

THE IMPACT OF TRANSITIONING TO RENEWABLE ENERGY ON NON-COMMUNICABLE DISEASES IN TANZANIA

EXECUTIVE SUMMARY (1/2 PAGE)



The burden of non-communicable diseases (NCDs) in Tanzania, particularly cardiovascular and respiratory conditions is rising, with age-standardized mortality rates reaching 557 per 100,000 males and 498 per 100,000 females in 2021. Fossil fuel emissions contribute significantly to NCDs by releasing harmful pollutants like carbon dioxide. Transitioning to renewable energy could reduce 25-33% of global NCD-related deaths, supporting a healthier, more sustainable society. Despite Tanzania's goal of 50% renewable energy by 2030, challenges such as funding shortages, limited technical expertise, low public awareness, and gender disparities persist. Collaboration among government, private, and grassroots organizations, alongside research and gender-inclusive training, is essential for promoting renewable energy adoption.

KEY MESSAGE (1/2 PAGE)



Tanzania's reliance on fossil fuels increases the strain on its health system by contributing to the rise of non-communicable diseases (NCDs) such as respiratory and cardiovascular conditions. Promoting a transition to clean energy sources can help reduce NCD cases, supporting a healthier and more sustainable society.

BACKGROUND INFORMATION (MAXIMUM 1 PAGE)

Rationale



Fossil fuels are major contributors to global warming, driving climate change by releasing greenhouse gases like carbon dioxide (Climate and Clean Air Coalition, 2017). However, their impact extends beyond environmental damage; Burning fossil fuels also directly affects health, increasing risks of NCDs like asthma, cancer, and heart disease due to air pollution (Harvard T.H. Chan School of Public Health, n.d.). These pollutants degrade air quality, increasing the prevalence of non-communicable diseases (NCDs) such as asthma, chronic obstructive pulmonary disease (COPD), cardiovascular conditions, and certain cancers. In 2020, for instance, 4.2 million deaths worldwide were linked to air pollution (Climate Council, 2022). Of these deaths, 80% were due to human-induced emissions, and 35% of those were related to the burning of fossil fuels (Climate Council, 2022). Without fossil fuels, it has been found that average life expectancy would increase by over 1 year,

and US \$3 trillion could be saved from economic and health costs (Climate Council, 2022).

The burden of non-communicable diseases (NCDs) in Tanzania, particularly cardiovascular and respiratory diseases, is rising (Byemelwa, 2024, Ndumwa et al 2022). In 2021, age-standardized mortality rates for these diseases were 557 per 100,000 in males and 498 in females (Pallangyo et al, 2024). Cardiovascular and respiratory diseases accounted for 13% of NCD deaths, worsened by COVID-19 (Roman et al, 2019). Fossil fuel emissions, including carbon dioxide, contribute to NCDs like heart attacks and COPD. Tanzania aims to generate 50% of its energy from renewables by 2030 to reduce pollution (Byemelwa & Kaplan, 2022). Transitioning to clean energy could reduce 25-33% of global NCD deaths. However, barriers such as funding challenges, technical expertise gaps, low public awareness, and gender disparities hinder renewable energy adoption. To address this, the partnerships between government, private, and grassroots organizations, further research on financial incentives, and gender-inclusive training and awareness campaigns is highly recommended.

The Opportunity



Tanzania aims to generate 50% of its energy from renewable sources by 2030 (Society for International Development, 2024), which will help reduce pollution and lower deaths from non-communicable diseases (NCDs). The country has abundant resources like solar, wind, and hydro power, and the government supports clean energy through policies and international partnerships. Advances in renewable energy technology make it more affordable, and the sector can create jobs, especially in rural areas. With growing public awareness, climate commitments, and access to funding, Tanzania has a strong opportunity to transition to a sustainable energy future.

Financial Benefits

Transitioning to renewable energy in Tanzania will also reduce energy costs related to fossil fuels importation, attracting investment, creating green jobs, and minimizing health expenses related to pollution, while fostering long-term economic growth and energy independence.

Medical Benefits

The transition to renewable energy in Tanzania will significantly contribute to improved public health by reducing harmful air pollution caused by fossil fuel use. This reduction in pollution will lower the prevalence of respiratory and cardiovascular diseases, as well as other health issues linked to poor air quality, leading to a healthier population overall. It will reduce reliance on harmful biomass fuels like firewood and charcoal.

Technical Benefits

Renewable energy transition ensures the country's energy mix, making it more resilient to disruptions in fossil fuel supply. Additionally, advancements in renewable energy technologies, such as solar and wind power improves energy efficiency and reliability, enabling more sustainable and cost-effective energy production.

RECOMMENDATIONS (1/2 PAGE)



1. *Facilitate collaboration between multiple stakeholders, particularly the energy and healthcare sectors, by establishing a Community of Practice at both local and national government levels. This will involve stakeholders from energy and health to support funding and implementation of renewable energy projects.*
2. *Invest in research and development to evaluate Tanzania's response to financial incentives for renewable energy transition. Disaggregate results by socioeconomic status, geography, and gender to design tailored interventions.*
3. *Train and educate engineers and technicians to build local capacity in renewable energy. Implement gender-inclusive hiring and working policies, such as offering flexible working hours and remote work for easy access to training sessions, and providing scholarships for girls to join sustainable energy academic programs. Collect gender-disaggregated data on the impacts of energy transition on women and girls.*
4. *Launch public awareness campaigns to educate government and community stakeholders on the importance of environmentally friendly practices, including the transition to renewable energy technologies. Ensure that women facilitators lead these sessions with culturally relevant information.*

CONCLUSION (1/4 PAGE)



Transitioning to primarily renewable energy generation in a fair and affordable manner is key to addressing the climate crisis and improving the wellbeing of society. Along with environmental positive impacts, there will be several health co-benefits such as cleaner air and water, fewer respiratory illnesses, and lower risks of heat stroke and various cancers. By bringing together government, private corporations, and grassroots organizations, Tanzania can reduce its reliance on non-renewable, harmful energy sources and contribute to its goal of 50% renewable energy generation by 2030. Although SDG 7 will be directly addressed, others such as SDG 1, SDG 6, and SDG 13 will be advanced through the incorporation of gender equality and job creation.

REFERENCES (1 PAGE)



1. *Byemelwa, A. (2024, May 15). President Samia's Vision: Leading Tanzania's clean energy transition amidst challenges and hope. Pan African Visions. <https://panafricanvisions.com/2024/05/president-samias-vision-leading-tanzanias-clean-energy-transition-amidst-challenges-and-hope/#:~:text=Samia%20Suluhu%20Hassan's%20unwavering%20commitment,held%20on%20Tuesday%2C%20May%202014>*
2. *Clements, A & Todd, J. F. (2022, August 24). Tanzania eCooking Market Assessment 2022. Modern Energy Cooking Services. <https://mecs.org.uk/wp-content/uploads/2022/08/Tanzania-eCooking-Market-Assessment-2022-Final.pdf>*
3. *Climate and Clean Air Coalition. (2017, September 12). New WHO report: Air pollution is a leading contributor to noncommunicable diseases. <https://www.ccacoalition.org/news/new-who-report-air-pollution-leading-contributor->*

noncommunicable-diseases

4. Climate Council. (2022, May 23). *Killer coal: Just how bad are the health effects of coal?* <https://www.climatecouncil.org.au/killer-coal-just-how-bad-are-the-health-effects-of-coal/>
5. Ndumwa, H. P., Mboya, E. A., Amani, D. E., Mashoka, R., Nicholaus, P., Haniffa, R., ... & Baker, T. (2022). *The burden of respiratory conditions in the emergency department of Muhimbili National Hospital in Tanzania in the first two years of the COVID-19 pandemic: A cross sectional descriptive study.* PLOS Global Public Health, 2(12). doi:10.1371/journal.pgph.0000781
6. Pallangyo, P., Komba, M. S., Mkojera, Z. S., Mfanga, L., Mmari, J. E., Kailembo, N. V., ... & Kisenge, P. R. (2024). *Perspectives for the Prevention of Noncommunicable Diseases in Tanzania: Is Knowledge Translated into Practice? Risk Management and Healthcare Policy*, 2024. 1177-1186. doi:10.2147/RMHP.S460703
7. Roman, W., Martin, H., & Sauli, E. (2019). *Cardiovascular diseases in Tanzania: the burden of modifiable and intermediate risk factors.* Journal of Xiangya Medicine, 4. doi:10.21037/jxym.2019.07.03.