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Fighting Against Climate Change to Build Positive Peace: Proposal of an Intersectional Panel on Environmental Peacebuilding in Sudan

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> "If we are to achieve the SDGs, we need to act boldly and urgently to reduce the risks that environmental degradation and climate change present for conflict and commit to protecting our planet from the debilitating effects of war". ---António Guterres, Secretary General of United Nations

Abstract:

Sudan has a long history of conflicts between the central Nile valley and those peripheral regions in the West, South, and North. Climate change effects exacerbate the violent situation in Sudan due to erratic rainfall, longer dry spells, and more frequent floods, which shortens sharply the supply of human basic needs and economic resources.

Relying on the thinking of the consequences of climate change in peacebuilding, I will argue that combating climate change can contribute to peacebuilding in Sudan. The intervention is an intersectional panel that combines both top-down government-led initiatives to build stability and bottom-top civil society led initiatives to build both negative and positive peace and to decolonize peacebuilding in Sudan via combating climate change.

The theory of this proposal is based on environmental peacebuilding that environmental challenges encountered by parties in conflict can be turned into cooperation and peace opportunities for them. With a one-way fixed effects model data analysis, it shows evidence that combating climate change can contribute to peacebuilding.

Key words: Environmental Peacebuilding; Climate Change; Decolonizing Peacebuilding; One-way fixed effects model

Introduction

According to the United Nations Environment Programme (UNEP), "over the last 60 years, at least 40 percent of all internal conflicts have been linked to the exploitation of natural resources" (2022), and the possibility of conflicts related to natural resources is twice as likely as other conflicts to reoccur (United Nations, n.d.).

Sudan has been suffering from social instability and violence since its independence in 1956. Since the 2019 revolution overthrowing President Omar Al-Bashir, the Sudanese people have continued to fall into unstable power transitions and tribal conflicts (Abdelrahman, 2021). Further, because of the secession of South Sudan in 2011, oil production decreased by 75 percent in Sudan, which cut off an enormous number of economic opportunities (UNEP, 2020). According to UNEP, territorial control and natural resources control are the main causes of today's violent conflicts among tribes in Sudan (2022). Climate change and its impacts exacerbate the violent situation in Sudan due to erratic rainfall, longer dry periods, and more frequent floods, which sharply shortens the supply of basic human needs and economic resources (UNEP, 2022). For example, in October 2022, "Sudan's Blue Nile State declared a state of emergency following a rash of tribal fighting that reportedly left more than 200 people dead" over territorial and natural resources contentions (UNEP, 2022).

To prevent more violence and tragedies ensuing as a result of the continued shortage of natural resources in the future, both negative and positive peace needs to be built in Sudan. Negative peace is the absence of violence, for example, the conditions produced by peace agreements or ceasefires (Galtung, 2007); positive peace is "the presence of harmony, intended or not" (Galtung, p.2, 2007).

This proposal focuses on building positive peace among all the tribes in Sudan by introducing an intersectional panel for fighting climate change. An intersectional panel would engage participants from national government, local communities and tribes, civil society and businesses, and external sectors covering economic, political, and social sectors. While many climate change mitigation strategies will be employed, an emphasis will be placed on renewable energy

(Schirch, 2022). Therefore, the proposed panel is aimed at designing and implementing intersectional policies and projects for renewable energy development that are aligned with local priorities.

The theory of this proposal is based on environmental peacebuilding "as the process through which environmental challenges shared by the (former) parties to a violent conflict are turned into opportunities to build lasting cooperation and peace" (Dresse et al., 2019, p.104). This proposal suggests that an intersectional panel should follow three trajectories to build environmental peace in Sudan: 1) a technical trajectory aiming to reduce environmental destruction; 2) a restorative justice trajectory aiming to rebuild and restore neutral and common values and norms; and 3) a sustainability trajectory aiming for equitable resource distribution and sustainable development.

1. Climate Change and Peacebuilding

1.1 Theory

Although the climate change-peacebuilding nexus is not new, there is no comprehensive theory for it. Nicoson articulated that "climate change is not a natural or completely external process; rather, it is produced by particular interests and exercises of power that are internal to societal structures" (p.1151, 2021). He pointed out that "climate resilience peace" is to address the imbalance of power and resources through intersectional distribution, and it is to tackle the structural violence caused by climate change. He utilized a degrowth approach to build climate resilience and peace. By degrowth, he aimed to address the over-consumption issue and build social equality through redistribution, reprioritized care for marginal groups, and decolonizing peace globally (2021). However, a weakness of this degrowth approach is that it is too ambitious and quite unrealistic as it attacks the structural pillars of capitalism. And it is not wise to persuade people of any economic status to stop chasing a higher living standard.

Schirch argued that "climate change weakens political systems, disproportionately affects marginalized communities, and contributes to social unrest and terrorism" (p.9, 2022). Schirch introduced the decolonizing peacebuilding approach with a focus on local-level fieldwork and local priorities. Schirch introduced that "decolonizing peacebuilding requires skills in designing inclusive peace processes around climate migration, adaptation, mitigation and prevention" (p.19, 2022). Schirch emphasized the importance of local knowledge in fighting climate change, especially in energy transfer. Decolonizing peacebuilding and fighting climate change complement each other since both are required to comply with local historical, cultural, and social norms instead of colonialist commitments (Schirch, 2022). While Schirch provided a general

description of decolonizing peacebuilding through combating climate change, her approach lacked depth of detail.

After analyzing a plethora of climate change peacebuilding models, Dresse, Nielsen, and Zikos built a theoretical framework for climate change and peacebuilding that has since been coined "environmental peacebuilding." They defined environmental peacebuilding as "the process through which environmental challenges shared by the (former) parties to a violent conflict are turned into opportunities to build lasting cooperation and peace" (Dresse et al., p.104, 2019).

The core of their definition of environmental peacebuilding corresponds to local demands, which aligns with both Nicoson and Schirch's decolonizing ideas. Environmental peacebuilding embraces decolonizing peacebuilding by accounting for "the multifaceted, long-term nature of environmental problems and the social, cultural, and political identities that are vested in the immaterial values of natural resources" (Dresse et al., p.103, 2019).

Within the theoretical framework of environmental peacebuilding, the first step for parties in conflict due to environment and natural resources is to find mutual interests---"peace dividends" --- including "the intrinsic benefits of environmental protection for human life and the environment itself, political or financial gain" (Dresse et al., p.105, 2019). Subsequently, the parties should build mechanisms to use and manage those dividends through technology, building a neutral space for common resource management. Although external actors can "play a central role in funding environmental peacebuilding projects and can act as neutral intermediaries" (Dresse et al., p.107, 2019), all of these efforts should be based on local or indigenous conventions and norms because "durable peacebuilding cannot be externally imposed" (Dresse et al., p.108, 2019). In the end, two possible outcomes could arise. The first is environmental and resource protection; the second is a custom of cooperation and trust built by the parties (Dresse et al., 2019).

Dresse, Nielsen, and Zikos pointed out the three trajectories of environmental peacebuilding. First is the technical trajectory that aims to reduce environmental destruction by using technical methods. "By reducing environmental problems and associated costs, this first strand of environmental peacebuilding potentially contributes to resolving the environmental causes of conflicts" (Dresse et al., p.109, 2019). This process does not need close cooperation between the conflicting parties. Instead, even a limited contact to find technical solutions for common environmental issues can help identify the common interests and special needs of each side to then foster a "transboundary interdependence," which can be beneficial for future cooperation on other issues (Dresse et al., p.109, 2019).

Second is restorative justice that aims to rebuild and restore neutral and common values and norms. Through communication on environmental issues

between the parties, they could gain mutual understanding and cut down biases towards each other. In the long run, they could build mutual trust in social and political systems (Dresse et al., 2019).

Third, sustainability seeks balanced resource distribution and sustainable development. This is the key to positive peace. Due to the complexity of resource delivery, it is not necessary to be equitable. However, the distribution and management of resources must be inclusive and balance the interests of all parties (Dresse et al., 2019).

Local priorities must be the focal point of all three trajectories. While a collective and top-down initiative is necessary, if the local demands are not satisfied, it will fail to restore harmony between the parties, and potentially cause conflicting interests to arise (Dresse et al., 2019).

Based on this environmental peacebuilding theory, this proposal introduces an intersectional panel for building both negative and positive peace in Sudan through combating climate change.

1.2 Data Evidence

This research collects all the data from *Our World in Data* organization. Since peacebuilding can be divided into negative peace and positive peace this research divided the dependent variables into two parts. The first one is the number of deaths in conflicts and terrorism to measure negative peace, while the second one is a self-reported life satisfaction score to measure positive peace, which is a continuous variable ranging from 0 to 10 with a higher number meaning being more satisfied.

***1. Summary statistics**

	N	Mean	Median	SD	Min	Max	Range
Deaths in conflict and terrorism	2355	552.685	0.000	3799.895	0	75356	75356

***2. Summary statistics**

	N	Mean	Median	SD	Min	Max	Range
Life satisfaction	2013	5.48	5.432	1.114	2.375	7.971	5.596

Among all climate change actions, energy plays a central role (Schirch 2022). Therefore, the two independent variables are the primary one --- renewable energy consumption per capital, calculated in Megawatt Hours (MWh), and the controlled one --- CO2 emission, measured in tons.

***3. Summary statistics**

	N	Mean	Median	SD	Min	Max
Renewable energy consumption percapita	1184	6.246	1.864	18.235	0	153.883

***4. Summary statistics**

	N	Mean	Median	SD	Min	Max	
CO2 Emission	3036	164.339	9.754	785.731	.004	10956.213	10

The controlled confounding variable is a dummy variable divided into high-income countries (coded as "0") and middle-low-income countries (coded as "1").

This research lagged the two independent variables---renewable energy consumption per capital and CO2 emission---because they have a delayed effect on peacebuilding.

The first model is a one-way fixed effects model (FE model), which has fixed effects on countries, to see the relationship between renewable energy consumption per capital, CO2 emission and deaths in conflict and conflicts within middle-low-income countries (negative peace model). This model shows us that within 34 middle-low-income countries, when holding the CO2 emission constant, one MWh increase in renewable energy consumption per capital in the previous year predicts an increase of 114 in the number of deaths in conflict and terrorism within those countries in the current year. However, this result is not statistically significant, thus, it fails to reject the null hypothesis. While holding renewable energy consumption per capital constant, within 34 middle-low-income countries observed, one ton increase in CO2 emission in the previous year predicts a decrease of 0.18 in the number of deaths in the current year. However, this result is neither meaningful nor statistically significant.

VARIABLES	(1) B / (SE)
Lagged renewable energy consumption per capital	114.22
	(341.30)
Lagged co2 emission	-0.18
	(0.55)
Constant	887.14^
	(494.87)
Observations	432
Number of Country	34
R-squared	0.00
r2_a	-0.0879

Standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, ^ p<0.10
*one-way FE: Death in conflict and terrorism

The second FE model is to see the relationship between renewable energy consumption per capital and life satisfaction within middle-low-income countries (positive peace model). This model shows us that within 34 middle-low-income

countries, when holding the CO2 emission constant, one MWh increase in renewable energy consumption per capital in the previous year predicts an increase of 0.20 in the score of life satisfaction within those countries in the current year. Moreover, this result is statistically significant, thus, it rejects the null hypothesis. While the CO2 emission have neither substantively nor statistically significant relationship with life satisfaction, the direction of the relationship is negative.

VARIABLES	(1) B / (SE)
Lagged renewable energy consumption per capital	0.20***
	(0.05)
Lagged co2 emission	-0.00
	(0.00)
Constant	5.09***
	(0.07)
Observations	441
Number of Country	34
R-squared	0.05
r2_a	-0.0321

Standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, ^ p<0.10
*one-way FE: Life satisfaction

Robustness Tests & Extension Analysis---Autocorrelation

As a time-series data set, there is a concern of autocorrelation that is errors at current time are correlated with previous time point. Although autocorrelation does not affect beta coefficient, it has influence on standard errors, and thus misleads hypothesis tests for whether renewable energy is related to peacebuilding. To diagnose if autocorrelation exists in the two one-way FE models, this research uses auxiliary regression to estimate "rho" in which it predicts residuals at current time with residuals from previous time points. The “rho” ranges from -1 to 1, with being negative meaning negative autocorrelation and being positive meaning positive correlation, 0 meaning no autocorrelation.

In the negative peace model, the “rho” is 0.52 and statistically significant. Therefore, this model has a positive autocorrelation. In the positive peace model, the “rho” is also 0.52 and statistically significant. Hence, it also has a positive autocorrelation.

VARIABLES	(1) B / (SE)
Lagged residual (*rho*)	0.52***
	(0.04)
Constant	-92.56
	(98.72)
Observations	389
R-squared	0.29
r2_a	0.290

Standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, ^ p<0.10
*Autocorrelation test-Death in conflict and terrorism

VARIABLES	(1) B / (SE)
Lagged residual (*rho*)	0.52***
	(0.04)
Constant	0.00
	(0.02)
Observations	387
R-squared	0.27
r2_a	0.272

Standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, ^ p<0.10
*Autocorrelation test-Life satisfaction

To deal with autocorrelation, this research utilizes a random effects model with fixed effects for Year to control for time points. Initially, it needs to test if the two FE models yield a similar coefficient to their corresponded random effects models (RE) that doesn't have any fixed effects for country or time. This is because a RE model accounts for units repeating but does not account for units having very different averages of dependent variables, namely, the intercepts. Consequently, it may still yield biased results if intercepts are correlated with values of independent variables. This research used Hausman LR test to detect this difference.

Since the p-values in both Hausman test are larger than 0.05 it fails to reject the null hypothesis that there is no statistically significant difference between the two FE models with their related RE models. Therefore, bias may not be an issue, fixed effects for time in random effects models (RETFE) can be included.

Hausman (1978) specification test---Negative peace

	Coef.
Chi-square test value	.714
P-value	.7

Hausman (1978) specification test---Positive Peace

	Coef.
Chi-square test value	.424
P-value	.809

VARIABLES	(1) B / (SE)
Lagged renewable energy consumption per capital	25.64
	(250.24)
Lagged co2 emission	-0.05
	(0.33)
2008.Year	-406.18
	(613.05)
2009.Year	-411.42
	(608.36)
2010.Year	-470.54
	(613.25)
2011.Year	-918.11
	(613.74)
2012.Year	-808.89
	(609.46)
2013.Year	-513.76
	(619.90)
2014.Year	189.71
	(615.42)
2015.Year	-165.57
	(610.49)
2016.Year	-201.06
	(621.17)
2017.Year	-392.32
	(611.68)
2018.Year	-1,110.74^
	(618.65)
2019.Year	-1,284.97*
	(616.47)
Constant	1,428.24^
	(815.50)
Observations	432
Number of Country	34
r2_a	.

Standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, ^ p<0.10
*RET model-Negative peace

VARIABLES	(1) B / (SE)
Lagged renewable energy consumption per capital	0.22***
	(0.04)
Lagged co2 emission	-0.00
	(0.00)
2008.Year	-0.04
	(0.10)
2009.Year	0.05
	(0.10)
2010.Year	0.07
	(0.10)
2011.Year	-0.01
	(0.10)
2012.Year	0.14
	(0.10)
2013.Year	0.01
	(0.10)
2014.Year	-0.10
	(0.10)
2015.Year	-0.10
	(0.10)
2016.Year	-0.16^
	(0.10)
2017.Year	-0.10
	(0.10)
2018.Year	-0.16
	(0.11)
2019.Year	-0.16^
	(0.10)
2020.Year	-0.14
	(0.10)
Constant	5.13***
	(0.13)
Observations	441
Number of Country	34
r2_a	.

Standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, ^ p<0.10
*RET model-Positive peace

The RETFE negative peace model shows us that within 34 middle-low-income countries observed from 2008 to 2019, when holding the CO2 emission constant, one MWh increase in renewable energy consumption per capital in the previous year predicts within those countries, an increase of 25 in the deaths of conflict and terrorism in the current year. This number dramatically decreased from 114 in the FE model, while it is still not statistically significant. The CO2 emission still has neither meaningful nor significant relationship with negative peace, though the direction of the relationship is negative as the FE model.

The RETFE positive peace model shows us that within 34 middle-low-income countries observed from 2008 to 2020. when holding the CO2 emission constant, one MWh increase in renewable energy consumption per capital in the previous year predicts within those countries, an increase of 0.22 in the deaths of conflict and terrorism in the current year. This number increased from 0.20 in the FE model, and it is still statistically significant. The CO2 emission still has neither substantiative nor significant relationship with positive peace, though the direction of the relationship is negative as the FE model.

2. Renewable Resources Potential in Sudan

Sudan is rich in renewable resource potential (Abdelrahman, 2021). As one of the largest countries in Africa, with the Nile flowing through it, and a coastline along the Red Sea, Sudan has a large territory made up of diverse natural resources that provides people and livestock with basic needs and energy. However, due to the over-exploitation in agriculture and industries, and fast population growth, traditional natural resources, such as oil and mines, have been dramatically depleted. Global warming has aggravated this situation by sharply diminishing the energy supply in Sudan. The rich potential of renewable resources has not been effectively explored in Sudan, especially its solar and wind energy (Abdelrahman, 2021).

2.1 Solar Energy

Being in a tropical area with a tropical desert climate over most of its land, Sudan's desert and semi-desert areas cover more than 70 percent of the territory, which gives the enormous potential for solar energy development (Abdelrahman, 2021). According to the Institute of Electrical and Electronics Engineers:

> Sudan is characterized by its good solar radiation, where we find that the solar radiation in the range from 5.8 to 7.2 kWh/m2/day. The average annual solar irradiation rate is high at the level of 2,300-2,350 kWh/m2 (Elsayed et al., 2019, p. 2).

With more than half of the population working in agriculture, solar energy can reenergize agriculture in Sudan (Ali, 2018). Currently, the Sudanese people mainly use traditional irrigation pumps powered by diesel, which not only costs a large amount of money but also causes damage to the environment. Yet, solar energy can be mixed with traditional energy for the pump, which will mitigate air pollution and environmental destruction. Based on Ali's study, a photovoltaic pump can contribute to the irrigation pump system with the least costs of money in Sudan (Ali, 2018). Also, developing solar energy can bring new industries in rural areas, such as solar energy system installation and maintenance, telecommunication, and so on, which not only improves the life standard but also creates employment opportunities. Moreover, it can supply energy for hospitals and health centers, and reduce pollution to preserve the environment (Elsayed et al., 2019).

2.2 Wind Energy

Wind energy is currently used in irrigation systems by pumping water from the ground, which provides more fresh water for the Sudanese people (Saeed, 2020). Yet, based on Saeed's study, wind energy has not been fully developed in Sudan, which has enormous potential for electricity production.

Sudan has considerable wind energy, especially around its northeast coastline.

> Mean wind speeds of 4.5 ms^{-1} are available over 50% of Sudan, which is well suited for water lifting and intermittent power requirements, while there is one region in the eastern part of Sudan that has a wind speed of 6 ms^{-1} which is suitable for power production (Saeed, p.4, 2020).

2.3 Other Renewable Energy Resources

Sudan also has substantial biomass resources including solid biomass, biogas, liquid biofuels, and municipal and forest wastes. Biomass resources can be used for producing power and heat (Saeed, 2020).

Due to its unique geography, Sudan has huge potential for geothermal resources in its Jabel-Marra volcano, the Tagbo and Meidob hills, the Bayud volcanic field, and the Red Sea coast (Saeed, 2020).

Although Sudan already has five hydropower plants, it is only realizing one-third of its hydropower potential, which could have major impacts on its access to electricity.

3. Intersectional Panel on Environmental Peacebuilding in Sudan

Based on the environmental peacebuilding theory and positive peace theory, the proposal herein recommends an intersectional panel to be dedicated to building positive peace in Sudan with a focus on fighting climate change. The intersectional panel should consist of the Sudanese national government, local communities and tribes, civil society and businesses, and external actors. This combines both top-down government-led initiatives to build stability and bottom-up civil society-led initiatives covering all economic, political, and social sectors to restore social justice.

3.1 Roles of each actor

3.1.1 Sudanese government

Large-scale technical projects for renewable energy and environmental change need large-scale financial and political support (Dresse et al., 2019). Therefore, a government-led effort must be in demand. It is expected that the Sudanese national government can provide financial support for renewable energy building and management. Moreover, it is anticipated to give the green light to renewable energy development by facilitating productive policies. Also, it could formulate mediation and legislation to contribute to a ceasefire, and fair resource delivery among local tribes. For example, when two tribes fall into the argument concerning the quota of resource delivery, the national government should have a strong and credible legislative institution to judge with impartiality. Through competent and transparent approaches by the national government, greater public-sector credibility can be achieved.

Yet, the government does not play the central role in this panel; it is expected to make policies and financial budgets based on the demands of the local communities.

3.1.2 Local tribes and communities

Environmental peacebuilding would be doomed if the local demands and priorities were not heeded (Dresse et al., 2019). The local tribes and communities play the central role in this panel. As renewable resources are also a part of natural resources, local people have the deepest knowledge of where to explore natural

resources and how to explore them. The leaders from local tribes must bring their people's demands and voices to this panel and provide proposals for renewable energy exploration and development policies or projects based on the local people's priorities.

Regarding tribes still in conflict, this panel shall be a neutral space for them to gain mutual understanding and respect. Following the technical and restorative justice trajectory, it is anticipated that they see environmental protection and resource development as their mutual interests and benefits. Through cooperation in finding technical solutions to environmental issues, they could gradually build mutual trust. Then, this mutual trust could bring collaboration and "transboundary interdependence" on other social and political issues. This could result in the restoration of social justice, which would bring sustainability and balanced resource delivery among tribes.

Moreover, other tribes can be mediators within the panel for those in conflict. Tribes who have solved conflicts themselves can share the experience with those still in conflict. A domino effect here is once two tribes make a peace agreement and start cooperating on renewable energy development, it will become easier for all other tribes in conflict to follow and learn from the first two groups as an example. This process will lead to negative peace among all tribes and generate the beginning of positive peacebuilding.

In addition, it is envisaged that local tribes also execute their supervisory role in this panel to ensure all the projects and policies are created and implemented based on local priorities.

3.1.3 Civil society and business

In this context, civil society includes local NGOs, universities, religious institutions, cultural institutions, and other relevant citizen-led groups. The main role of civil society in this panel is supervision. They need to supervise the work of the national government and local tribes in case of corruption. Moreover, they could be the media for governments and local communities to advocate environmental preservation and resource protection among the public.

Civil society is expected to also play a significant role in research and policymaking. Universities and relevant environmental organizations shall conduct surveys and draft annual reports to provide the panel with feedback from local people and recommendations for future actions. The measurement of the success of this panel shall be mainly done by civil society. One direct way is to do a survey and collect both quantitative and qualitative data in local communities to see the change before and after any policies or projects are implemented.

Businesses is foreseen to play a crucial role in funding this effort, and the implementation and management of renewable energy projects. Because of the

local priority and demands, this panel only gives discourse power to local businesses. The goal of the local business is to innovate more technical solutions for environmental issues and to create more employment opportunities for local people. There is also an expectation that educational institutes can play a significant role in peacebuilding and socioeconomic development. Schools not only function as institutions for educating the younger generation but also provide safe spaces for their healthy growth and development. This expectation is rooted in the understanding that education not only contributes to economic growth but also enables society to invest in its own future development, ultimately fostering long-term positive peace construction (Psacharopoulos, 1988). It is envisaged that businesses could cooperate with young people from universities and other educational or vocational institutes to create a domestic cyclical business model on renewable energy. In other words, the local businesses can earn capital from the current renewable energy projects and then reinvest it in training and educational boot camps, which aim to train more young people with related knowledge and skills. Then, the young generation can continue to innovate and gain economic benefits for future investment. In the long run, the Sudanese people can fundraise for their future projects on economic and social issues with their own money, which will be a massive step for decolonization.

3.1.4 External actors

External actors here include international NGOs, foreign government agencies, foreign businesses, and other kinds of foreign institutions. Although external actors shall only play the role of an observer in the panel, it is still important for them to provide Sudanese people with financial support and novel forms of technology at the beginning (Dresse et al., 2019). Moreover, external actors shall also be an oversight mechanism on corruption and misbehaviors among the national government or local tribes.

Yet, to decolonize the peacebuilding process, external actors cannot determine what and how the panel operates. External actors must respect the authority of the Sudanese government and people when designing and implementing policies and projects. Otherwise, this panel would fail because of neglecting the local priorities and interests (Schirch, 2022).

3.2 A feasible case proposal example

To make peace in the Blue Niles region where tribal conflicts and violence have constantly happened (UNEP, 2022), the panel shall bring the local tribes in conflict to sit together. During the first technical trajectory, the national government shall lead the conversation to mediate the tribes in conflict. Then, since the conflicts

were mainly caused by the shortage of resources (UNEP, 2022), the tribes shall provide the panel with the demands provided by local people in their tribes. The tribes in conflict will be able to understand each other and find common interests in environmental protection and renewable energy. They shall provide a proposal to the panel to implement a renewable energy project for the tribes that could benefit all. Then, civil society, local businesses, and external actors can do a pre-stage survey and exploration for renewable energy guided by the local tribes and people. Since the Blue Niles region is located in the southeast part of Sudan, where renewable resources are scarce (Saeed, 2020), Sudan will need to build infrastructure to transfer power from the northern part of Sudan.

This power transfer across the nation needs the national government and external donors to invest. The national government shall design and implement policies that fit every local community's interest and ensure that no damage will be caused to local communities along the transfer route. The tribes involved in this power transfer shall cooperate to seek common grounds while finding solutions for existing disputes so that they can gain mutual understanding and trust. Civil society and Sudanese people shall cooperate to supervise the funding of this project to prevent any corruption amongst the national government and local tribal chiefs. All actors in the panel shall cooperate on this project based on local natural conditions and priorities. Since this power transfer will be a long-term project all actors need to be patient with the outcome. Further, civil society shall make measurements based on the opinions of local people. If the project goes well, it will help tribes in conflict to restore social justice and norms and build interdependence not only on the environmental aspect but also on the social and political system.

4. Conclusion and Discussion

Climate change leads to a shortage of natural resources and environmental destruction, which exacerbates the violence in Sudan (UNEP, 2022). The intersectional panel proposed in this proposal is a creative approach that focuses on renewable energy exploration and development that brings the Sudanese government, local communities and tribes, civil society, local businesses, and external actors together. Environmental peacebuilding can be the theoretical framework for the panel to engage in new ways to build negative peace in the short term and positive peace in the long run based on local priorities through: 1) technical trajectory aiming to reduce environmental destruction; 2) restorative justice trajectory aiming to rebuild and restore neutral and common values and norms; and 3) sustainability trajectory aiming for equitable resources distribution and sustainable development (Dresse et al., 2019).

Yet, the environmental peacebuilding theory is still in its infancy, which requires more practical cases and data to be refined. And the intersectional panel is

only one of the suggested ways to build environmental peace in Sudan, which still needs to be tested if it fully corresponds to the local history and social norms. Moreover, although renewable energy does play a crucial role in combating climate change and its impacts, it needs more data covering various aspects of climate change to evaluate the environmental peacebuilding theory and to find the most effective approach for peacebuilding to fighting climate change. In addition, corruption issue is always a big concern in any intervention. A detailed discussion on controlling and reducing corruption is still in need.

Above all, since the root cause for most tribal violence in Sudan is climate change, all actors in Sudan must pay attention to solving climate change challenges. This presents a new opportunity for the Sudanese to decolonize peacebuilding and build positive peace aligned with their social norms and values to fight against climate change.

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