

## Evidences

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### Study #2793

**Contributing Projects:**

- P611 - Restoration of deforested areas in the Colombian and Peruvian Amazon ? socioeconomic and biophysical indicators, determinants and limitations of/for success.

**Part I: Public communications**

**Type:** OICR: Outcome Impact Case Report

**Status:** On-going

**Year:** 2018

**Title:** Water planning system "Agua de Honduras" used to improve Honduran investment decisions (WLE-CIAT)

**Short outcome/impact statement:**

The Government of Honduras piloted and adopted a major new data platform, "Agua de Honduras" that provides data on hydrology, vegetative cover, soil properties, along with future climate scenarios. Implemented by the Centro Internacional de Agricultura Tropical (CIAT) and contributing to the CGIAR Research Program on Water, Land and Ecosystems (WLE), the platform has been aiding water management decisions, including being used 150 times to identify rainwater harvesting sites and influencing at least one local land investment decision.

**Outcome story for communications use:**

Water planning system used to improve Honduran investment decisions

Much of Western Honduras can be brutally dry, constraining most farmers to rain-fed subsistence agriculture. And with climate unpredictability, farmers and governments often lack the information needed to make the smartest water and agricultural investments.

But the Government of Honduras has piloted and adopted a major new data platform, supported by the CGIAR Research Program on Water, Land and Ecosystems (WLE) and Centro Internacional de Agricultura Tropical (CIAT) science. "Agua de Honduras" provides communities with data on hydrology, vegetative cover, soil properties and water demand, along with future climate scenarios. The platform aids water management decisions on farms, in communities and across entire micro-watersheds, sub-watersheds or watersheds.

At the local level, the platform was successfully piloted with local organizations and municipal governments in four areas. One of these organizations used it to decide where to purchase land to invest in potable water systems. The successful results so far have led to interest from other agencies in expanding this system to other areas of Honduras.

One important component of the platform is AGRI (AGua para RIego), a tool for identifying sites for irrigation and drinking water. The award-winning AGRI has already been used in Western Honduras over 150 times to identify rainwater harvesting sites, 25 times to determine river diversion points, and three times to select the best routes to increase aqueduct water supplies.

The Government of Honduras officially adopted the platform as one of the main water management systems of the Ministry of Environment. The tool is expected to help water conservation investments as well as of access to water for smallholder farms and human consumption.

Since 2015, the United States Agency for International Development (USAID) in Honduras has supported, through CIAT, water-related information initiatives. The Water Planning System (WPS), which deploys Agua de Honduras, aims to benefit millions of Hondurans, by providing policy makers the information necessary to make smarter water investment decisions.

"This demonstrates the potential that alliances between research centers and development agencies have to generate products that provide concrete solutions to real problems in agriculture," says CIAT/WLE research lead Marcela Quintero. "Likewise, these partnerships allow technical and scientific products to reach end users faster."

By providing critical data, the platform already supports the implementation of several national laws and policies such as the General Water Law, National Plan, Country Vision, and the Water, Forest and Soil Master Plan. In future, it may benefit millions of Hondurans.

Photo 1: <https://blog.ciat.cgiar.org/wp-content/uploads/3-17.jpg> CIAT researchers analyse local hydrological data in communities in Honduras to provide information to facilitate decision making on water management in micro-basins, sub-basins, and basins. CIAT (no consent on file)

Photo 2: <https://ciat.cgiar.org/wp-content/uploads/2016/10/Water-1024x675.jpg> A farmer waters his

fields in Honduras. CIAT (no consent on file)

Photo 3: <https://www.flickr.com/photos/ciat/6887912758/> digging a well for irrigation in Honduras.

Neil Palmer/CIAT (no consent on file)

Photo 4: <https://www.flickr.com/photos/ciat/6887918742/> Residues of last season's maize crop (right), and irrigated maize, grown during Honduras' intense dry season. Neil Palmer/CIAT (no consent necessary)

For related links please see "Communications Materials" in the field below. For a version of this story with embedded links, please contact WLE: [a.hunt@cgiar.org](mailto:a.hunt@cgiar.org)

**Links to any communications materials relating to this outcome:**

- <https://tinyurl.com/y4qqdea6>
- [https://drive.google.com/file/d/1jL5TkGXn6VVP\\_8Q\\_U6JAnsxv6MidYUrh/view](https://drive.google.com/file/d/1jL5TkGXn6VVP_8Q_U6JAnsxv6MidYUrh/view)
- <https://wle.cgiar.org/content/marcela-quintero>
- <https://doi.org/10.7910/DVN/YR7QYP>
- <https://doi.org/10.7910/DVN/QVXA7U>
- <https://tinyurl.com/y2qfpdnh>
- <https://tinyurl.com/y48g7n4r>
- <https://aguadehonduras.gob.hn/>
- <https://tinyurl.com/r3fvcw6>
- <https://cgspace.cgiar.org/handle/10568/73454>
- <https://tinyurl.com/y67ljxjh>
- <https://tinyurl.com/v6h8cmu>
- <http://www.miambiente.gob.hn/>

**Part II: CGIAR system level reporting**

**Link to Common Results Reporting Indicator of Policies :** No

**Stage of maturity of change reported:** Stage 2

**Links to the Strategic Results Framework:**

Sub-IDOs:

- Increased resilience of agro-ecosystems and communities, especially those including smallholders
- Increased capacity of partner organizations, as evidenced by rate of investments in agricultural research

Is this OICR linked to some SRF 2022/2030 target?: Yes

SRF 2022/2030 targets:

- Increase in water and nutrient (inorganic, biological) use efficiency in agro-ecosystems, including through recycling and reuse

Description of activity / study: <Not Defined>

**Geographic scope:**

- National

Country(ies):

- Honduras

Comments: <Not Defined>

**Key Contributors:**

Contributing CRPs/Platforms:

- WLE - Water, Land and Ecosystems

Contributing Flagships:

- F1: Restoring Degraded Landscapes (RDL)

Contributing Regional programs: <Not Defined>

Contributing external partners:

- Government of Honduras
- USAID - U.S. Agency for International Development

**CGIAR innovation(s) or findings that have resulted in this outcome or impact:**

CIAT worked with the Government of Honduras to develop a Water Planning System (WPS) designed to support water resources development decision making from micro-watershed to larger watershed levels. It now forms the basis for a new governmental decision support site, "Agua de Honduras" [10]. Climate [2-6], weather [12], hydrometric and other data are combined and made publicly available. The platform is already used at local and national levels by different decision makers, who can access the web platform, upload their local data and quickly obtain statistics, generate scenarios, find new sources of water and have all the information needed to make investment decisions.

**Innovations:** <Not Defined>

### **Elaboration of Outcome/Impact Statement:**

Since 2015, the United States Agency for International Development (USAID) in Honduras has supported, through CIAT, innovative initiatives aimed to improve water-related information for decision-making. The latest initiative, started in 2017 [19] and consolidated in 2018 [14-17], is the Water Planning System (WPS). This was initially implemented in western Honduras where water availability is scarce and most farmers practice rainfed subsistence agriculture.

This system is deployed as a governmental web platform, "Agua de Honduras" [10, 11]. It provides communities with information combining hydrological data for current and future climate scenarios, and data on vegetative cover and water demand to facilitate water management decision making in micro-watersheds, sub-watersheds, and watersheds [1]. One important component of the platform is AGRI (AGua para RIego), a tool for identifying sites for drinking water and irrigation [7-9, 20, 21]. To date, AGRI has been used about 150 times to identify rainwater harvesting sites, 25 times to identify river diversion points, and three times to identify routes to increase aqueduct water supplies. The platform also includes climate change scenarios [3-6].

The platform was officially adopted by the Government of Honduras as one of the main water management systems of the Ministry of Environment. At the local level, the WPS was successfully piloted in four micro-watersheds with local organizations and municipal governments. One of these organizations has already used the platform to decide where to purchase land as a strategy to increase water availability for potable water systems. Given the successful results obtained thus far [13], other agencies are interested in expanding this system to other areas.

The WPS is user-friendly. This supports municipal, governmental and international cooperation investments related to water conservation and improvement of access to water for smallholder farming and human consumption. By providing critical data, the platform also supports the implementation of several national laws and policies, for example the General Water Law, National Plan, Country Vision, and the Water, Forest and Soil Master Plan [18]. In future it may benefit millions of Honduran citizens.

**References cited:**

Evidence:

1. Officialization of the hydrographic delineations of Honduras dated February and April 2018
  2. Navarro-Racines, C.E.; Llanos-Herrera, L.; Monserrate, F. 2018. "30-seconds (1 Km<sup>2</sup>) monthly, seasonal and annual gridded Historical Climate Surfaces for Honduras.", <https://doi.org/10.7910/DVN/QET5UQ>, Harvard Dataverse, V1.
  3. Navarro-Racines, C.E.; Monserrate, F. 2018. "30-seconds (1 Km<sup>2</sup>) gridded Future Climate Change Scenarios for Honduras", <https://doi.org/10.7910/DVN/E3C1KB>, Harvard Dataverse, V1.
  4. Navarro-Racines, C.E.; Monserrate, F. 2018. Replication Data for: 4-km gridded historical and future scenarios for sea level rise in Honduras. <https://doi.org/10.7910/DVN/ANQTXW>, Harvard Dataverse, V1.
  5. Navarro-Racines, C.; Monserrate, F.; Llanos-Herrera, L.; Obando, D.; Córdoba, J. 2018. Desarrollo de los Escenarios Climáticos de Honduras y Módulo Académico de Capacitación. Centro Internacional de Agricultura Tropical (CIAT); Programa de las Naciones Unidas para el Desarrollo (PNUD); Dirección Nacional de Cambio Climático de MiAmbiente. 140p.
  6. Llanos Herrera, L.; Navarro-Racines, C.E.; Valencia, J.; Monserrate, F.; Quintero, M. 2017. 30 Arc-Second Historical and Future Scenario Climate Surfaces for Western Honduras. <https://doi.org/10.7910/DVN/YR7QYP>, Harvard Dataverse, V1.
  7. Online user manual of AGRI dated 2017
  8. Da Silva, M.; Monserrate, F.; Valencia, J.; Quintero, M.; Jarvis, A. 2016. Digital mapping of soil properties in the West of Honduras, Central America. <https://doi.org/10.7910/DVN/QVXA7U>, Harvard Dataverse, V2.
  9. Monserrate, F.; Valencia G.; Jefferson; Quintero, M.; Hyman, G.; Da Silva, M.; Coppus, R.; Bautista, O.; Rivera, O.; León, J.; Manueles, A. 2016. Aumentando la resiliencia climática en el occidente de Honduras: explorando fuentes de agua para pequeños productores rurales. United States Agency for International Development (USAID); Centro Internacional de Agricultura Tropical (CIAT); Escuela Agrícola Panamericana Zamorano (EAP Zamorano). Cali, CO. 44 p.
- Promotional material:
10. URL of the platform: <https://aguadehonduras.gob.hn>
  11. YouTube channel of the platform: <https://www.youtube.com/channel/UC9qxy8pK0nnYdr1qjvHcaVA>
  12. Repository with weather station datasets: [http://ccafs-climate.org/weather\\_stations/](http://ccafs-climate.org/weather_stations/)
  13. Inter-institutional team tackles Honduras's water crisis: <https://blog.ciat.cgiar.org/inter-institutional-team-tackles-hondurass-water-crisis/>
  14. Interview to Marcela Quintero for the release of the platform: <https://www.facebook.com/ciat.ecoefficient/videos/10156342043681877/>
  15. Marcela Quintero talking about the platform: <https://www.facebook.com/ciat.ecoefficient/videos/10156342147561877/>
  16. Jefferson Valencia explaining how the platform is structured: <https://www.facebook.com/ciat.ecoefficient/videos/10156342027186877/>
  17. Blog post of the platform release: <http://blog.ciat.cgiar.org/es/lanzan-primera-plataforma-en-linea-agua-de-honduras-para-la-toma-de-decisiones/>
  18. Video of release of government instruments (including the platform) for the implementation of the General Water Law: [https://drive.google.com/file/d/1jL5TkGXn6VVP\\_8Q\\_U6JAnsxv6MidYUrh/view](https://drive.google.com/file/d/1jL5TkGXn6VVP_8Q_U6JAnsxv6MidYUrh/view)
  19. Blog post announcing the start of the WPS project:

<https://blog.ciat.cgiar.org/es/honduras-quiere-conocer-el-potencial-de-sus-recursos-hidricos/>

20. Blog post of the delivery of AGRI to the Government of Honduras:

<http://blog.ciat.cgiar.org/es/se-entrega-al-gobierno-de-honduras-herramienta-para-orientar-proyecto-s-de-agua-para-pequenos-agricultores/>

21. AGRI, one the platform's web applications, was chosen as one of the 8 best customized applications in the 2017 User Applications Fair at Esri Conference:

<https://www.esri.com/arcgis-blog/products/arcgis-enterprise/analytics/explore-eight-incredible-apps-at-the-2017-user-apps-fair/?rmedium=redirect&rsource=/esri/arcgis/2017/06/27/visit-2017-user-apps-fair>

**Quantification:** <Not Defined>

**Gender, Youth, Capacity Development and Climate Change:**

**Gender relevance:** 0 - Not Targeted

**Youth relevance:** 0 - Not Targeted

**CapDev relevance:** 1 - Significant

Main achievements with specific **CapDev** relevance: Several training courses and meetings were conducted for technicians from government institutions, NGOs, communities, water boards, municipalities, among others, who are involved into water-related decision-making processes of high relevance for the country or their zones of interest.

**Climate Change relevance:** 1 - Significant

Describe main achievements with specific **Climate Change** relevance: This topic is addressed in the platform by providing information to the users resulting from hydrological analyses combined with data from current and future climate scenarios and other data. The future climate change scenarios were downscaled for the whole country and made available to the users through interactive web applications. As a consequence, capacity of national institutions was improved to assess or address climate change risks.

**Other cross-cutting dimensions:** <Not Defined>

**Other cross-cutting dimensions description:** <Not Defined>

**Outcome Impact Case Report link:** [Study #2793](#)

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