

JOCELYN WIDMER, PHD MPH



**ENSURE  
ENVIRONMENTAL  
SUSTAINABILITY**

HALVE, BY 2015, THE PROPORTION OF THE POPULATION WITHOUT SUSTAINABLE ACCESS TO SAFE DRINKING WATER AND BASIC SANITATION

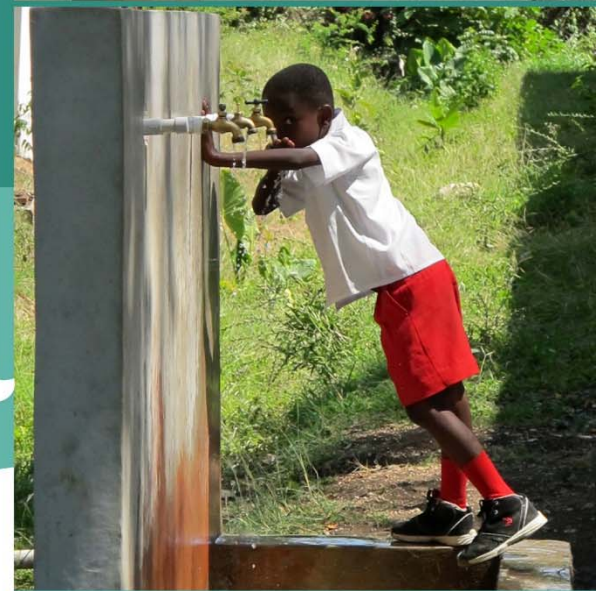
- PROPORTION OF POPULATION WITH SUSTAINABLE ACCESS TO AN IMPROVED WATER SOURCE
- PROPORTION OF POPULATION WITH ACCESS TO IMPROVED SANITATION

**6** CLEAN WATER  
AND SANITATION

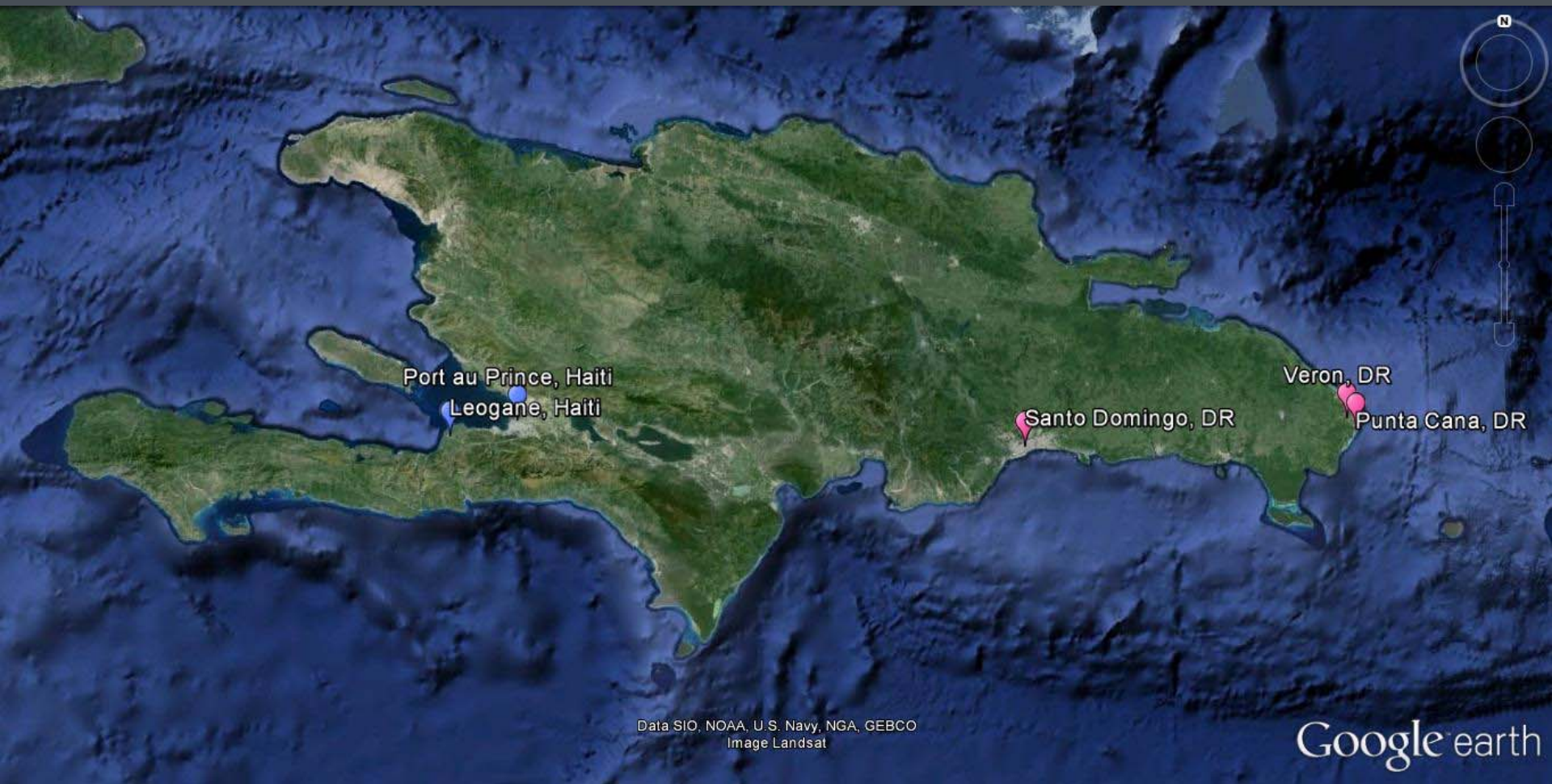


ENSURE ACCESS TO WATER AND SANITATION FOR ALL

Shift <sup>FROM</sup> local  
= 2 global







Port au Prince, Haiti  
Leogane, Haiti

Santo Domingo, DR

Veron, DR

Punta Cana, DR

Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
Image Landsat

Google earth

ISLAND OF HISPANIOLA



SCALABILITY OF A COMMUNITY-BASED APPROACH TO  
IMPROVE WATER POINT ACCESS, FUNCTIONALITY &  
PUBLIC HEALTH IN HAITI

WATER POINT MONITORING PROJECT: JUNE 2012 – JUNE 2013

# PROJECT HIGHLIGHTS



MONITORING WATER POINT FUNCTIONALITY

MEASURING WATER QUALITY

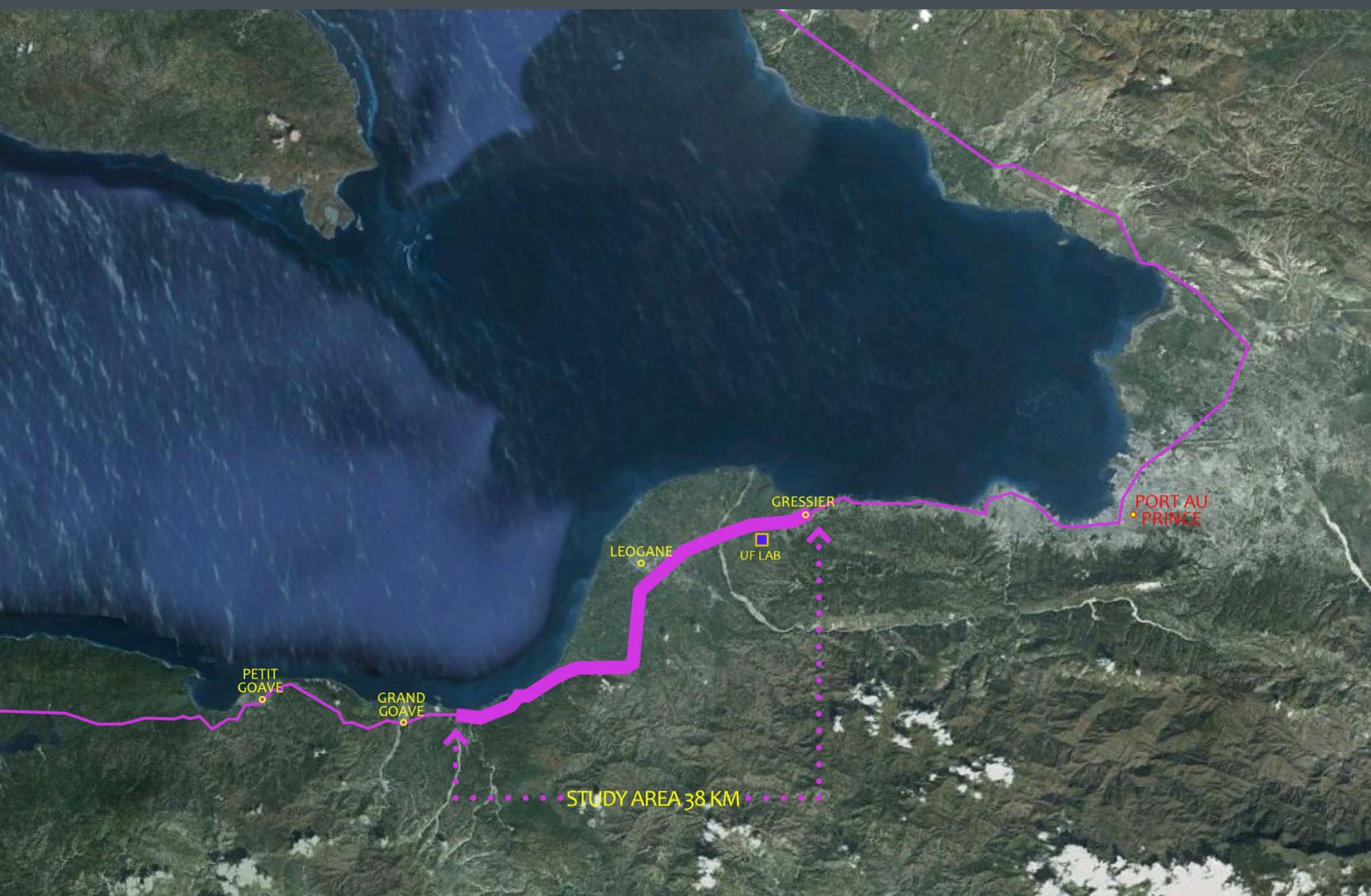
TRACKING WATER-RELATED PERCEPTIONS / BEHAVIORS

DATA COLLECTION METHOD

DEVELOPED USING ANDROID-BASED TABLET SYSTEM



# GEOGRAPHIC VARIABILITY



# DEFINITION OF WATER SOURCE

## SOURCE TYPE

*WHERE IS THE WATER COMING FROM?*

## EXTRACTION SYSTEM

*HOW IS THE WATER GETTING OUT OF THE GROUND?*

## WATER POINT TYPE

*WHERE ARE THE PEOPLE GOING TO COLLECT WATER?*





WATER USAGE BEHAVIORS & PERCEPTIONS OF WATER IN AREA  
*ESTABLISH COMMUNITY PRESENCE / DEFINE CHARACTERISTIC OF AREA*

INVENTORY OF 550 WATER POINTS IN STUDY AREA  
*NO WATER SAMPLES COLLECTED*

WATER QUALITY SAMPLING & RE-INVENTORY OF WATER POINTS  
*STORM HIT 8/24-8/25 (RAIN FOR 36-HR PERIOD)*  
*~ 460 WATER POINTS (NOT ALL ACCESSIBLE DUE TO FLOODING)*  
*BAG TESTS + 20% MICROBIOLOGICAL SUBSAMPLE (NOT CLEAN)*

ATTEMPT BASELINE WATER QUALITY SAMPLING & RE-INVENTORY OF WATER POINTS

*DRY CONDITIONS*

*~ 446 WATER POINTS (DUPLICATES, CLOSED, ETC...)*

*BAGS + RE-SAMPLING OF MICROBIOLOGICAL SUB-SAMPLE (~ 72)*

*COORDINATED SAMPLE COLLECTION WITH MICROBIOLOGY TEAM*

RESAMPLE SUBSAMPLE AFTER SANDY (= ISAAC)

*STORM HIT 10/24 (RAIN FOR 36-HR PERIOD)*

*SAMPLE COLLECTION MIRRORED SUBSAMPLE AFTER ISAAC*

*~ 57 WATER POINTS*

FULL RE-INVENTORY WITH FULL MICROBIOLOGICAL TESTING  
*369 WATER POINTS (EFFORT TO REMOVE DUPLICATES)*



# INDICATION OF WATER SATURATION IN AREA DURING FALL 2012 SAMPLING



30 AUGUST 2012 [5 DAYS POST ISAAC]



13 OCTOBER 2012



31 OCTOBER 2012 [5 DAYS POST SANDY]

[N18.47866 W72.62424]



# INDICATION OF WATER SATURATION IN AREA DURING FALL 2012 SAMPLING



31 AUGUST 2012 [6 DAYS POST ISAAC]



14 OCTOBER 2012



1 NOVEMBER 2012 [6 DAYS POST SANDY]



# INDICATION OF WATER SATURATION IN AREA DURING FALL 2012 SAMPLING



30 AUGUST 2012 [5 DAYS POST ISAAC]



14 OCTOBER 2012



31 OCTOBER 2012 [5 DAYS POST SANDY]



# INDICATION OF WATER SATURATION IN AREA DURING FALL 2012 SAMPLING



26 AUGUST 2012 [1 DAY POST ISAAC]

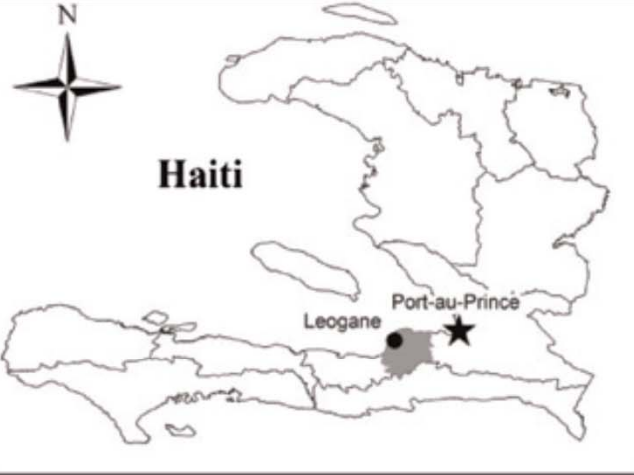


14 OCTOBER 2012



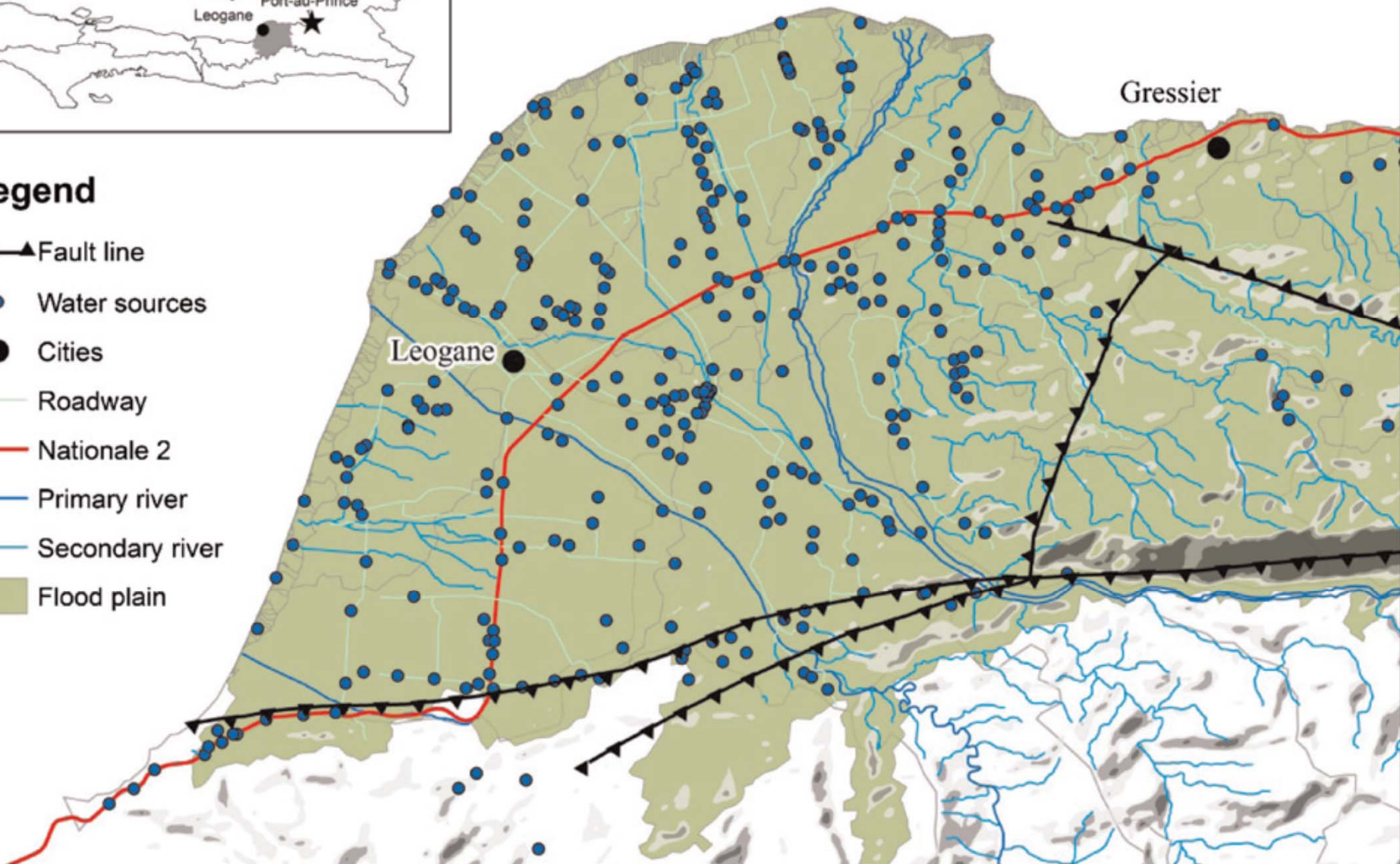
31 OCTOBER 2012 [5 DAYS POST SANDY]





### Legend

- ▲ Fault line
- Water sources
- Cities
- Roadway
- Nationale 2
- Primary river
- Secondary river
- Flood plain





# SOME POINTS ON SIGNIFICANCE & LIMITATIONS

## SIGNIFICANT POINTS

- DATA COLLECTION AIDED BY RECOGNITION OF TEAM IN CERTAIN AREAS (ASSIGNED SAME WATER POINTS EACH SAMPLE RUN)
- CONSISTENT TEAM COLLECTING DATA
- COORDINATION BETWEEN TEAM AND MICROBIOLOGISTS
- DATA COLLECTION PROCESS IS OCCURRING IN WAYS THAT MSPP AND DINEPA HAVE PROPOSED (TEAM-BASED)

## LIMITING FACTORS

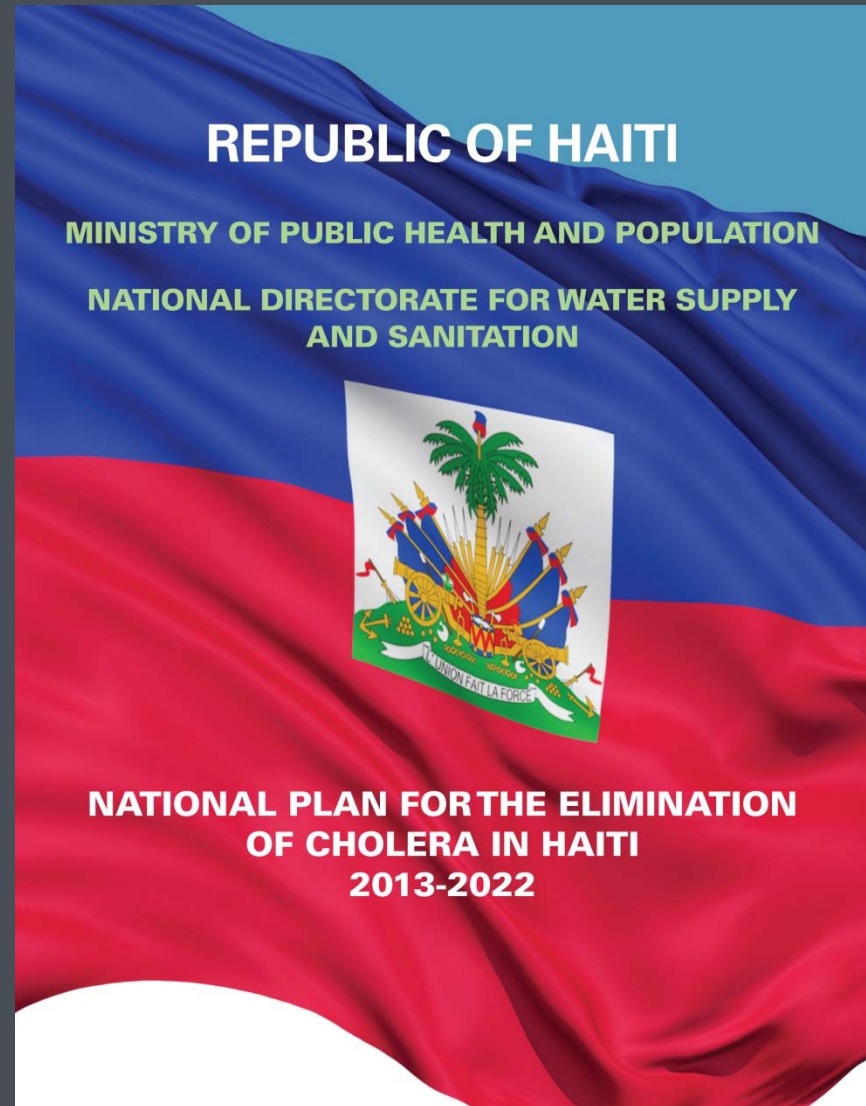
- NOT GETTING INFORMATION BACK TO COMMUNITIES
- SOME AREAS PROHIBITING WATER SAMPLE COLLECTION
- INTERVENTION STRATEGY UNIQUE BECAUSE OF REGIONAL SCALE (MANY OFFERS TO PUT IN POINT SYSTEMS-WILL THIS PERPETUATE THE PROBLEM?)

# MONITORING & INTERVENTIONS



- MONITOR OPERATIONAL PERFORMANCE OF WATER POINT
- ASSESS MANAGEMENT MODELS USED
- IDENTIFY WATER POINT REPAIR PROCESS
- DEVELOP UNIQUE POINT IDENTIFICATION SYSTEM
  - SYSTEM FOR ADDING NEW WATER POINTS
  - SYSTEM FOR CLEANING / CLOSING WATER POINTS

**MSPP + DINEPA  
DECADE-LONG,  
NATIONAL PLAN FOR  
THE ELIMINATION OF  
CHOLERA IN HAITI**



# STUDY RESPONSE TO MSPP CHOLERA ERADICATION PLAN



## CHALLENGE OBJECTIVE 1 IN STUDY REGION

- INCREASE ACCESS TO POTABLE WATER TO AT LEAST 85% OF POPULATION

## PROPOSED SHORT TERM INTERVENTION

- TEAM CARRY OUT WATER TEST (ALREADY DOING THIS)
- ESTABLISH COMMUNITY HEALTH CLUBS (VERY POSSIBLE)
- [DINEPA] AT RISK RESIDENTS ARE GIVEN CHLORINE TABS (NOT ADDRESSING SCALE OF PROBLEM)
- ADDRESS TARGET AREAS: MEDIUM/LARGE CITIES + RURAL AREAS (LEAVING STUDY REGION OUT WHERE THERE CLEARLY IS A PROBLEM)

## EXPECTED SHORT TERM RESULTS:

- IN LARGE/MEDIUM CITIES, RISK OF TRANSMISSION ELIMINATED (REPAIR WATER POINTS + ADD NEW)
- RESULT 2.1: RIVER WATER V. POTABLE WATER (WE HAVE DATA THAT SHOWS PEOPLE DON'T NECESSARILY DRINK POTABLE WATER WHEN AVAILABLE)



# RESPONSE TO MSPP CHOLERA ERADICATION PLAN



## MONITORING & EVALUATION

- COMMITTEE WILL CONVENE TWICE A YEAR (CHANGE OCCUR FASTER THAN THAT CURRENTLY)

## EPIDEMIOLOGICAL SURVEILLANCE

- 5.5: INSTALL LAB SPACE FOR WATER-QUALITY SURVEILLANCE; PROVIDES RELIABLE INFORMATION FOR TIMELY DECISION-MAKING (CHALLENGE WITH THIS ALREADY)

## PREPARATION OF NATIONAL MICROBIOLOGICAL, IMMUNOLOGICAL, ENVIRONMENTAL & SOCIO-ANTHROPOLOGICAL AGENDA

- MULTI-DISCIPLINARY APPROACH (ALREADY DOING THIS)
  - TRAINING OF COMMUNITY-BASED TEAM (ALREADY DOING THIS)
- BOTH MSPP & DINEPA POINT TO TEAM AS FUNDAMENTAL TO THE SOLUTION & THE TEAM IS AT THE HEART OF HOW THIS PROJECT FUNCTIONS

COMMUNITY ACTION TEAM  
CHRISTIANVILLE, HAITI



# Impact Assessment

Focus Investigation on

# WATER



Samaritano Segundo . Verón

June 2015





**Punta Cana Ecological Foundation**

*Philosophy + Investment in Water*

Notes from Jake Kheel  
Notes from Carrasco



**Precedence | Impact Assessment**

*Water as an Emergent Theme*

January 2015 Impact Assessment  
Water Theme Infographic



**Water in Samaritano Segundo**

*History of Water Management System*

Narrative Background on Water  
Video Perspective (*Spanish*)



# Project Rationale

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June 2015 Proposal to Punta Cana Ecological Foundation

6/12

6/20

Pre-Test Survey [English]  
Pre-Test Survey [Spanish]  
Interview Protocol

1

Focus Group Protocol  
Survey [English]  
Survey [Spanish]

2

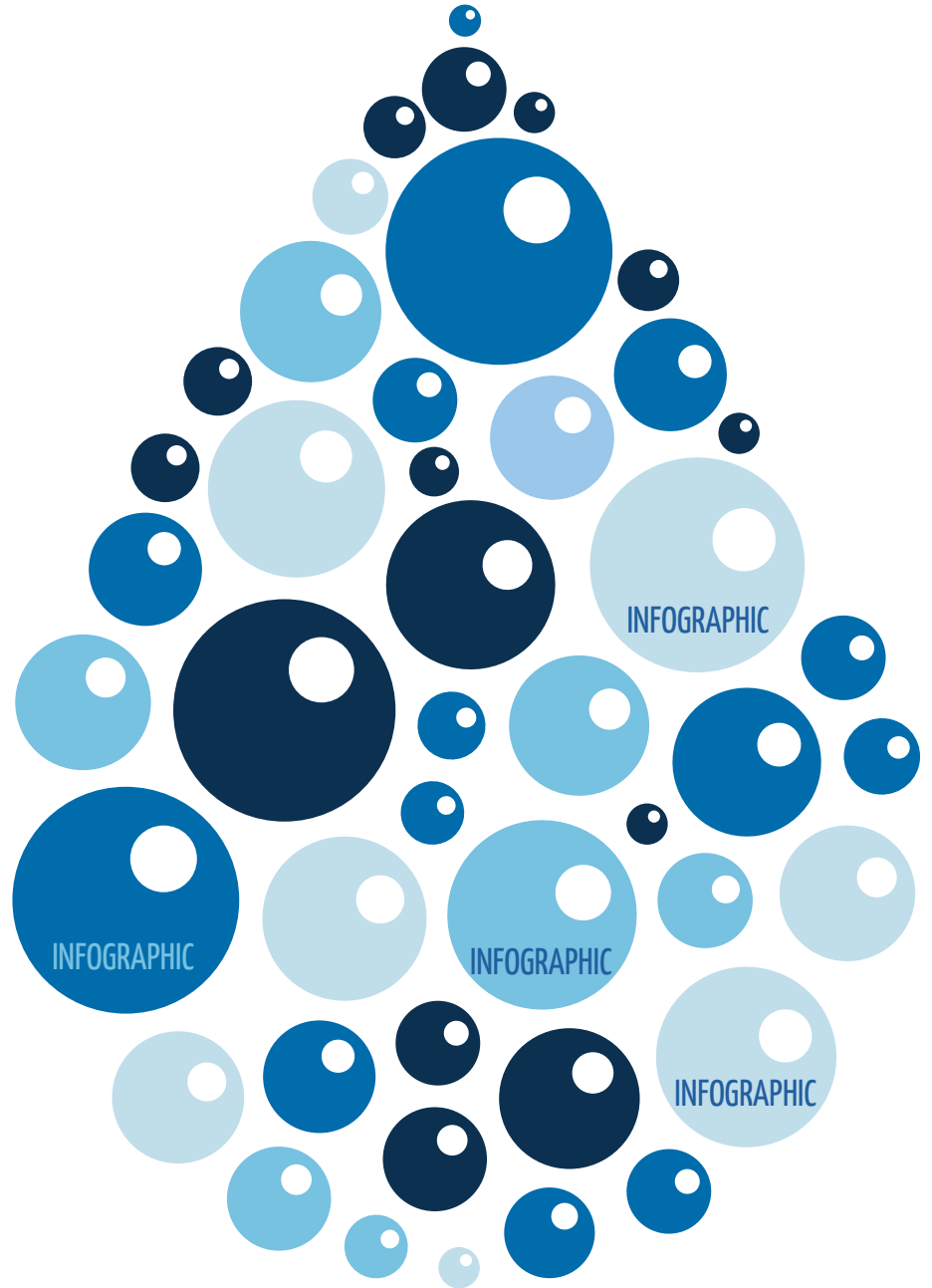
3

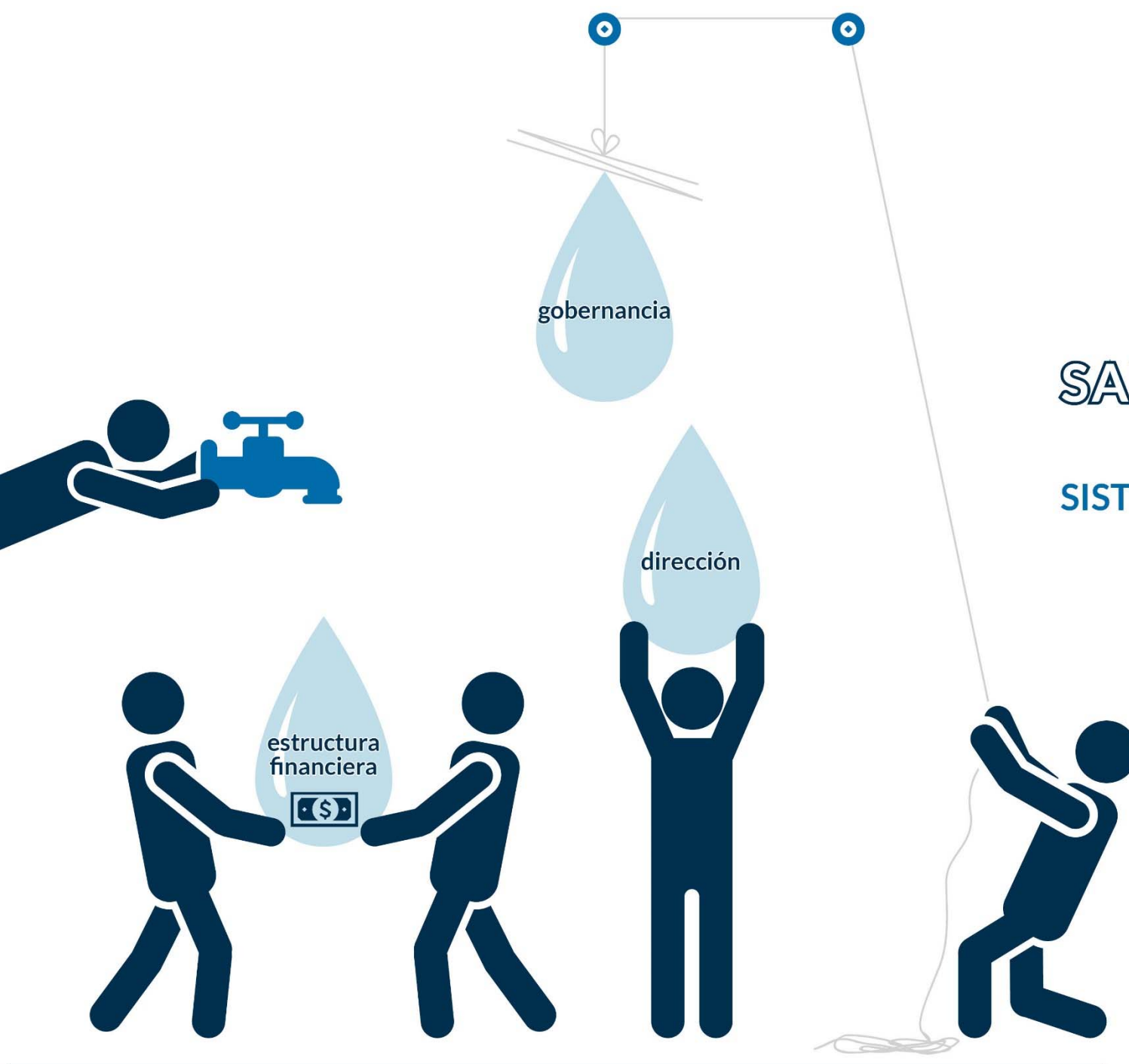
Storyboards  
WhatsApp Video Call [English]  
WhatsApp Video Call [Spanish]

Approach  
Terms + Definitions

# By the Numbers

Project Findings





**SAMARITANO  
SEGUNDO  
SISTEMA DE GESTIÓN  
DE AGUA**

ELEMENTS OF A  
WATER  
MANAGEMENT  
SYSTEM

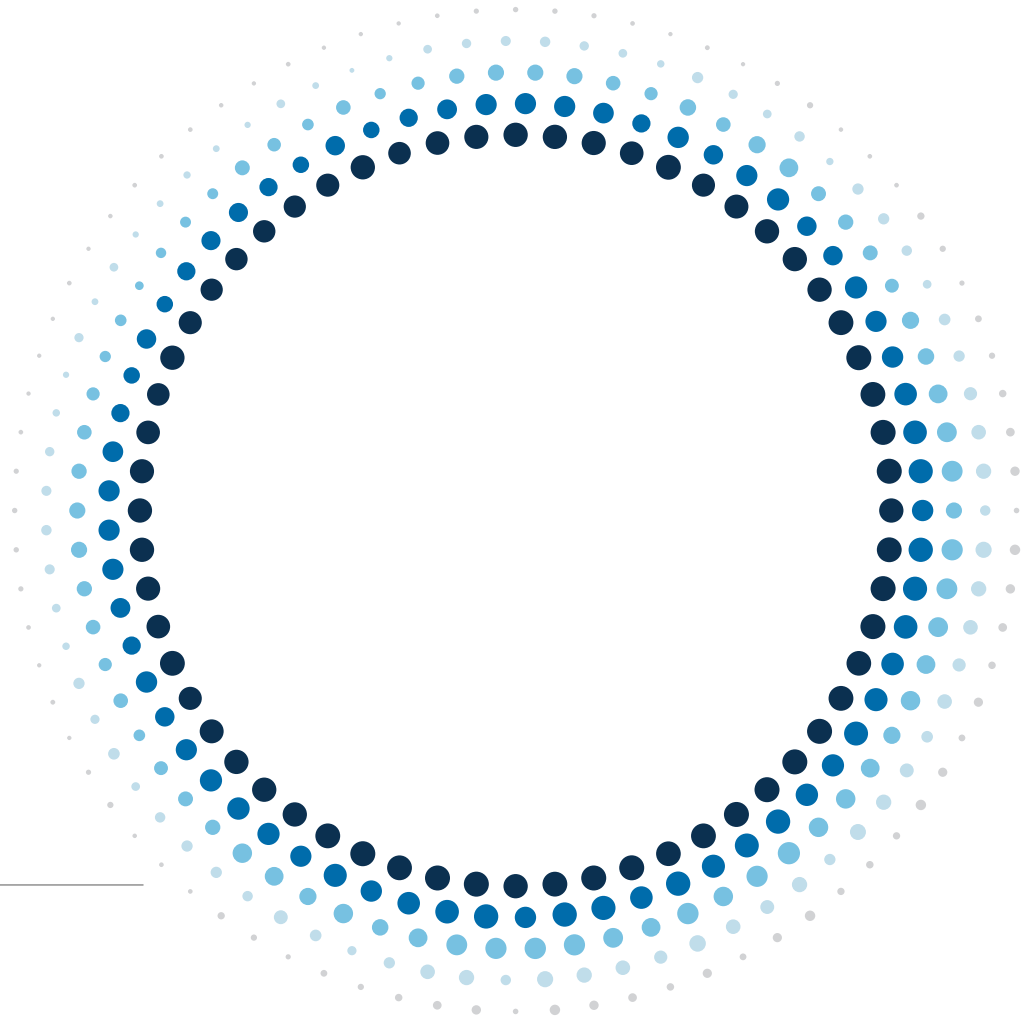


SOAR Analysis



# Limitations

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## Trends + Key Takeaways

The **KEY TAKEAWAYS** of the assessment are based on the findings from the survey, focus groups or interviews. The research team also discovered phenomena occurring in the community that were not captured in the aforementioned data collection instruments. These **TRENDS** have been deemed integral to the community and should be considered in the decision-making process moving forward. Together, the key takeaways and trends provide relevant stakeholders a comprehensive understanding of how integral water is to Samaritano's governance structure and resource stewardship, two characteristics that could positively impact other communities in Verón.





RECOMMENDATIONS derive from the SOAR Analysis and have been categorized across relevant stakeholder groups. These recommendations also map onto time increments for potential impact. Coupling the initial investment needed in water-related infrastructure with training and community obligations that link Samaritano Segundo's strengths with other communities in Verón in a peer-to-peer capacity will embed accountability measures and will maximize return on the initial investment. Collectively, the series of recommendations will have the greatest impact if they are phased in as recommended and phases are evaluated so that each stakeholder group is held accountable for the collective impact.

## Collective Impact

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# Linkages to Innovation

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