



## AGRI (AGua para Riego)

AGRI-Honduras Online is a Web GIS Application to identify potential sites for supplying water to communities for potable water and smallholder irrigation uses



This application was developed by the **International Center for Tropical Agriculture (CIAT)** through the projects “Tool for identifying viable sites for small irrigation projects” and “Water Planning System” which were commissioned and funded by the **U.S. Agency for International Development (USAID)**.

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### MORE INFORMATION AT:

<https://cgspace.cgiar.org/handle/10568/73454>



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## THE PROBLEM

*In Western Honduras, 60% of the population, whose principal economic activity is rainfed agriculture on hillsides, live in poverty.*

Secure access to water is a major constraint to poverty alleviation. The selection of viable water sources (through river diversions or rainwater reservoirs) to fulfill drinking water and agricultural irrigation needs has been a major challenge. It is evident that access to water for household and agricultural needs is crucial for improving income and well-being, leading to a future with greater food security and less poverty.

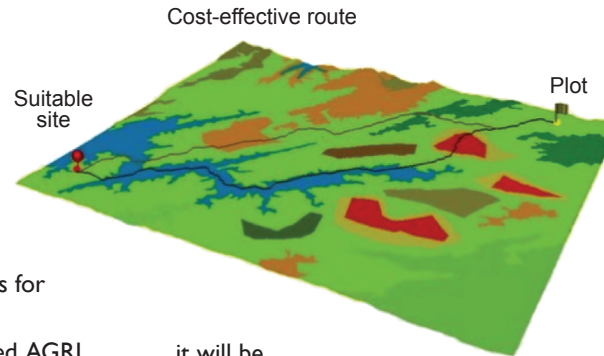
Diversions are often constructed on flows far from the plots to be irrigated, or on intermittent flows. Reservoirs are often located downstream of the areas to be irrigated, or in zones with poor water flow. Site identification with existing know-how requires weeks of field surveying to identify sites, their distance from plots, potential for transport of water to plots, and assessment of obstacles in the catchment area of interest.



## HOW AGRI WORKS

In response to these challenges, **AGRI (AGua para Riego – Water for Irrigation, in Spanish)** was developed as an automated GIS tool which integrates publicly available information on terrain, soil and climate with mathematical and hydrological models to identify water sources for small-scale irrigation.

Starting at the plot to be irrigated, AGRI scans the surrounding area to identify potential sites for river diversion and rainwater harvesting. AGRI also displays viable routes for transporting water by gravity from its source to the field where



it will be used, as well as identifies the water catchment area so that it can be better managed and protected in order to ensure the sustainability of its resources.

*AGRI is a tool which reduces from months to just a few days the time needed to identify viable sources of water by providing useful information in order to make better decisions. AGRI identifies potential biophysical water diversion and harvesting sites, however it is up to the user to validate these in-field and comply with local administrative, legal, social and environmental regulations.*



## WHO BENEFITS?

**AGRI has been used over 200 times** to identify water sources for both irrigated agriculture and drinking water needs in Western Honduras and has facilitated cost-effective investments by government and development agencies. For example, it has been used roughly 145 times to identify rainwater harvesting sites, 25 times to identify river diversion points, and 3 times to identify routes to increase aqueduct water supplies. As compared to sites identified by technicians NOT using the tool, AGRI has identified sites that are closer and/or have better supply. In fact, some previously identified sites have been successfully changed to AGRI's identified locations.

AGRI can be applied in other countries to support greater precision and efficiency in identifying water sources, increasing the cost-effectiveness of irrigation for smallholder farmers, while also ensuring drinking water supplies for rural communities, in order to improve food security and income generation.

