Analysis of the upstream supply chain for Artemisinin Combination Therapy (ACT) treatments for malaria

Malaria is a transmitted disease that is caused by single-cell parasites of the genus Plasmodium. The result of infection ranges from mild flu-like illness to severe disease and even death in several hours. Around 300-500 million people in more than 100 countries catch malaria every year and about 1.1 million die from the disease, among which, most are children under five years old. Africa, especially the sub-Sahara area (south of the Sahara), is the hardest-hit region and account for 80 percent of deaths worldwide.

Malarial is both curable and preventable. The most effective drug against malaria is ACT, short for Artemisinin-based Combination Therapy. However, ACT is selling in private sectors in Africa where most people have access to medicines at around 5-6 dollars, while average income in these countries is only 2 dollars a day. As a result, most people still go to Chloroquine when infected with malaria. Chloroquine used to be the most popular anti-malaria, but has lost its effectiveness more than 30 years ago. However, selling at at 0.1 dollar, it is the only drug that is affordable to people in most African countries.

The purpose of the global subsidy of ACT is to lower the ACT price paid by first-line buyers such as private national wholesalers or ministries of health, so that the retail price of ACT is comparable to drugs like Chloroquine.

The objective of this study is by studying demand and cost structure of upstream supply chain of ACTs, especially the suppliers of intermediate drugs (API derivatives) and the final drug manufacturers, try to identity of impact of different subsidy structure on the long term price and cost of intermediate suppliers and manufacturers, and based on the analysis, propose a subsidy mechanism that can ensure sustainable and stable supply for ACT production in a long term.