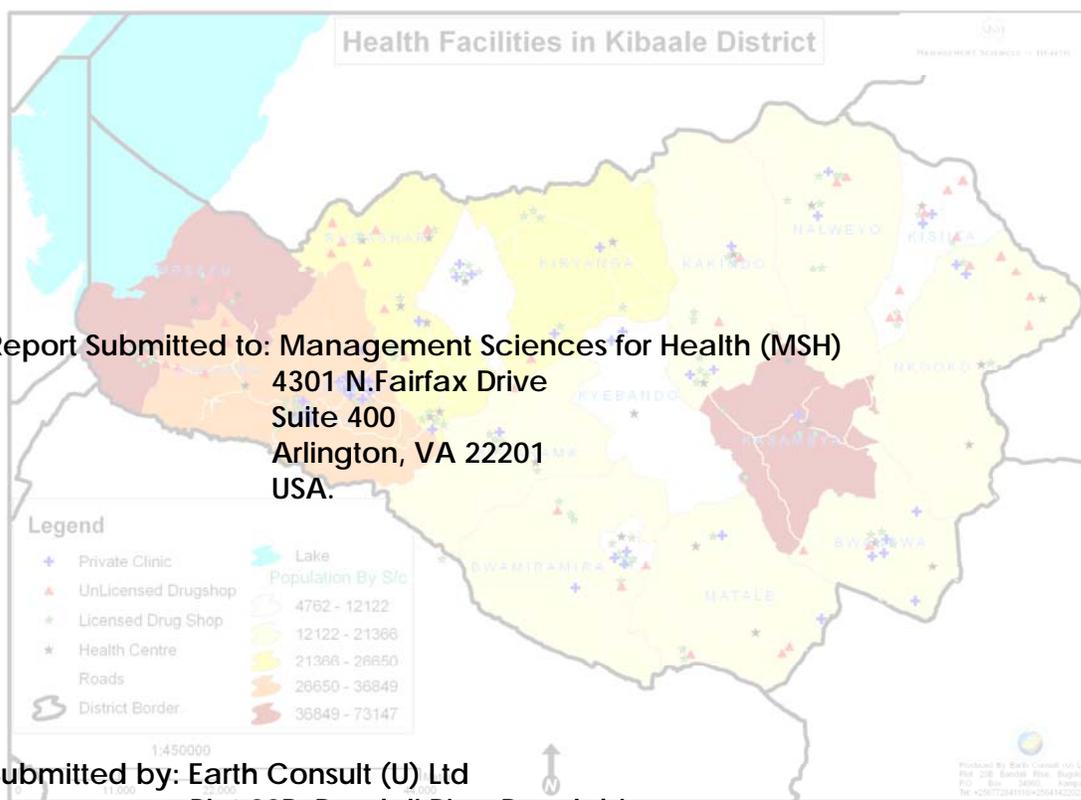**Earth Consult (U) Ltd**

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RE: Mapping of Health Facilities in the Districts of Mpigi & Kibaale

Report Submitted to: Management Sciences for Health (MSH)
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        Arlington, VA 22201
        USA.

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24th sept, 2008

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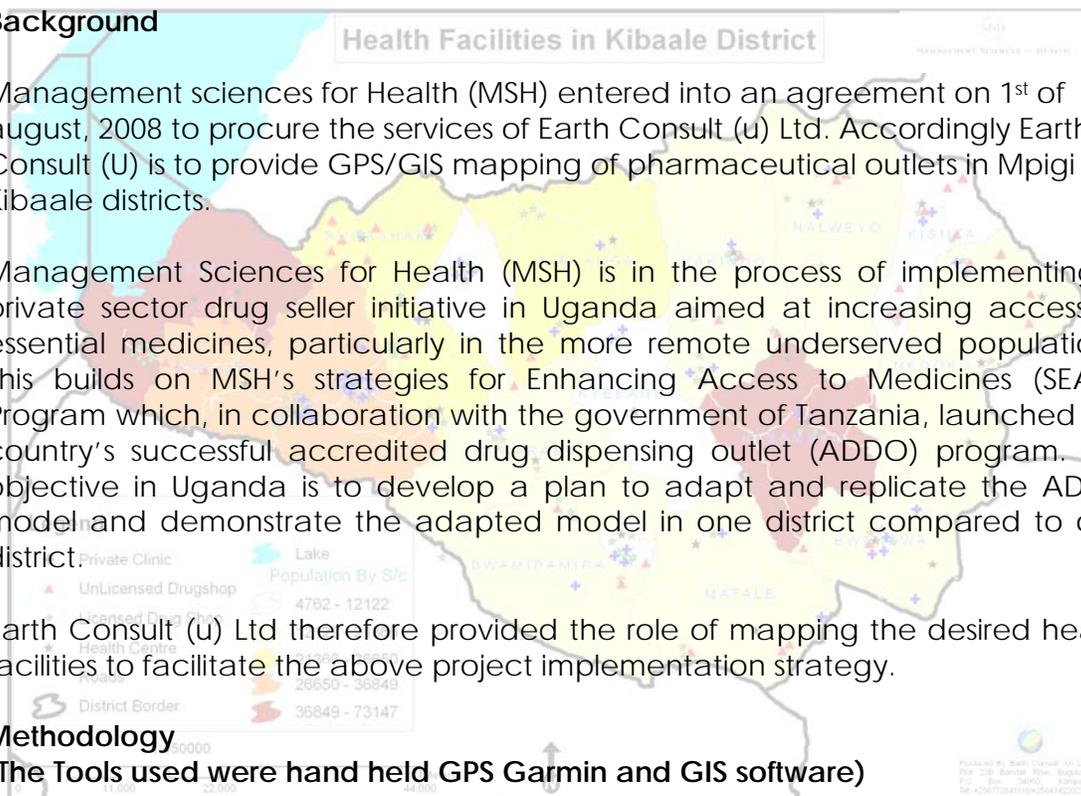
Background

Management sciences for Health (MSH) entered into an agreement on 1st of august, 2008 to procure the services of Earth Consult (u) Ltd. Accordingly Earth Consult (U) is to provide GPS/GIS mapping of pharmaceutical outlets in Mpigi & Kibaale districts.

Management Sciences for Health (MSH) is in the process of implementing a private sector drug seller initiative in Uganda aimed at increasing access to essential medicines, particularly in the more remote underserved populations. This builds on MSH's strategies for Enhancing Access to Medicines (SEAM) Program which, in collaboration with the government of Tanzania, launched the country's successful accredited drug dispensing outlet (ADDO) program. The objective in Uganda is to develop a plan to adapt and replicate the ADDO model and demonstrate the adapted model in one district compared to one district.

Earth Consult (u) Ltd therefore provided the role of mapping the desired health facilities to facilitate the above project implementation strategy.

Methodology
(The Tools used were hand held GPS Garmin and GIS software)

How the GPS works?
The Global Positioning System (GPS) is a satellite-based navigation system made up of a network of 24 satellites placed into orbit by the U.S. Department of Defense. GPS was originally intended for military applications, but in the 1980s, the government made the system available for civilian use. GPS works in any weather conditions, anywhere in the world, 24 hours a day. There are no subscription fees or setup charges to use GPS. GPS satellites circle the earth twice a day in a very precise orbit and transmit signal information to earth. GPS receivers take this information and use triangulation to calculate the user's exact location. Essentially, the GPS receiver compares the time a signal was transmitted by a satellite with the time it was received. The time difference tells the GPS receiver how far away the satellite is. Now, with distance measurements

from a few more satellites, the receiver can determine the user's position and display it on the unit's electronic map.

How the GIS operates?

A Geographic Information System (GIS) is a computer-based system that records, stores, manipulates, and analyzes information about the features that make up the earth's surface. A GIS can generate two or three-dimensional images of an area, showing such natural features as hills and rivers with artificial features such as roads, schools, churches, trading centres, water sources, parcels, power lines, etc. Scientists use GIS images and/or maps as models, making precise measurements, gathering data, and testing ideas with the help of the computer.

The GIS stores the location of each feature as a of pair geographic coordinates, or as a set of coordinate pairs that define its shape (point, line or area). When you make a map, the GIS use the coordinates to draw the features, using a symbol you specify. For individual locations, such as a customer addresses or **HEALTH CENTRES**, *the GIS draws a symbol at the point defined by the coordinates for each address/HEALTH CENTRE. For linear features (lines) such as streets or roads, the GIS draws lines to connect the points that define the shape of each street. For areas, such as parcels of land, the GIS draws their outlines or fill them in with a color or pattern.*

Description of work done (Health Facility Categories)

Using the above methodology and following the instructions from MSH as per the reference obtained from NDA. The health facilities are categorized into Licensed Drug shops, Unlicensed drug shops, Private Clinics, Private Hospitals, Government Hospitals, Health centres (Private and Government owned) and Retail or wholesale Pharmacies. This means various MAPs have been produced into categories as Health Centres, Private Clinics, Licensed and Unlicensed drug shops on request from MSH.

Distribution of Health facilities in Kibaale District

There are 100 licensed drug shops, 23 Public health centres, 47 private clinics, one retail/wholesale pharmacy, one government hospital, 51 UDS and one unlicensed private clinic (Byava Clinic). Generally, the Unlicensed Drug shops are peripherally distributed in the district. Private clinics are densely clustered in Kagadi Town council than other facilities in other locations. This is possibly due to

the density of the population in the township. More so due to the location of the government hospital in Kagadi, no health centres are located in its vicinity.

Distribution of Health facilities in Mpigi district
There are 64 licensed drug shops, 54 Public health centres, 30 private clinics, one government hospital, and 20 unlicensed drug shops and 4 private hospitals with no pharmacies.

Generally the distribution of the health facilities centered in townships. There are fewer unlicensed drug shops in Mpigi than in Kibaale district; however the distribution is not within peripheries like in Kibaale district. The map reveals that unlicensed drug shops are distributed in a random manner through out each district.

Health Facilities in Kibaale District

Execution teams
We created two teams of three field GPS/GIS mapping experts per each district i.e. Mpigi & Kibaale respectively. Each team worked in close collaboration/jointly with the recommended district health officials from both the districts as seconded by MSH through Mr. AZIZ MAIJA.

Challenges encountered

❖ The two districts (Mpigi & Kibaale) are so vast with very poor road network & poorly developed road infrastructure. KIBAALE presented the heaviest difficulty in accessibility options to health facilities. Naturally this factor has made movement from one unit to the other very challenging if not impossible. This therefore means a lot of time was spent on trying to access location of health facilities than actually mapping & gazzeting the health units/centres.

Motor vehicle break down in Kibaale:
❖ Our vehicle broke down in Kibaale on the third day. And for the remaining three days we have been hiring three motor cycles to transport the team in and around the district to accomplish the task. Being a rain season, we went through a lot of challenges within these three days.

❖ Poor/lack of information by the private health operators about the exercise created a fear among these groups that the mapping exercise could possible lead to regulatory actions. Many private health operators therefore were not willing to give us their true identities. More so this affected the nomenclature of our data entries in many places.

❖ A good number of outlets closed on hearing about the exercise. In kibaale we managed to trace almost all of them with the functional support of Mr. George Okurut (DADI) but on the other hand Mpigi gave us

a lot of difficulty as there was/is no substantial DADI to identify/direct us to the respective health facilities.

Critical observations:

- ❖ Most licensed drug shops are owned by government employed staff and located closed to the government facilities.

- ❖ The local government health facilities officials were very positive about the exercise and contributed willingly in the facilitation of the mapping exercise.

- ❖ The district health officials (DADI'S) ear marked for this exercise did not prepared the health facility's operators adequate enough to allow for smooth running of the entire exercise.

- ❖ NDA should institute a measure to fast track the incoming drug seller outlets and should advocate for proper labeling/signage of drug seller outlets.

- ❖ NDA/MSH should ensure that all health service provider attendants at service outlets/dispensing windows should wear a name tag for easy identification in these two districts where the project is going to be piloted.

- ❖ The time frame required to execute the task was greatly under estimated to produce the quality of work desired.

Conclusion:

In spite of all the above odds we managed to override the challenges through demonstration of expertise & deligency and obtained the desired output.

Inconsistency in Nomenclature:

The NDA list of existing health facilities in the respective districts was very helpful. We therefore relied heavily on this list to verify outlet names, outlet types, level of service and ownership.

Newly incorporated health facilities:

We were also able to identify and name newly opened health facilities not on the list of NDA as provided by MSH.

Transport & logistics:

We had to put every thing behind us and embraced all the challenges as they unfolded. It is should be noted that we had to use motor cycles to complete our work both in Kibaale and Mpigi districts. Thanks to the focused commitment & resilience of our team.

In our view the GPS/GIS mapping exercise was totally reflective of our commitment and MSH's desire to obtain absolute locational & status references to health facilities in both Mpigi & Kibaale districts.

At Earth Consult (U) Ltd, we value and uphold trust, sincererity & dedication. We look forward into continued partnership with MSH and wish MSH the best of luck in implementing the private sector drug seller initiative to improve access to essential medicines in more remote & underserved populations of Mpigi and Kibaale districts.

NB: We do under take free advice and interpretation on work done. Please therefore do not hesitate to contact us for any assistance related to our filed as & when the need arises.

Sincerely,

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