

Context

São Tomé e Príncipe is located in the Gulf of Guinea, very close to the Equator. The country is formed by two main islands (São Tomé and Príncipe), and several islets with a total area of one thousand and one square kilometre (1001 Km²), more or less the size of metropolitan Indianapolis, and, with a population of around two hundred thousand inhabitants.

The Portuguese, who have made the discovery in the late fifteenth century used the islands as a slave warehouse on their way from Africa to Brazil, and, created plantations producing sugar, and, later, in the early nineteenth century, coffee, and, cocoa. In 1907, the English chocolate makers protested against the use of slave labor in São Tomé, and, the Portuguese colonies were pressured to adopt another policy. However, the forced labor continued in one form or another until the islands gained independence in 1975.

Unlike most of European colonial territories in Africa, São Tomé became a Republic without bloodshed, after the rise of power in Lisbon of a military junta, and, the end of the dictatorship.

During the 1970s and 1980s, the country aligned itself with the socialist bloc. In 1991, a peaceful transition from the one-party regime to democracy has happened. Like its independence from Portugal, in São Tomé, the farewell of Marxism was done without confusion.



Malaria:

One of the threats to public health

São Tomé e Príncipe is a country where malaria is endemic, with an annual incidence of more than 1 case per 1000 inhabitants. The transmission of malaria occurs throughout the year, with two periods of high transmission that runs from April to June, and, from October to December.

Plasmodium falciparum is the predominant species accounting for over 90%.

The transmission of malaria in São Tomé e Príncipe is essentially made by the species of *Anopheles gambiae* S.S, currently recognized as *An. Coluzzi*. *Anopheles funestus* and *An. Coustani* are considered as secondary vectors. *Anopheles Coluzzi* is sensitive to bendiocarb and alpha-cypermethrin, but is resistant to DDT.

Government's efforts to Reduce Morbidity and Mortality caused by Malaria: The Epidemiological and Entomological impacts of the National Strategic Plan - NSP 2012-2016

Based on the implementation of the elimination policy based on the Operational Manual in Epidemiological Surveillance for Malaria elimination of the World Health Organization (WHO, 2014), São Tomé e Príncipe was among the countries that will eliminate malaria by 2025. According to the Global Technical Strategy for Malaria (GTS, 2016-2021), which guides countries to accelerate their efforts to eliminate malaria, and, the African Union Agenda 2063 (AU, 2014), which stipulates that malaria will be eliminated in all African countries by 2030.



With the adoption of artemisinin-based therapies in 2003, coupled with the intensification of vector control, malaria is no longer the leading cause of morbidity and mortality in São Tomé e Príncipe. The annual incidence of malaria decreased dramatically from 411,6 to 20,4 cases per 1000 inhabitants between 2001 and 2010.

The mortality rate decreased from 180,2 to 8,5 per 1000 inhabitants during the same period.

In 2012, the country adopted a Strategic Plan with the following objectives:

- i. Reduce Malaria morbidity and mortality by 60%, and,
- ii. Reduce the incidence of autochthonous cases of malaria to less than one case per 1000 inhabitants in the Autonomous Region of Príncipe.

During the five years of implementation of the National Strategic Plan, the planned objectives were achieved. The purpose of reducing morbidity and mortality for malaria was largely exceeded, reaching 72%.

Morbidity and mortality related to malaria are declining. The number of confirmed cases of malaria went from 10744 to 2058 between 2011 and 2015. A reduction of 80,8%. The number of deaths because of malaria decreased from 14 cases to 0 cases during the same period.

A diminution of 100%. As for the incidence of malaria, it decreased from 65,5 cases per 1000 inhabitants in 2012, to 10,8 cases per 1000 inhabitants in 2015, while mortality went from 3,9 per 1000 in 2012 to 0,0 cases per 1000 inhabitants in 2015. The average rate of positive tests (TDR and slide), declined from 8,5% in 2012 to 2,5 in 2015. The infection rate of the vector An. Coluzzi (ELISA test) went from 0,78% in 2013 to 0% in 2014 and 2015. The pair vector rate decreased from 83% in 2010 to 62,5% in 2014.

The Príncipe Island has reached the objective of reducing the incidence of autochthonous cases with less than 1 case per 1000 inhabitants in 2015. In fact, the incidence of autochthonous cases in this island is less than 1 case per 1000 inhabitants since 2014. Indeed, the Príncipe Island is in the Elimination Phase of malaria, and, the São Tomé Island is in the Pre-elimination Phase.



Challenges

Although the progress in the Anti-Vector Fight (AVF) continue to be a central pillar in the fight against malaria in São Tomé e Príncipe, there still are some restrictions that prevent achieving, and, maintaining universal coverage of interventions, and, their effective use.

These also include delays in the development of guidelines, and, technical guides for anti-vector fight, the gradual increase of refusal rate for Indoor Residual Spraying (IRS), the lack of management plan for cases of vector resistance to the insecticide ; delay in the acquisition of insecticides for spraying, and, in mosquito nets purchase, and, the non-use of vector cartography.

Financing of National Malaria Control program (National Program of the Fight against Malaria - PNL P)

The Global Fund is the largest contributor to the fight against malaria (57%), followed by the Taiwanese Cooperation (33,9%), and, the Government is contributing with 2,7%. The Country broke diplomatic relations with Taiwan in December 2016.

Because of the breakdown of the diplomatic relations between São Tomé e Príncipe and Taiwan, and, the diminution of more than 50% of the Global Fund grant, there is now an important financing gap in order to maintain the pre-elimination phase in the São Tomé Island, and, the Elimination Phase in the Príncipe Island. Indeed, the country will need more or less 5 000 000 USD between 2018 and 2021 in order to pursue the good results of the malaria control.

FIGHT AGAINST MALARIA IN SÃO TOMÉ E PRÍNCIPE

