The Madagascar Water Project

Phase VI Program Summary Report
September 2018

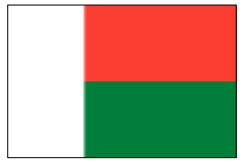






The Madagascar Water Project

Current Status of the Project



The Madagascar Water Project has accomplished major goals during the past year, culminating most recently with the successful completion of the Phase VI Well Program.
Operations accomplishments include the following:

- Growth has become exponential with the Phase V Program nearly doubling the number of productive wells from 28 to 43 and the Phase VI Program bringing the number of successful wells up to 76. The Project now provides water to over 40,000 people who did not have clean water previously.
- Solo has been hired full-time. Between procurement, preparations and operations, our work has become a year–round operation.
- Well costs have dropped substancially while well designs have been improved dramatically. Drill times for many wells have dropped from 3 days to ½ a day. Many costs are fixed and based on time, which has a corresponding impact on well costs. Most wells are now built of stainless steel materials, which allows us to drill deeper, easier and faster. New pump designs have been tested and new well design are continually being evaluated, including using tanks for water treatment purposes.
- The Supply Chain has improved, with more materials now being purchased locally.
- Logistics has brought our work to villages that are nearly inaccessible, the ones most often neglected and with the most urgent needs.
- Sustainability is emphasized and result have been seen. Community-based training in all things WaSH has expanded and shown some success – although there is still much to do in this regard. Local technicians have been trained and many have proved their value with little to no cost to the Project. The Project's four-man Andovoranto Drill Team is highly proficient. The MWP-43 well proved the Madagascar Team can drill a well without Fred even being in-country – the ultimate goal!

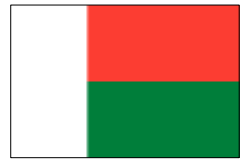
The Business side of our work has also accomplished major goals:

- The Madagascar Water Project Inc was incorporated in the US and has ben approved as a 501(c)(3) non-profit public charity.
- The Phase VI Program was entirely funded with contributions from others – in the past, significant amounts were contributed by Fred and his brother Paul. Much of this success can be attributed to Michael Heneghan, someone I didn't even know until he expressed an interest in helping the Project on *facebook* during the Phase V Program. It turned out he went to school with one of my brothers. I can't thank Mike and his Contributors enough. If anyone else is interested on helping, please let me know.
- Water Charity, a world-wide NGO with a mission very similar to ours, recognized our efforts and sponsored one-quarter of the entire Phase VI Program. Partnerships such as this will allow us to grow even more.

The Madagascar Water Project is at a pivotal point in its development. We have 71 producing wells on a hundred mile stretch of coast on the east side of Madagascar. If we can get a more secure financial foundation, we will be able to hire more full-time Malagasy personnel to strengthen our community relations work and expand our work even more.

Website: http://TheMadagascarWaterProject.org

The Madagascar Water Project

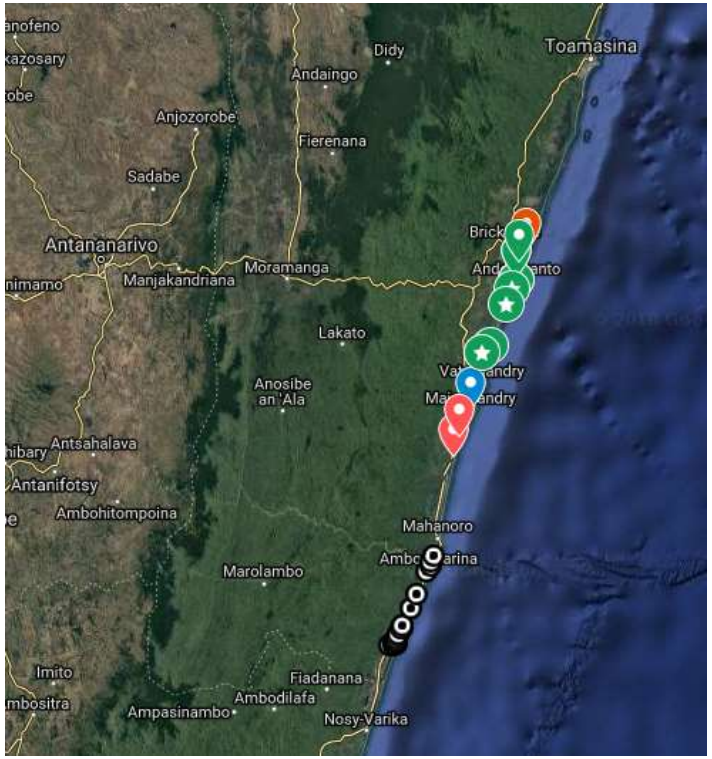


Phase VI Program Goals and Objectives

To drill 35 wells in 20 villages and upgrade or maintain 41 existing wells in 20 villages

Thirty-four successful wells have been built in 19 villages listed below:

- Masomeloka
- Analila
- Manonilaza
- Antaniambo
- Sohihy
- Ampanotoana
- Antanandava
- Andakorolava
- Antaroby
- Ampanalana
- Andranotsara
- Ambodiharina
- Salehy
- Tsangambato
- Ankazomirafy
- Nierenana
- Marosiky
- Andovoranto clinic
- Ambodi-pont



Phase I – V Wells (41)

Phase VI Wells (34)

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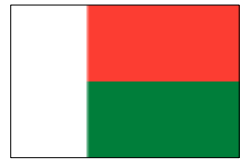

Forty-one existing wells in the following 20 villages were upgraded

- Andovoranto
- Kalomalala
- Amboakambatsy
- Amboditafara
- Sondrara
- Analalava
- Mahatsara
- Vohitrampasina
- Antsiranamihanana
- Ambilan’ny Varanta
- Ivato
- Manakambahiny
- Ambilabe
- Mahatsara Mahanoro
- Ampasimbe
- Tsivangiana
- Ambodivaro
- Vavony
- Andavakimena
- Andovona

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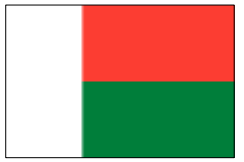


MASOMELOKA

Masomeloka, population 4600, is a Commune and large village along the Pangalana Channel. It can be reached by road only with 4 Wheel Drive vehicles using three primitive ferries. Most commerce is done using boats along the Pangalana.

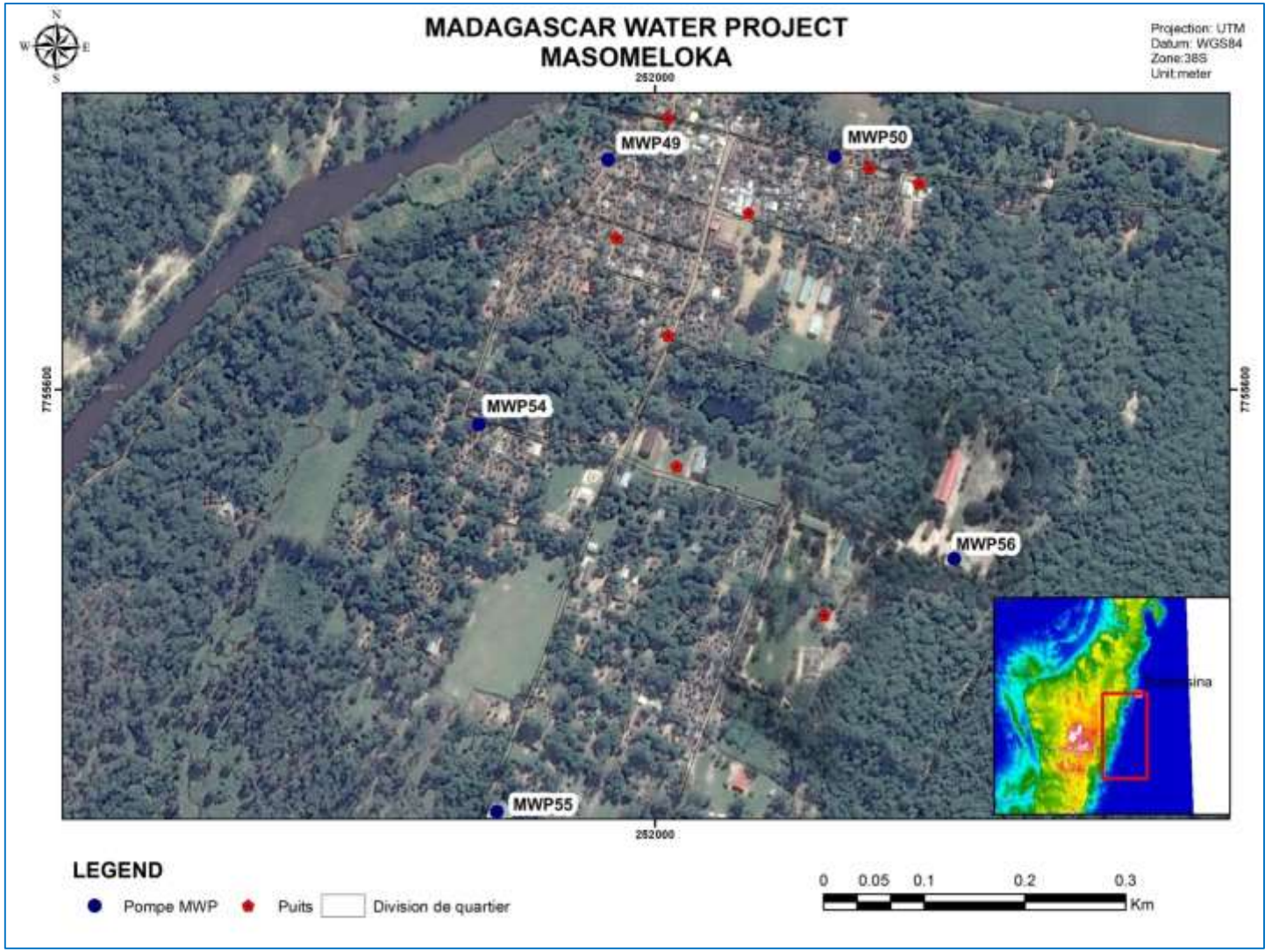
The local economy is dominated by area commerce, fishing and farming. It has a Catholic Mission with a good school and also a Mosque that broadcasts a call for prayer several times a day.

The Madagascar Water Project drilled four wells in the village sponsored by Water Charity, one well at the Catholic School, and it placed a well over a bucket well at the Catholic Mission.

Prior to our arrival, seven bucket wells and the Pangalana Channel provided the water for the village. The Mayor and other Commune Officials provided important assistance with the out-lying villages to effect our Program.

Project Sponsored By

WATER CHARITY



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MASOMELOKA

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MWP-49

MWP-50

MWP-54

MWP-55

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MASOMELOKA

The Madagascar Water Project placed a well in the Catholic School and installed a pump on an existing bucket well in a residential area of the Mission compound. Several hundred students and teachers will benefit from these pumps on a daily basis and thousands will benefit during meetings and retreats.

Father Francois, in the red shirt in photo to the left, was very helpful to the Team to accomplish our goals. In addition to providing the church and school, the Mission performs an outstanding service to the greater Masomeloka community

MWP-56

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ANALILA

MWP-51

MWP-52

Analila, population 800, lies on a narrow sand bar between the Pangalana Channel and the Indian Ocean. They were in desperate need of a clean water source as they have only one bucket well that goes saline for several months each year.

The Madagascar Water Project drilled two wells in the village. The first well. MWP-51, was drilled within 50 meters of the Channel and was slightly saline. It became fresher with more production but would go saline after a few minutes without flow. Since fresh water "floats" over denser saline water, we pulled up 1-1/2m and were able to flow relatively fresh water. Field tests showed <250 ppm NaCl but there is a possibility it could go saline seasonally.

The second well, MWP-52, was drilled on a wider part of the village and it tested fresh water. It may be the only source of year-round fresh water in the village. Close monitoring will be necessary, but taste tells all with regard to salinity.

The Villagers and the Well Management Committees were very grateful to get these additional sources of water and are especially hopeful the second well will remain fresh all year.

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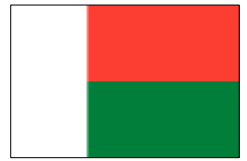

MANONILAZA

MWP-53

MWP-48

Manonilaza. population 850, lies on a wide tract of land between the Pangalana Channel and the Indian Ocean. Villagers survive by fishing and farming. Sadly “survival” is the most appropriate word to describe life in Manonilaza.

With only one ageing bucket well, they had a high need for a clean water source. Access to the Pangalana Channel was difficult and it is muddy and contaminated in the small area accessible to the village.

The Madagascar Water Project was met with enthusiasm from the Villagers. Well Management Committees were organized, sites were selected and the wells were drilled successfully. These two wells will fill a long-awaited need to help improve the health, hygiene and sanitation in the village. These wells will save lives!

The Madagascar Water Project

ANTANANDAVA

MWP-64

Antanandava, population 300, lies along the remnants of RN11A. Most people support themselves through subsistence farming and fishing, just enough to live on the edge of crisis. This village is extremely vulnerable.

The village had no source of water and the well placed there by The Madagascar Water Project took them a few steps away from a very undesirable fate. The village has few assets and the Well Committee and the Villagers treat their new resource with the greatest pride and respect. There is little doubt this well be used as much as it can to improve the quality of life in the village. This well will save lives, perhaps even the young one on the back of the young mother in the photo upper left.

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ANDAKOROLAVA

MWP-65

Andakoralava, population 350, is a few miles down the road from its neighbor Antanandava. They also subsist by farming and fishing and are able to meet only their most basic needs. This village is extremely vulnerable.

The village had no source of water and the well placed there by The Madagascar Water Project gave them a slight edge for food and water security. The well is the most valuable asset the villages owns and they treat it with great respect There is little doubt this well will be used as much as it can to improve the quality of life in the village. This well will save lives!

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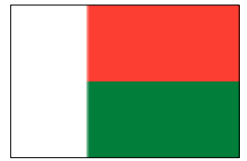

ANTAROBY

MWP-66

Antaroby, population 1200, is just down the road from Andakoralava and Antanandava. It is a large village but spread out over a few miles with no one area densely populated. They support themselves with farming and to a smaller extent, fishing. They appear to enjoy a slightly better quality of life than their neighbors.

The village has a strong social structure, and social and political leadership was quite evident in our dealings with the village. In my opinion, with everything else being the same, the presence of good leadership seems to be one of the most critical factors related to having a good quality of life.

A Well Management Committee was established, training and spare parts were provided, many good questions were answered. A good rapport was established and we look forward to working with them in the future.

We left with confidence the well will be used wisely to improve the quality of life and the health, sanitation and hygiene in the village. There is plenty of room to drill more wells in Antaroby.

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ANTANIAMBO

MWP-57

MWP-58

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Antaniambo, population 1300, lies on the west side of the Pangalana Channel. The village barely survives by fishing and farming. It has one over-used bucket well (photo upper left) in the center of the village and a dirty, narrow access to the Pangalana. It is one of the poorest villages I have visited and it would not be an exaggeration to say malnutrition is a major problem. It is accessible only by boat.

The Madagascar Water Project drilled two wells, one at each end of the village. Well Management Committees were established for each well and they were provided with guidance to help them manage their new resources. Technicians were trained in pump maintenance and repairs and provided the tools and spare parts to keep them operating.

The village has been given a helping hand to improve their quality of life and the health, sanitation and hygiene in their village. Given this lifeline, we will continue to work with them and see if they use it to pull themselves out of the hole of poverty.

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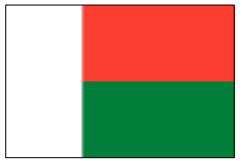

SOHIHY

MWP-59

MWP-60

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Sohihy, population 1250, is less than a kilometer along the west coast of the Pangalana from Antaniambo and they are quite similar. The village survives by fishing and some farming and the quality of life for most is fair at best. Widespread poverty is present. Although Sohihy has no visible humanitarian crisis, the village is quite vulnerable in the event of a flood, storm, poor harvest, disease or other undesirable event.

Sohihy is located on a low-relief sand bar surrounded by a marshy swamp on the west coast of the Channel. It is accessible only by boat or a wet-walk through the swamp. The water table is only one meter below ground level.

Sohihy has 3 bucket wells, which are exposed to contamination from the surface and probably to flooding in the event of seasonal cyclones. The Madagascar Water Project drilled two wells in the village. It was the first time we drilled a well with such a high water table, which actually become more challenging in this environment.

Well Management Committees were established for each well and they began the work to care for their new resource and manage them for the improvement of the quality of life in the village. The wells will provide needed stability and quality to their water resources

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SOHIHY II

MWP-61

Sohihy II, population 300, is a small rural village on RN11A. It consists of several enclaves of houses adjacent to the fields they farm. They use the rice fields for water and have no source of clean water. Despite this problem, the quality of life in the village is good.

The Madagascar Water Project placed a well in a central location. A Well Management Committee was formed and they immediately built a fence and took control of the care of the well. With guidance, they will be able to use it to improve their quality of life, and the health, sanitation and hygiene of their village.

The photo (above left) of the dedication ceremony show an abundance of adults and a fence – good signs the village will use their new resource well.

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AMPANOTOANA

MWP-62

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WATER CHARITY

MWP-63

Ampanotoana, population 5000, is a very large village accessible by both RN11A and an inlet of the Pangalana Channel. The livelihood of the people is supported primarily through fishing and farming. Considering its large size and good location, the village does not enjoy a good quality of life. Poverty is widespread and intestinal disease claims 50 lives per year.

The village has 5 bucket wells of questionable quality. The Madagascar Water Project placed two new wells in the village. Well Committees were formed and discussions on the utilization of the wells to improve the quality of life and the health, hygiene and sanitation in the village.

A Technician was trained and recruited by the Project to be available for higher level maintenance and repairs for all wells in the area. He was left with spare pumps, parts and tools. Although we encourage all Well Committees to maintain and repair their wells, we send in skilled technical help when needed.

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ANDRANOTSARA

Andranotsara, population 1325, is a medium-sized village at a ferry crossing on RN11A. The people support themselves with fishing, farming and ferry operations. Their only well dated back to a 1999 program conducted by UNICEF and it dried up three years ago. Before our arrival, they relied on the Pangalana for all of their water needs. The quality of life in the village is fair at best.

The Madagascar Water Project drilled one well in the center of the village. A Well Management Committee was formed and the Project provided some advice on well care, maintenance and community participation. We passed through this village several times and it appears to me it will take ongoing work to get them to fully utilize this resource to improve the health, hygiene and sanitation in this village.

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AMPANALANA

MWP-44

Ampanalana, population 600, is a commercial, farming and fishing village on RN11A and the Pangalana Channel. Many of the boats travelling the Pangalana stop at the hotels and restaurants there. The quality of life in the village is good.

The village relies on one bucket well and the Channel for its water. Two of the hotels also have private pumps. The Madagascar Water Project drilled one well in the village. It was the first well in the Phase VI Program, not because it was planned but because the supply truck was hopelessly stuck in the mud at a ferry crossing a few miles away. The village is spread-out with plenty of room for another well. This well had the best tasting water of any well we have drilled.

The Madagascar Water Project

AMBODIHARINA

MWP-46

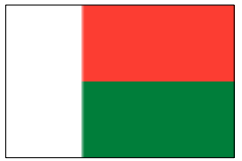
MWP-45

Ambodiharina, population 3800, is a Commune and large village on the south side of the Salehy ferry crossing. Farming, fishing and commerce provide the livelihood for a majority of the villagers and most enjoy a good quality of life.

Until recently, four bucket wells and the Pangalana provided all the water. An NGO, AMB, recently drilled three wells along the main road, RN11A, but could not drill them in the interior areas of the village. This caused a migration from the outlying areas of the village to locations nearer the AMB wells.

The Project drilled two wells in densely populated areas away from the main road on the east side of the village. These wells will allow people to stay in their homes and still have readily accessible sources of clean water.

The Madagascar Water Project



SALEHY

Salehy, population 1600, is the last village along RN11A before it becomes less-accessible to the south. Villagers make their living from farming, fishing and commerce related to the Pangalana.

Three bucket wells provided the only water. The village has grown substantially since the wells were built, leaving some parts of the village without any readily accessible source of water.

Community meetings were spirited, with each area competing for the two wells to be drilled. The Project drilled one well in the northern part of the village and another in a densely populated area in the center of the village. The Well Committees were quick to assume control of their wells.

MWP-69

MWP-70

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TSANGAMBATO

Tsangambato, population 550, is one of the last villages along RN11A before it becomes less-accessible to the south. Most villagers make their living from farming and fishing. Three bucket wells provided their only sources of water.

The Madagascar Water Project drilled one well in the center of the village. The village seemed to lack both political and social leadership and I noticed some of the solar-powered lights had been robbed of their panels and batteries. The Project built a good well but working with the village and the Well Management Committee may prove to be a challenge. Note the lack of adults in the photos.

MWP-68

The Madagascar Water Project

ANKAZOMIRAFY

Ankazomirafy, population 400, is one of the last villages along RN11A before it becomes less-accessible to the south. Villagers support themselves with farming and fishing and they have some economic benefit from a good road to the north. Their water was limited to one bucket well of questionable water quality.

The Well Committee has plans to use the well to improve the quality of life for the villagers and The Madagascar Water Project will visit periodically to provide guidance in this endeavor.

MWP-67

The Madagascar Water Project

NIERENANA

Nierenana, population 150, is a small village at the end of the road to Marosiky. The village is made up of mostly ageing rice farmers - a victim of Madagascar's version of rural flight. There was no source of clean water.

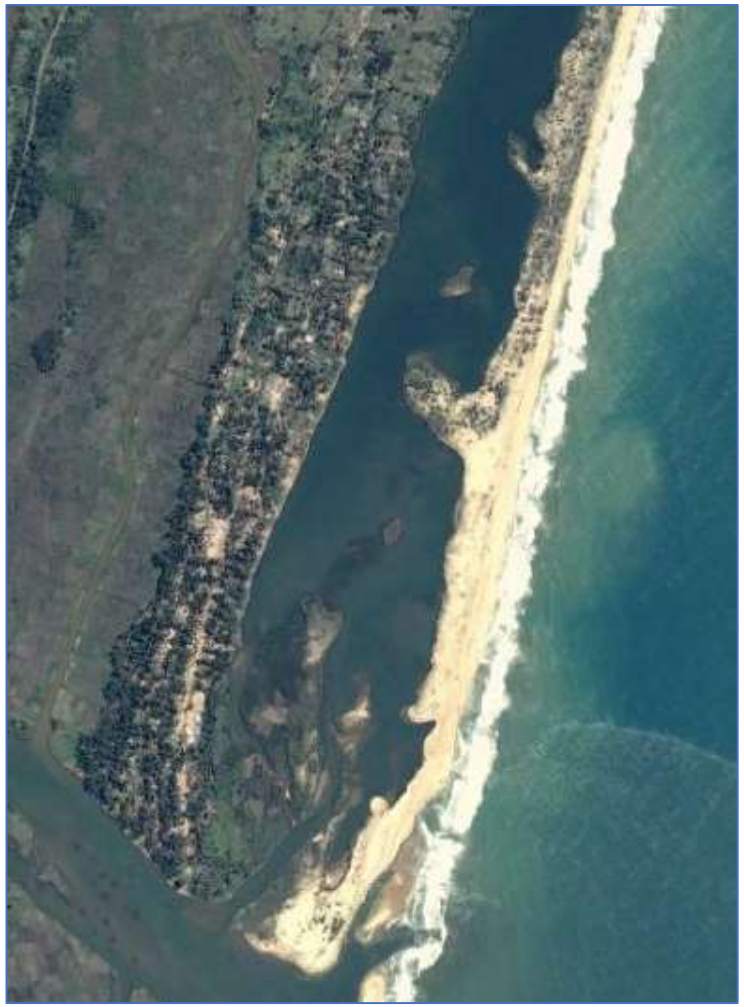
Most villages this small are not included in aid programs. Our gift of a water well was very well received and immediately became a community project. With guidance from The Madagascar Water Project they will use it to improve their quality of life.

It was very gratifying to help a village that has been forgotten

MWP-71

The Madagascar Water Project

MAROSIKY



Marosiky, population 3770, is accessible only by boat. Although isolated, The village provides well for itself with farming and fishing. Prior to our work, they took all their water from 5 bucket wells and the Pangalana Channel.

The Madagascar Water Project built 3 wells and there is room for 2 – 3 more. The village worked quickly to manage their wells and use them to improve the health, hygiene and sanitation in their village.

I sometimes relate the quality of life in a village to community leadership. Marosiky has very good social and political leadership and they work well together for the better welfare of the village.

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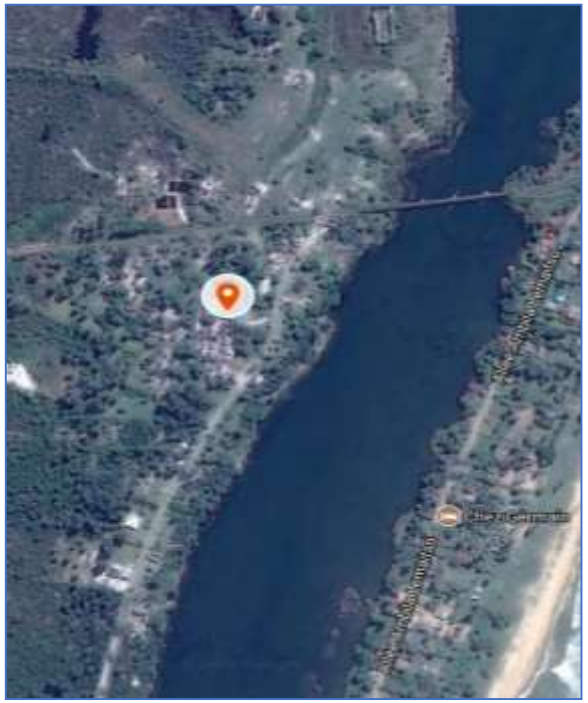
AMBODY PONT



MWP-75

Ambody Pont, population 350, is on the northern end of our work area. It lies on a bluff on the west (land) side of the Pangalana Channel. A railroad bridge on the north side of the village allows easy access to the sea. The village provides well for itself with fishing and farming. Prior to our work, they took all their water from one bucket well that goes dry seasonally and the Pangalana Channel, which is not easily accessible.

The Village is well-organized socially and politically. The quality of life is good and everyone is busy and friendly. A Well Management Committee was organized that represents all aspects of the community. The well is a valuable asset to the community and there is every probability they will use it to advance the heath, sanitation and hygiene in their village.

It's great helping people that help themselves.

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ANDOVORANTO CLINIC

The Andovoranto Clinic requested a well over a year ago. Their only water source is a bucket well along the road in front of the complex so the need is indisputable. Finding a suitable location was problematic. Buildings have been on the location for a century or more. Abandoned toilet and wash facilities are located at several locations on site behind the buildings.

The Madagascar Water Project drilled a well in the front, fairly close to the same bucket well they used. We drilled it to a depth of 8 meters with the intent to get it below potential surface contamination. These efforts were not successful. Field tests indicated potential pathogen contamination and testing done later in a proper laboratory show the pathogen content was too high to be approved as “potable”. We are currently exploring chlorination options.

The Madagascar Water Project

PROJECT SUMMARY: VILLAGE AND WELL DATA

		Existing Water							
Wel No.	Fokotamy	Pumps	Bucket	No Houses	Population	Depth	Water Table	Type Pump	Rate
MWP-44	Ampanalana	0	1	80	600	8.4m	4.0m	9m	30 liters/min
MWP-45	Ambodiharina	3	4	542	3770	7.4m	3.5m	9m	30 liters/min
MWP-46	Ambodiharina	3	4	542	3770	7.4m	4.0m	9m	30 liters/min
MWP-47	Andranotsara	0	0	160	1325	6.4m	4.0m	9m	30 liters/min
MWP-48	Manonilaza	0	1	120	850	7.4m	3.0m	Batimax	30 liters/min
MWP-49	Masomeloka	0	7	1250	4600	7.4m	3.0m	Batimax	30 liters/min
MWP-50	Masomeloka	0	7	1250	4600	7.0m	3.0m	Batimax	30 liters/min
MWP-51	Analila	0	1	90	800	6.4m	4.0m	9m	30 liters/min
MWP-52	Analila	0	1	90	800	7.3m	4.0m	9m	30 liters/min
MWP-53	Manonilaza	0	1	120	850	7.4m	4.0m	Batimax	30 liters/min
MWP-54	Masomeloka	0	7	1250	4600	7.4m	3.0m	9m	30 liters/min
MWP-55	Masomeloka	0	7	1250	4600	7.4m	3.0m	9m	30 liters/min
MWP-56	Catholic School					7.4m	3.0m	9m	30 liters/min
MWP-57	Antaniambo	0	1	180	1300	7.4m	3.1m	Batimax	30 liters/min
MWP-58	Antaniambo	0	1	180	1300	7.4m	3.4m	9m	30 liters/min
MWP-59	Sohihy	0	3	170	1250	5.3m	1.0m	Batimax	30 liters/min
MWP-60	Sohihy	0	3	170	1250	5.3m	1.0m	Batimax	30 liters/min
MWP-61	Sohihy II	0	0	35	300	7.3m	2.5m	Batimax	30 liters/min
MWP-62	Ampanotoana	0	5	388	5000	7.3m	5.0m	9m	30 liters/min
MWP-63	Ampanotoana	0	5	388	5000	7.3m	4.7m	9m	30 liters/min
MWP-64	Antanandava	0	0	40	300	6.0m	2.7m	Batimax	30 liters/min
MWP-65	Andakorolava	0	0	100	350	6.0m	3.0m	Batimax	30 liters/min
MWP-66	Antaroby	0	1	250	1200	7.3m	4.0m	Batimax	30 liters/min
MWP-67	Ankazomirafy	0	1	60	400	7.3m	5.0m	9m	30 liters/min
MWP-68	Tsangambato	0	3	70	550	5.3m	3.1m	Batimax	30 liters/min
MWP-69	Salehy	0	3	200	1600	5.4m	2.5m	Batimax	30 liters/min
MWP-70	Salehy	0	3	200	1600	5.4m	2.5m	Batimax	30 liters/min
MWP-71	Nierenana	0	0	20	150	7.3m	5.5m	9m	30 liters/min
MWP-72	Marosiky	0	5	620	3770	7.3m	4.5m	9m	30 liters/min
MWP-73	Marosiky	0	5	620	3770	7.3m	5.0m	9m	30 liters/min
MWP-74	Marosiky	0	5	620	3770	7.3m	5.0m	Batimax	30 liters/min
MWP-75	Ambody Pont	0	1	40	350	5.4m	1.5m	Batimax	30 liters/min
MWP-76	Clinic					7.4m	4.5m	Batimax	30 liters/min
	Total Beneficiaries:	**28,465**							