

West Africa Water Supply, Sanitation, and Hygiene Program (USAID WA-WASH)

WEST AFRICA DEVELOPMENT CHALLENGES: WATER SUPPLY AND QUALITY



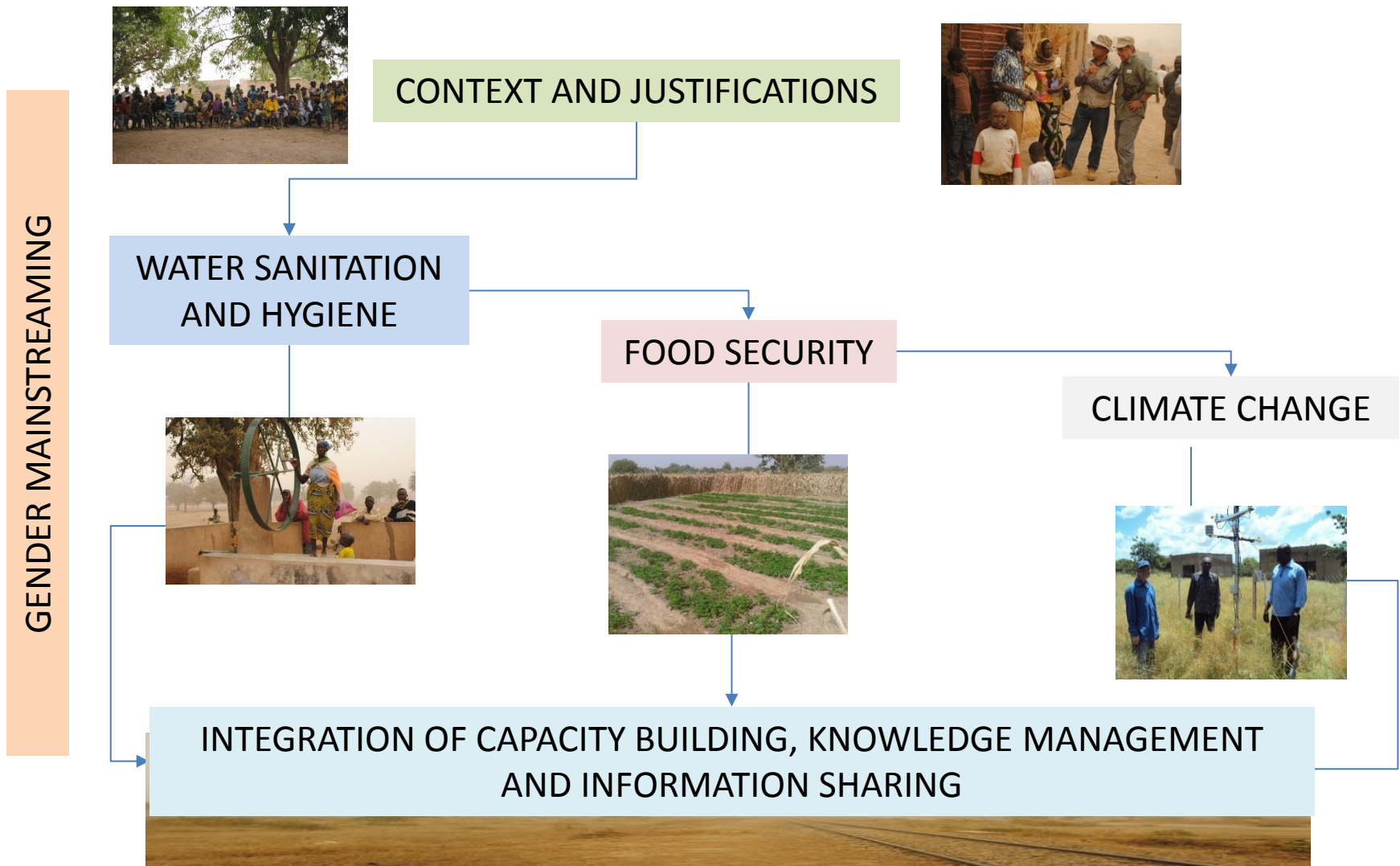
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OUAGADOUGOU, BURKINA FASO
US EPA WASHINGTON DC
JANUARY 27, 2014

West Africa Water Supply, Sanitation, and Hygiene Program (USAID WA-WASH)

OUTLINE

- Project Context and Set-up – Planes and Runways?
- Who are we – Implementing Partners?
- Our Objectives – Results Framework, Indicators?
- Our Thematic Areas?
- Our Geographical Areas of Intervention?
- Our Approach?
- What do we do – Our Activities?
- Water Analysis Survey – Main Results?

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IMPLEMENTING PARTNERS

- Under FIU's leadership, several organizations are responsible for the implementation of the program:
 - Building Partnerships for Development (BPD) - England
 - CARE – USA
 - Florida International University (FIU)
 - International Water and Sanitation Center (IRC) - Netherlands
 - International Water Association (IWA) - England
 - Rainwater Harvesting Implementation Network (RAIN) - USA
 - UNESCO-IHE Institute for Water Education - Netherland
 - Winrock International – USA
 - PROMACO
 - ANIMAS SUTURA
 - APDO
 - WSA

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OBJECTIVES

- **Objective 1:** Support catalytic approaches to accelerate regional access to improved water supply/sanitation services and improved hygiene behaviors.
- **Objective 2:** Develop and implement improved models for sustainability of rural and peri-urban WASH service delivery that are replicable throughout West Africa.
- **Objective 3:** Build synergies between WASH interventions and critical USAID/West Africa regional priorities related to food security, climate change, and sustainable resource management.
- **Objective 4:** Strengthen regional enabling environment and capacity for WASH to achieve WASH MDGs in West Africa.

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Assistance Objective:
Strengthen resilience and sustainable access to water supply, sanitation and hygiene for better livelihoods

IR A.
Increased community access to potable water and improved sanitation

Sub-IR A.1
Improved access to and quality of sustainable water supply services for domestic and productive purposes

Sub-IR A.2
Improved access to and use of sustainable sanitation services

Sub-IR A.3
Increased adoption of key hygiene behaviors

IR B.
Improved sustainability of WASH services

Sub-IR B.1
Adoption of replicable and sustainable WASH management approaches

Sub IR B.2
Strengthened national and local policies and governance for WASH service delivery and management

Sub-IR B.3
Increased access to sustainable financing for WASH services

IR C.
Increased income generation and food security outcomes of WASH investments

Sub-IR C.1
Adoption of complementary agricultural technologies and practices in WASH programs

Sub-IR C.2
Increased local and national capacity to adapt to water-related climate change

Sub IR C.3
Increased availability of climate relevant information

IR D.
Strengthened national and regional enabling environment for integrated WASH

Sub IR D.1
Strengthened national and regional organizations in integrated WASH advocacy

Sub IR D.2
Increased regional integrated WASH knowledge management and networking

Sub IR D.3
Enhanced gender mainstreaming in integrated WASH programs

Sub IR D.4
Expanded private sector engagement in integrated WASH programs

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INDICATOR LIST

Intermediate Result A

- IN.02 Number of people gaining access to an improved drinking water source
- IN.05 Number of communities certified as “open defecation free” (ODF) as a result of USG assistance
- IN.07 Number of people gaining access to an improved sanitation facility
- IN.09 Percent of household with soap and water at a hand washing station commonly used by family members
- IN.12 Percent of women correctly use the household water treatment product in the targeted areas of the project
- IN.32 Number of water related enterprise receiving technical training or business development service training
- IN.46 Percent of households using an improved drinking water source
- IN.47 Percent of households using an improved sanitation facility
- IN.48 Number of households (in target areas) with increased availability of water for multiple uses

Intermediate Result B

- IN.17 Number of new policies, laws, agreements, regulations, or investment agreements (public or private) implemented that promote access to improved water supply and sanitation
- IN.18 Number of NGO/local/national/regional governments that benefit from capacity building interventions
- IN.19 Percent of community level Water Users Associations (WUA) with at least 40% female membership

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INDICATOR LIST

Intermediate Result C

IN.26 Number of people receiving training in global climate change as a result of USG assistance

IN. 27 Number of stakeholders with increased capacity to adapt to the impacts of climate variability and change as a result of USG assistance

IN.28 Number of climate vulnerability assessments conducted as a result of USG assistance

IN. 29 Number of stakeholders using climate information in their decision making as a result of USG assistance

IN.52 Number of farmers and others who have applied new technologies or management practices as a result of USG assistance

IN.53 Number of individuals who have received USG supported short-term agricultural sector productivity or food security training

Intermediate Result D

IN.35 Number of people receiving training in WASH as a result of USG assistance

IN.37 Number of WASH modules (group modules, etc.) developed by academic institutions

IN.39 Number of gender specific actions into WA-WASH plans developed and implemented

IN.40 Number of people trained in mainstreaming gender into WASH

IN.41 Number of institutional partnerships created as a result of USG assistance

IN.44 Number of successfully implemented action plans developed and revised by partnership practitioners

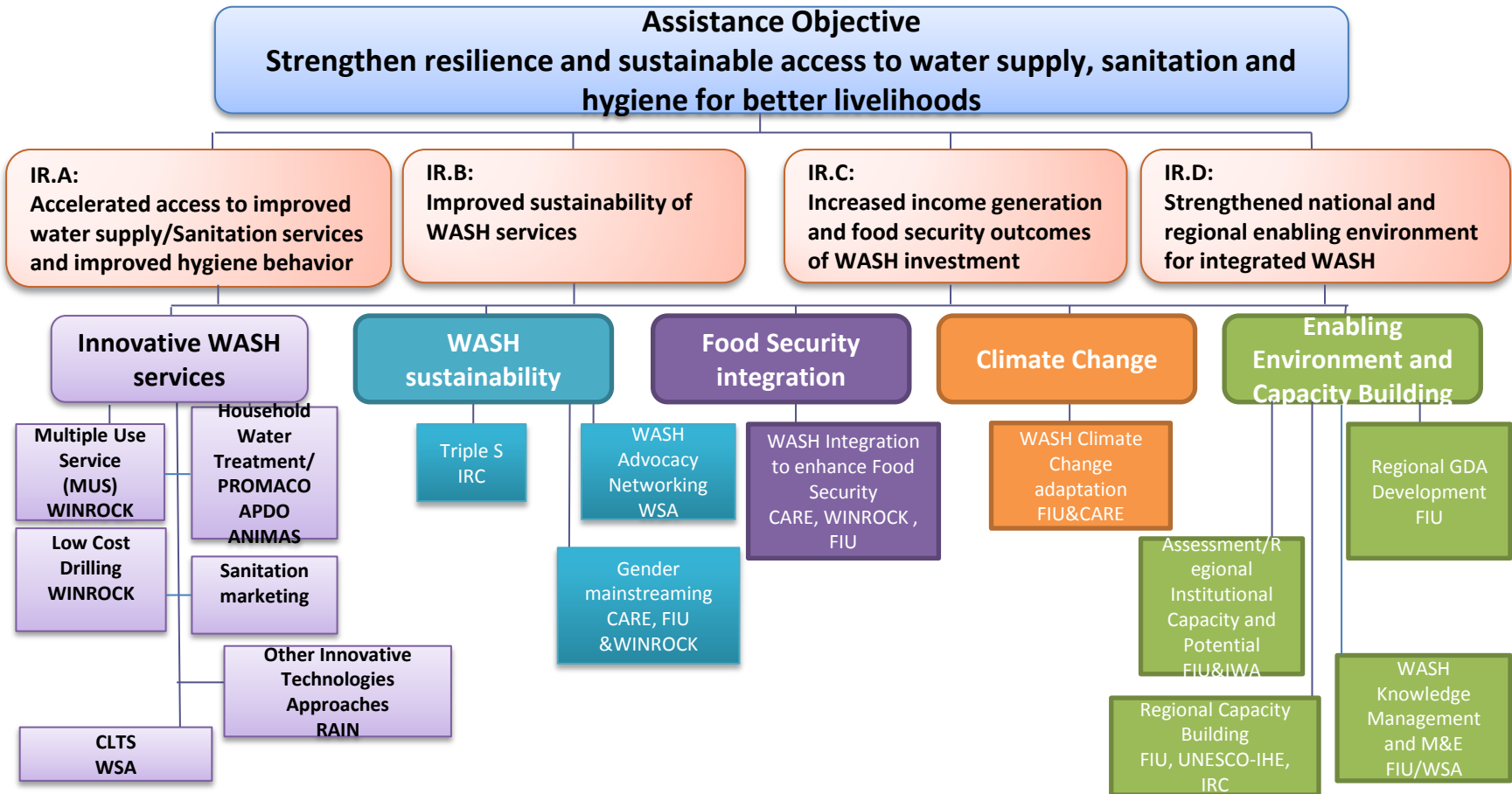
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MANDATORY INDICATORS

Indicator title	Contributing partners
IN.02 Number of people gaining access to an improved drinking water source	WINROCK, FIU, CARE, RAIN
IN.07 Number of people gaining access to an improved sanitation facility	WSA, WINROCK, CARE
IN.17 Number of new policies, laws, agreements, regulations, or investment agreements (public or private) implemented that promote access to improved water supply and sanitation	FIU
IN. 27 Number of stakeholders with increased capacity to adapt to the impacts of climate variability and change as a result of USG assistance	FIU, CARE
IN.28 Number of climate vulnerability assessments conducted as a result of USG assistance	CARE, RAIN
IN. 29 Number of stakeholders using climate information in their decision making as a result of USG assistance	FIU
IN.46 Percent of households using an improved drinking water source	WINROCK, CARE, IRC
IN.47 Percent of households using an improved sanitation facility	WSA, WINROCK, CARE
IN.52 Number of farmers and others who have applied new technologies or management practices as a result of USG assistance	WINROCK, FIU, CARE
IN.53 Number of individuals who have received USG supported short-term agricultural sector productivity or food security training	WINROCK, FIU, CARE

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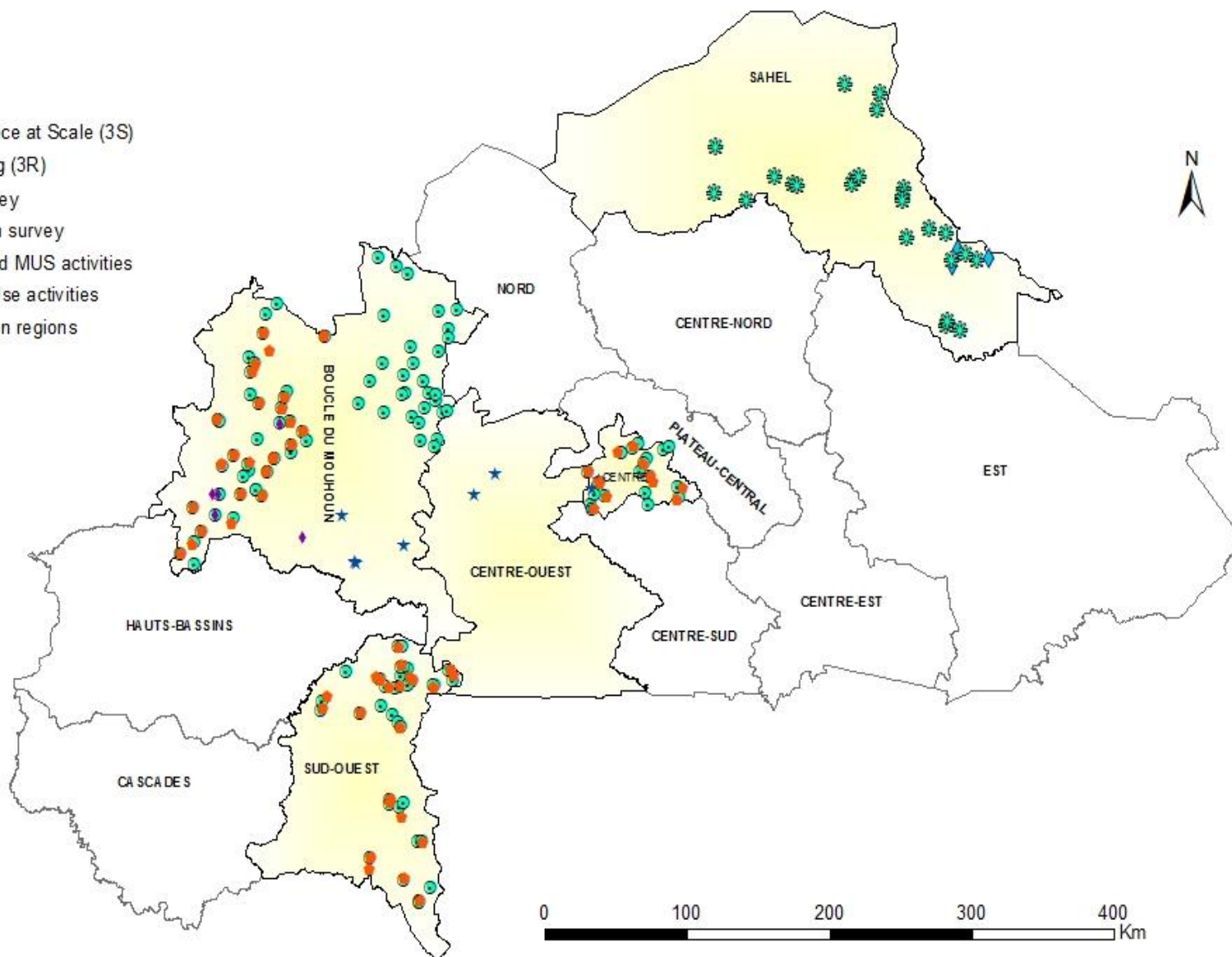
THEMATIC AREAS



USAID WA-WASH PARTNERS INTERVENTION REGIONS AND ACTIVITIES IN BURKINA FASO

Legend

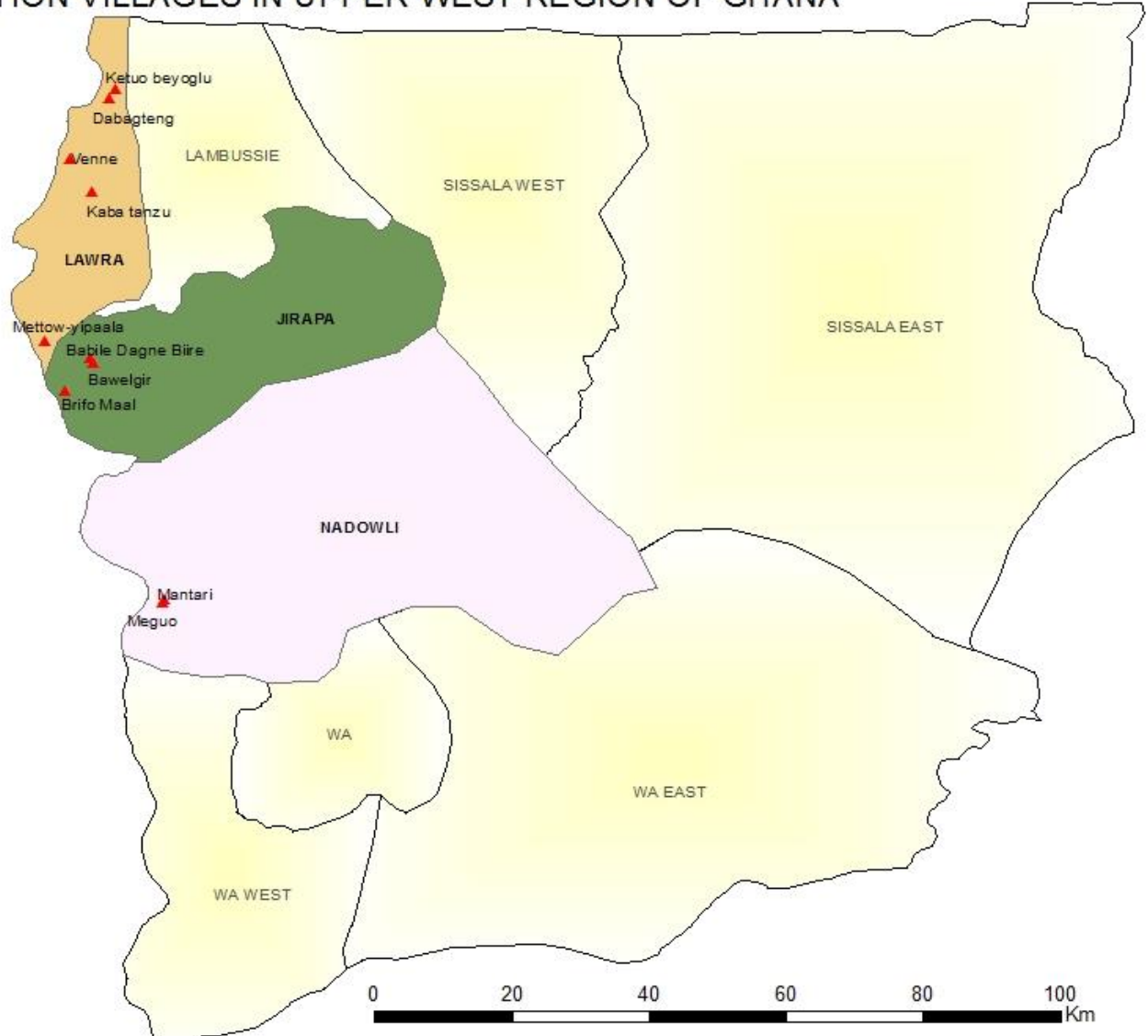
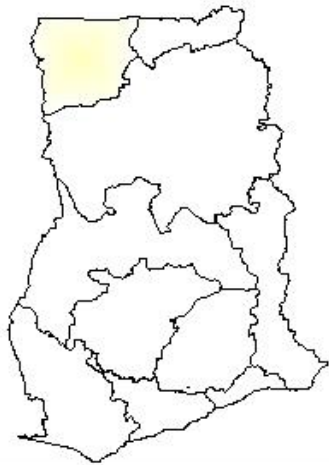
- IRC Sustainable Service at Scale (3S)
- RAIN water harvesting (3R)
- FIU water quality survey
- FIU households wash survey
- Winrock boreholes and MUS activities
- PROMACO Point of Use activities
- WA-WASH intervention regions
- Other regions



INTERVENTION VILLAGES IN UPPER WEST REGION OF GHANA



UPPER WEST REGION IN GHANA

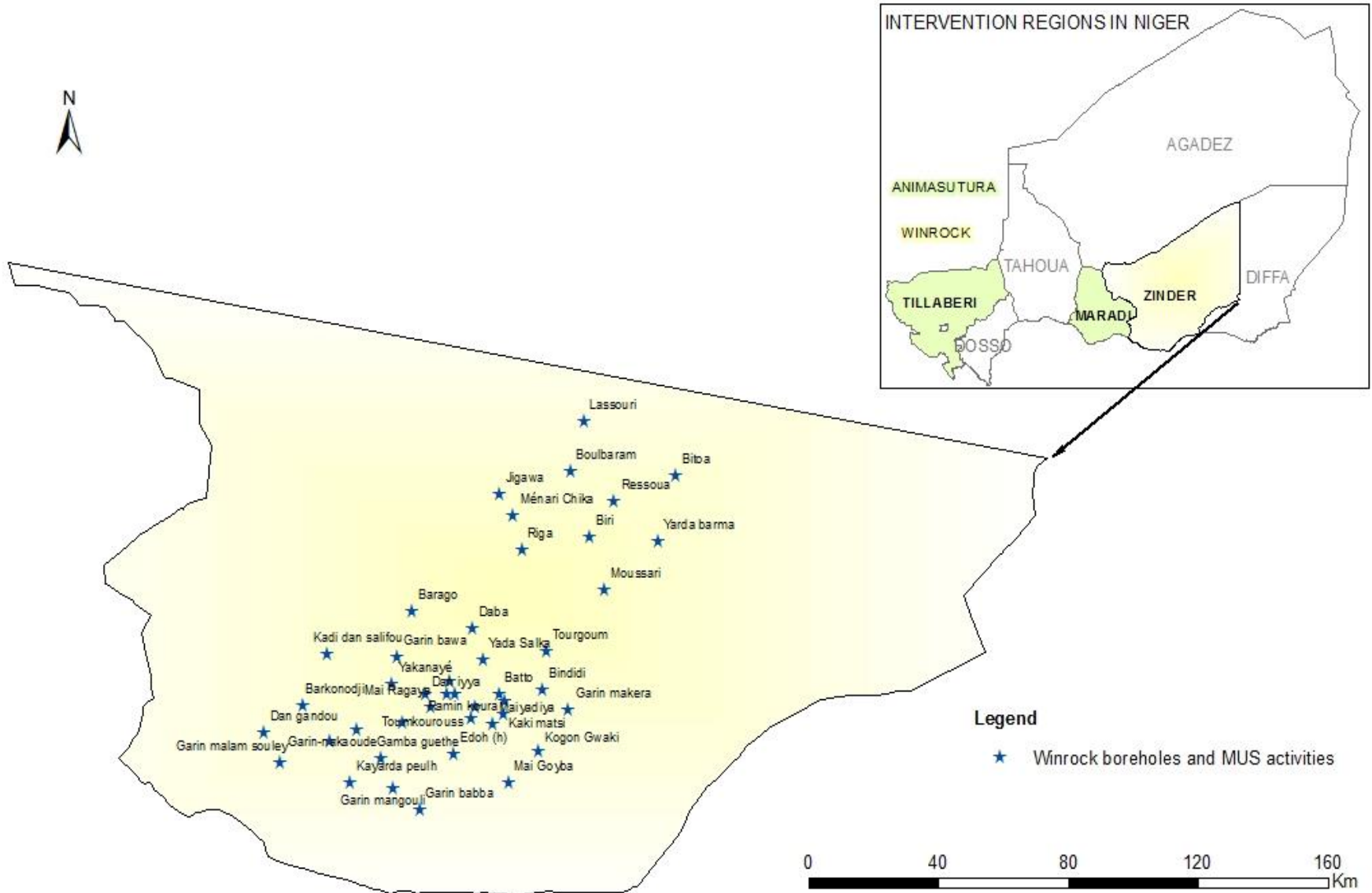


Legend

- ▲ CARE intervention villages
- WA-WASH intervention districts
- Jirapa
- Lawra
- Nadowli



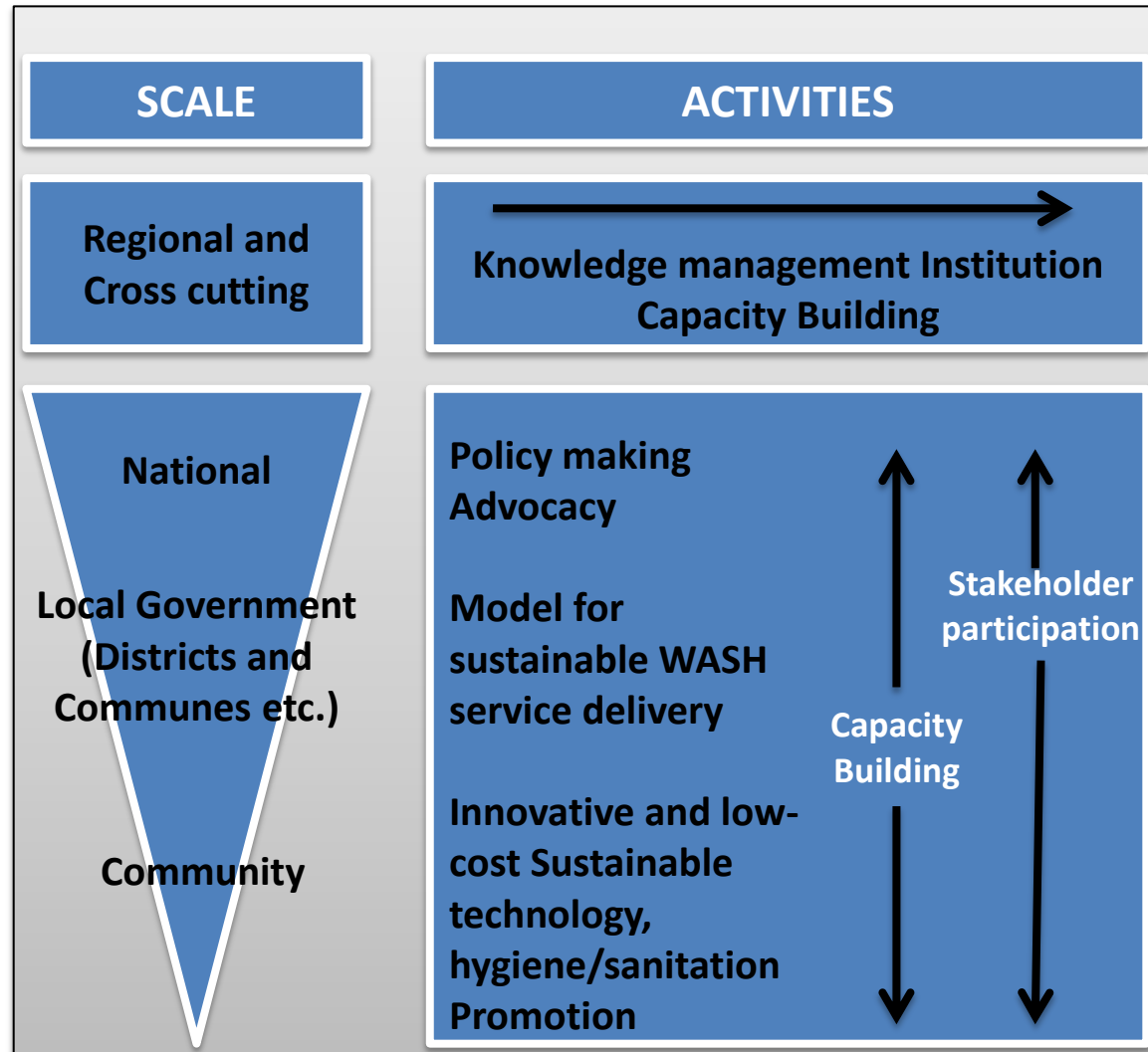
WA-WASH PARTNERS INTERVENTION VILLAGES AND ACTIVITIES IN SOUTHERN ZINDER IN NIGER



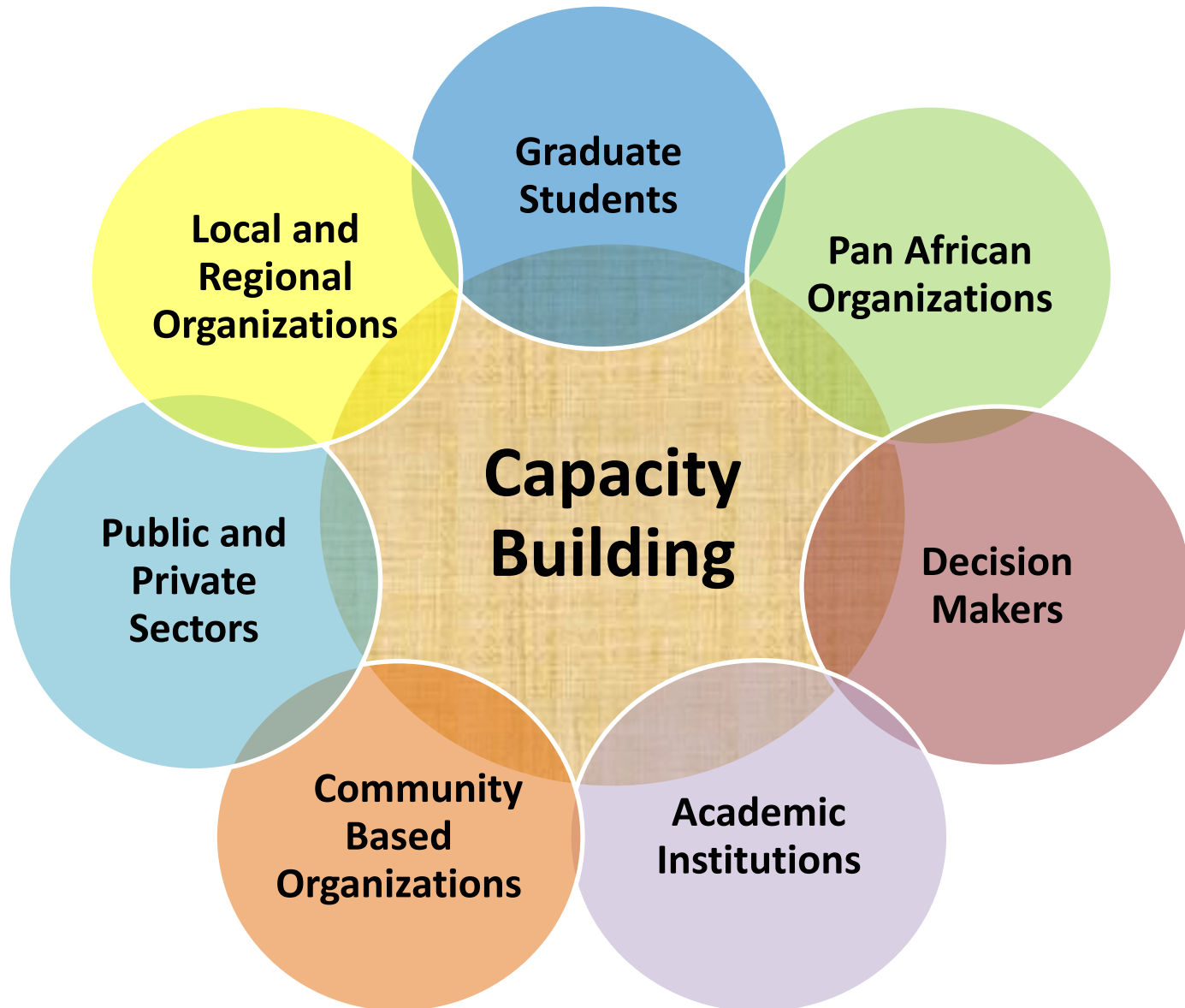
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CONCEPTUAL APPROACH

- Our conceptual approach involves a carefully coordinated set of simultaneous and sequential activities nested at multiple levels.
- These activities are aimed to complement and integrate each other both at the horizontal (country activities) and vertical (cross-cutting and regional activities) levels.



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CAPACITY BUILDING EXPECTED RESULTS

- Improvements in operational practices of local government and the private sector in technical, financial, managerial and monitoring capacities.
- Strengthened national and regional enabling environment and capacity to achieve WASH MDGs in West Africa and increased government compliance to regional and international commitments.
- Increased capacity and synergy among WA-WASH regional partnership members for improving the local governance of WASH services.
- Strengthen the capacity of academic institutions to deliver an adapted WASH curriculum.

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CAPACITY BUILDING ACCOMPLISHMENTS

- Training of 50 graduate students and young professionals and funding of 60 scholarships
- Inventory of WASH related courses at the University of Ouagadougou (identification of the teaching and research departments)
- Collaboration with 2iE for the training of students in the collection and analysis of water samples related to WA-WASH activities (water route)
- Support graduate students in the preparation of a conference at the University of Ouagadougou (March 2013)



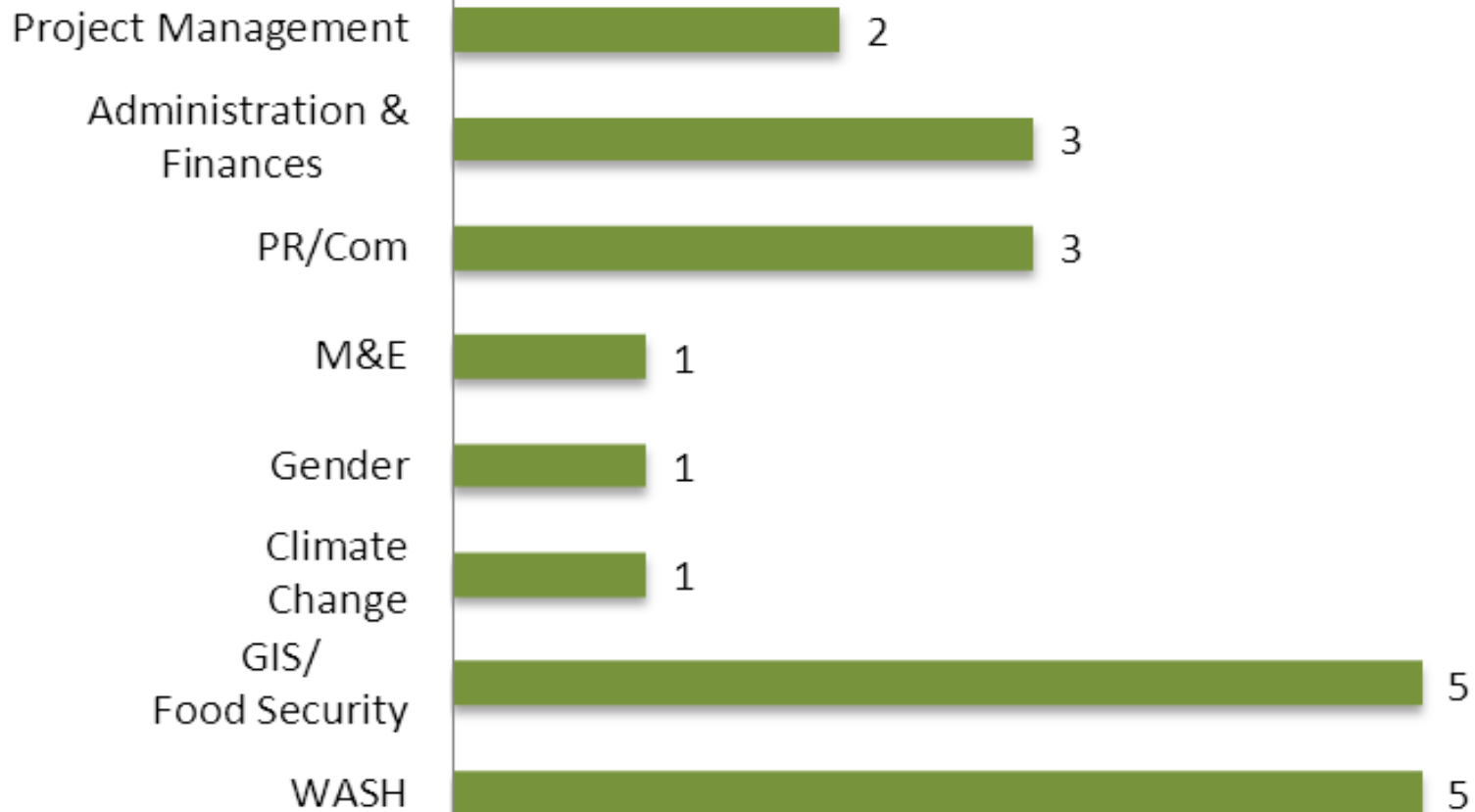
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QUICK FACTS ON INTERNSHIPS

- Number of interns (students):21
- Number of academic institutions: 11 including University of Ouagadougou, University of Koudougou, International Institute for Water and Environmental Engineering, University of Togo,etc.
- Number of Interns(young professionals):29
- Area of studies of all interns: geography, water and environment, communication, languages, project management, economics, finance and accounting, administrative studies, and international studies.
- 11 countries represented including: Burkina Faso, France, USA, DRC, Benin, Comores Island, Cote d'Ivoire, etc.
- Students with theses related to the program's activities: 9
- Fullbright fellows: 1 (University of Colorado)

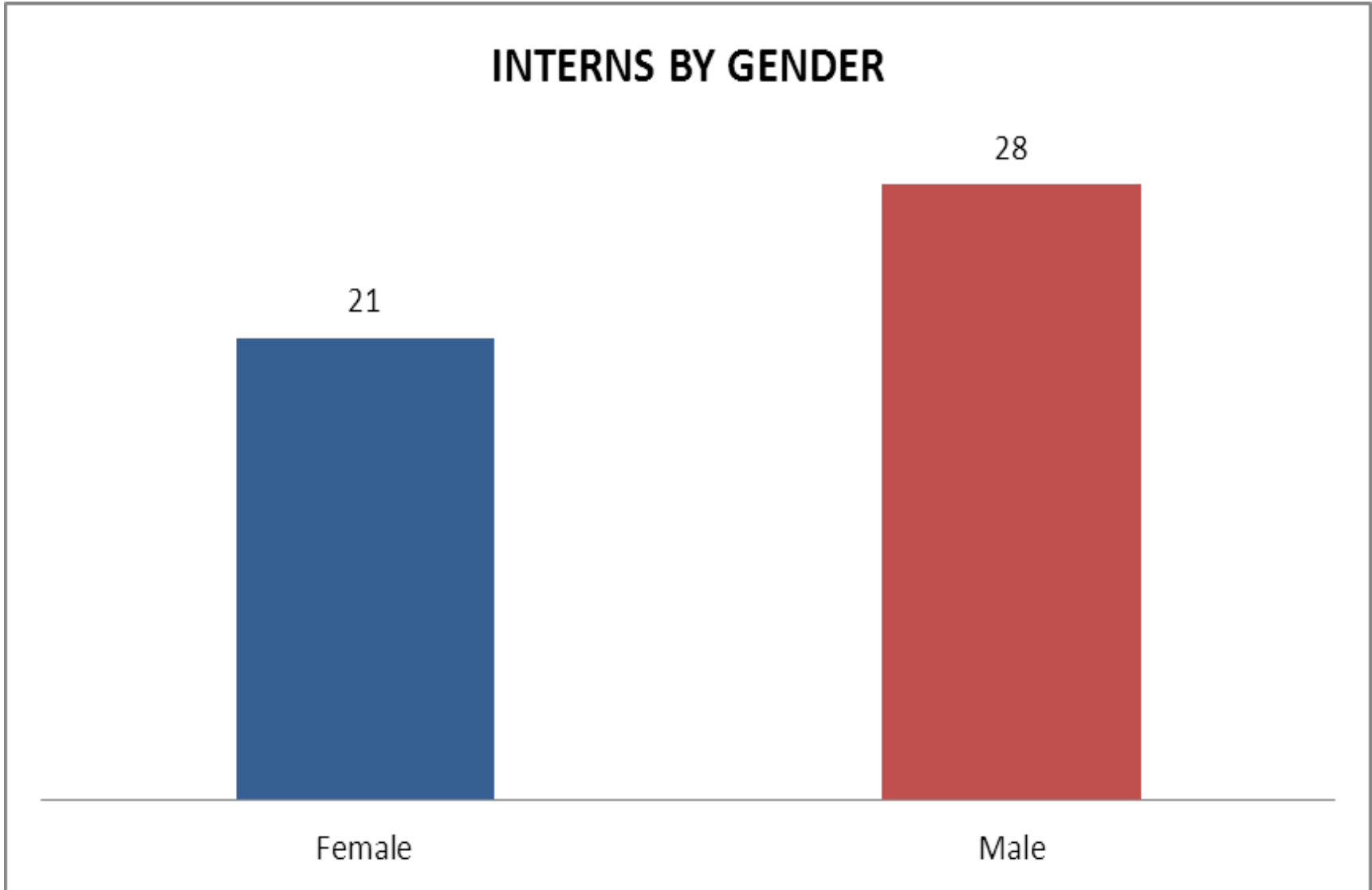
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THESIS BY THEMATIC AREA



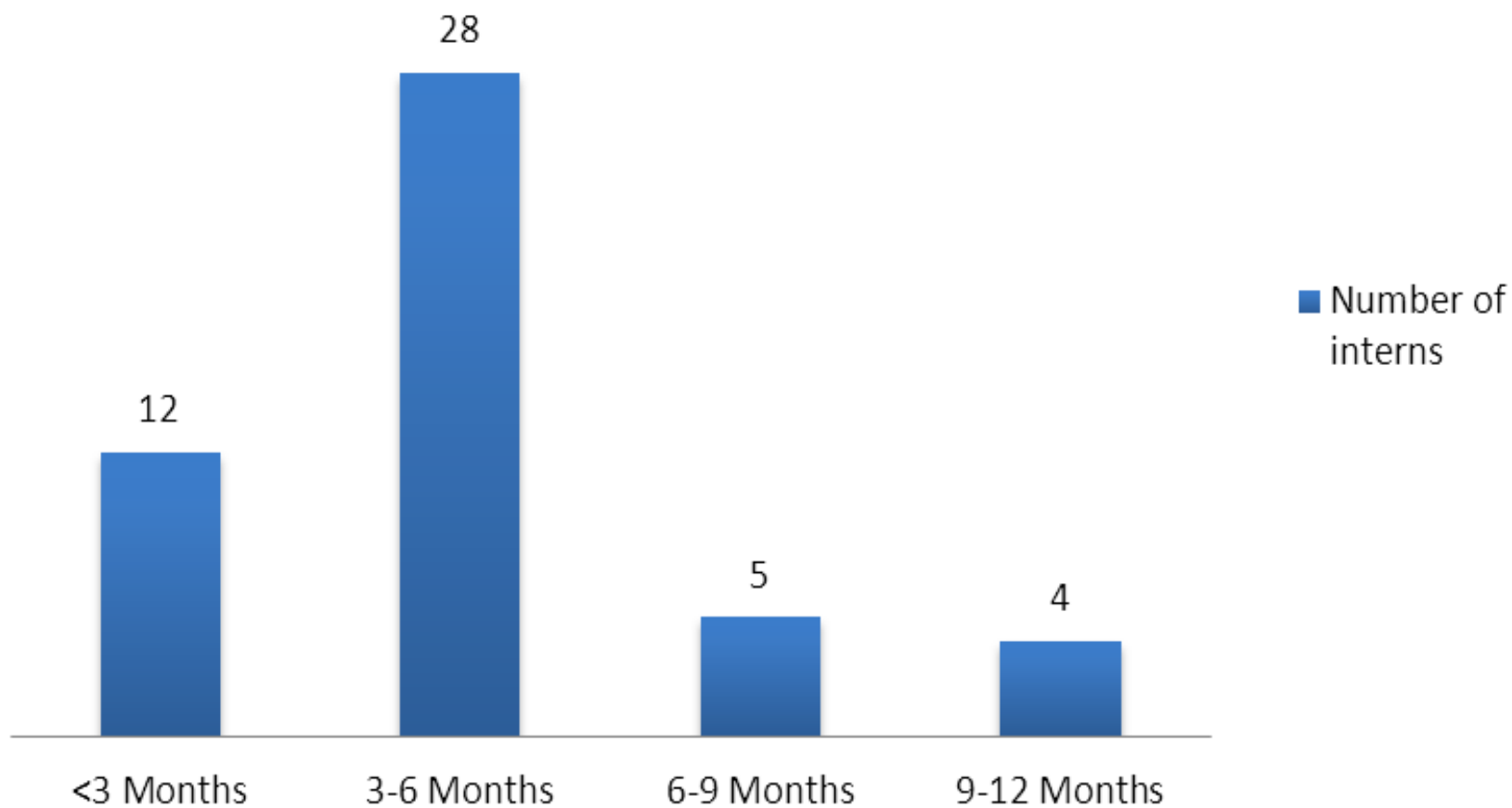
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INTERNS BY GENDER



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INTERNSHIPS DURATION



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WATER SUPPLY BUSINESS DEVELOPMENT

- Family (Niger) and multi-family (Burkina) rope pump model developed
- Three (3) private metal workshop trained to manufacture the multi-family model rope pump (Burkina)
- Pump marketing strategy discussed with metal workshop and sellers (including involvement of KickStart)



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MUS ACHIEVEMENTS

- 7 promising communes (8 villages, 587 households) identified for project implementation, in 3 regions of Burkina Faso
- Training workshops organized for implementing partners and stakeholders
- Preliminary assessment of performance and acceptance of low cost pumps and irrigation technologies in Niger



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WATER SUPPLY FOR COMMUNITIES

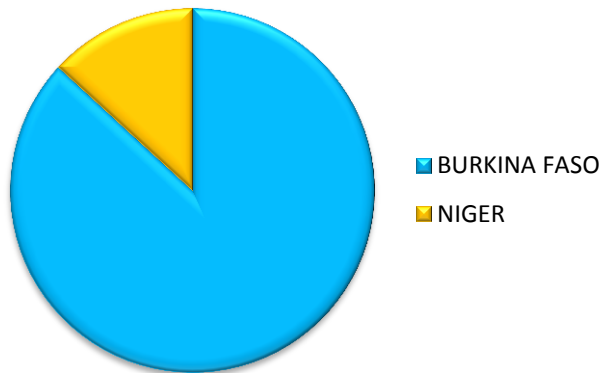
- Establishment of partnerships to increasing access to water, sanitation and hygiene
- Collaboration with Commune of Dori and other donors for the construction of a piped water distribution system (24,700 people gained access to water supply)
- USAID investment of \$100,000 leveraged 900,000 from other donors
- Practical training (provide technical support to Burkina Faso Water Management Agencies)



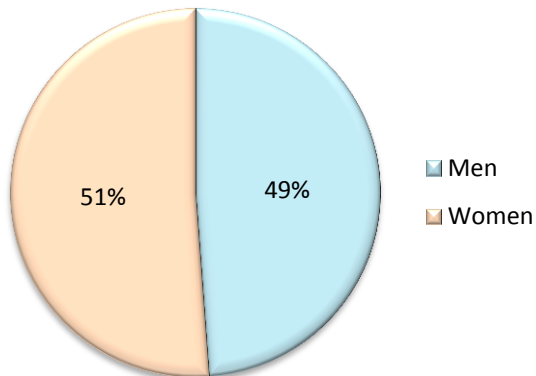
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Number of people gaining access to an improved drinking water source

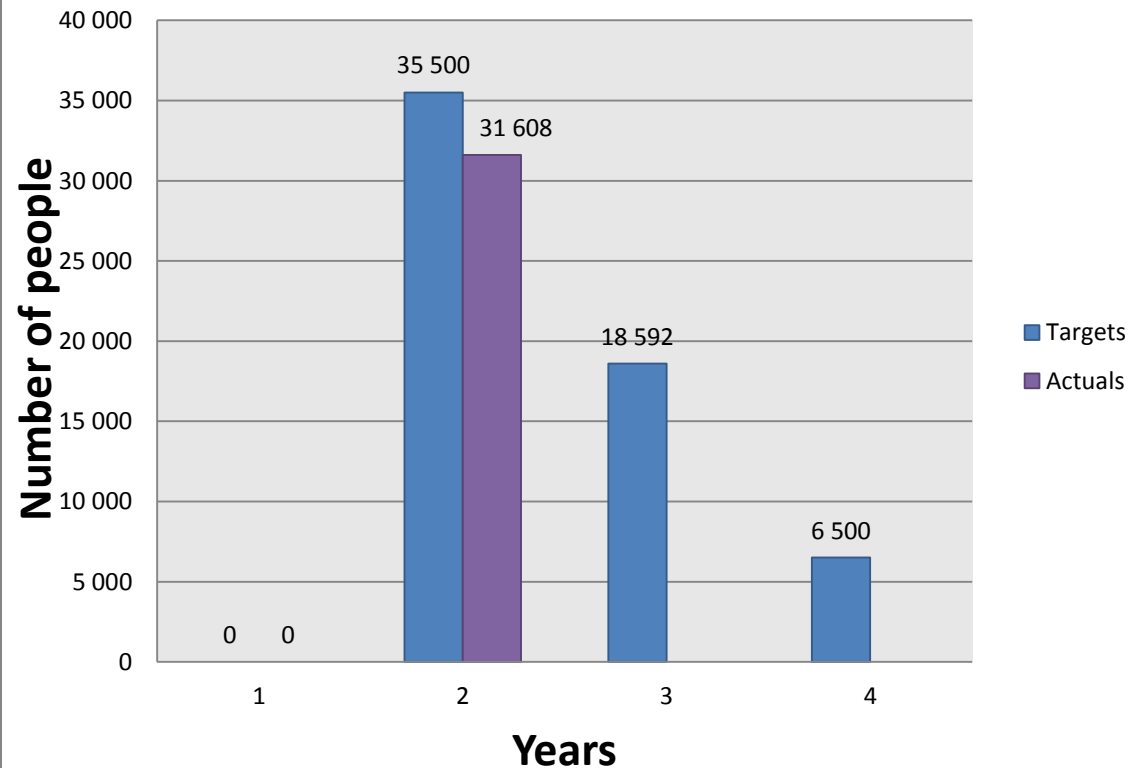
By country



By sex



By year



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PARTNERSHIP PROGRAM



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PARTNERSHIP ACHIEVEMENTS

- GDA/P assessments and analyses done for Burkina Faso, Ghana and Niger.
- Specific partners from Burkina Faso, Ghana and Niger identified and introduced to GDA/partnership principles (through local level meetings and incentives mapping).
- Conducted GDA/P training in Burkina and Niger
- 38 public and private sector actors contacted in the three countries.
- Engagement to develop partnerships with LONAB \$700,000, CNSS \$50,000 and Rotary Colorado 100,000 ... more to come.



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KNOWLEDGE MANAGEMENT/INFORMATION SHARING

- Newsletter(quarterly)
- News Flash (timely)
- Press releases
- Press conferences
- Televised debates (Senegal, Cote d'Ivoire)
- Website (external)
- SharePoint (internal)
- KM/IS Platform (IMS)
- Participation at conferences
- Sponsorship of High Level Forum
- Developing the capacity of local, regional and pan-African organizations



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SAFE WATER HANDLING, STORAGE, AND POINT-OF-USE (POU) ACHIEVEMENTS

- Start up of activities on the ground in Burkina Faso and Niger. Ghana will start soon.
- Design of the campaign to promote Aquatabs in Burkina Faso and Niger. Use of traditional wrestler to promote Aquatabs in Niger.
- Implementation of awareness campaign and sensitization around Aquatabs in Burkina Faso, Niger and Northern Ghana
- Training of hygienists to inform local population
- Development of a sales force and point of sale resulted in over 2 million pills sold in Burkina Faso and Niger

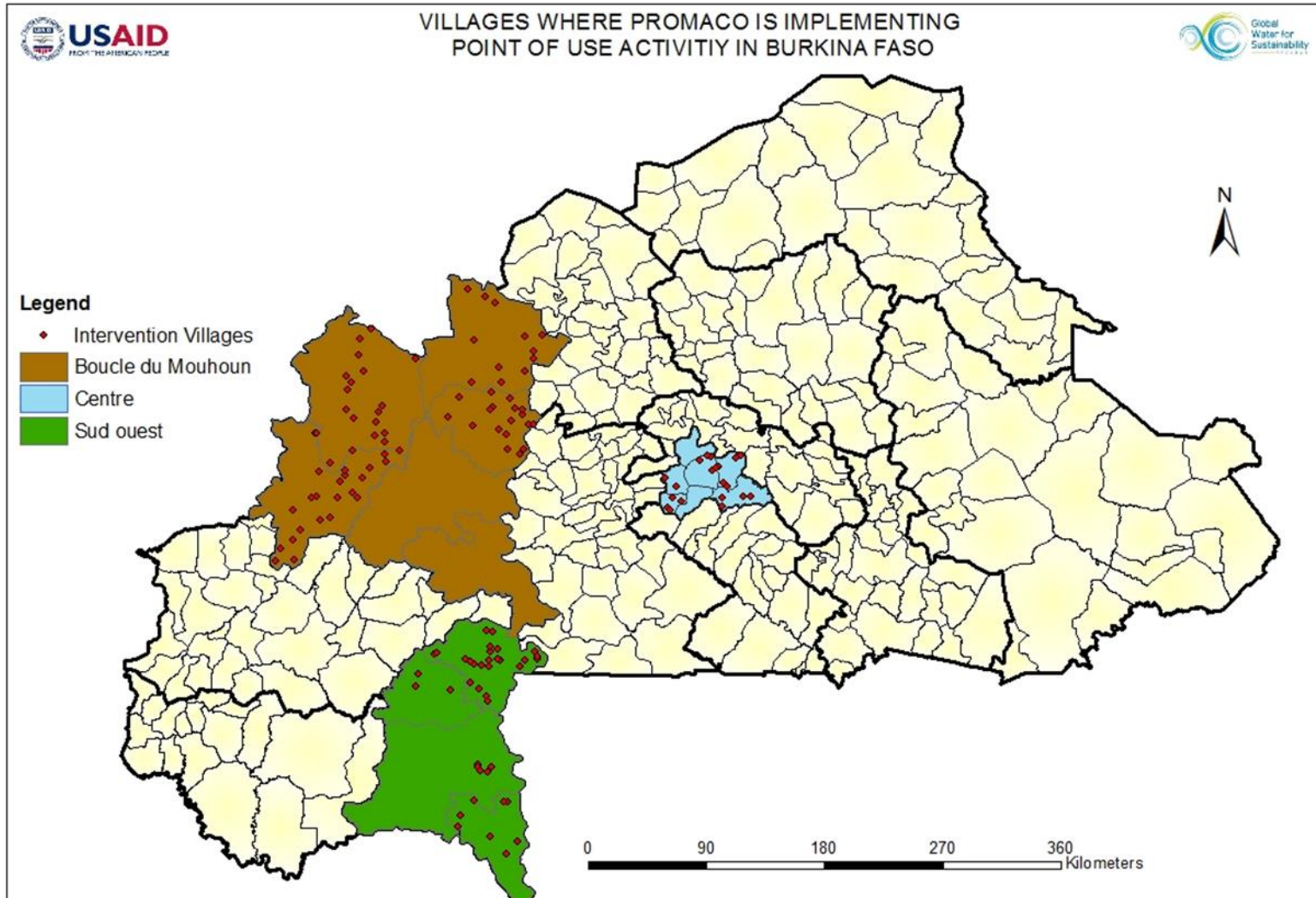


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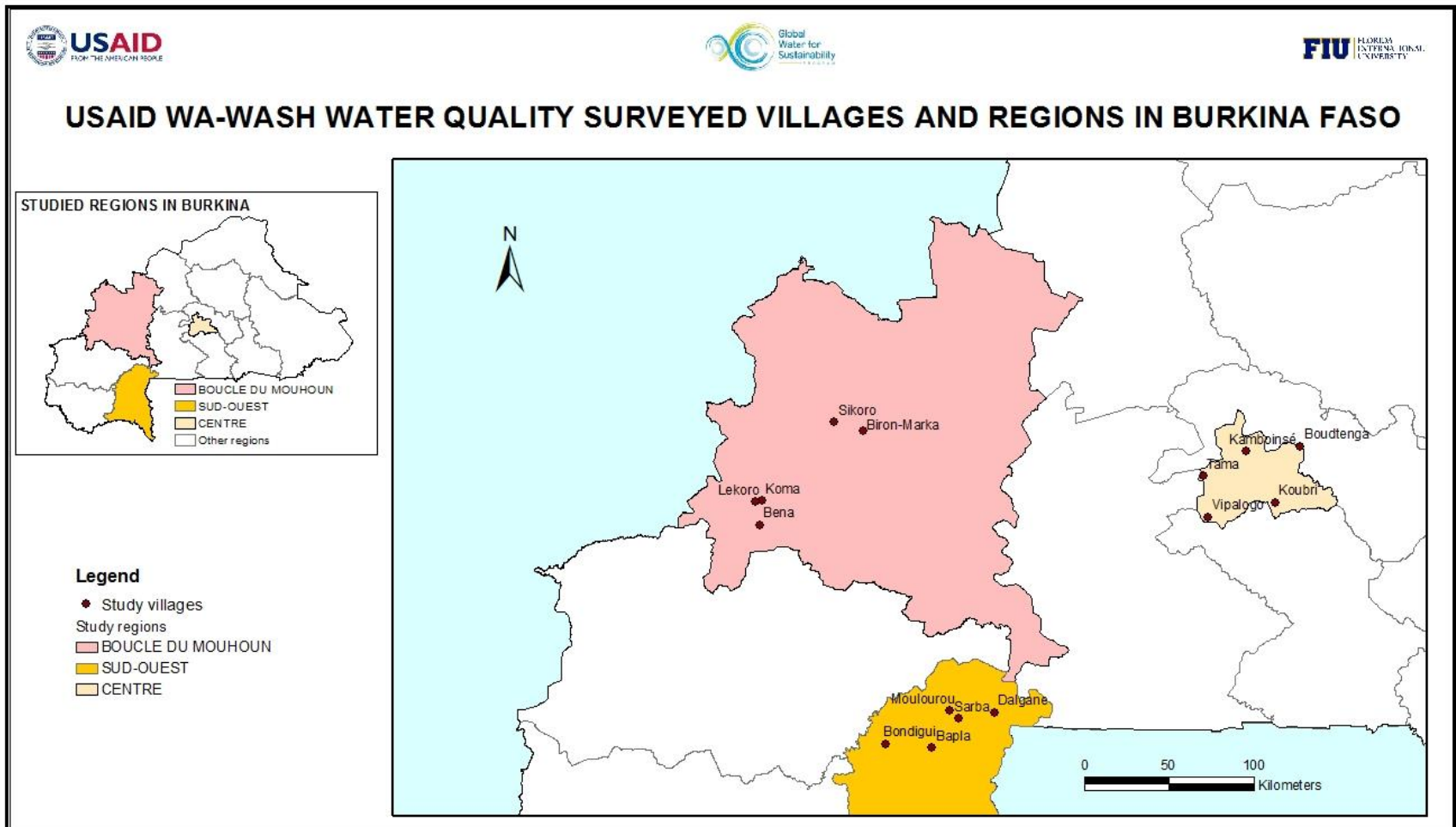
SAFE WATER HANDLING, STORAGE, AND POINT-OF-USE (POU)

- Field survey of water wells completed, results analyzed for:
 - 3 regions/33 communes/56 villages
 - 26 town halls surveyed
 - 25 healthcare centers surveyed
 - 603 households interviewed
 - 25 water point managers interviewed
- Water Quality Assessment with local partner 2iE with following objective:s
 - Assess water quality from various sources (5 villages/region; 2 wells/village, 7 households/well i.e.570 samples analyzed for bacteriological parameters ; 30 samples analyzed for arsenic)
 - Analyze origin of bacteriological contamination (source, transport and storage) and identify steps that could reduce contamination

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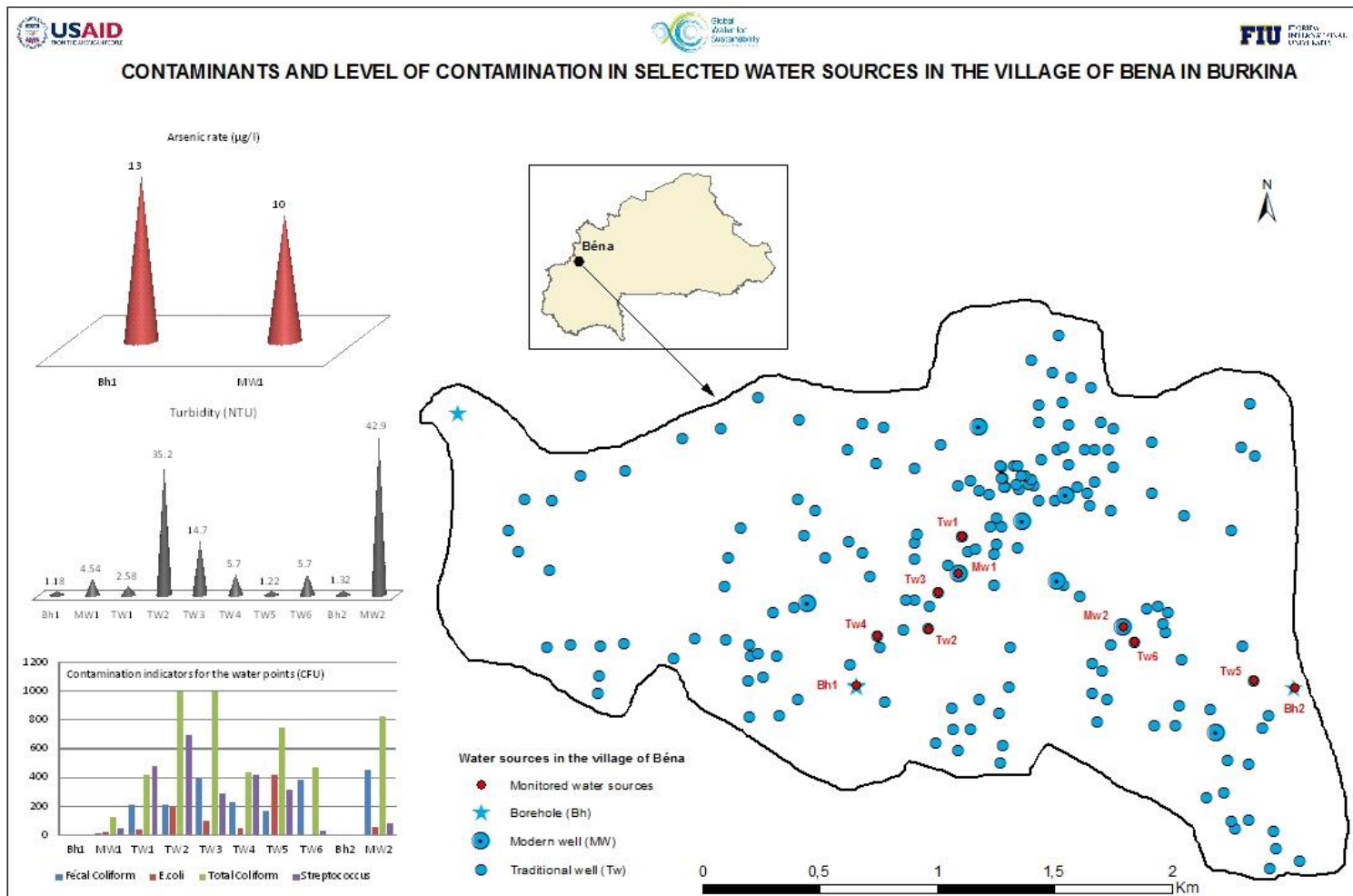


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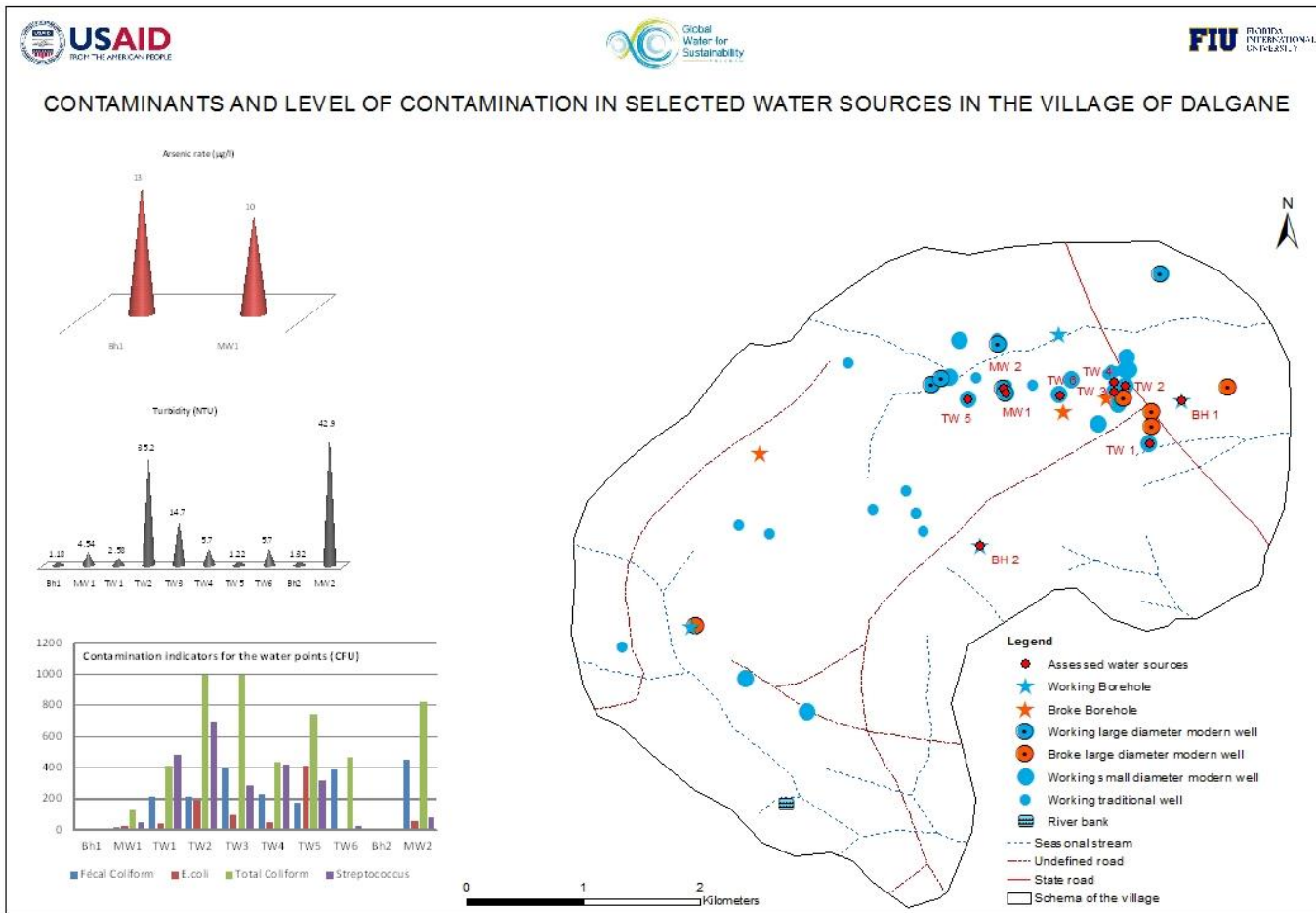
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BENA IN BOUCLE DU MOUHOUN REGION

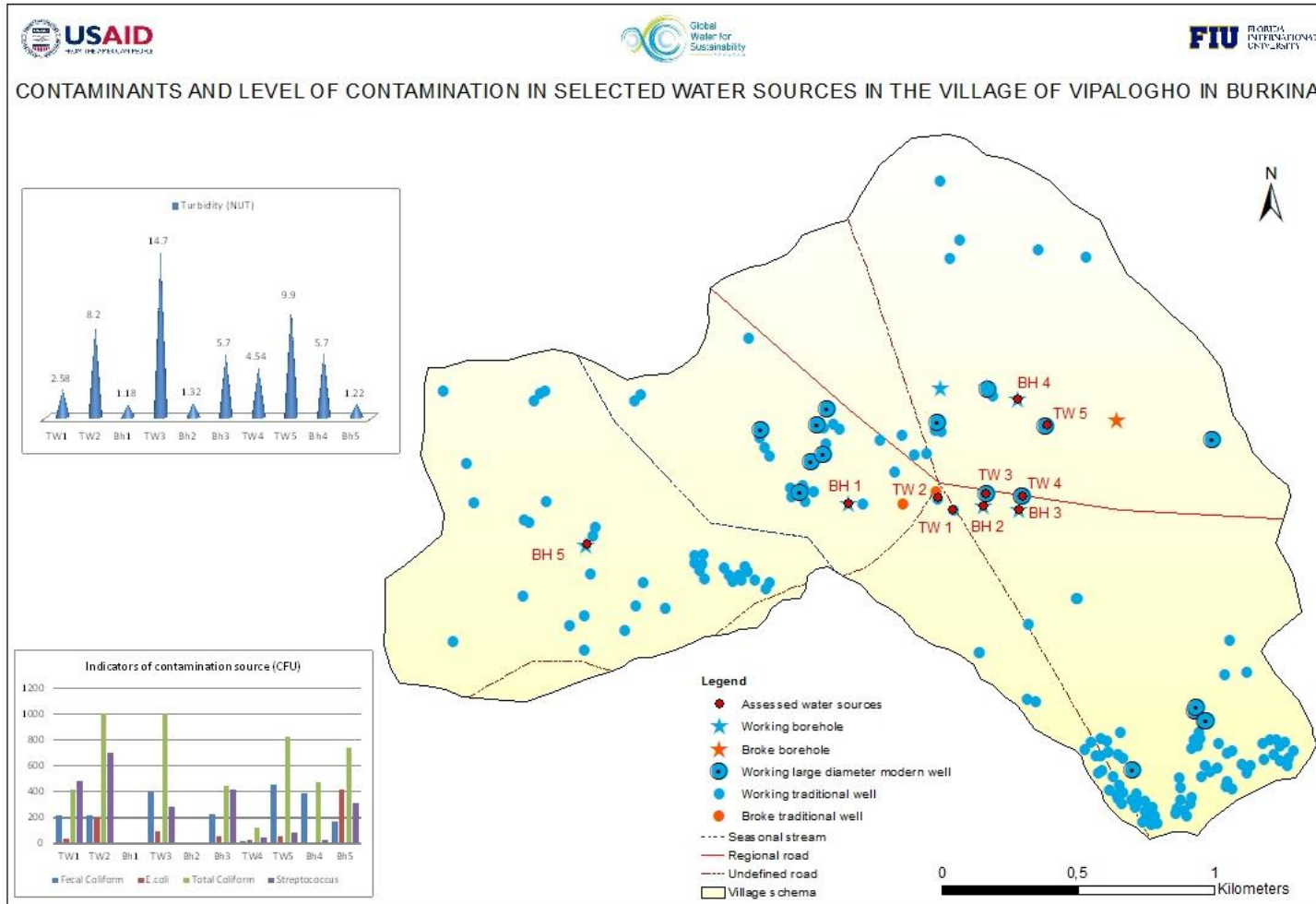


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DALGANE IN SUD-OUEST REGION



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SOURCES OF CONSUMED WATER

- 85.8% of the households surveyed get their drinking water from boreholes.
- 6.6% collect water from traditional wells for convenience of location.
- 7.6% use public taps when they exist



Public tap



Traditional well

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PERCEPTION ABOUT WATER QUALITY

- 83.7% of people think that boreholes water quality is good
- 2.8% think that water quality is average
- 1.2% think that the quality of their water is poor
- 12.3% think that water quality varies with the season



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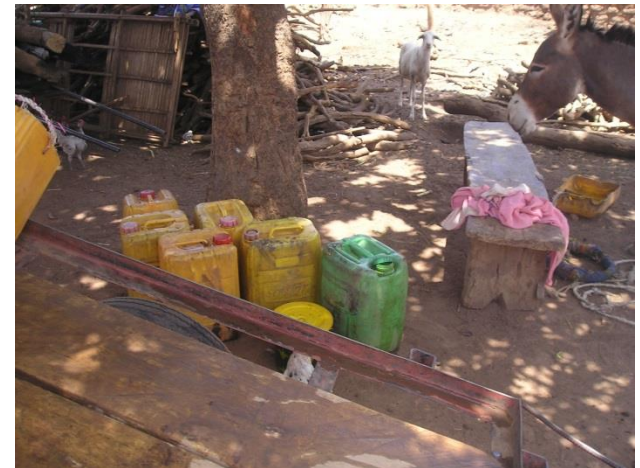
HOUSEHOLDS BEHAVIOUR DURING TRANSPORT

- Type of containers use to transport water
 - plastic containers of 20 liters (61.5%)
 - metallic flat recipients (15%)
 - plastic buckets (12.5 %)
 - steel barrels (11 %) .
- Preservation of water quality
 - 61.2% of respondents confirm protecting their water during transport
- Container cleaning
 - 97% of women say they clean containers used for transport, using different cleaning methods
 - 29% perform a simple water rinse
 - 53 % use soap
 - 18% mixed sand or gravel before rinsing with water

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PERCEPTION OF WATER QUALITY DURING TRANSPORT

- 81.6 % think that water quality may deteriorate during transport
- Respondents are aware that water needs to be protected during transport from the source to the house
- Respondents believe that if not protected, water can trap dust



Containers used to transport water

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HOUSEHOLDS BEHAVIOUR DURING STORAGE

- Types of container used for storage
 - The majority of villagers (82%) use jars (canary) made with mud
 - 12% use the type of bucket used for transport
 - 5% use plastic cans
 - 1% use metallic barrel



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HOUSEHOLDS BEHAVIOUR DURING STORAGE

- Villagers are aware of the need to cover their storage container
 - 95 % of them claim to cover their water containers
- Cleaning the storage containers
 - 98% of women clean their storage containers everyday
 - 2% every other day
 - Cleaning mode includes using soap in 58 % of cases, the remaining use only water
- Container storage location
 - 52% keep the storage containers indoor
 - 26% store the containers outdoor
 - For other it depends of the use of water, drinking water is kept indoor, while water for other uses is kept outdoor

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PERCEPTION OF WATER QUALITY DURING STORAGE

- 72.2% believe that water quality may deteriorate during storage
- The reasons given are:
 - Poor protection of the storage container
 - Lack of cleaning of the storage container
 - Duration of storage
- More than half of respondents believe that the protection of the container is a key factor for preserving water quality
- Most households recognize that water should not be stored for a longtime

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STORAGE CONTAINERS



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LAB PHYSICAL AND CHEMICAL RESULTS

TURBIDITY

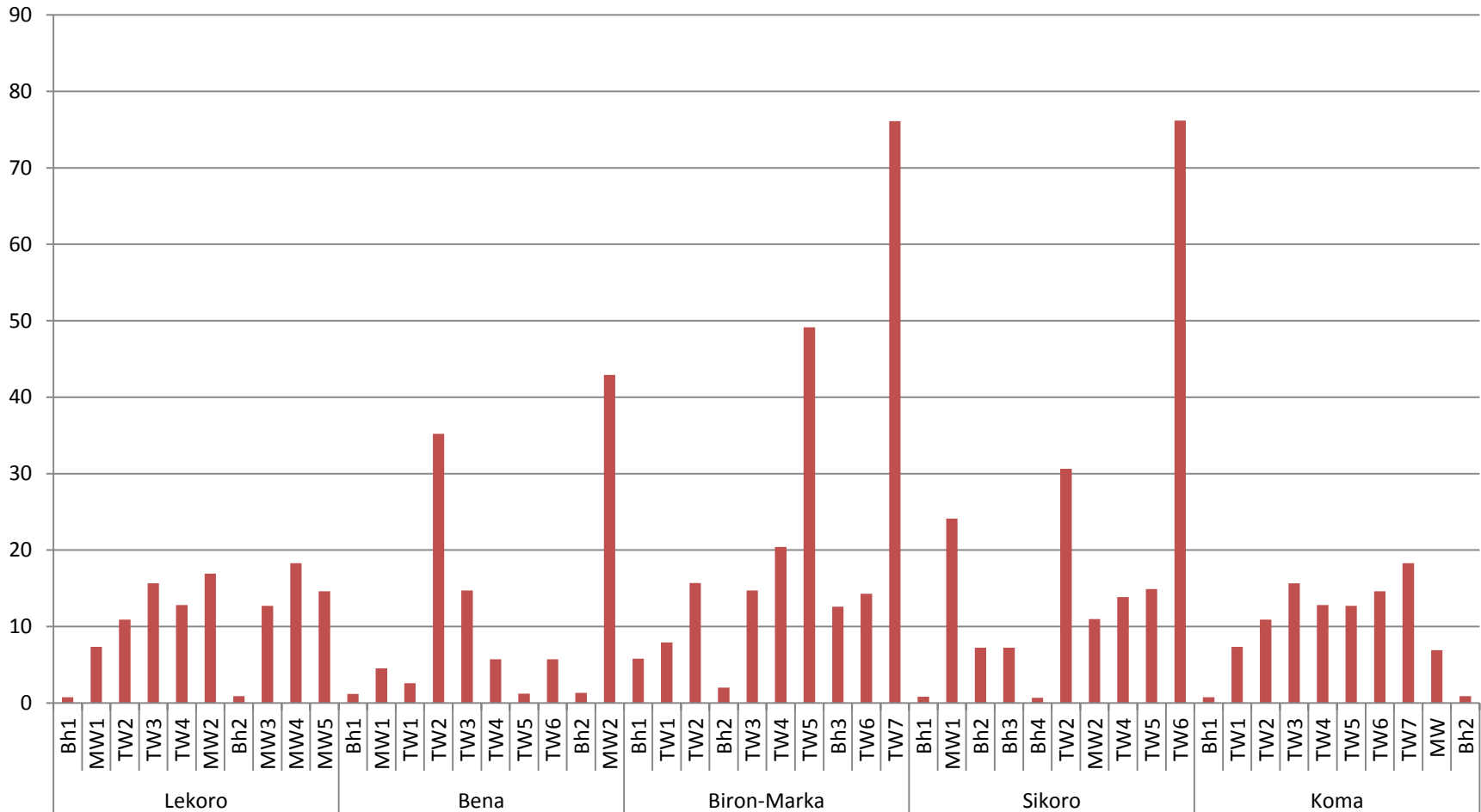
- WHO standard for water turbidity is 5 NTU
- 16% of the surveyed boreholes do not meet this standard
- 80% of wells tested exceeded this standard
- All the public taps meet this norm



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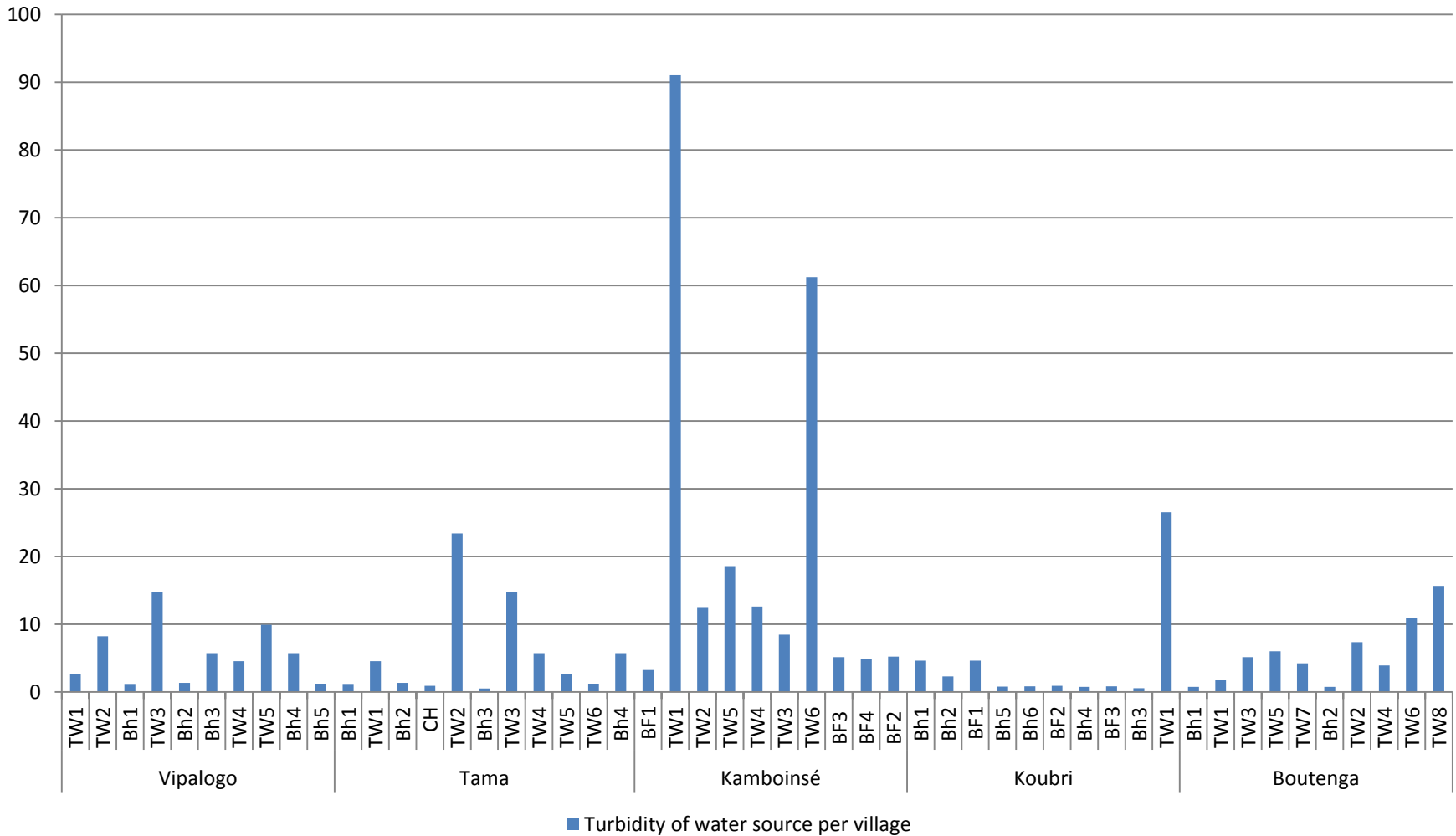
Turbidity of water source per village in Boucle du Mouhoun Region

■ Turbidity of water source per village



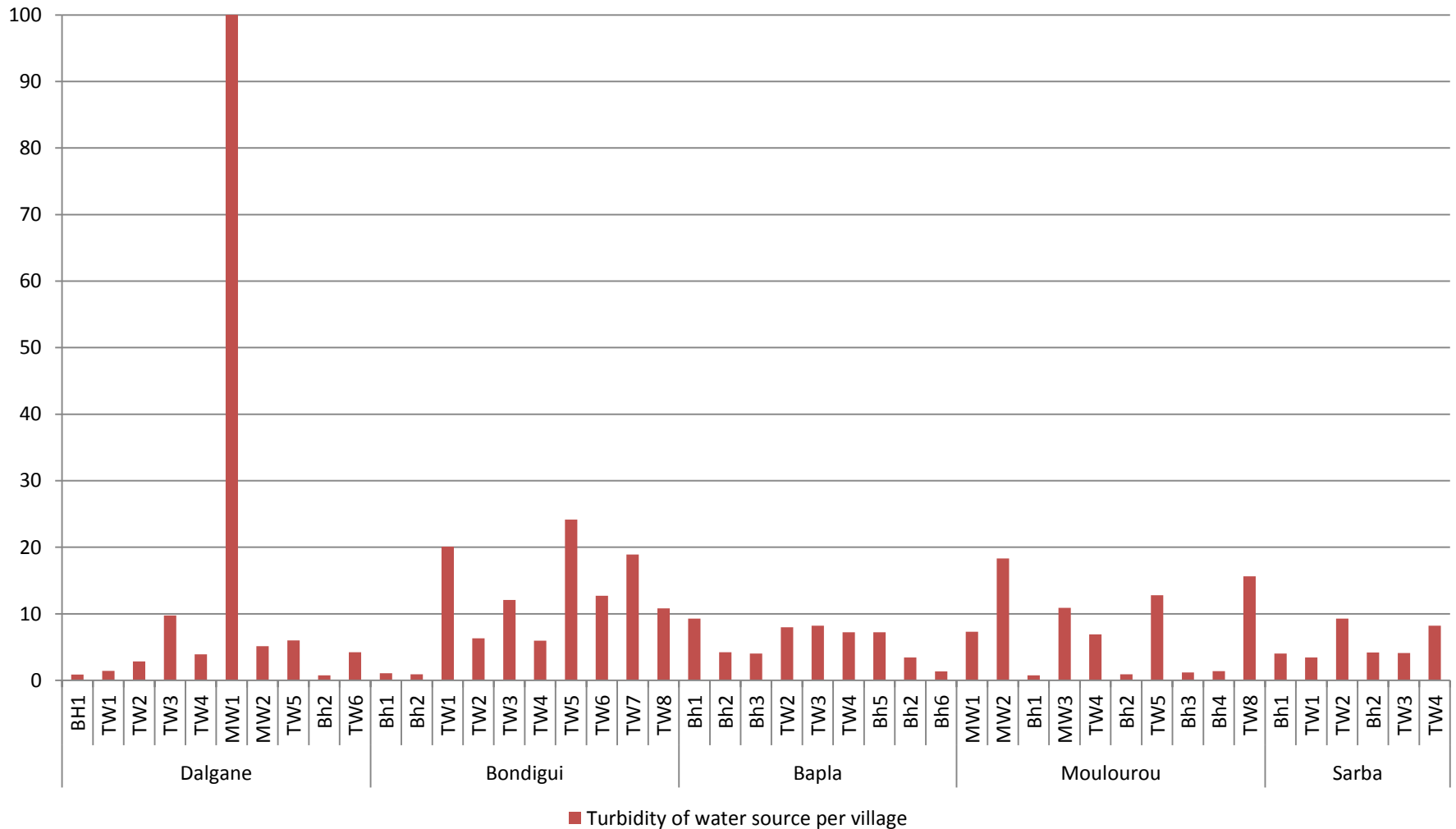
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Turbidity of water source per village in Centre region



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Turbidity of water source per village in Sud-Ouest Region

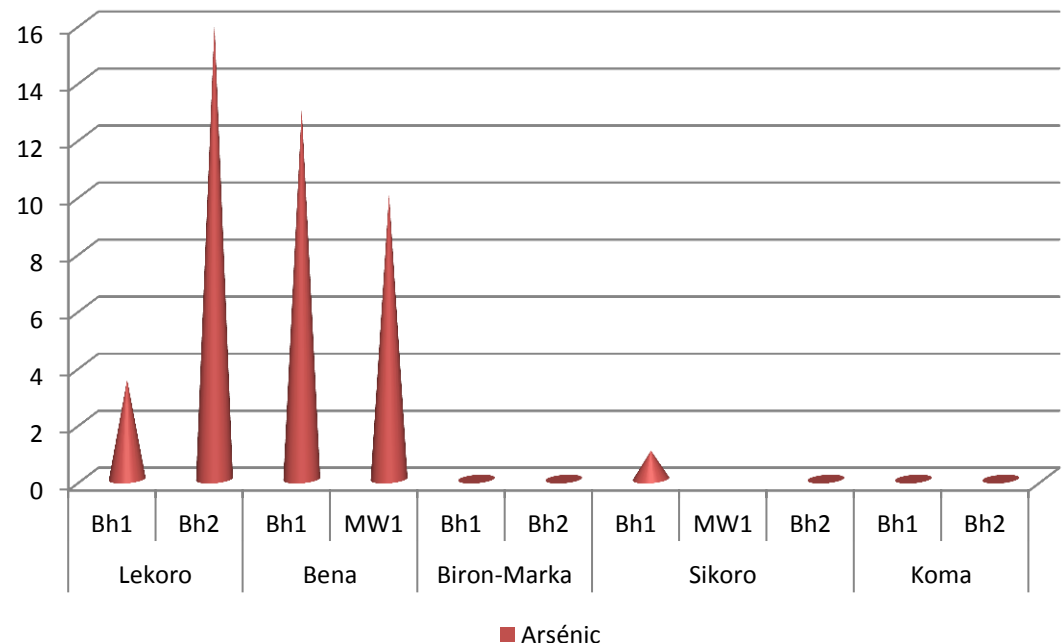


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ARSENIC

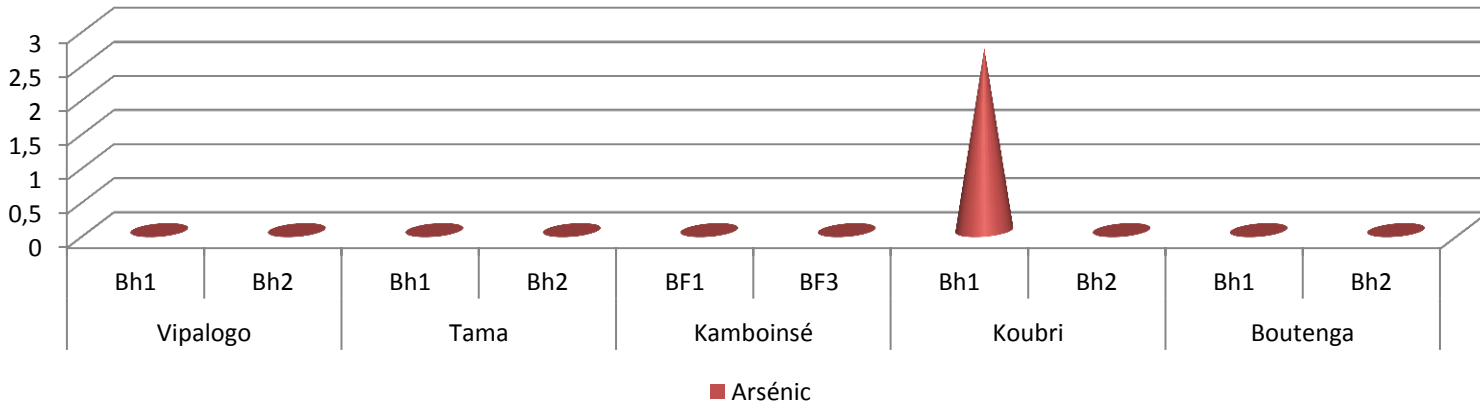
- Standard set by WHO is 10 mg /l
- 35 boreholes out of the 38 sampled met this standard
- 3 boreholes contained an arsenic level between 10 and 20 mg/l

Arsenic in Boucle du Mouhoun Region

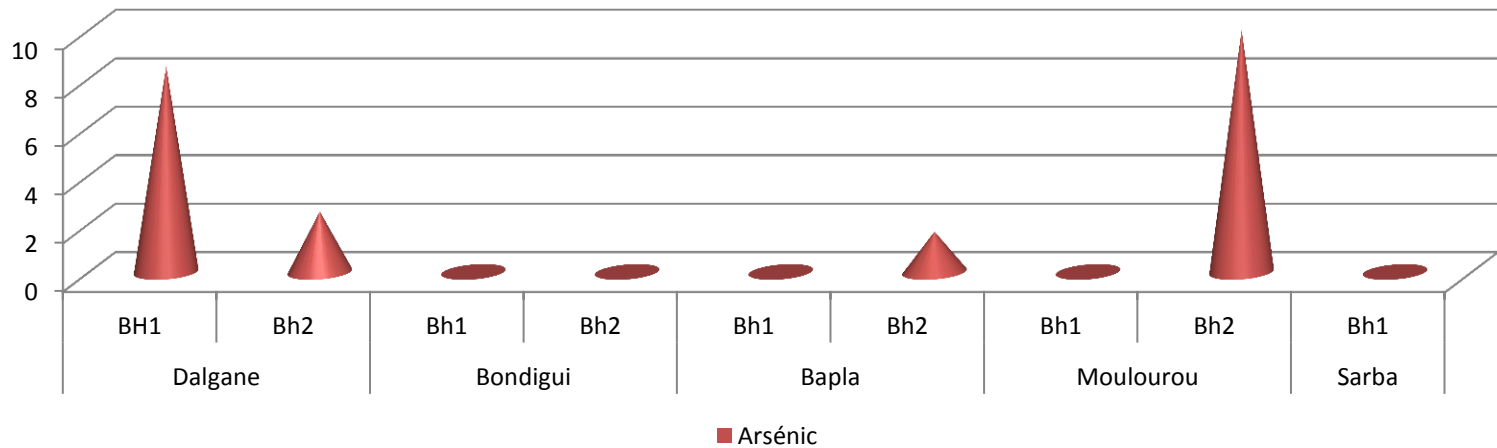


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Arsenic in center region



Arsenic in South West region



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MICROBIOLOGICAL PARAMETERS

- Two classification methods have been used in this study: WHO and Faechem methods
- WHO considers zero fecal contamination per 100 ml for drinking water.
- Faechem method classification:
 - Drinking Water: free of contamination
 - Acceptable water: concentration below 100 CFU per 100 ml ,
 - Unsafe water: concentration below 1000 CFU per 100 ml ,
 - Extremely contaminated water: concentration greater than 1,000 CFU per 100 ml .

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MICROBIOLOGICAL RESULTS FOR WATER SOURCES

Results of WHO method

- Boreholes
 - 60% of the boreholes are free of microbiological contaminants
 - 10% are somewhat contaminated
 - 30% are highly contaminated

- Wells
 - 2.7% are not contaminated
 - 8.2 % are contaminated
 - 89.1% are highly contaminated

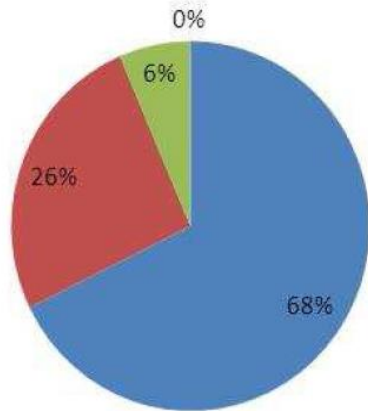
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MICROBIOLOGICAL RESULTS FOR WATER SOURCES

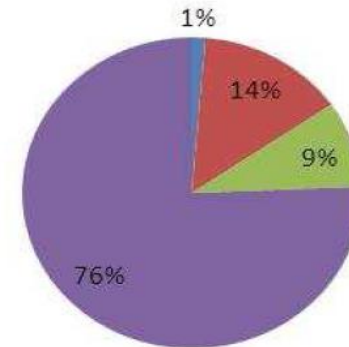
Results of Faechem method

■ eau potable ■ eau acceptable ■ eau impropre ■ eau très contaminée

Boreholes



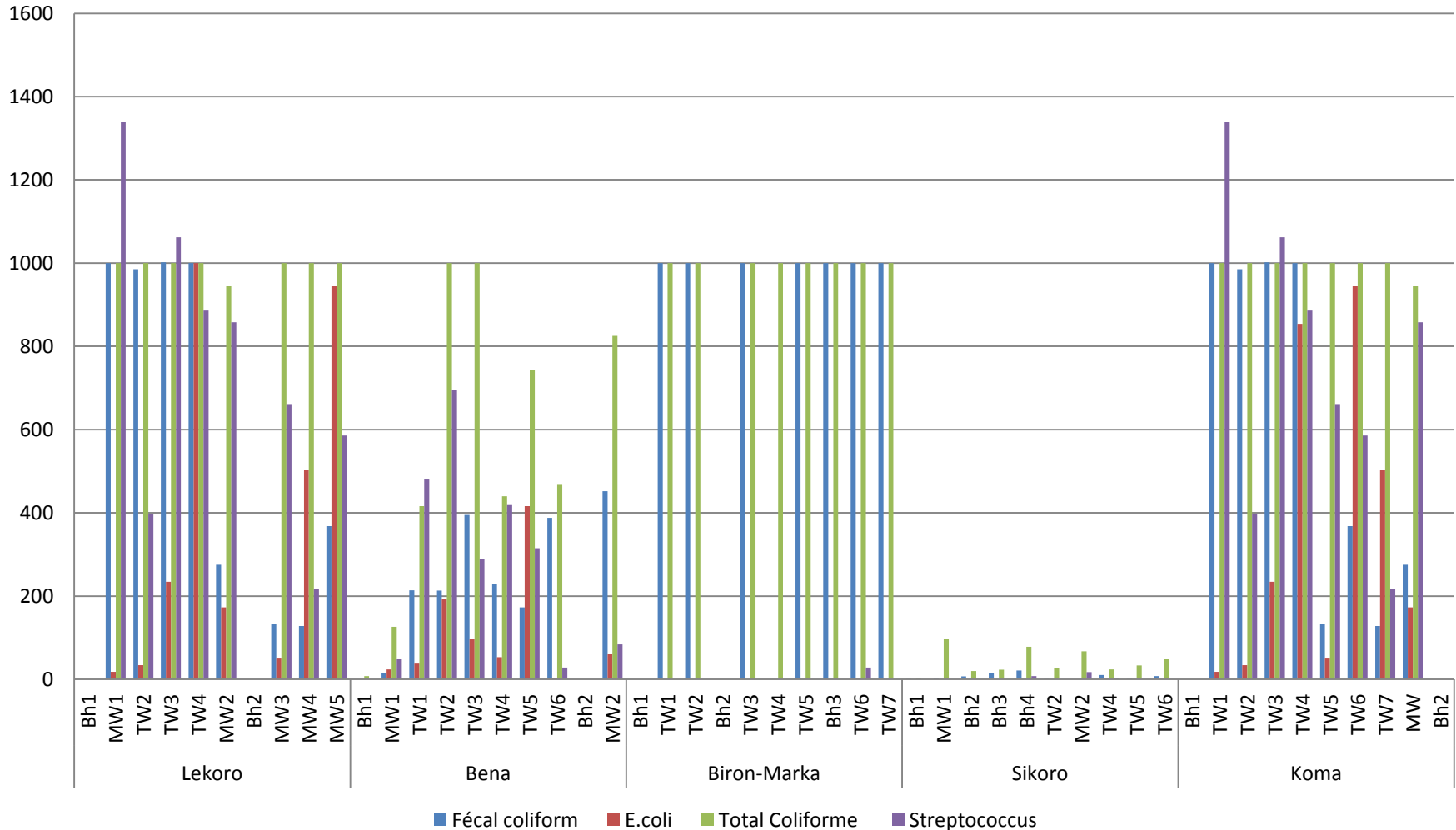
■ eau potable ■ eau acceptable ■ eau impropre ■ eau très contaminée



Wells

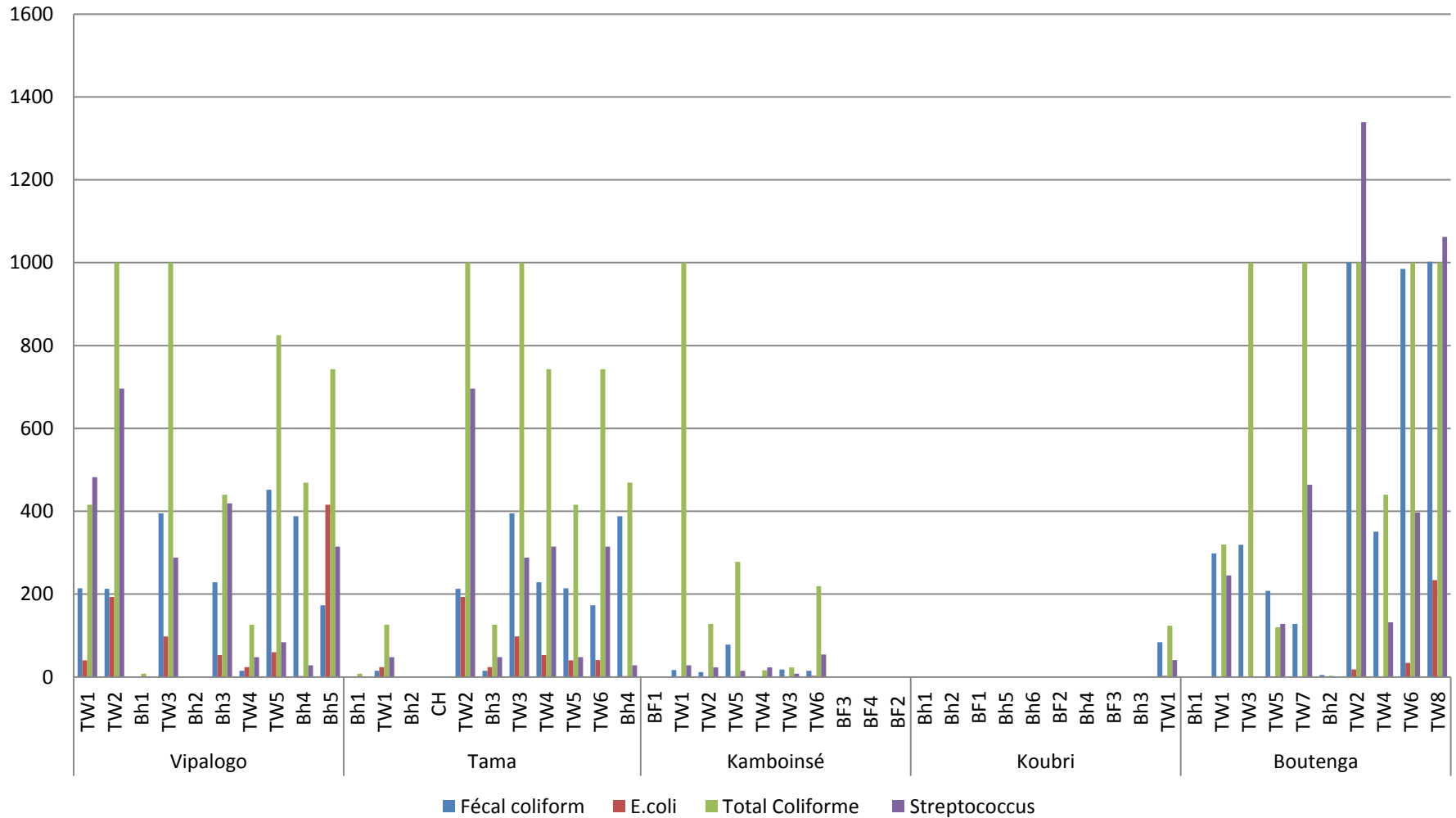
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Microbiological Contamination in Boucle du Mouhoun Region



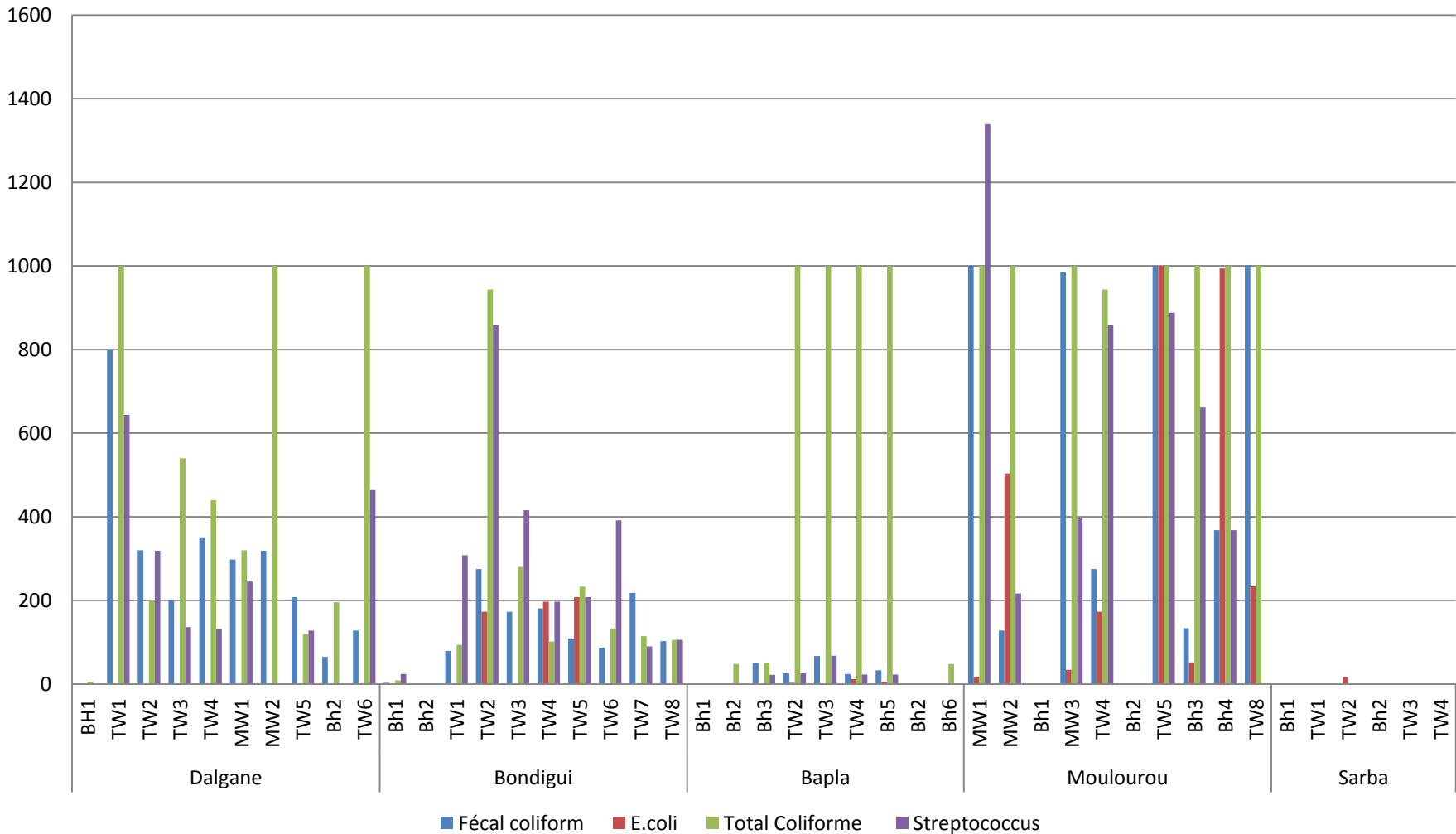
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Microbiological Contamination in Centre Region



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Microbiological Contamination in Southwest Region



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WATER QUALITY ANALYSIS SUMMARY

The Objective of the study was to assess current water quality and the risk of water contamination along the supply chain (source, transport and storage)

- People are aware of the need to have access to clean drinking water
- The majority of households (84%) are aware that water quality has an impact on their health
- Unsafe water handling during transport and storage are increasing bacterial contamination of drinking water
- There is a difference between boreholes and traditional wells
- Close to 10% of the water sources had an unacceptable arsenic level

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WATER QUALITY MONITORING CHALLENGES AND OPPORTUNITIES

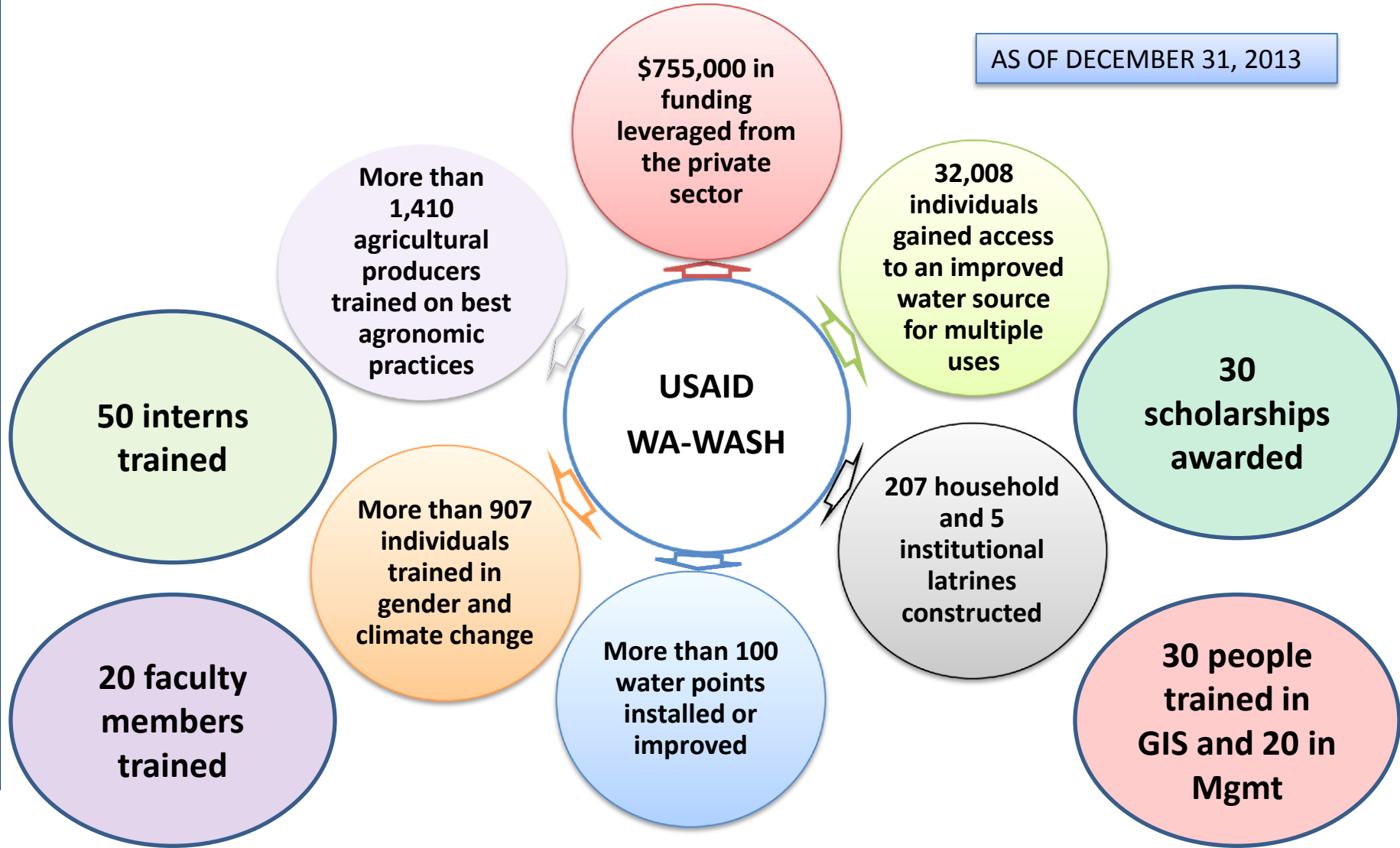
1. Lack of human capacity
2. Equipment shortages
3. Lack of equipment
4. Lack of funding
5. Lack of trained personnel
6. No integration of needs

1. Availability of “trainable” personnel
2. Willingness of government to address the issue
3. Academic institutions can help
4. Private sector presence
5. Working with other donors
6. Presence of local, regional and pan-African orgs

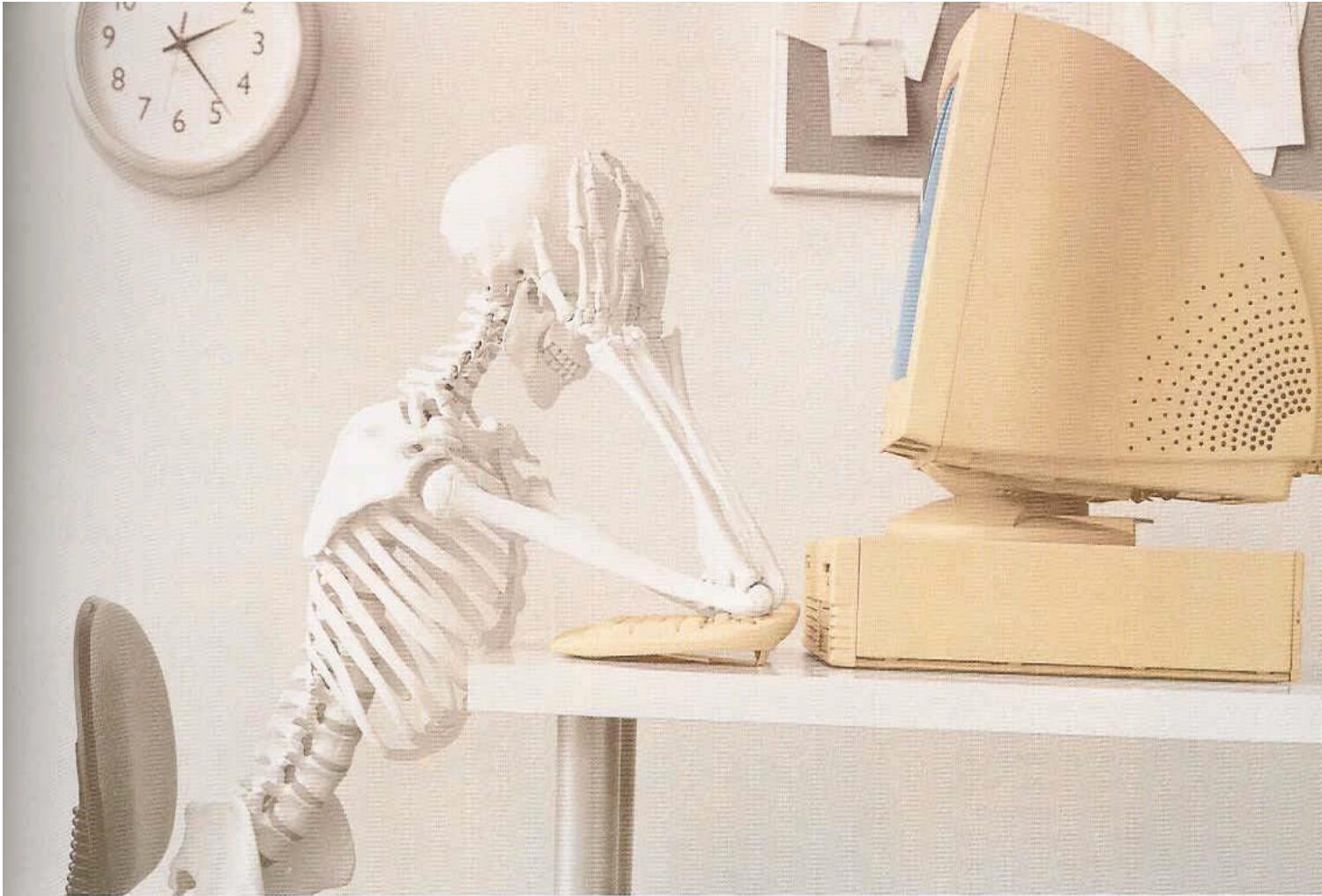
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MAIN ACCOMPLISHMENTS

AS OF DECEMBER 31, 2013



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WATER QUALITY RESULTS CAN GIVE YOU A VERY BAD HEADACHE!!!

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CONTACT INFORMATION

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