02

What drives malaria?

Why is malaria still a scourge in some countries? To understand this better we need to examine the drivers of this disease.

Insufficient public investment in health and social care and services

- To reduce or eliminate the incidence of malaria requires significant public investment.
- For various reasons, governments in the Global South have not made sufficient investments in public and social services. This is despite it being well known that the main risk factor for contracting malaria is lack of equitable access to social services such as effective water and sanitation services (CDC, n.d.).

PHOTO: RICHARD JUILLIART / SHUTTERSTOCK.COM

Child laying in bed

Chronic public disinvestment

The drivers of low public investment in healthcare and services in Africa are both historical and modern in nature.

Following independence, many African countries sought to improve the quality of and access to primary healthcare facilities, but those that took loans from the International Monetary Fund and the World Bank in the 1980s were subject to the conditionalities of structural adjustment programmes. These programmes were based on externally imposed austerity measures aimed at reducing public spending, to ensure that African governments do not default on debt repayments.

The structural adjustment programmes heavily promoted a market-orientated approach to the provision of public services (Skosireva and Holaday, 2010). They were thus aimed at liberalising African economies, promoting private-sector participation in healthcare, and severely limiting public expenditure and the role of the state in public healthcare.

On average, African government spending on public healthcare was halved in those countries with structural adjustment programmes compared to those without (Stuckler et al., 2011). Thus, one of the well-established consequences of structural adjustment and chronic public disinvestment was the abject deterioration of public health systems in African countries.

PHOTO: FREE WIND 2014 / SHUTTERSTOCK.COM

Hospital ward

Phillanthrocapitalism and donor funding

Post-independence historical factors shifted financing, responsibility and control, and autonomy from the public to the private sector and foreign donors. This, in turn, led to external funding for and control over infectious diseases in Africa (African Development Bank, 2013).

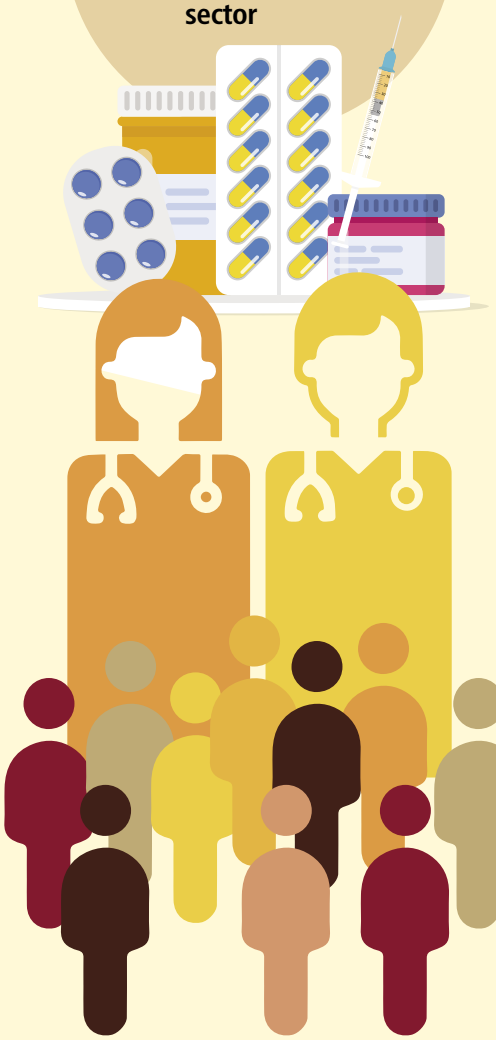
The African Development Bank provided an overview of health services on the continent in 2013. Little donor funding was directed towards developing public health infrastructure or making these health systems more equitable and effective. (African Development Bank, 2013).

Corruption and poor economic governance

Widespread corruption and poor economic governance have resulted in further deterioration in public healthcare services.

38%

of essential drugs were available in the public health sector

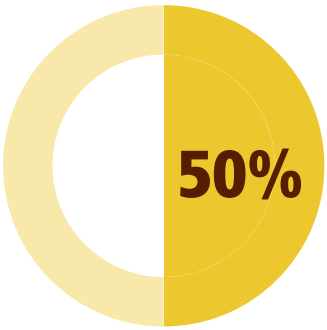


Two doctors per 10 000 people, compared to the global average of 14.63

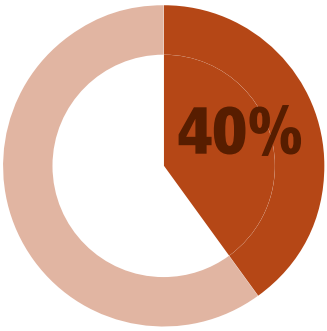
= 1000 people

PHOTO: VECTOR PILLS BY VECTEEZY / VECTEEZY.COM

Afrobarometer 2014–2015 survey



of Africans did not receive the healthcare they needed



40% of those who did access care found it extremely difficult to do so

(Hsiao et al., 2019)

In Malawi, Nigeria, South Africa, Zambia and Burkina Faso reasons for lack of access to healthcare include:

- lack of access to education and transportation
- fear of discrimination, and costs – including those of illegal fees and bribes

Misappropriation of funds by public officials substantially reduced funding for public healthcare.

This impacted on the procurement of medicines, hiring of healthcare workers and building or maintenance of healthcare facilities.

"[P]oor governance is associated with poorer health outcomes, including lower levels of life expectancy, higher mortality rates, and lower levels of subjective health feelings"

Corruption in the healthcare sector is thus directly correlated with poor management of chronic illnesses. (Hsiao et al., 2019)

Inadequate water provision, sewage and waste management

Typically, in malaria-prone countries, wastewater is not channelled, managed and treated properly. Water and sanitation services and infrastructure are non-existent or are not maintained properly, or communal taps are not properly constructed to eliminate standing/ stagnant water. (CDC, n.d.)

It is no coincidence that malaria is more prevalent in areas where there is limited access to these essential and basic human services. (Kouyate et al., 2007)

PHOTO: AMORS PHOTOS / SHUTTERSTOCK.COM

The link between high rates of malaria and lack of access to the effective provision of clean water and sewage and waste management services is crystal clear. Díaz, 2019)

Land-use change and extraction

Large-scale industrial agricultural development is a key driver of the increased intensity of malaria, especially in developing countries (Asenso-Okyere et al., 2009)

- This is because of land clearing – including of forests – deforestation, turning of the soil, and large irrigation schemes and dams (Ijumba & Lindsay, 2011).
- These irrigation schemes and dams expand the volume of surface water and breeding habitats for mosquitoes.
- Increased irrigation capacity tends to provide more water sources on farms for mosquitoes to breed year-round and not just during the rainy season.

In Nigeria, for example, the construction of large-scale irrigation schemes increased the volume of surface water and is linked to higher rates of malaria cases in that country (Ejezie, 1983). The same has been witnessed in some parts of Eswatini, as a result of the installation of irrigation schemes for export cash crops such as sugarcane (Boëte, 2006).

PHOTO: AGAJANAYO / SHUTTERSTOCK.COM

Deforestation or large-scale land clearing changes the microclimate and thus breeding habitats of mosquitoes; it also increases contact opportunities between mosquitoes and people. And reforestation initiatives with forest cash crops such as eucalyptus (Tusting et al., 2013) also create waterlogged grounds for optimal mosquito breeding.

Erosion due to deforestation in Madagascar

PHOTO: VLAD KARAVAEV / SHUTTERSTOCK

Intensive production systems and growing certain crops in monocultures (such as maize) are also directly linked with increased incidences of malaria. Mosquito larvae feed from the pollen that falls into larval habitats (Kebede et al. 2005).

The focus on resource extraction and exportation as a revenue source for African countries is extremely detrimental to the social and ecological well being of a country. The proceeds of these types of ecological degradation are often usurped by a few

Agricultural pressure around the Selous protected area, Tanzania.

PHOTO: GREGOIRE DUBOIS/FLICKR

PHOTO: OLYMPIA DE MAISMONT - EUROPEAN UNION, 2021

Helping children get back to school in conflict-torn Burkina Faso

corrupt elites in governance positions, instead of going into building and maintaining the ecological and social infrastructure that is sorely needed, particularly in this time of climate change.

Urban areas and lack of basic services and infrastructure

The United Nations estimates that by 2050 more than 60% of Africa's population will live in cities. (UN World Urbanization Prospects, 2018)

The "number of settlements in West Africa with a population of 10,000 or more increased from just 152 in 1950 to 1,947 in 2010". (Africa at LSE, 2017:1)

It is not so much increased population putting pressure on natural systems and therefore driving land-use change – as Africa is less densely populated than countries in the Global North – but more people are now living in urban environments that are poorly resourced in terms of essential and basic infrastructure supported by the public sector. This is manifesting in slums characterised by overcrowding, poor sanitation conditions and an absence of facilities, all of which affect people's health.
(African Development Bank, 2013)

Key drivers of this phenomenon include land grabs and rural communities' loss of resource rights to extractive industrial uses such as mining, industrial agriculture and deforestation, and associated infrastructure developments.

Africa's urban areas are underfunded and thus the necessary basic services and infrastructure are absent (Alirol et al., 2011). A broken urban environment – containing puddles, ditches, construction sites, drains, water collection vessels and broken pipes – provides the perfect breeding ground for malaria-carrying mosquitos.

PHOTO: SCOTTGUNN - FLICKR. 2016

A study was undertaken in southern Ghana in 2017 in two Ghanaian cities

Results: Up to 67% of breeding grounds of Anopheles mosquito habitats identified were permanent sites, leading to perennial malaria transmission in these cities.
(Mattah et al., 2017)

Climate change

Climate change – in particular, shifts in rainfall patterns and temperature – will directly influence the prevalence of malaria on the African continent (Kulkarni et al., 2022). While it is not possible to predict exactly where, or to what extent vector-borne diseases will shift, it is known that rainfall, humidity and temperature play a key role in the proliferation of the Anopheles malaria-transmitting mosquito.

Research predicts that by 2050, climate change alone might expose some areas in sub-Saharan Africa, South America and China to a 50% higher probability of malaria transmission (IBRD and World Bank 2012). Studies indicate that in tropical highland regions in sub-Saharan Africa, warming temperatures could also shift the disease burden from malaria to dengue fever (Kulkarni et al., 2022).

The risk is that, when mosquito habitats shift into more conducive areas, they may encounter human populations with little or no immunity (Kulkarni et al., 2022). What is not clear is where additional rainfall will support proliferation of malaria-carrying mosquitoes or where it will wash out breeding habitats (Kulkarni et al., 2022). Higher temperatures can also increase the biting rate of a female mosquito, thereby increasing the rate of malaria transmission (Kulkarni et al., 2022).

While climate change has resulted from extractive industrial processes in countries of the Global North, it is countries of the Global South that bear the brunt, and with far fewer resources to adapt. In 2020 an estimated 30.7 million people were displaced by floods, drought, heat waves and wildfires. The continued mass movement of climate change refugees will also distribute malaria if people are displaced from areas where it is endemic (UNDP and Roll Back Malaria Partnership, 2013).

Climate change could place an additional 170 million African people at risk of malaria by 2030 (African Development Bank, 2013). It is therefore critical that investment is made in appropriate and equitable adaptation measures (education, basic infrastructure services and delivery, and improved publicly funded healthcare) to offset the possibility of radical increases in malaria and other disease vectors.

To break away from top-down interventions, there is an urgent need to contest the current development discourse and the way in which problems are being framed and understood. Top-down interventions often result in maladaptation and create new forms of exclusion and oppression, particularly of women and other vulnerable groups. Increasingly, we witness climate change mitigation and adaptation strategies amplifying gendered inequalities. Policy and legislative reforms are critical and indispensable. These must be aimed at establishing fair and equitable access to resources for excluded communities, and

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at building resiliency on the part of these groups through, inter alia, investment in social services and the creation of opportunities for self-organisation and partnerships.

Successful malaria eradication

Strong and appropriate approaches rooted in socio-economic development to addressing the issue of malaria have worked in the developing world and are very much needed in Africa – with its challenges of high malaria burden, bad governance and political instability. It is precisely because malaria is a "disease of the poor" that interventions need to be rooted in such approaches.

Billions of dollars have been spent on research and product development for malaria in Africa in the past years (WHO, 2020). It is pertinent to ask, if these had been allocated to enhancing socio-economic conditions and public healthcare systems, would the continent perhaps be in a better position to control malaria, and to make sovereign decisions on how to utilise donor funding? Do we really need to stay on the same insecticide/drug treadmill and ratchet up "hard" high-tech solutions, ignoring the softer, yet pragmatic, systemic, socially just and sustainable solutions that exist and that would assist countries to reach their objectives for the protection of biodiversity and for sustainable development?

African governments carry huge responsibility in determining how their grants from donors benefit their countries and citizens, in the implementation of malaria eradication strategies. It is essential that African governments direct malaria funding towards fixing derelict public health systems. It is only through robust and resilient public healthcare systems that innovations to eradicate malaria will have positive impacts on local populations. African governments must fiercely reject austerity measures and make the necessary investments to rebuild their financial, human and institutional capacity.

Find out more

Fact Sheets

Malaria: What drives it?

Current and false solutions to the malaria challenge in Africa

Briefing paper

The financialisation of malaria in Africa: Burkina Faso, rogue capital & GM/gene drive mosquitoes

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