



## GIS Overview

Geographic Information Systems (GIS) utilize hardware, software and data from multiple sources to capture, analyze and display various types of geographically referenced information in a visual and/or graphic form (maps, reports, charts, globes, etc.).

GIS allows us to view, analyze and interpret data in ways that reveal patterns, relationships and trends by painting a visual image of complex data in a way that is intuitively understandable. GIS plays a key role in translating this data into actionable intelligence, providing decision makers with the ability to overlay multiple layers of information to accurately convey a common operating picture.

**GIS Strategy & Coordination**  
Macfadden has worked with USAID, the UN, and NGOs to further the abilities of GIS and Information management practices in humanitarian responses, and better utilize the technology in difficult environments.

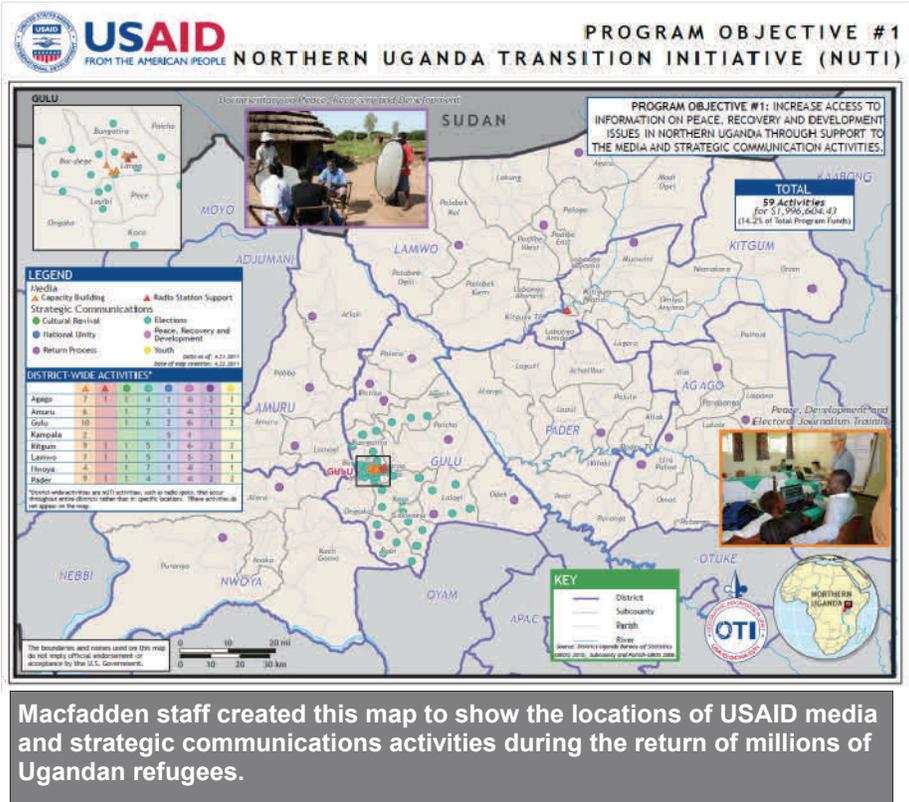
**GIS Analysis**  
Macfadden's GIS analysis provides users with the ability to make informed decisions based on an accurate portrayal of the "on the ground" operating environment.

## GIS Use and Benefits

- GIS technology such as ArcGIS® and spatial technology can be integrated into any enterprise information system framework.
- GIS can use data from a variety of sources as well as predictive analysis to map and model disasters, rapidly assessing and displaying their impact and pinpointing particular areas of need or vulnerability.
- GIS dramatically improves communication and information management among multiple groups
- GIS provides decision makers with up-to-date, accurate information, helping them to quickly understand situations and their impact.

## Macfadden's Areas of GIS Expertise

- **Mapping Services:** Macfadden specializes in custom client solutions for document publication. We merge the analytical capability of ESRI GIS software with the flexible power of graphic design software packages such as Adobe® Illustrator® and Photoshop® to create publication quality maps.
- **Remote Sensing Support:** Macfadden provides basic imagery support, conversion, interpolation, and analysis. We have developed processes to deal with commercial and government satellite and remote sensed data to aid in our mission to provide the best data and products to decision makers.
- **Applications Development & Custom Programming:** Our program staff are experts in developing applications based on ESRI software and other industry-standard technologies. We specialize in applications development from the desktop to enterprise-wide solutions. We develop Enterprise GIS and Internet GIS applications using Python scripting language, MapObjects®, ArcObjects®, and ArcSDE® that integrate GIS and enterprise database systems.



# Information Management & Coordination

The Macfadden GIS team has developed numerous information sharing processes, procedures and platforms to aid information management and coordination. We work with key domestic and international stakeholders while providing strategy, policy and planning guidance. Macfadden staff have worked with:

- National Response Coordination Center (NRCC)
- FEMA's Map Modernization and HAZUS programs
- CrisisMappers Network
- URISA's GISCorps
- OpenStreetMaps
- Google.Org

These relationships facilitate information sharing and form the backbone of information coordination during a disaster response. Through this network, we can engage with a vast group of international and domestic partners that bring together an extensive data network, allowing our clients to benefit from a strong, reliable pipeline of information sources around the globe.



ONGOING USG HUMANITARIAN ASSISTANCE TO HAITI FOR THE EARTHQUAKE



Macfadden personnel created this map to show the geographic distribution of USG and NGO humanitarian response after the 2010 Haiti earthquake.

## Macfadden at USAID OFDA & OTI

Macfadden has successfully stood up and is responsible for running GIS units within the USAID Office of U.S. Foreign Disaster Assistance (OFDA) and Office of Transition Initiatives (OTI). Macfadden's USAID OFDA and OTI-based GIU staff is on-call to our government customers 24 hours a day to provide awareness, expertise and capacity in several core disciplines including cartography, GPS, remote sensing, modeling, deployment, and field support. The Macfadden GIU equips government agencies and the humanitarian community with custom maps, satellite images and other products. These GIS products assist decision makers and responders to quickly and accurately assess a disaster's impact.

In 2011, Macfadden produced over 1900 maps for disaster responses and risk reduction activities for use in various publications, briefings to the White House, Congress and senior policymakers, supporting field operations as well as Response Management Teams (RMTs). These materials provided critical information about impact areas, demographics, needs and resource gaps to decision-makers.

### Predictive Analysis

Through our strategic relationships with partners in the GIS field, Macfadden can offer capabilities in the area of predictive analysis and modeling. Predictive analysis derives patterns from what has happened to predict what will happen. Combining GIS and predictive analysis in this way allows us to move beyond simply creating situational awareness maps and charts in response to a disaster that has already happened. It enables us to draw out patterns among populations and assess disaster risk and impact *before* it occurs, improving emergency response preparedness dramatically.