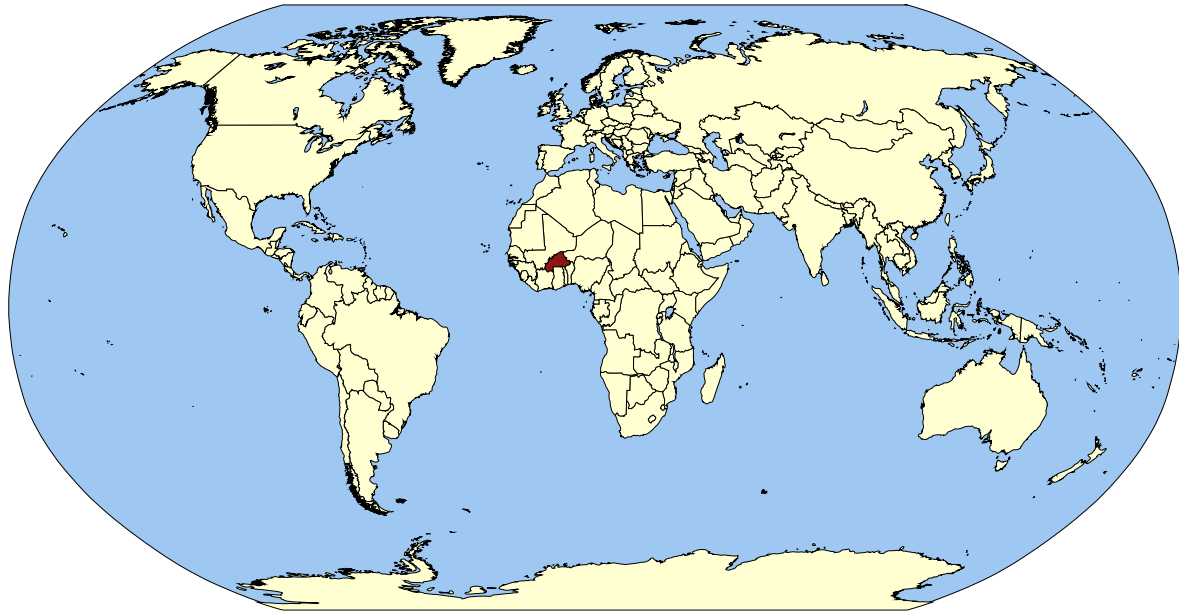


Burkina Faso



The Scope of Schistosomiasis in Burkina Faso

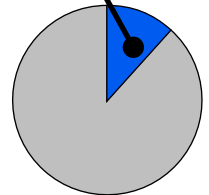
Burkina Faso, a landlocked country in West Africa situated on a dry plateau, is made up of a predominantly rural population highly dependent on the agricultural sector for employment and subsistence [1]. Though little is known regarding the distribution and prevalence of schistosomiasis on a national level, it is known that the disease is endemic in all 63 districts of the country with a current estimated prevalence of 30% [2,3]. The country is within a tropical climate zone; the southern lowlands experience the highest rainfall and have the most fertile soils in a country with mostly dry, nutrient-poor soils. Burkina Faso is ranked 181st of 187 for poverty and human development in 2011. From 2002 to 2012, access to improved drinking sources increased from 64% to 82%, but access to sanitation facilities was only 19% by the end of the same period [1]. A national control program to address schistosomiasis control in Burkina Faso was initiated in 2004 with support from the Schistosomiasis Control Initiative [4].

Schistosomiasis in Burkina Faso [9]

Burkina Faso treated over **4 million** people for schistosomiasis in 2013.

12% of the population requires preventative chemotherapy for schistosomiasis

Burkina Faso successfully treated **95%** of all infected school-age children in 2013.



Overview of Burkina Faso [10]

- » Population in 2015: 18,931,686
- » Official Language: French
- » Capital: Ouagadougou
- » Parliamentary Republic
- » Percentage of Population with Access to Improved Drinking Water in 2012: 81.7%
- » Percentage of Population with Access to Improved Sanitation in 2012: 18.6%

The Schistosomiasis Control Initiative: A Success?

Burkina Faso's Schistosomiasis Control Initiative achieved full national coverage in 2005, where 90.8% of school-aged children were treated. In total, over 3.3 million school-aged children underwent first round treatment [5]. The control initiative, administered by the Ministry of Health, followed WHO guidelines suggesting treatment once every two years to all school-aged children. In Burkina Faso, synergistic treatment for STH through co-administration of praziquantel and albendazole was implemented [5]. The MDA was followed up at 1 and 2 years post drug administration, and it was found that prevalence amongst school-aged children dropped from 59.6% in 2004 to 6.2% in 2005 to 7.7% in 2006 [5]. Unfortunately, present-day data on prevalence amongst this group of treated children has not been available in the published literature. A nationwide prevalence rate of 30% was estimated in 2010 [3].

Human Development in Burkina Faso

Burkina Faso is one of the lowest-income countries in the world, and the sustained reduction in the prevalence of schistosomiasis amongst at-risk school children following a single MDA event is encouraging for the development of successful control strategies in resource-poor countries. However, drug administration alone fails to address compounding landscape and environmental modifications that have proven to increase mollusk habitat and associated schistosome prevalence. In the Sourou region of Burkina Faso, for example, prevalence of schistosomiasis following the development of hydraulic water projects has increased from 23% to 70% for *Schistosoma haematobium* and 0% to 69% for *S. mansoni* in the period from 1987 to 1998 [6]. The range and density of mollusk species has also increased significantly in areas where water projects have been developed [6]. Along with the introduction of hydro-agricultural systems that support mollusk populations, domestic migration of agricultural workers has increased schistosomiasis endemicity in Burkina Faso over the last many decades [7]. As of 2012, 27% of the population is economically involved in agriculture, and 21% of the total land area is cultivated [1].

Irrigations and Dams in Burkina Faso

Little data has recently been generated on irrigation capacity and actual use, but as of 2001, 0.5252% of the cultivated area was equipped for irrigation and actually irrigated [1]. In 1988, Burkina Faso's first hydroelectric dam and associated lake -- the Kompienga dam -- finished constructed. The Kompienga river basin experienced a dramatic influx of agricultural workers and development of surrounding areas. Currently, there are 136 dams in the country [1]. The development of water schemes in Burkina Faso has shifted in focus with shifting political paradigms and a growing concern for self-sufficiency in the face of deteriorating climatic conditions and natural capital. Before independence in 1960, small lowland areas of the country were irrigated for rice cultivation. After independence, dams and large-scale irrigation schemes were developed. In 1990, the country transitioned into a state of economic reform, and the state withdrew funding for large scale agricultural schemes and irrigation transitioned into private and community organization. The most commonly grown irrigated crops include: rice, maize, vegetables, sugarcane, and bananas [1].



Agriculture and Irrigation in Burkina Faso

Agricultural development for farms in Burkina Faso, like the one shown above, created unintended consequences, though meaning well. In 2010, irrigation-based production accounted for 10% of all agricultural output, and is credited for contributing to poverty alleviation and job security for vulnerable representative groups, including women and youth [1]. However, as the case in Sourou shows, water-associated disease remains high, and the expansion of irrigation schemes may have contributed to the current state of both widespread urinary and intestinal schistosomiasis endemicity in Burkina Faso.

Looking Ahead

Burkina Faso's success in initiating schistosomiasis control is founded on strong government support for the control of Neglected Tropical Diseases (NTDs). The USAID NTD Program supports control efforts while maintaining that "country ownership of the Program is a core principle and is critical to successful implementation and long-term sustainability" [8]. Following the first round of Mass Drug Administration (MTD) described above in 2004, integrated MDAs supported by the Burkina Faso government and Ministry of Health alongside the SCI, took place in 2007 and 2008, and 4.4 million people were treated for schistosomiasis [8]. As of 2009, USAID reported that the program would continue to be supported and expanded. An operational plan for NTD control in 2013 and onwards from the Helen Keller International foundation, in conjunction with other supporting programs, reports that the NTD program in Burkina Faso currently runs ongoing MDA treatment for schistosomiasis in 20 of 63 districts, but the disease remains endemic in all 63 districts [2].

References

1. AQUASTAT - Système d'information de la FAO sur l'eau et l'agriculture. at <http://www.fao.org/nr/water/aquastat/countries_regions/ago/indexfra.stm>
2. OPERATIONAL PLAN 2013 FOR NEGLECTED TROPICAL DISEASES CONTROL IN BURKINA FASO Annual Work Plan. 1-26 (2013).
3. Rollinson, D. *et al.* Time to set the agenda for schistosomiasis elimination. *Acta Trop.* **128**, 423-440 (2013).
4. Schistosomiasis Control Initiative. at <<http://www3.imperial.ac.uk/schisto>>
5. Touré, S. *et al.* Two-year impact of single praziquantel treatment on infection in the national control programme on schistosomiasis in Burkina Faso. **048694**, (2008).
6. Poda, J. N., Traoré, A. & Sondo, B. K. Schistosomiasis endemic in Burkina Faso. *Bull. Soc. Pathol. Exot.* **97**, 47-52 (2004).
7. Poda, J. N. *et al.* Parasitological profile of urinary schistosomiasis of the Sourou hydroagricultural complex of Burkina Faso. *Bull. Soc. Pathol. Exot.* **94**, 21-24 (2001).
8. USAID's Neglected Tropical Disease Program: Countries, Burkina Faso. at <http://neglecteddiseases.gov/countries/burkina_faso.html>
9. WHO. PCT Databank for Schistosomiasis. at <http://www.who.int/neglected_diseases/preventive_chemotherapy/sch/en/>
10. Central Intelligence Agency. (2014). Burkina Faso. In The World Factbook. at <<https://www.cia.gov/library/publications/the-world-factbook/geos/uv.html>>