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Case Study

AMAZON MALARIA INITIATIVE

PRIVATE SECTOR ENGAGEMENT HELPS TO INTERRUPT MALARIA TRANSMISSION IN BRAZIL

May 2016

Malaria, a potentially fatal illness transmitted by mosquitoes, is endemic to nine states in the Brazilian Amazon. Scientific evidence shows that deforestation, environmental degradation, and population migration associated with large infrastructure projects may increase the incidence of malaria.¹ With over 45,000 cases, Porto Velho had the second highest number of malaria cases reported by any municipality in the Amazon region in 2005.

In 2008, the building of the Santo Antônio and Jirau hydroelectric dams in and around Porto Velho began. In a matter of months, thousands of people flooded into a district of Porto Velho and another area 120 km (75 miles) away to meet the demand for labor during dam construction. As the local population doubled in size, malaria cases were bound to increase.

Despite the presence of competent vectors, environmental degradation propitious for malaria transmission, and considerable population growth, malaria incidence in Porto Velho decreased — contrary to what would have been expected. The number of cases fell from 34,865 in 2006 to just 3,600 cases in 2015.

From 2006–2015, Brazil has implemented a regulatory framework to bring together government, the private sector, and communities in the fight against malaria by requiring all large infrastructure projects in the Amazon to assess and mitigate their impact on malaria transmission. Effects of the regulations have been seen with the construction of two hydroelectric dams on the Madeira River in the vicinity of Porto Velho, Rondônia state.



Photo: PAHO/WHO



Map: Google Earth

Regulations require large infrastructure projects like the Santo Antônio and Jirau hydroelectric dams in the Brazilian Amazon to help mitigate the risk of increased malaria transmission in the surrounding areas. Map on right shows, in yellow, locations of the dams in relation to the city of Porto Velho.



According to a Brazilian Ministry of Health Regulation published in December 2006,² the two energy companies and the dam builder involved had to provide the municipality of Porto Velho with material support for malaria control as a requirement for environmental licensing; the companies were mandated to set aside funds to help mitigate malaria transmission in local communities near the Santo Antônio and Jirau dams. The companies provided over 38 million Reais³ (equivalent to USD 21 million at the time) in equipment, educational materials, supplies such as rapid diagnostic tests and long-lasting insecticidal nets, as well as services. With the in-kind goods and services such as health education and door-to-door installation of mosquito nets from the private sector, the state and municipal health secretariats were able to enhance existing programs to reduce malaria transmission.

Health workers were trained in education and communication for malaria, and then made home visits to all residences to educate the population about malaria risk. They focused on communicating the importance of early diagnosis and treatment at public primary care facilities, as well as proper use of bed nets for prevention. The population was involved in developing educational materials for malaria, with activities implemented in collaboration with the Public Defender's Office. In order to monitor all privately-supported health programs that had been approved as part of the environmental licensing process, an inter-institutional committee was also established. As such, besides implementing interventions for malaria diagnosis, treatment, and vector control, the health programs also created a space for engaging with local communities and making them a part of the solution.

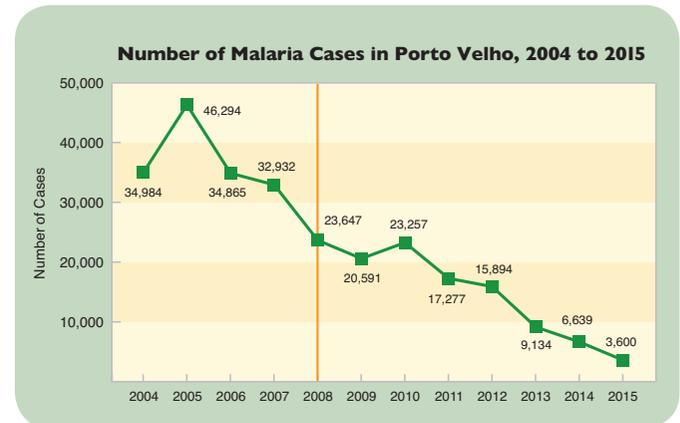
The implementation of Brazilian regulations that require large infrastructure projects in the Amazon to contribute to malaria control efforts is considered an important asset in helping the Ministry of Health strive towards malaria elimination. In this case, the successful implementation of a regulatory framework that promotes the active leadership, involvement, and ownership of both public and private sectors has made a difference in limiting the spread of disease, bringing significant benefits to malaria-affected communities.

Regulations were intended to mitigate an increase in malaria cases. However, after the deployment of prevention, diagnosis, and treatment measures using effective communication and social mobilization, malaria cases actually decreased by 90% in the end compared to annual cases before dam construction. As a result, Porto Velho has moved from the high to low risk category for malaria transmission.

Brazil expanded the regulatory framework for malaria control with Ministry of Health Regulation N° 001 in 2014 and Inter-Ministerial Regulation N° 60 in 2015, so that the regulations now involve the ministries of health, the environment, mines and energy, the National Foundation of the Indian (FUNAI) and the Palmares Institute. The case of the Santo Antônio and Jirau dams reinforces the notion that human health impact needs to be considered early on in large infrastructure projects, and exemplifies how effectively-implemented regulatory frameworks can engage the private sector in successfully interrupting the transmission of malaria.

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Figure 1: Decline in Malaria Cases in Porto Velho, Rondônia state, Brazil



Line shows start of dam construction in 2008. Sources: Rondônia State Health Secretariat (SESAU), November 2015 and Brazilian National Malaria Control Program, March 2016.



Photo: PAHO/WHO

The private sector supported the door-to-door installation of mosquito nets.

1 Katsuragawa, TH, Gil, LHS, Tada, MS, and Silva, LHP. Dec. 2008. Endemias e epidemias na Amazônia. Malária e doenças emergentes em áreas ribeirinhas do Rio Madeira. Um caso de escola. *Estud Av* [online]. 22(64). http://www.scielo.br/scielo.php?pid=s0103-40142008000300008&script=sci_arttext. Accessed on November 18, 2015.

2 The Ministry of Health's Health Surveillance Secretariat (SVS) issued Regulation N° 47 on December 29, 2006, which set forth the need to verify the occurrence of malaria, its determinants, and mitigating factors, in areas directly and indirectly impacted by infrastructure projects in order for companies to obtain environmental licensing in the malaria-endemic region of Brazil.

3 Rodvalho, S. 2014. O controle da malária nos grandes empreendimentos na Amazônia. Presentation made at the 14th ExpoEpi held from October 28-31, 2014 in Brasília, Brazil on behalf of the National Malaria Control Program (CGPNM/DEVIT).