Improving Sustainable Water Access to Rural Communities in Guinea

A proposal prepared for the AJA Charitable Trust

OCTOBER 2018

Overview

The Ebola outbreak of 2014-2016 highlighted the need to strengthen water, sanitation and hygiene (WASH) health-related preventive measures at all levels in Guinea. Safe drinking water and adequate sanitation are essential for life and health. A sustainable supply of safe water, adequate sanitation and improved hygiene not only saves lives, but also has significant effects for girls and women, who bear primary responsibility for fetching water, which is often unclean and far from home. This daily chore exposes them to the potential risk of violence and can prevent girls from attending school. UNICEF believes that access to WASH goes far beyond health improvements, positively affecting areas such as human rights, girls' education, gender relations and nutrition.

In 2000, approximately 47 percent of the population in rural Guinea consumed contaminated water, further increasing the risk of communicable diseases; the success of the manual drilling project supported by your previous gift has helped bring that percentage down by 2015 to 32 percent.[1]

Still, rural communities remain poorly served with too few sources of safe water in areas that are too widely spaced apart. UNICEF estimates that at approximately 10,154 water points are required to meet to the country's basic water supply needs. And although the number of people sharing a water point should only be 300, data collected by the national water service agency (Service National d'Aménagement des Points d'Eau, or SNAPE) shows that an average of 1,500 people in fact share the same water point. With WASH services still recovering from the largest Ebola outbreak in human history, children in Guinea remain vulnerable to preventable illnesses and diseases.

The generous gift and commitment of AJA Charitable Trust beginning in 2013 enabled UNICEF and the Government of Guinea to pilot a manual drilling and community water management model for bringing safely managed water to children and their families in Guinea (Phase 1). Because of the great success of this model, the government and UNICEF are ready to scale up the program and continue to make progress toward bringing safely managed water to the most vulnerable and hardest to reach children and their families (Phase 2).

Children retrieving water from an unsafe source in rural Guinea.

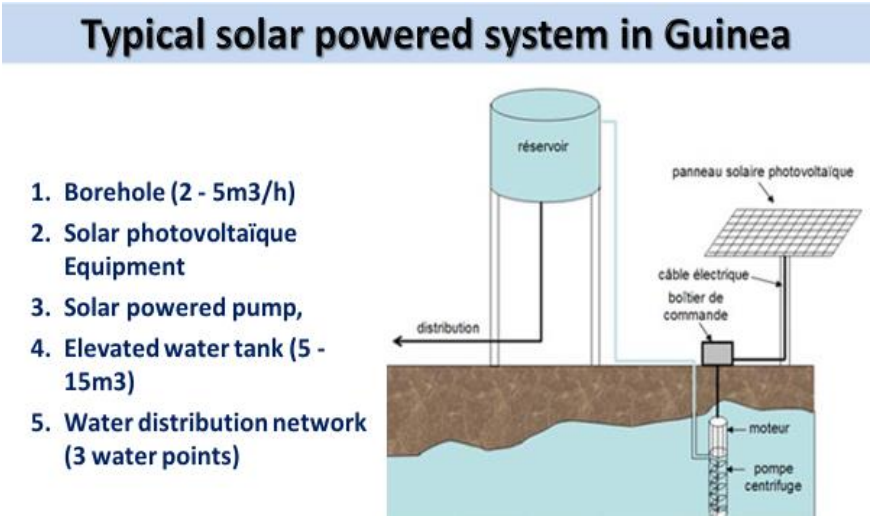
[1] Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and SDG Baselines. Geneva: World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), 2017. Online at https://www.unicef.org/publications/files/Progress_on_Drinking_Water_Sanitation_and_Hygiene_2017.pdf.

UNICEF in Action

UNICEF uses manual drilling technology in Guinea to reduce the cost of water points in hard-to-reach locations and to build expertise in their maintenance within communities. Based on the success of the initial pilot project in 122 villages that was made possible with support from AJA Charitable Foundation, the Government of Guinea has adopted UNICEF's process for professionalizing manual drilling and developed a hydrogeological map to outline areas suitable for manual drilling.[2]

As previously reported and shown here in Annex IV, the pilot project funded with support from AJA Charitable Foundation directly benefitted 83,677 people in rural Guinea, bringing them a safe and sustainable supply of safe water. This generous support of the pilot project was a catalyst for additional partners - including the European Union and the Netherlands – to contribute to manual borehole drilling in Guinea. Together, these partners supported the manual drilling of an additional 43 boreholes in the targeted areas of the pilot project, increasing the total number of project beneficiaries to 120,178. [3]

The core of UNICEF's approach is to build the skills of local artisans and private sector capacity for manual drilling by providing the tools and training required to meet the demand for safe water beyond donor assistance. UNICEF is committed to helping meet the Sustainable Development Goals (SDGs), including SDG 6 that seeks to ensure safe, sustainable water and sanitation access for the most vulnerable rural communities. To this end, Guinea will be expanding its manual drilling program with a new option that will combine manually drilled boreholes with solar-powered pumping systems, which are an upgrade from previously used hand pumps. Solar-powered water pumps will feed pipe systems and water towers, promoting resilience in the water supply, even during times of drought. And unlike their diesel-powered counterparts, solar powered pumps generate no emissions and they break down far less often than diesel-powered or hand pumps, with a life span of approximately 30 years. Solar-powered systems can also be used to reach water sources of greater depth than can be reached by hand pumps, have no operating costs, and require less effort to operate.[4] Another advantage of solar-powered systems is that they can be used for multiple purposes, not only powering water pumps but also to contribute to providing electricity to schools and health centers, or to charge cell phones.



[2] The Government of Guinea has adopted the piloted UNICEF-supported manual drilling model as a low-cost alternative intervention to bring safely managed water to small communities of up to 1,000 people. The government's water ministry (SNAPE) will oversee the selection of local companies, construction and final technical verification of boreholes. UNICEF will continue to provide guidance and capacity building support to local companies.
[3] The chart outlining manually drilled boreholes during the pilot project/Phase 1 is provided in Annex III. The number of people served per borehole in each village is an average of the total population divided by the number of boreholes available.
[4] UNICEF Solar Powered Water System Assessment, 2016. Online at https://rwsnforum7.files.wordpress.com/2016/11/rwsn-presentation-unicef-solar-system.pdf.

The Impact of Your Support

This Phase 2 of the project will build on the success of Phase 1 and scale up sustainable access to safe water in remote villages in the regions of Labé and NZérékoré. UNICEF will also promote good hygiene practices to help reduce water-borne diseases in rural communities. Three specific objectives for the project are:

- Scale up access to safe water for rural communities/villages through low cost water supply technology options;
- Empower rural communities to adopt good hygiene practices; and
- Strengthen community-based management of water facilities and water supply infrastructure.

Phase 2 will cover 34 rural municipalities in the regions of N'Zérékoré and Labé over four years, benefitting at least 210,148 people. This number includes 20 municipalities in which existing boreholes will be retrofitted with solar powered pumping and water systems and at least167 villages where up to 200 boreholes will be drilled.

Improving water access for at least 210,148 people

The same low-cost manual borehole drilling methods and technologies used in Phase 1 will continue to be used in Phase 2 of the project. The number 210,148 represents the total known population that will benefit from Phase 2: 139,290 people in 20 municipalities that will benefit from retrofitting 20 existing boreholes with solar powered systems and 70,858 people in 167 villages that will benefit from new manually drilled boreholes (38,617 of whom will be served by hand pumps and 32,241 of whom will be served by solar powered systems). An additional 33 boreholes equipped with hand pumps could be drilled in new villages, meaning thousands more people could benefit from Phase 2.[5] The actual number of additional beneficiaries can only be known once the villages are identified and the population counted. UNICEF has requested flexibility in determining the right locations for these additional boreholes as the project progresses.

The 20 retrofitted solar powered pumping systems will be installed on existing boreholes in the main town of each targeted municipality. UNICEF will seek a qualified company to equip the selected boreholes with a solar-powered pumping system, a water tower and a water distribution pipeline that will serve five public water fountains. Whenever possible, schools and health centers will be connected to this system. In each municipality's town receiving the solar powered water system, two local technicians will be trained with the support of SNAPE on daily operating processes and maintenance.

Over the past several years, UNICEF has been exploring new and innovative approaches to water supply, placing an emphasis on systems that are affordable, scalable, environmentally sustainable and climate smart. Solar powered water systems have the potential to meet all these criteria, and the systems can also help provide a higher quality service to multiple communities through the use of small piped water schemes. Globally, 35 UNICEF Country Offices are using solar powered water systems in their programs. A recent UNICEF assessment of progress achieved by solar powered water systems showed that, when correctly sited and dimensioned, solar powered water systems are a sustainable and effective method of providing safe water to communities.[6] Low day-to-day running costs as compared to diesel pumps combined with long-term durability mean that solar powered systems are now becoming financially competitive, particularly in comparison to motorized systems. The systems can also provide an important water storage buffer for climate adaptation purposes and help reduce the carbon footprint of the water sector.

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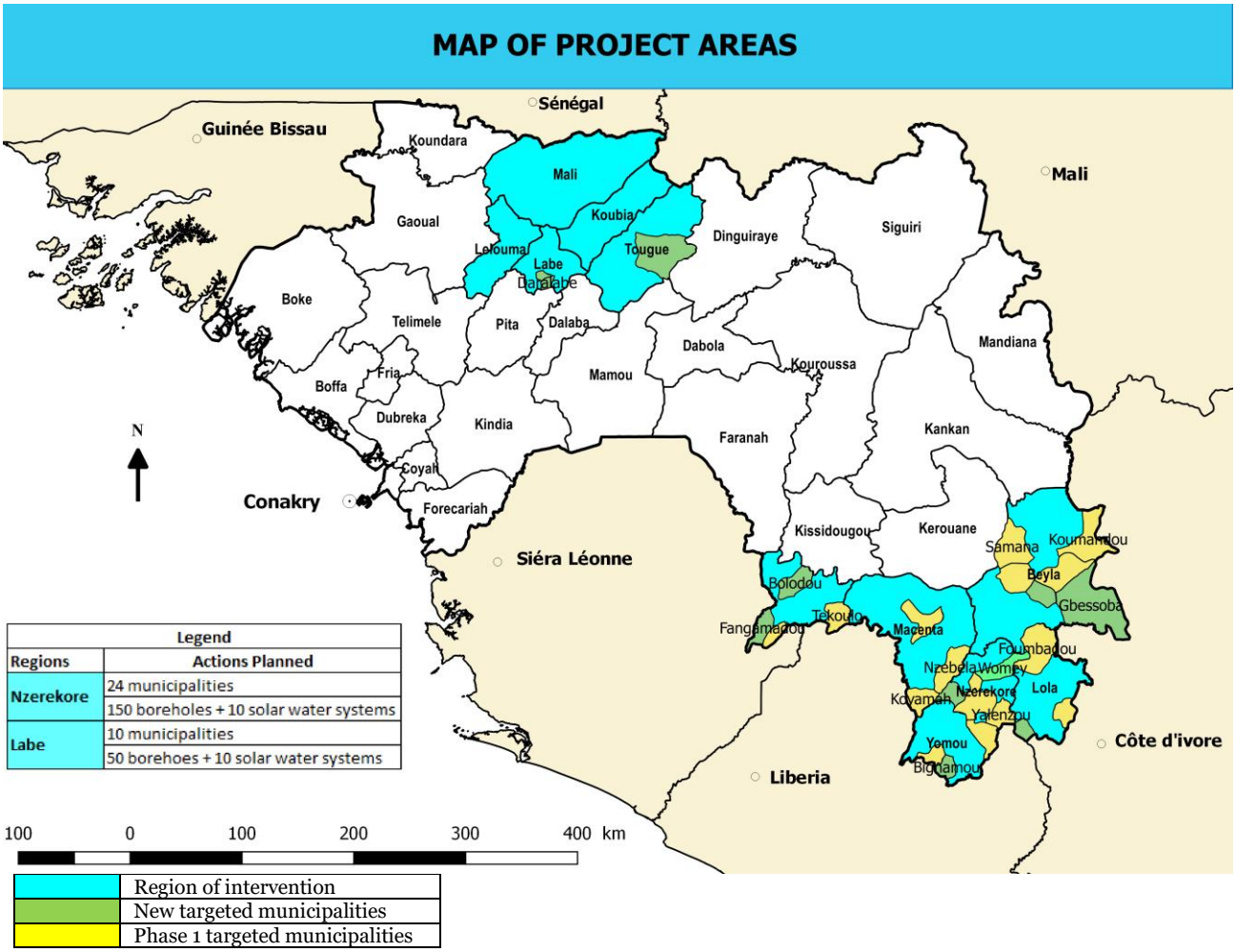
[5] Using the average of 300 people served per hand pump, an additional 9,900 people would be served by 33 additional hand pumps.

[6] Emily Bamford and Djani Zadi. Scaling Up Solar Powered Water Supply Systems: a review of experiences. United Nations Children's Fund (UNICEF), 2016.



SUPPORTING ACTIVITIES

The project will provide two geophysical kits for the selection of borehole drilling sites, one for each of the two target regions. The kits include equipment that will be used by SNAPE teams in N'Zérékoré, Labé and at the central office in Conakry to measure water levels and depths to determine the best locations to conduct manual drilling.[7] The two kits are reusable for future interventions by SNAPE throughout the country. SNAPE will also provide regular technical support to existing SMEs that are operating in the N'Zérékoré region.

Phase 2 will capitalize on the success of Phase 1 by engaging the Small and Medium Enterprises (SMEs) in N'Zérékoré equipped and trained in Phase 1 to do the manual drilling in Phase 2 under the technical supervision of SNAPE. SNAPE and local municipalities will receive UNICEF support in leading the selection process for SMEs as well as to ensure protection measures are taken to ensure water quality monitoring and surveillance. Communities will be responsible for the ongoing water quality through a safety plan for protection and disinfection of water points with the support of municipal water technicians.

For regular maintenance of water points, two local pump minders will be trained and equipped with tools in each municipality. For the new areas of intervention in Labé region, UNICEF will select local enterprises to construct the manually drilled boreholes under the technical supervision of SNAPE; in N'Zérékoré, UNICEF will continue to use the same local companies used in Phase 1 for Phase 2 activities. Protection measures will be taken to ensure the quality of

[7] SNAPE teams using the geophysical kits for site selection will be provided with technical support from the PRACTICA Foundation.

construction, water quality monitoring and surveillance, such as a safety plan monitored by local communities for the protection and disinfection of water sources.

Community Empowerment

ESTABLISHMENT AND TRAINING OF WATER COMMITTEES

In each village, a water committee will be established and trained on the operation and maintenance of water facilities, water safety (storage and utilization) and how to address and promote behavior change on environmental and climate change issues, such as the contamination of water reserves and a reduction in the quantity of water. Water committees will oversee water system management of boreholes fitted with hand pumps as well as solar powered water systems and will collect funds from water users for the maintenance of the water points and systems. Committees will work under the guidance of the municipal water officer during and after the project activities take place.

SOCIAL MOBILIZATION

There is a clear recognition that community leaders have keys roles to play in social mobilization in rural areas, and members of water committees will play a leading role in ensuring and enhancing the sustainability of the proposed interventions. **Community awareness campaigns will be carried out in villages throughout the various phases of the project, engaging approximately 330,930 people**[8] (120,782 from Phase 1 and 210,148 from Phase 2) from core social groups (community and religious leaders, women and youth groups) and encouraging their participation in project activities. Social mobilization will be articulated around three main actions:

- Organizing an official launch of the project to present the expected results and request the community's full support;
- Working with community leaders and building their accountability; and
- Working with existing youth groups to ensure their active engagement in the project.

Capacity Building

TRAINING SNAPE AGENTS ON COMMUNITY MOBILIZATION AND GOVERNANCE

SNAPE will oversee the social and community mobilization and hygiene promotion components of Phase 2, preparing local social mobilizers to better organize the populations of their villages and train them for the maintenance of their water systems and facilities. In total, four technicians from the regional offices of SNAPE (two from the N'Zérékoré and two from the Labé office) will be trained on community mobilization techniques and the Information, Education and Communication approach (IEC). IEC is a community engagement model that stresses ownership of the maintenance of water facilities, water safety (storage and utilization) and promoting behavior change. Addressing environmental and climate change issues such as the contamination of water reserves and water scarcity are key components of the IEC approach.

UNICEF will also support SNAPE in conducting knowledge management activities, updating the mapping of existing manual boreholes and advocating for additional funding to scale up manual drilling in Guinea.

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[8] All 120,782 residents of the villages targeted in Phase 1 will benefit from social mobilization: those who benefitted from the 122 manually drilled boreholes supported by AJA Charitable Foundation as well as those who benefitted from manually drilled boreholes supported by additional donors.

TRAINING OF MUNICIPAL WATER AGENTS FOR COMMUNITY GUIDANCE

In most rural municipalities, there is a water officer in charge of the management of WASH issues. This technician's roles include: identifying the most vulnerable villages; engaging in social mobilization and domestic financial mobilization for the local WASH sector; and supervising the maintenance of WASH facilities. **Thirty-four water officers from the rural municipalities of N'Zérékoré and Labé regions will be trained on social mobilization and management of water interventions**, specifically on monitoring and evaluation, technical supervision and the monitoring of pumps. They will also be trained by SNAPE and UNICEF to be able to coach and supervise all village water committees. UNICEF will facilitate inter-municipal meetings with water officers to exchange ideas on bottlenecks to the smooth operation, maintenance and management of the water systems and water points, and to discuss how they can work together to reinforce their actions in addressing common issues.

WATER COMMITTEES FOR THE MANAGEMENT OF SYSTEMS

In rural Guinea, the population pays for water when water pumps are functional more than 80 percent of the time. To manage these payments, water committees will be established and trained to sell water by volume and to set funding modalities for the sustainability of the water points. In addition, these committees will be trained to maintain the water points and water meters. For systems managed by private companies, a partnership agreement will be established between the water committee and the municipality, and between the private company and the municipality.

SUPPORT FOR THE DESIGN AND MANUFACTURE OF LOCAL PUMPS WITH A PRIVATE GUINEAN COMPANY

In order to ensure continuity of service, a partnership will be established with the private sector in Guinea to identify a company working in the WASH sector (mechanics-welding, boiler making, etc.). This private company will be equipped and trained to manufacture local pumps that will meet UNICEF's technical specifications for manual drilling. By using a local company, UNICEF will help create employment and increase knowledge and skills for maintenance. In addition, local companies will design pumps with parts that are locally sourced and available for maintenance as needed. New pump designs will be presented to all stakeholders for technical and socio-cultural validation to meet the expectations of users.

Sustainability

To ensure the strong commitment of key actors, a clear agreement of accountability will be signed between the communities, the municipalities and the private company in charge of the regular maintenance of the water systems. A roadmap will be established, and each party will follow its recommendations.

To guarantee an active level of engagement by all key actors, UNICEF will establish an agreement between the private sector, local authorities and state services. A local sustainability pact will be signed with the municipalities indicating the roles and responsibilities of each party that will help ensure the sustainability of results during and after the project.

Coordination, Monitoring, Evaluation and Learning

UNICEF will coordinate the interventions and integrate monitoring and evaluation into its cooperation agreement with the Government of Guinea. Two evaluations will conducted by an external consultant, one at the mid-point of the project and one final evaluation.

A monitoring system to ensure all activities are completed as planned will be supported by regular field visits and the production of periodic progress reports on the project's implementation. The reports will be used for the quarterly project review meetings with all stakeholders, where they will plan next phases and/or corrective measures.

Workshops for exchange learning will be carried out among the private enterprises to create healthy competition that will boost the WASH sector in Guinea. Stories about successful manual drilling and sustainability efforts will be written and

featured in sector fora for replication (i.e., scientific papers published in recognized water-related journals), as well as posted on Web and social media (Facebook, Twitter and Medium.com). In addition, technical documents on manual drilling techniques will be published and shared with key WASH partners.

Year 1, Budget

ACTIVITIES	UNIT COST	TOTAL, YEAR 1		YEAR 1, TRANCHE 1				YEAR 1 REMAINING	
		QTY	COST	QTY	COST	UUSA COST	UNICEF COST	QTY	COST
Manual borehole drilling	$5,000	40	$200,000	35	$175,000	$175,000	--	5	$25,000
Solar-powered pumping system for manually drilled boreholes	$25,000	--	--	--	--	--	--	--	--
Solar-powered pumping system and water distribution network for 20 existing boreholes	$50,000	5	$250,000	--	--	--	--	5	$250,000
Feasibility studies and technical assessments	$20,000	1	$20,000	1	$20,000	--	$20,000	--	
Subtotal			$470,000		$195,000	$175,000	$20,000		$275,000
Social mobilization in all villages	$200	45	$9,000	35	$7,000	$7,000	--	10	$2,000
Establishment and training of water committees	$300	45	$13,500	35	$10,500	$10,500	--	10	$3,000
Subtotal			$22,500		$17,500	$17,500	--		$5,000
Training SNAPE agents on community mobilization and geophysical drilling site selection	$1,000	6	$6,000	3	$3,000	--	$3,000	3	$3,000
Training municipal water agents for community guidance, work supervision and monitoring	$1,000	10	$10,000	5	$5,000	---	$5,000	5	$5,000
Support for the design and manufacture of pumps with a local private company	$5,000	0	--	--	--	--	--	--	--
Training of local pump minders; providing maintenance tools	$1,000	10	$10,000	5	$5,000	--	$5,000	5	$5,000
Reusable geophysical kits for site selection	$10,000	2	$20,000	2	$20,000	--	$20,000	--	--
Subtotal			$46,000		$33,000		$33,000		$13,000
Coordination and monitoring cost/year	$3,750	1	$3,750	1	$3,750	--	$3,750	--	--
Evaluation costs (mid-term and final)	$20,000	--	--	--	--	--	--	--	
Subtotal			$3,750		$3,750		$3,750		

Two national WASH staff (N'Zérékoré and Labé)	$10,000 per month	12	$120,000	3	$30,000	$30,000	--	--	$90,000
International professional staff* (70% for 1 year)	$135,000	1	$135,000	%	$30,486	$30,486		--	$104,514
Visibility costs**	$3,000	1	$3,000	%	$1,000	--	$1,000	--	$2,000
Operation support costs***	$15,000	1	$15,000	%	$3,750	--	$3,750	--	$11,250
Subtotal			$273,000		$65,236	$60,486	$4,750		$207,764
Total Program Costs			$815,250		$314,486	$252,986	$61,500		500,764
UNICEF/UUSA Administrative Costs****			$83,189		$32,090				$56,200
TOTAL			**$898,439**		**$346,576**	**$278,801**	**$61,500**		**$606,964**

* This project will fund 70 percent of the International professional staff person's salary; the other 30 percent will be funded by alternative sources. After the first year, the Chief of WASH will take over the project.
** Visibility costs include: conception and installation of signs in construction sites; banners for training sessions; shirt printing to highlight the source of funding for the project (UUSA); photo albums and posters; and donor visibility kits/reporting activities.
*** Operation and support costs include fuel for transporting project staff in the field and costs associated with maintenance of UNICEF vehicles.
****UUSA retention has been waived for the $275,000 gift made by the donor in October 2018. This amount - $5,500 – has been absorbed into and amortized over the overall first year UNICEF project budget.

The Way Forward

Access to a sustainable and safe water supply provides many benefits to children and their families, including life-saving health benefits. As a result of the successful manual drilling programs that were made possible with AJA Charitable Foundation's past support, UNICEF now has the opportunity to expand Guinea's manual drilling program and pilot solar-powered water pumps that are more durable than their hand pump counterparts. The government has adopted UNICEF's approach to manual drilling for small communities, and has used your gift to leverage internal and additional external resources to drill 43 additional boreholes in N'Zerekore.[9] UNICEF is grateful for your partnership in the work to reach the most vulnerable children of Guinea with access to safe water, and we thank you for considering continuing that partnership to reach even more children and their families and improve water systems for generations to come.

On behalf of the children of Guinea, thank you!

The United Nations Children's Fund (UNICEF) works in more than 190 countries and territories to put children first. UNICEF has helped save more children's lives than any other humanitarian organization by providing health care and immunizations, clean water and sanitation, nutrition, education, emergency relief and more. UNICEF USA supports UNICEF's work through fundraising, advocacy and education in the United States. Together, we are working toward the day when no children die from preventable causes and every child has a safe and healthy childhood. For more information, visit unicefusa.org.

To learn more, contact:
Kristen M. Jones
Vice President, Major Gifts
UNICEF USA
101 Montgomery Street, Suite 625
San Francisco, CA 94104
KJones@unicefusa.org
(415) 549-0937

[9] Additional resources came from the EU and the Netherlands.

Annex I: 4-Year Budget

Activities	Unit cost	Qty	Total cost 4 years	Year 1		Year 2		Year 3		Year 4		UNICEF USA Cost	UNICEF Cost
				Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost		
Water supply systems													
Drilling of manual boreholes equipped with hand pumps	$5,000	160	$800,000	40	$200,000	40	$200,000	40	$200,000	40	$200,000	$750,000	$50,000
Drilling of manual boreholes equipped with solar powered system	$25,000	40	$1,000,000	--	--	20	$500,000	10	$250,000	10	$250,000	$900,000	$100,000
Retrofitting existing boreholes with solar powered system and water distribution network	$50,000	20	$1,000,000	5	$250,000	5	$250,000	5	$250,000	5	$250,000	$850,000	$150,000
Feasibility studies and technical assessment	$20,000	1	$20,000	1	$20,000	--	--		--		--		$20,000
Subtotal			***$2,820,000***		***$470,000***		***$950,000***		***$700,000***		***$700,000***	***$2,500,000***	***$320,000***
Community empowerment													
Social mobilization in villages	$200	220	$44,000	45	$9,000	85	$17,000	65	$13,000	25	$5,000	$44,000	
Establishment and training of water committees	$300	220	$66,000	45	$13,500	85	$25,500	65	$19,500	25	$7,500	$66,000	
Subtotal			***$110,000***		***$22,500***		***$42,500***		***$32,500***		***$12,500***	***$110,000***	
Capacity building													
Training SNAPE agents on community mobilization and geophysical drilling site selection	$1,000	6	$6,000	6	$6,000	--	--	--	--	--	--	--	$6,000
Training municipal water officer for community guidance, works supervision and monitoring	$1,000	34	$34,000	10	$10,000	24	$24,000	--	--	--	--	--	$34,000
Support the design and manufacturing of a local pump with a private promoter	$5,000	1	$5,000		--	1	$5,000	--	--	--	--	--	$5,000
Training local pump minders and maintenance tools	$1,000	34	$34,000	10	$10,000	24	$24,000	--	--	--	--	--	$34,000
Geophysical kits for site selection and training	$10,000	2	$20,000	2	$20,000	--	--	--	--	--	--	$20,000	
Subtotal			***$99,000***		***$46,000***	***49***	***$53,000***					***$20,000***	***$79,000***

Project monitoring and evaluation													
Coordination and monitoring cost/year	$3,750	4	$15,000	1	$3,750	1	$3,750	1	$3,750	1	$3,750	$15,000	
Evaluation cost (mid-term and final)	$20,000	2	$40,000		--	--	--	1	$20,000	1	$20,000	$40,000	
Subtotal			***$55,000***		***$3,750***		***$3,750***		***$23,750***	***2***	***$23,750***	***$55,000***	***0***
Technical assistance													
2 national WASH staff (Nzerekore, Labe) per month	$10,000	48	$480,000	12	$120,000	12	$120,000	12	$120,000	12	$120,000	$480,000	
International P3 staff (70% for 1 year)	$135,000	1	$135,000	1	$135,000	--	--	--	--	--	--	$135,000	
Visibility costs	$3,000	4	$12,000	1	$3,000	1	$3,000	1	$3,000	1	$3,000	$5,000	$7,000
Operation support cost	$15,000	4	$60,000	1	$15,000	1	$15,000	1	$15,000	1	$15,000	$60,000	
Subtotal			***$687,000***		***$273,000***		***$138,000***		***$138,000***		***$138,000***	***$680,000***	***$7,000***
Total program cost			**$3,771,000**		**$815,250**		**$1,187,250**		**$894,250**		**$874,250**	**$3,365,000**	**$406,000**
UNICEF/UUSA Administrative costs			$384,796		$83,189		$121,148		$91,250		$89,209	$343,367	
TOTAL			**$4,155,796**		**$898,439**		**$1,308,398**		**$985,500**		**$963,459**	**$3,708,367**	**$406,000**

Annex II: List of villages for new boreholes with population and pump type

N'ZÉRÉKORÉ – BOREHOLES WITH HAND PUMPS

Rural municipality	Village	Estimated population
Bossou	Gbaah (secteur II)	510
	Souokpoyai	604
	Gbohileta	709
Kobela	Konia	723
	Gbazèboye	491
Bignamou	Nienh	415
	Koima	581
	Kossodou	305
	Boodou	350
	Koloadou	515
	Sandiamely	358
Fangamadou	Bambamely	392
	Borô	426
	Gbassiadou	315
	Maatogui	432
Gbackedou	Koyakroudou	387
	Kossoulédou	309
	Kassoundou	312
	Damama	207
	Fifladou	287
	Kounaédou	415
	Sanambala	291
	Wariedou	303
	Djamounifrandou	513
	Kaniandou	147
	Banko	311
	Lafékémodou	247
	N'Gouacédou-doua	318
	Moribadou	199
	Koubéla	356
	Cécédou Centre	463
Bolodou	Songbo	300
	Massamoudou	230

	Denenkedou	380
	Ngnoumadou	200
	Jerusalem	160
	Eglise	150
	Doumboulou	250
	Kamadou	212
	Cedou	200
	Gbogloma	170
	Sadou	210
	Mah	190
	Bouwadou	120
	Soumbiya	243
	Temessadou	392
	Gbokoro	350
	Doumboudou	309
	Belessa	360
	Konkoufin terrain	300
	Thimbadou	200
	Konian	260
	Koukonany	243
	Konkofinwouladou	300
	Tongoron	250
	Kondoutoumadou	260
	Fodou I	470
	Fodou II	309
	Makho	375
	Kanya	270
	Youmbou	270
	Gbalédou	310
	Wassaga	218
	Kènèmakhoura	208
	Woléyan	330
	Sallé	310
	Koindou	375
	Sankedou	210
	Kandobhè	330
	Yelendou	270
Gbèssoba	Morifadou	900
	Kessésso	382
	Fatounzo	334
	Lagbèsso	280
	Vanamadou	422

	Lassilandou	316
	Souakédou	290
	Morigba	428
	Késsésso	286
	Siadou 1	350
	Kèkoro	409
	Konkoinon	300
	Frégbèdou	280
	Tonodou	406
	Gnamadou	322
	Gnigbèdou	350
	Kessèsso	200
	Goima	238
TOTAL	**88**	**29,178**

N'ZÉRÉKORÉ – BOREHOLES WITH SOLAR POWERED SYSTEMS

Rural municipality	Village	Population to be served by solar system	# of water points to be installed
Bossou	Tiéba	604	2
	Nionh	1,101	3
	Gbénemou	901	3
	Loayi	812	3
Womey	Ouléouon	1,113	3
	Lamineta	1,246	3
	Yomata	2,359	3
Kobela	Moata	972	3
Bignamou	Gbamou	812	3
	Dissaye	910	3
	Pamporé	623	2
	Fandou	648	2
Gbackedou	Missiboro Centre	1,412	3
	Kafobaro Centre	967	3
Bolodou	Nongoa	550	2
	Guilandou	499	2
	Thenebengou	551	2
	Kolipa	405	2
	Komony	475	2
	Tyéssané	560	2
	Gbogbiro	490	2
	Wende Gboungboukoro	530	2
	Kouanko	518	2

	Teldou	570	2
	Gbandou I	550	2
	Gbandou II	450	2
	Centre	618	2
	Fonhoro	450	2
	Gbenko	450	2
TOTAL	**29**	**22,146**	**69**

LABÉ - BOREHOLES WITH HAND PUMPS

Rural municipalities	Villages	Estimated population
Dare Labé	Bourouwal Ferobhé	197
	Djola	183
	Fello Yaalalbhé	132
	Ley Saré	378
	Sangoya	153
	Thiandhi	105
	Bouboudjé	100
	Djolel	112
	Fougué	135
	Fello Yaro	118
	Founnaguebhè	142
	Gadha Thianguel	75
	Hamarè	133
	Kessou Bantanhi	115
	Ndanta Sarayabhé	158
	Windé	145
Guarambé	Dow Bassanya	280
	Fello Tippi	232
	Gnembe Gnogueyabhè	249
	Nyarga	355
	Nyembe Ndouyebhè	372
	Birarè	139
	Dialy	264
	Dow Wara	298
	Hansangherè	372
	Horé Dheppol	590
	Ley Dheppol	395
	Pellel diawbhè	123
	Thienguel	302
	Thioppi	345
	Wara	495

Kollet	Korikori	393
	Kotema	285
	Pelloun	117
	Bantanghi	182
	Fello Mori Kounda	380
	Fougoumba	417
	Hakkounde Tyandhi	88
	Kaabè Sorondo	385
Total	**39**	**9,439**

LABÉ - BOREHOLES WITH SOLAR POWERED SYSTEMS

Rural municipalities	Villages	Estimated population	# of water points to be installed
Dare Labé	Dow Saré	727	3
	Kouraba Ley	720	3
Guarambé	Bassanya I	945	3
	Bhourouhoye	622	2
	Gnembe Tarrobhè (1)	1220	3
	Missidé Garambé (1)	1347	3
	Sourirè (1)	1235	3
	Wonson	717	3
	Ley Saré	755	3
Kollet	Kedjenya Missidé	1082	3
	Kollangui Missidé	725	3
Total	**11**	**10,095**	**32**

Total # of villages	Total estimated population	Total # of new boreholes to be drilled*	Total # of people served by new boreholes with solar powered systems	Total # of people served by new boreholes with hand pumps
167	70,858	200	32,191	38,617

*Current population data is based on the 167 known villages where boreholes will be drilled; up to 33 additional boreholes will be drilled based on the number of solar powered systems that can be installed in the identified villages.

Annex III: Municipality main towns being retrofitted for solar powered systems

Region	Prefecture	Rural municipalities	Estimated population	# of water points to be installed
N'Zérékoré	Beyla	Gbackédou	14,744	5
		Nionsomoridou	6,068	5
		Moussadou	7,978	5
	Gueckedou	Bolodou	3,608	5
		Fangamadou	8,172	5
	N'Zérékoré	Gouecké	6,812	5
		Kobéla	10,858	5
		Womey	7,452	5
	Yomou	Bignamou	6,912	5
		Pela	6,470	5
Total NZérékoré		**10**	**79,074**	**50**
Labé	Koubia	Fafaya	5,268	5
		Gadha Woundou	3,052	5
	Lelouma	Djountou	7,774	5
		Parawol	5,256	5
		Thiallou	7596	5
	Mali	Balaki	4,548	5
		Donghol Sigon	11,428	5
		Bandeya	7,908	5
	Tougue	Fello Koundoua	3,394	5
		Kollet	3,992	5
Total Labé		**10**	**60,216**	**50**
Total 2 regions		**20**	**139,290**	**100**

Annex IV:
Project intervention areas, phase 1 (2014-2017)

Year	Prefecture	Rural Municipalities	Villages	# boreholes drilled with outside support	# boreholes drilled with donor support	Total estimated population	Estimated population served by donor support
2014	N'Zérékoré	Yalenzou	Karana centre	2	1	1,708	569
			Gbentapa	0	1	190	190
			Demou I	1	1	1,561	781
			Lomoucentre	2	1	1,252	417
			Soota	1	1	859	430
			Batouala	2	1	1,252	417
	Lola	Tounkarata	Iro centre	0	1	1,668	1,668
			Kpinita	1	1	1,599	800
			Sokota	0	1	723	723
			Gbeke Nema	1	1	1,264	632
			Gueta	0	1	610	610
			Keta	0	1	615	615
2015	Lola	Lainé	Cisséla	1	1	274	137
			Kiengbéla	0	1	124	124
			Yokpota	1	1	3,232	1,616
			Yaligna	1	1	693	347
			Deen	2	1	703	234
			secteur 1	0	1	441	441
			KomaYénéta	0	1	286	286
			Laine Centre	6	1	6,861	980
			Ouyé	2	1	534	178
		Foumbadou	Foumbadou I	3	1	6,970	1,743
	Yomou	Bheta	Dissaye	1	1	213	107
			Dissaye 2	0	1	181	181
			Lakpalaye	1	1	700	350
			Lakpalaye 2	1	1	1,005	503
			Béméyé	1	1	1,745	873
			Béméyé 2	0	1	1,054	1,054
			Zowéta	0	1	255	255
			Zowéta 2	0	1	367	367
			Tilékolè	0	1	1,185	1,185
			Woroyakoré I	1	1	2,025	1,013
2016	Guéckédou	Ouendé kénéma	Kamian	0	1	199	199
			Kérédou	0	1	211	211
			Gnamandou	0	1	174	174
			Sangadou	0	1	123	123
			Bambadou	0	1	291	291
			Temessadou	0	1	468	468
			Poundidou	0	1	325	325
			Gboyama	0	1	379	379

			Konian	0	1	174	174
		Fangamadou	Digbèma	0	1	316	316
			Fouédou	0	1	309	309
			TongomaTongui	0	1	607	607
			Tagbèfou	0	1	459	459
			Sansandou-Pombo	0	1	576	576
		Tekoulo	Sangbekoelo	0	1	423	423
			Foréah	0	1	393	393
		Ouendé kénéma	Banama	0	1	376	376
			Kolobengou	0	1	2,229	2,229
		Fangamadou	Mano	0	1	1,033	1,033
			Yébéma	0	1	327	327
			Kamakouma	0	1	181	181
			Mafèndou	0	1	387	387
			N'Dambo	0	1	1,252	1,252
			Koniandou	0	1	597	597
		Ouendkénéma	Komede	0	1	1,548	1,548
			Sangbkoedou	0	1	1,005	1,005
		Tekoulo	Fassabéma	0	1	297	297
			Killima	0	1	373	373
		Ouende Kénéma	Kako	0	1	742	742
		Tekoulo	Beldou	0	1	639	639
2017	Beyla	Foumbadou	Kignègbèla	0	1	571	571
			Morigbèdou	0	1	571	571
			Faboridou	0	1	271	271
		Moussadou	Kamandou	0	1	312	312
			Gborondono	0	1	910	910
			Lancedou Tinikoma	0	1	180	180
			Lono	0	1	295	295
			Mallésséri	0	1	252	252
			Bambadou	0	1	583	583
			Kanikemodou	0	1	294	294
		Sinko	Djendèdou	0	1	930	930
			Soridou Ecole	0	1	198	198
			Boukorodo	0	1	258	258
			Yéférédou	0	1	913	913
			N'Gomadou	0	1	478	478
			Dabadou	0	1	858	858
			Djelisso	0	1	202	202
			Nanseredou	0	1	309	309
			Mazadou	0	1	145	145
			Fensendou	0	1	93	93
		Samana	Famorodou	0	1	216	216
			Leydou	0	1	403	403
			Fakouroudou Centre	0	2	732	366
			Franwalidou	0	1	189	189

			Kabadou	0	1	210	210
			Djélikamandou	0	1	270	270
			Fouanikan	0	1	456	456
			Toumbala	0	1	330	330
			Namadou	0	1	240	240
		Koumandou	Bassadou	0	1	423	423
			Tombakoro	0	1	2,933	2,933
			Korofere	0	1	859	859
			Douala	0	1	222	222
			Frankamadou	0	1	208	208
			Tamadou	0	1	1,563	1,563
			Togbadou	0	1	199	199
			Fassouso	1	1	2,408	1,204
			Kèmosso	1	1	754	377
			Belekoko	1	1	600	300
	Lola	Foumbadou	Faboridou	1	1	387	194
		Lainé	Kignegbela	0	1	2,029	2,029
	Nzérékoré	Kobela	Béléfanaye	1	1	1,516	758
			Woloyé	1	1	1,460	730
		Samoé	Boma-Coline	2	1	9,955	3,318
		Palé	Yinéta	1	1	1,126	563
		Bounouma	Kèlèta	0	1	1,674	1,674
			Louléhouata	0	1	690	690
			Manawi	0	1	1,321	1,321
			Wokipa	0	1	1,101	1,101
	Macenta	Nzébela	Sibata 1	1	1	6,792	3,396
			Mamadita	0	1	450	450
			Moizou	0	1	225	225
			Galawéléma	0	1	525	525
			Galawélé Mawuizo	0	1	6,952	6,952
			Bayama	2	1	387	129
		Sengbédou	Lokpo 2	0	1	997	997
			Lassaou 1	0	1	747	747
			Lassaou 2	0	1	524	524
			Mougnedoukoro	0	1	792	792
			Féléwala	0	1	732	732
TOTAL			**122**	**43**	**123**	**120,782**	**83,677**