

Study: These Man-Made Structures Lead To Millions Of Malaria Cases In Africa — What Now?

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September 13, 2015

About one million people die from malaria every year, and most of the victims of this disease caused by parasites are children under 5-years-old. Malaria kills about twice as many children across the globe as measles, and about four times as many people as tetanus, according to [UNICEF](#). Malaria is a top killer, and as it turns out, [man-made structures](#) are greatly contributing to these deaths.

Newly released data indicates that over a million people in sub-Saharan Africa will [fall sick from malaria](#) this year, simply because they live near a large man-made dam. Just as daunting, the new data indicates that, because 78 major new dams will be constructed in the region, 56,000 additional cases each year are to be expected. This is according to [data published](#) in *Malaria Journal*.

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“This number may increase significantly after the commissioning of these dams, as past experience indicates that people tend to migrate towards the shores of reservoirs for livelihood purposes (mainly agriculture). The contribution of these dams to malaria burden in the region is thus substantial.”

“Dams are at the center of much development planning in Africa. While dams clearly bring many benefits—contributing to economic growth, poverty alleviation and food security—adverse malaria impacts need to be addressed or they will undermine the sustainability of Africa’s drive for development,” biologist Solomon Kibret of the University of New England in Australia explained. Kibret was a lead author on the paper that studied malaria-risks associated with dams.

The research was part of the CGIAR Research Program on Water, Land, and Ecosystems. It claims that almost two-thirds of the dams in the region are located in areas that are prone to malaria. The research team compared the number of cases of malaria in the communities near dam reservoirs and compared them to the number of cases in communities nearby that were not close enough for the dams to impact the number of cases. The implications of the researcher’s study are grave. Over 1.1 million [cases of malaria](#) each year are due to the construction of dams in sub-Saharan Africa.

“Our study showed that the population at risk of malaria around dams is at least four times greater than previously estimated,” Kibret said, explaining that in their estimates, the researchers made sure to stay very conservative, so the reality of the impact of dams on malaria deaths and malaria cases is likely much greater.

Malaria, transmitted by the Anopheles mosquito, is found in areas where this mosquito species thrives. Current dam reservoirs, the authors of the paper state, provide the perfect breeding ground for these malaria-transmitting mosquitoes, because the water that flows through them is fairly stagnant and slow moving. Matthew McCartney, of the International Water Management Institute (IWMI) and a co-author of the paper, questioned whether it is ethical to subject so many people to this major killer in exchange for developing the communities.

“Dams are an important option for governments anxious to develop, but it is unethical that people living close to them pay the price of that development through increased suffering and, possibly in extreme cases, loss of life due to disease.”

One suggestion the authors made is that future dams could be redesigned, and all dams could be managed to reduce mosquito breeding. Operating schedules could be altered so that shores are able to have dry out times in [known breeding areas](#), according to *Science Daily*. Certain species of fish could also be introduced into the reservoirs to eat the mosquito larva and bed nets distribution could be considered.

Co-author Jonathan Lautze, researcher at the International Water Management Institute's office, said that malaria concerns absolutely need to be addressed, because governments can not be erecting man-made dams without also ensuring that these dams do not add to the mortality rates of the people in the communities that live near them.

“The bottom line is that adverse malaria impacts of dams routinely receive recognition in Environmental Impact Assessments, and areas around dams are frequently earmarked for intensive control efforts. The findings of our work hammer home the reality that this recognition and effort—well-intentioned though it may be—is simply not sufficient. Given the need for water resources development in Africa, malaria control around dams requires interdisciplinary cooperation, particularly between water and health communities. Malaria must be addressed while planning, designing and operating African dams.”

[Photo Credit: Eggs of the *Anopheles quadrimaculatus* by [C. Roxanne Connelly / University of Florida](#)]