings. At times these women as vulnerable population do not have access to information on the causes and effects of climate change to such an extent that the effects are heavily felt by rural communities (Ingutia & Sumelius, 2022).

### *Violent conflict*

Climate change induces pastoral tensions (Schilling et al., 2020, 2014). In the Horn of Africa, where water resources are scarce, ethnic and religious groups resulting in armed conflicts (Mach et al., 2019) leading to contravening parties to put restriction boundaries in accessing these essentials. Fights often ensue due to such conflicts. These conflicts often result in environmental social work practice challenge.

## **Deficiencies of climate change in environmental social work in Africa**

Social work practice and education still lag behind in embracing the concept of climate change in their teaching and practice. There seems to be a need for modules in the higher institutions of learning on this emerging relevant field of study for collaborative interdisciplinary efforts to reduce the fragmented approach. Clearly, there is lack of financing and funding of climate change related social work research (Overland et al., 2022). In many cases, the policy pronouncements are talk-show, and mere window dressing. There is a wide gap between policy and practice in many African countries pertaining to the focusing on the area (Dinku et al., 2014). Efforts that are often put in place seem to be to solicit for external funding rather than to address the challenge since most of such funds are often faced with abuse, and most prevalently corruption (Schilling et al., 2012). Often, there is citation of lack



of resources when in fact goodwill is lacking in government policy. Rampant corruption and lack of accountable institutions are one of the deficiencies on the area (Schilling et al., 2012).

## NEXUS BETWEEN CLIMATE CHANGE AND ENVIRONMENTAL SOCIAL WORK

The rate of climate change is increasing due to human activities (IPCC, 2007). Climate change impacts are predicted to result in a plethora of negative ecological, economic, social, and developmental effects (Table 2) and noted in detail by the IPCC (2007) as outlined below. As such, there is decreasing quality of environment due to pollution. Furthermore, there is increasing prevalence of poverty that affect livelihoods and social harmony hence increasing vice including conflict and crime. Additionally, there is increase in hydro-meteorological disasters (e.g., drought, floods, cyclones) that cause injuries, destruction and deaths. Therefore, the environmental social work burden will also increase with time due to the multiple factors affecting the environmental and socio-economic situation of the population. By increasing temperature, drought and heat-related crop, animal and human diseases lead to negatively influence of several economic activities especially energy, food and water security. High prevalence of sicknesses due to proliferation of vectors e.g. mosquitos will result in a higher malaria disease burden onto an already overburdened health delivery systems in Africa worsens the preoccupation of clinical social workers. Furthermore, increasing tropical cyclones and rainfall are predicted to result in destructive and fatal floods that add to the already overloaded social work burden. Such climate change impacts on social work practice have thus influenced the birth of environmental social work.

Environmental social work practice can contribute significantly to the curtailing of diverse climate change-induced challenges since it is a proactive approach. Coates and Gray (2012) highlighted 10 environmental social work practice thematic areas in either adaptation or mitigation of climate change from a review they conducted. These included firstly, three interventions during floods, drought and against pollution, secondly, two areas of activism for climate change and environmental justice, and lastly, five areas in food security, socio-economic development, awareness campaigns in energy use and large scale production in mines and industry (Coates & Gray, 2012). Adoption and popularising environmental social work enhances various awareness raising strategies including education system thereby contributing to the fight against climate change. Already there are other scientific fields of practice fighting climate change including agriculture, geography, and environmental science. The preoccupation of environmental social work on social justice, ecological friendliness, and reduction of pollution helps to safeguard environmental integrity thereby reducing climate change. With regards to climate change, environmental social work is a unique field of practice since it is geared for preventative stance rather than being reactive to problems affecting humans such as clinical social work. Therefore, there is evidently a intricate relationship between climate change and environmental social work.

### Implications for practice in Africa and beyond

The current study has various implications for social work practice given the profession's abiding commitment to social justice and human rights (Muridzo et al., 2022; Coates & Gray, 2012). Although the literature was focused on the African continent, implications of the findings for the current study are transferrable to the globe because social work practice and climate change issues are universal. The findings from the foregoing discussion clearly indicate the absence of climate change issues in social work education and practice that needs to be tackled at *micro*, *meso* and *macro* levels around the world.

The review highlighted several health, energy, economic, social and political consequences of climate change (Falconnier et al., 2020; van der Bank & Karsten, 2020. Atwoli et al., 2022a; Haile et al., 2020; Lange, 2019; Dube et al., 2022). As such there are various initiatives that are useful to respond to the challenges associated. One of the solutions include nature-based solutions that can protect people from aggressive climate change effects hence the conservation of natural ecosystems is of paramount importance as noted by Seddon et al. (2020). The natural features such as trees, mountains, wild animals, cultivated land and while human-created features include built-up areas. Environment has, since human existence, also been a contributing factor to resolve problems faced by humanity hence physical environment is a place of solace, relaxation, recreation, worship and interaction to solve clinical problems like anxiety, stress, post-traumatic disorders, and depression amongst others. In social work practice there are a diversity of problems encountered at *micro*, *meso* and *macro* level which the natural environment can be used to modify abnormal behaviours by having knowledge on climate change.

Climate change sensitization workshops and outreaches should be prioritized in order to tackle illiteracy, measures necessary to curb climate change and its adverse effects. Maybe the traditional methodologies of relaying climate change information being used by social workers and climate change NGOs in the advocacy domain are obsolete and insufficient and should be reconsidered. Possibly there is need to move away from traditional ways such as pamphlets and adopt captivating avenues such as short films, road shows and music. The

increased social media presence of the general public can then be utilized to distribute these climate change messages for climate change programming and mainstreaming. Apart from that, the Council of Social Workers and National Association of Social Workers Zimbabwe (NASWZ) with the leadership of international associations such as NASW-global and International Federation of Social Workers (IFSW) may influence the curriculum utilised in the training of social workers by diverse training institutions in Zimbabwe in order to incorporate issues on climate change. Such educational information is critical in equipping social workers with the intervention tools and models needed in contemporary social work practice.

There is a need for empirical research by social workers in order to clearly comprehend the magnitude of climate change as well as the social ills that are associated with it so as to influence the crafting of a clear legal framework. Evidence-based intervention is crucial as it ensures the identification of interpretation and translation gaps in the current laws thereby tackling challenges from the root. Lobbying for the effective implementation of laws that can adequately deal with climate change that legal and social work practitioners should have an appreciation of the extent to which climate change is affecting the lives of individuals, groups, and communities. Coates and Gray (2012) advocated for a multidisciplinary approach to combating climate change issues involving social workers. It is therefore critical for social workers to be active in policy and legal issues, mobilizing other relevant stakeholders as front-runners of social justice who are responsible for the social functioning of the environment in its holistic manner.

Also, as advocates and teachers, social workers should conscientise and sensitise the public on climate change issues. This then calls for preventative measures to be put in place to cushion the entire society from vulnerability. The researchers propose an attitudinal change that is developmental in nature, aiming at the attainment of social reform at *micro*, *meso*, and *macro* levels.

## CONCLUSION

Climate change is a serious threat to human security. Its consequences are detrimental to human development and hence it has a potential to generate huge social, economic, political ecological and health-related issues that bear serious social work practice implications. As such, climate change and environmental social work are intricately connected at individual, group and community actions as there is a bidirectional link. Therefore there is a need for strengthening social work intervention in climate change discourse to reduce human impacts resulting from climate change. In academia, modules on climate change should be introduced in schools of social work so that graduates are equipped in advance before going to practice. Social workers through the Council of Social Workers and NASWZ have also been identified as relevant to influence social reform through inclusive public conscientisation efforts on climate change in Zimbabwe. Immediate and all-inclusive action from different disciplines is needed to stabilise climate change.

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