REDD+

REDUCING EMISSION FROM DEFORESTATION & FOREST DEGRADATION IN DEVELOPING COUNTRIES

MAKING THE INVESTMENT CASE FOR SOLAR SCALE CAPACITY EFFICIENCY TO ACCELERATE REDD+

Weekly Wetland Sustainability Report

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Announcement

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In this issue, we focus on making the investment case for solar scale capacity efficiency to accelerate reducing emission from deforestation and forest degradation in Africa with the aim of placing the emphasis on the role of forest conservation, sustainable management of forests and enhancement of forest carbon stocks (REDD+). We also discuss how over 50% of investment in renewable energy is invested in solar energy. There is hope for Africa to develop the capacity for renewable solar energy capacity through technological innovation. However, investment in the capacity for solar energy needs to be inclusive; gender sensitised, which is then embedded in inclusive growth.

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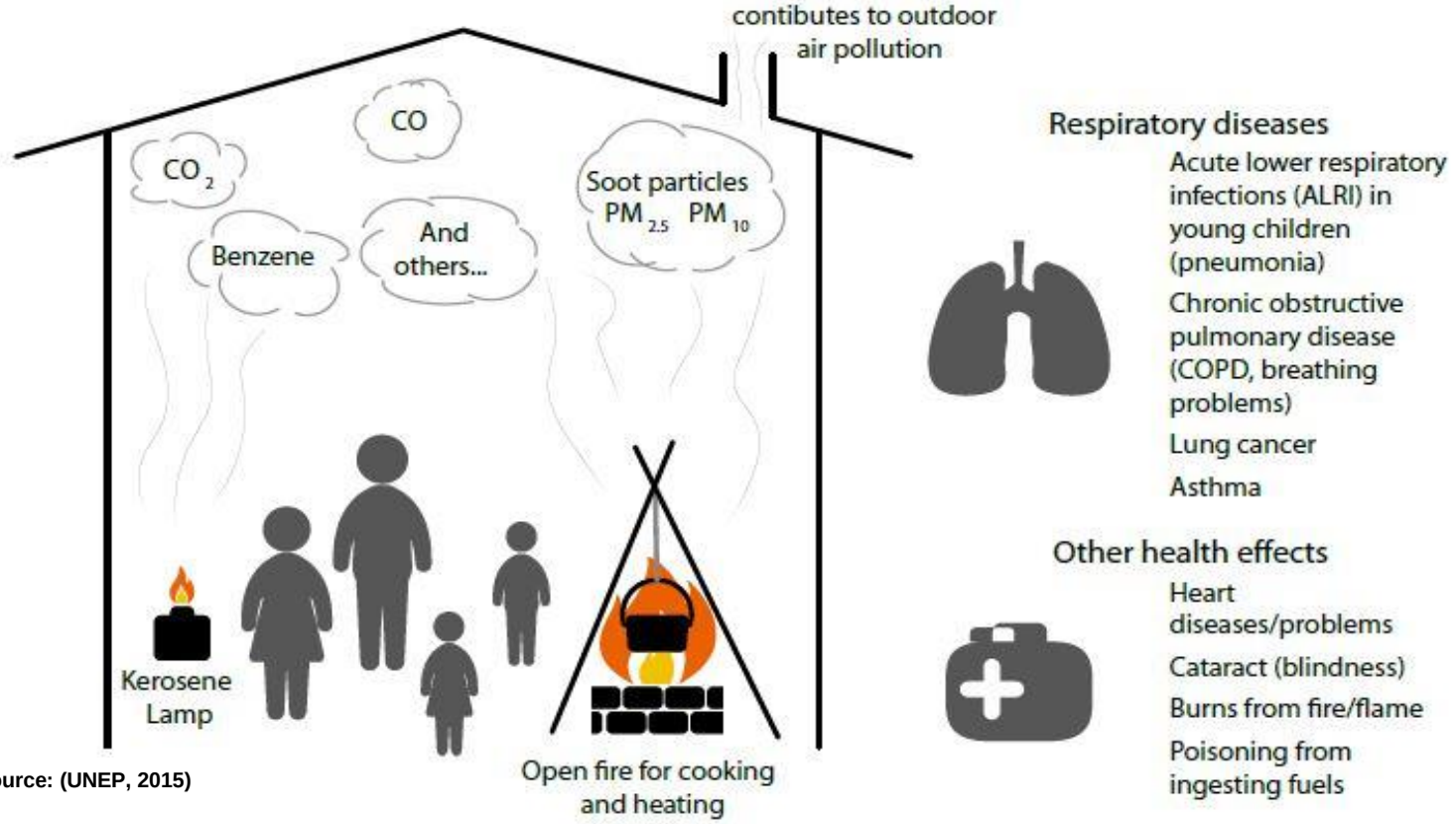
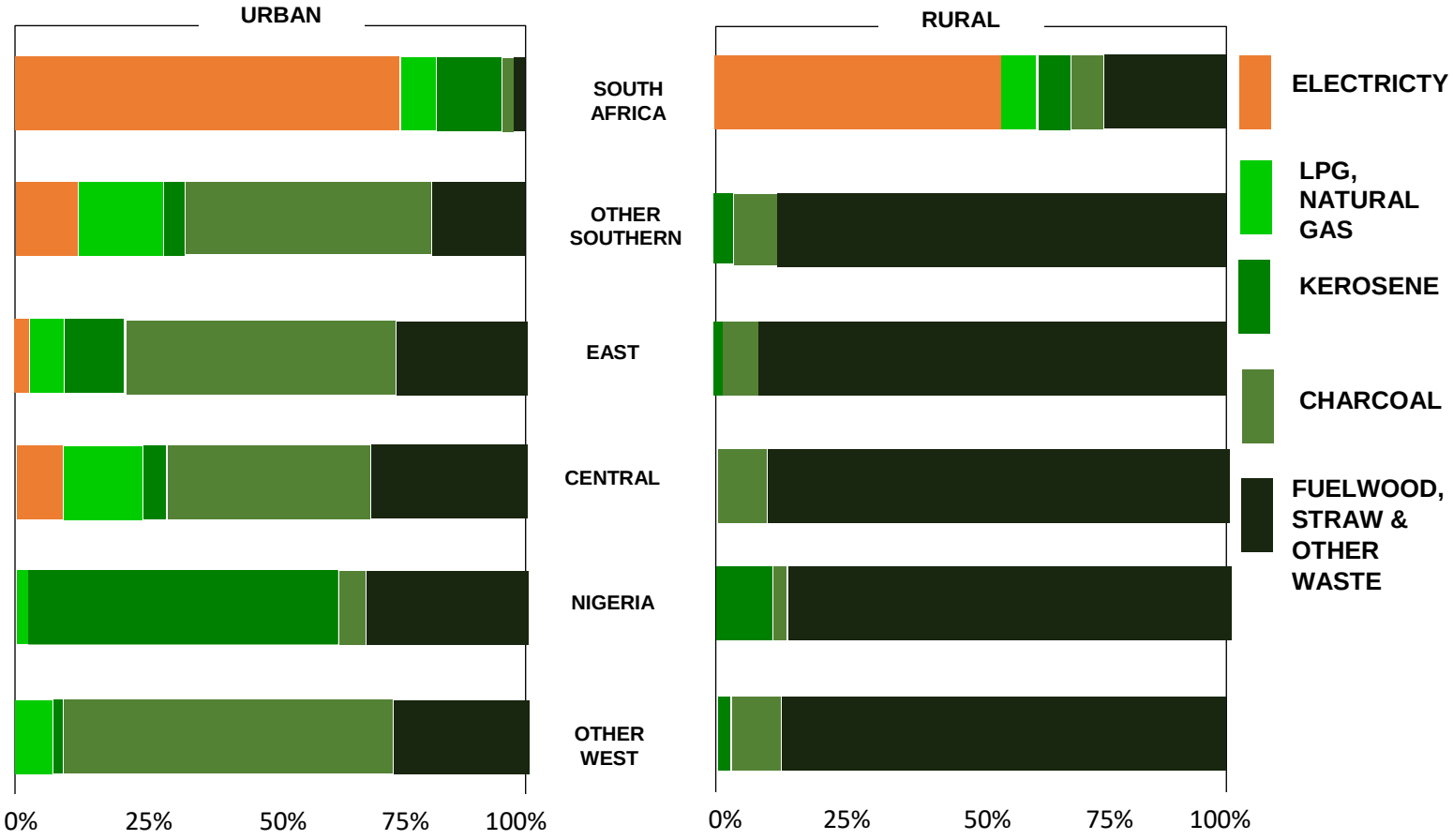
Fig.1 Household air pollution



Source: (UNEP, 2015)

Fig.2. Main fuel used by households across Africa for cooking

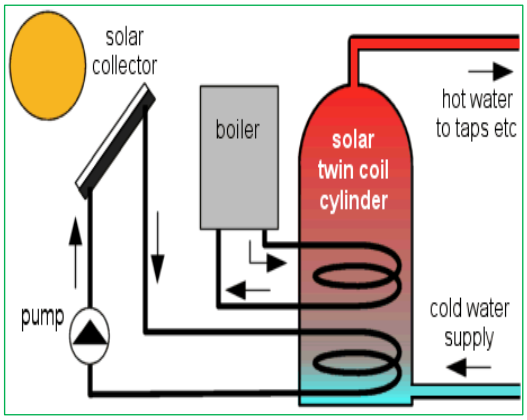


Data Source: (Jaeger & Cavis, 2015)

The case for investment in solar scale capacity in Africa, to improve sustainable energy production and usage is critical to address climate change, mitigation, and adaption issues as well as improve health amongst the vastly growing population. In figure 5, the total investment in solar energy capacity in 2018, totalled $US 272.9 billion of which the Middle East and Africa received $US 16.1 billion (6%). In figure 6, over 50% of renewable energy capacity investment is apportioned to solar energy capacity building, which is a direct investment in solar energy technologies. Below we consider some of the different types of solar energy technologies.

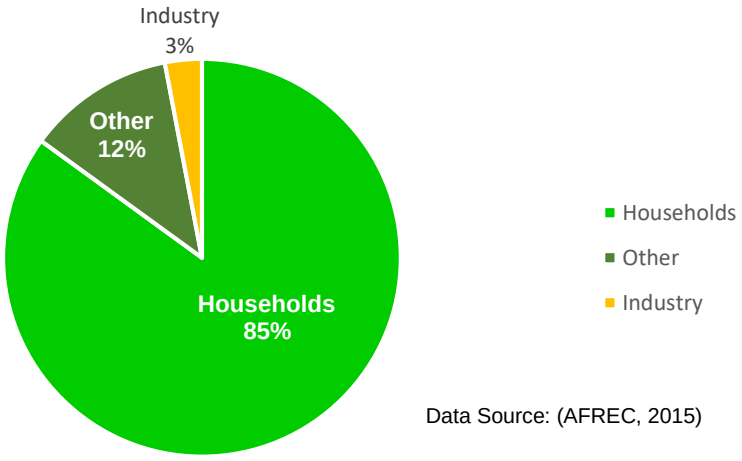
1. Photovoltaic systems (solar cell cooking systems).

2. Solar Water heating systems



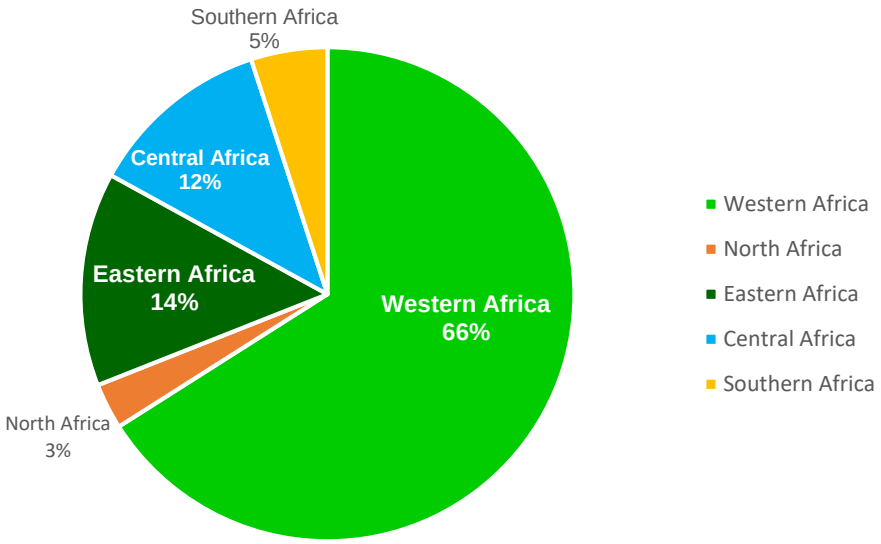
3. Solar power plants

Fig.3. Africa: Fuelwood shares of total final consumption by sector, 2013



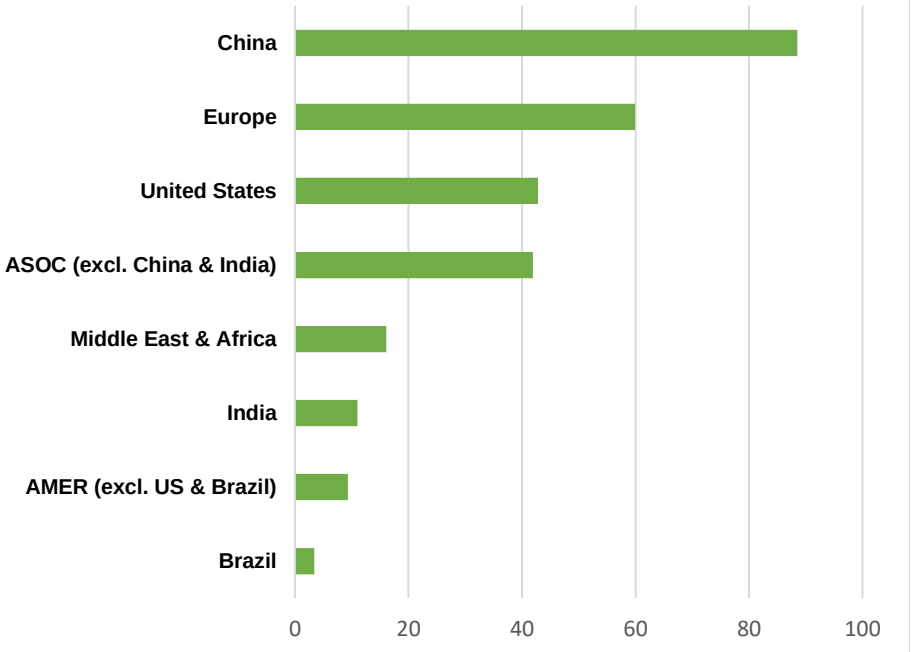
Data Source: (AFREC, 2015)

Fig.4. Regional Shares of Firewood Production, 2013



Data Source: (AFREC, 2015)

Fig.5. Investment in Renewable Energy Capacity By Region, 2018, $BN



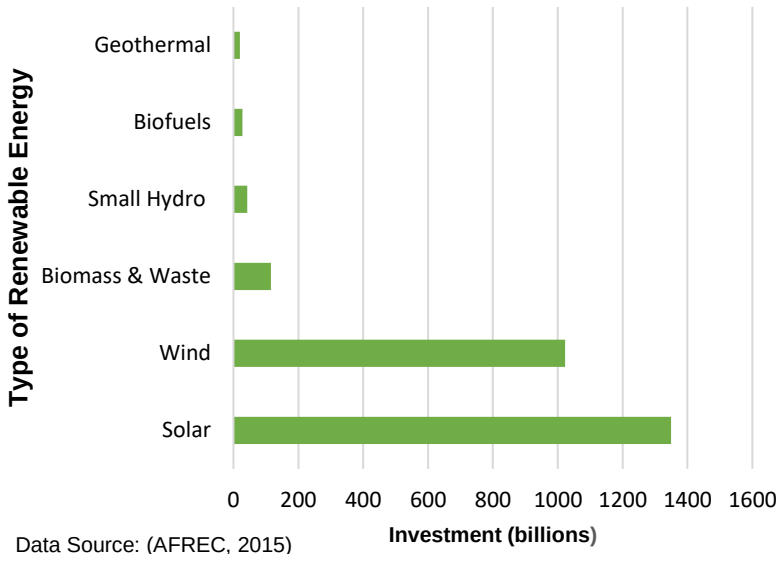
Data Source: (AFREC, 2015)

In Africa, there is a high dependency on renewable energy; up to 70% of energy-consumption derives from renewable energy sources. It is estimated that 4 out of 5 households rely on biomass for energy consumption, mainly fuelwood and charcoal. In fig.1, we see the catastrophic environmental impacts of fuelwood and charcoal from energy consumption. Fig. 2, provides further analysis of energy consumption in households across Africa. Within these households, women play a significant role in household energy consumption, from collecting the fuelwood to sourcing different types of renewable energy. The need for changing fuelwood household consumption to solar energy is vital to reduce carbon emissions and improve the health of the local citizens. The interactions, relationships and interlinkages between gender, climate change, and inclusive growth are evident and well-founded (Blackden et.al (2006), Clancy (2010), Dankelman (2010), and Deloitte (2014), ECREE, (2015).

In Fig. 6, solar energy accounts for over 50% of investment in renewable energy. However, investment in the capacity for solar energy requires inclusive investment; gender sensitised integration into all investment decisions to change household consumption. If Africa achieves 100% sustainable renewable energy by 2050, will the problem of forest degradation be resolved? Is there enough evidence to suggest that changing household energy consumption across Africa from fuelwood to solar energy reduces forest degradation? If we consider the four main drivers of forest degradation (fig.7), it is apparent that changing household energy consumption to solar energy will reduce forest degradation by 50%. However, this change will require a gender lens, since the Beijing Conference of 1995, the concept of Gender and Energy has evolved from focusing on clean cook stoves to analysing the complex relationship between the access to and use of energy, and economic development, especially for women, due to the importance of energy in women's lives (Clancy & Khamati-Njenga, 2005). More women than men suffer from energy scarcity in Africa (World Bank, 2013). Therefore, the relationship between gender, renewable energy and reductions in forest degradation is well founded and critical. There are also other issues to address such as the issue of illegal timber logging, livestock grazing, and uncontrolled forest fires, all of which will need addressing. Therefore, it is clear that reducing forest degradation will accelerate REDD+.

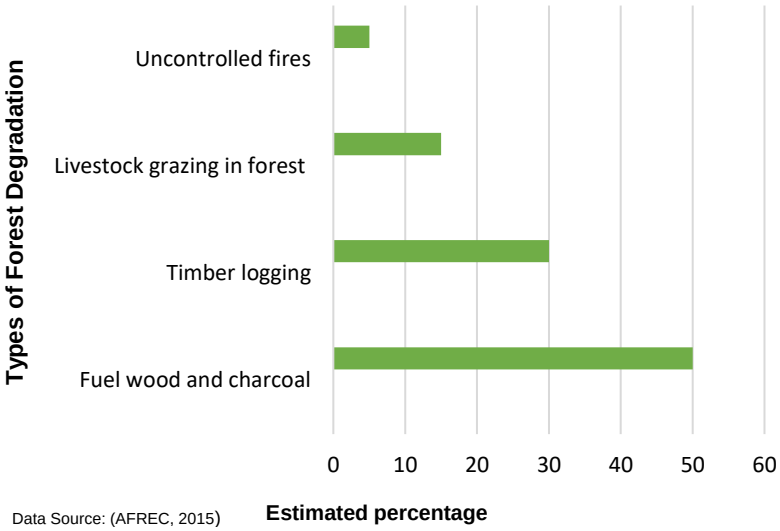
In fig. 8, the intended nationally determined contributions in reducing greenhouse gas emissions under the UN Framework Convention on Climate Change (UNFCCC) are summarised. The highest priority of commitments from national governments includes increasing afforestation and reforestation, increasing forest cover and improving energy fuel (cooking), from fuelwood to other more sustainable sources such as solar energy.

Fig.6. Renewable Energy Capacity Investment, 2010-2019, $BN



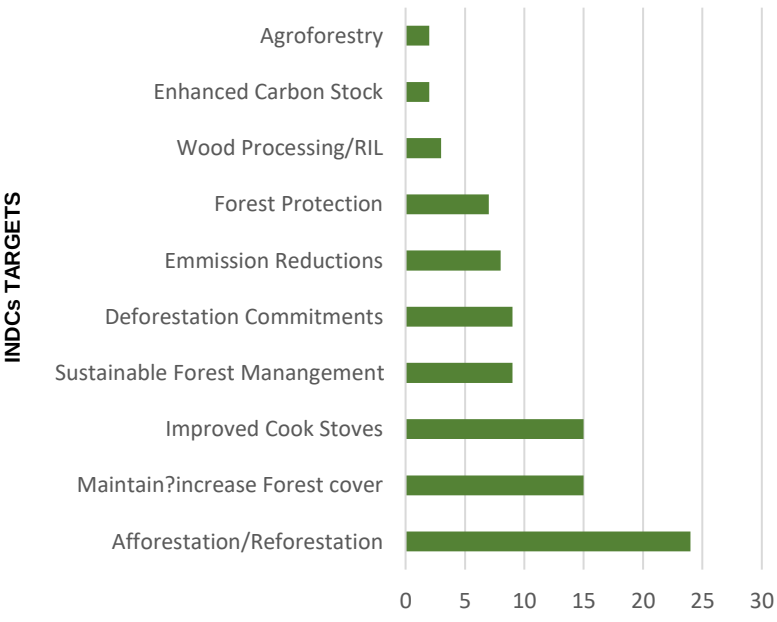
Data Source: (AFREC, 2015)

Fig.7. Main causes of Forest Degradation in Africa

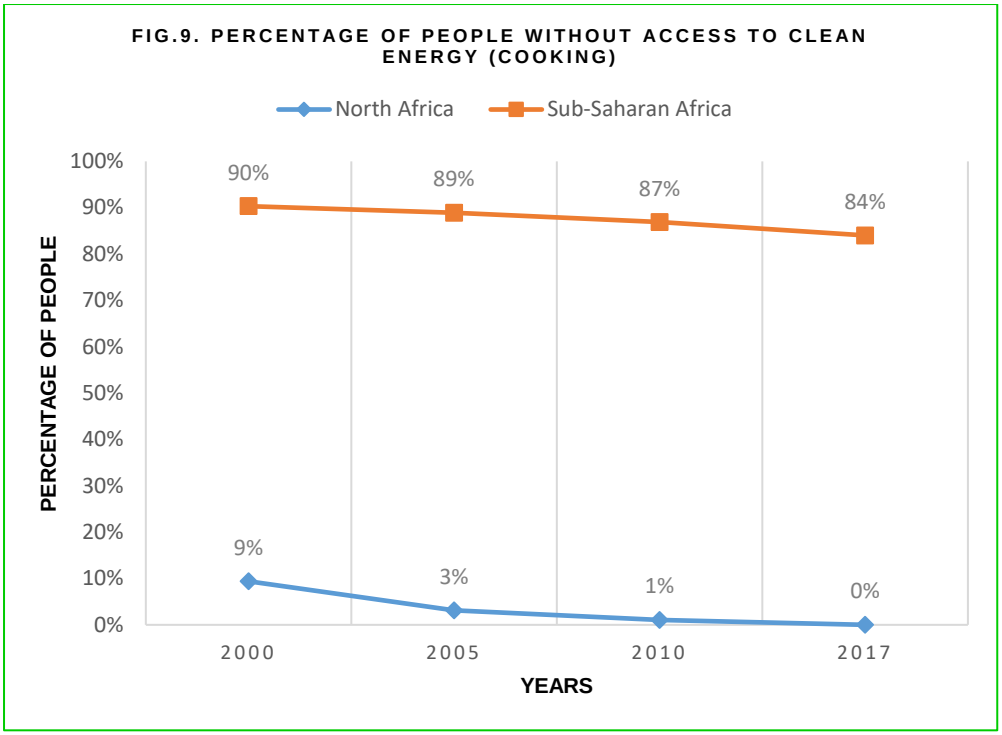


Data Source: (AFREC, 2015)

Fig.8. INDCs - FOREST TARGETS

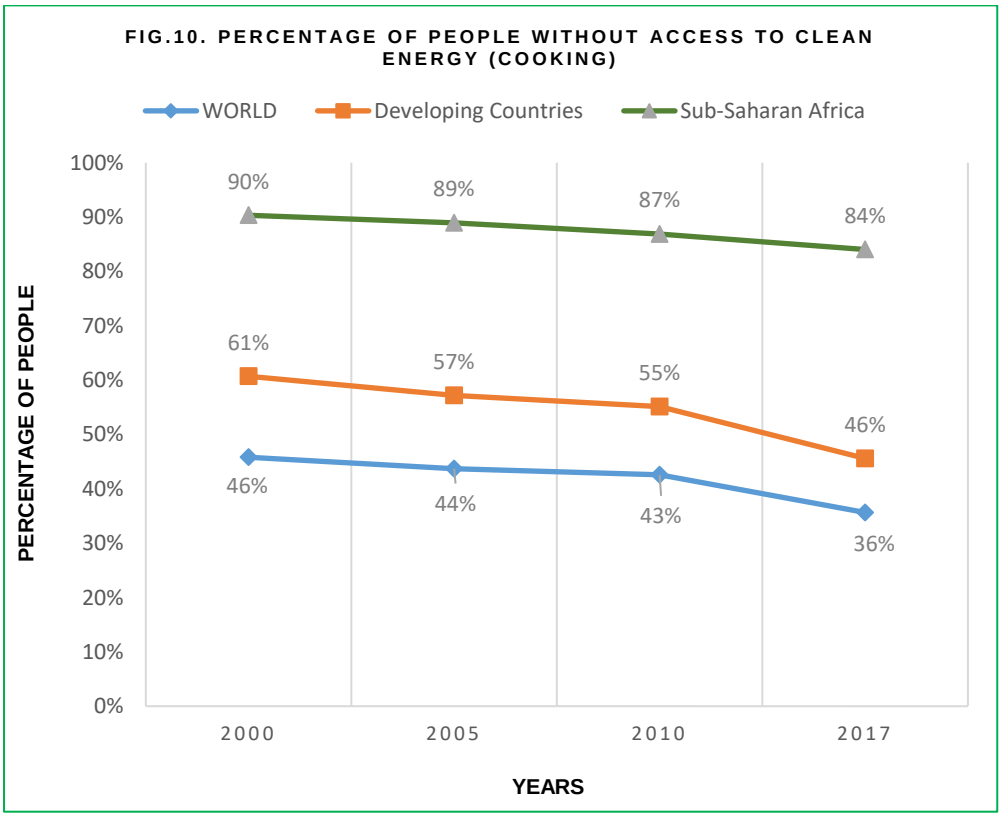


Data Source: (AFREC, 2015)



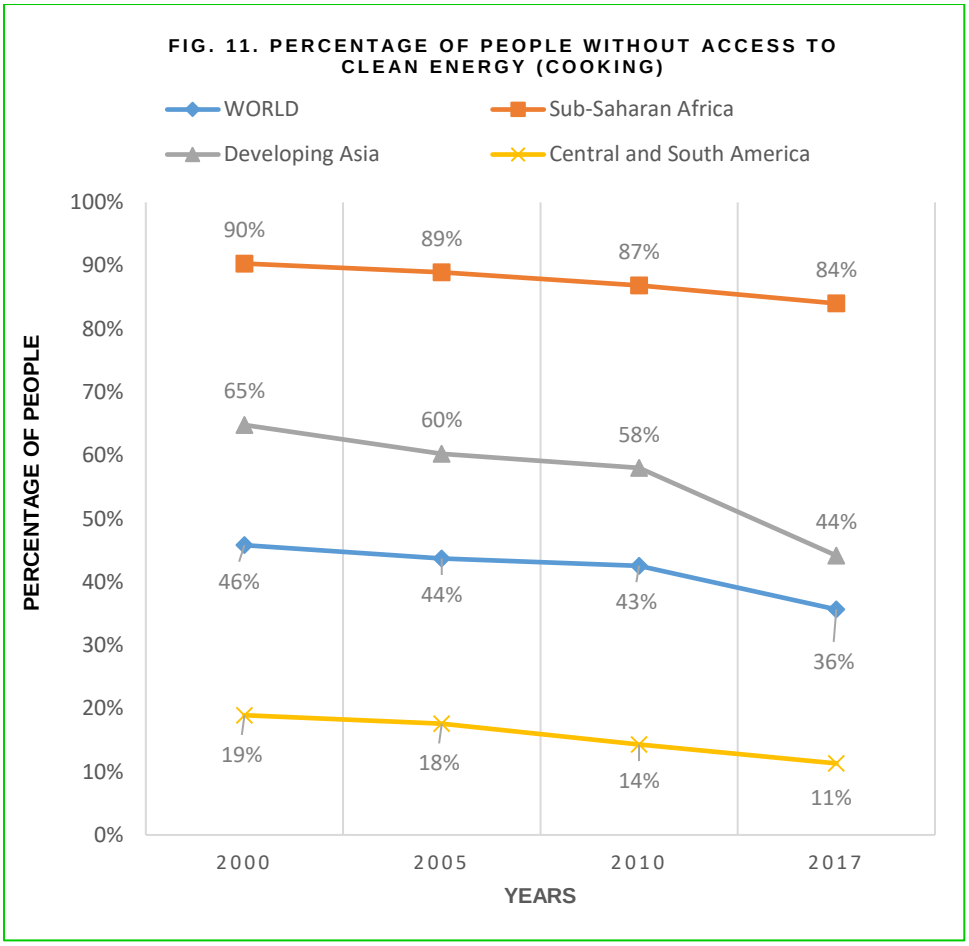
Data Source: International Energy Agency (EIA), Graph created by NET Africa

Africa's share of renewable energy consumption has increased over the last 16 years. For example, fig. 9 shows a 7% decrease over the last 16 years, in the number of people without access to clean energy (cooking). In the year 2000, the number of people without access to clean energy (cooking) was 90%, with a drop of 7% by 2017. Meaning more people have gained access to other more sustainable sources such as solar energy. However, this slight increase in cleaner fuel (cooking) energy is insufficient; much improvement is required to meet climate targets on clean energy for all by 2050.



Data Source: International Energy Agency (EIA), Graph created by NET Africa

In fig 10, there are disparities between Sub-Saharan Africa, the rest of the developing countries and the world in terms of the number of people without access to clean energy (cooking). Africa is well above the global average of people without access to clean energy. In the year 2000, Sub-Saharan Africa was over 48% above the global norm for people without access to clean energy and 16 years later in 2017, the disparity has slightly decreased to 45% whilst other developing countries have been decreasing the disparity from 33% above norm in 2000 to 28% in 2017.



Data Source: International Energy Agency (EIA), Graph created by NET Africa

In fig 11, there are further disparities between the percentages of people without access to clean energy (cooking) when making comparisons between sub-Saharan Africa, Asia, Central and South America and the global average standard.

For instance, the difference between developing Asia and Sub-Saharan Africa is notable. In the year 2000, Africa 38% higher than Asia, 16 years later; Sub-Saharan Africa is now 91% higher than Asia in terms of people without access to clean energy. Asia has improved access to clean energy (cooking) by 48% over the last 16 years, whilst Africa has only improved by 7%. The lack of improvement for Sub-Saharan Africa requires urgent attention in the form of investment in solar energy capacity, as well as addressing the complex relationship between the access to and use of energy, and economic development, especially for women, due to the importance of energy in women's lives.

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