

3. Water supply and water use conditions in the selected 100 villages

Water Supply and Water Use Conditions in the Selected 100 Villages (1)

Mtwara Rural District, Mtwara Region

Division	Ward	Village	Population		Water source for domestic use as of 2000	Condition of Existing Water Supply Facility and Facility Plan
			Census 1988	Actual 2000		
Nanyamba	Nanyamba	Mbembaleo	2,536	5,600	Traditional dug well (2km)	A large village with a population of 5,600 and 1,500 households. The present water supply sources are traditional dug wells; the capacity of these sources significantly decrease in the dry season. During this time, water is extracted using the pipelines of the Nanyamba Village which is 9km away. The village is very poor. Although a borehole was dug in 1981, the facility was never constructed. The villagers desire a level 2 water supply system, and this system is considered appropriate in view of the village population and the groundwater level.
	Mtiniko	Maranje	2,064	2,346	Pond (2km)	This village is along the road that connects the towns of Mtwara and Newala, and uses the pond 2km away as a water source, by digging an infinite number of holes around the pond. The pond does not get depleted even in the dry season and is used by 7 other neighbouring villages. Beside the pond is a ring well with 4 hand pumps, however, only one of the hand pumps is working at present. Other wells have dried up. In 1979, a level 2 system using borehole as water source was constructed by the Ministry of Water. The casing of this well broke down in 1986 and has been left unrepaired. The villagers desire a level 2 system and this is considered appropriate in view of the population and the groundwater level.
		Mtiniko	2,823	1,166	Pond (2.3km)	This village is along the road that connects the towns of Mtwara and Newala, and currently uses a small pond as a water source. In 1989, the Ministry of Water drilled boreholes directly beside the pond and constructed a level 2 system facility. The water level dropped, however, and the borehole was never used. The use of a reservoir is considered possible. Although the villagers want a hand pump facility, the depth of the groundwater would make extraction by hand pump very difficult. Level 2 system will be constructed therefore.
		Malamba	—	1,557	Pond (8.0km) RW collection	A pond 8km away is the current source of water supply, although many rainwater collection pits within the village are used as well. The public rainwater collection pit in the village sells a bucket of rainwater for 100TSH. Another rainwater collection pit is under construction. In the dry season, the pond dries up and water is drawn from the hand pump well in the village of Kiromba, which is located 12km away. An individual collects water from the source and delivers the water to the villagers for 500TSH/bucket. This village is as poor as Mbembaleo. In the past, the Ministry of Water drilled a 70m borehole. However, the work was never completed as the hole collapsed prior to the installation of the casing. In consideration of the village population and groundwater level, the construction of a level 2 system would be appropriate.

Water Supply and Water Use Conditions in the Selected 100 Villages (2)

Mtwara Rural District, Mtwara Region

Division	Ward	Village	Population		Water source for domestic use as of 2000	Condition of Existing Water Supply Facility and Facility Plan
			Census 1988	Actual 2000		
Ziwani	Ziwani	Ziwani	4,147	6,700	Dam (500m)	Ziwani is not a village but a large community made up of the villages of Nambelekerela and Msakala. Both villages currently get water from a dam. In the dry season when the dam dries up, the villagers use the ring well with a handpump 3km away as a water source. In 1978, the Ministry of Water constructed a level 2 system, but now the facility does not work because the pump fell and got stuck inside the borehole during a repair work in 1996. Before this, a well was constructed in the low lying area at the end of the community and an elevated tank on the other end where the elevation is slightly higher. Two pipelines for water transmission and distribution were installed along the main road. Although a small scale level 2 facility was constructed in the pilot study, there is a need to upgrade the system facilities to suit the future structure and population of the villages.
	Nalingu	Msimbati	3,591	5,320	DW (HP)	Although Msimbati is the selected target village, the counterparts actually recommended the sub-village of Ruvula. There are no residential sections in this sub-village and the 240 households therein are spread out in a wide area. Therefore, the designation of the sub-village as a target area is considered unsuitable. The village of Msimbati has a ring well with a handpump. The ring well, however, cannot meet the water needs of a village as big as Msimbati. The installation of a handpump facility is deemed necessary therefore, but because the development of a deep borehole is very difficult in this area, a shallow borehole with a handpump for every small village community will be considered.
		Msangamkuu	2,951	4,980	Traditional dug well	This is a large village by the sea at the tip of the peninsula. Although some of the villagers do live at the tip of the peninsula, the majority live inland. Surprisingly enough, this is not a fishing village but an agricultural village, e.g. cultivation of coconuts, cashew nuts. Water is currently extracted from a ring well with a handpump and a traditional dug well. In 1977, the Ministry of Water constructed the ring well as the level 2 water supply system source, but the well has not been used since it dried up in 1987. The villagers desire a level 2 water supply system. The construction of shallow boreholes with hand pumps at every small village community will be considered as the geologically would not allow the development of deep boreholes.
	Nanguruwe	Nanguruwe	2,167	4,482	Dam (800m)	This is a large village along the road connecting the towns Mtwara and Newala. The village takes water from a dam, but when this dries up in the dry season, water is taken from a spring 2km away. In 1970, the Ministry of Water constructed a level 2 facility with a ring well dug beside the dam as water source. However, the well has not been used since it dried up in 1983. the villagers want a level 2 facility and this facility is desirable in view of the village structure and population.

Water Supply and Water Use Conditions in the Selected 100 Villages (3)

Mtwara Rural District, Mtwara Region

Division	Ward	Village	Population		Water source for domestic use as of 2000	Condition of Existing Water Supply Facility and Facility Plan
			Census 1988	Actual 2000		
Ziwani	Nanguruwe	Mbawala	2,337	2,050	HP (DW) (250m)	This is a village along the road connecting the towns Mtwara and Newala. A ring well with a hand pump is the present water source. However, since the well is used by 2,500 people, the handpump is no longer as efficient as it used to be. The well also dries up in the dry season, and water is taken from a spring 2km away. In 1982, FIN constructed a level 2 facility with borehole as a water source. The facility has not been used since the pump broke down in 1995. A level 2 system is appropriate in view of the village population. However, since the groundwater level is low, there is a need to conduct a survey on the site where the well should be constructed upon.
Mayanga	Mayanga	Kawawa	2,355	3,530	Dam (1.5km)	The topography of this village is complex as it is separated by two valleys. The village currently depends on a small dam for water supply. When the dam dries up in the dry season, the villagers dig a hole at the bottom and oozes out is used. In 1978, FIN constructed a level 2 facility in one village under the Mbawala scheme. This facility, however, is no longer in use since 1991. The village chief desires the construction of a new dam. The construction of a Level 1 system is desirable in terms of the village structure and shallow groundwater level.
Kitaya	Kitaya	Kitaya	4,412	2,767	Ruvuma River (500m)	This village is located along the Ruvuma River and the residents use the water from the river. In 1972, the Ministry of Water constructed a ring well (suction well, no treatment measure) beside the Chidya Lake 5km from the village, and water is extracted by pumping. The pump broke down in 1991 and has not been working since then. Chidya Lake functions as a retarding pond when the Ruvuma River overflows. This study is considering the use of the elevated tank (45m ³) in the village. The villagers want a level 2 facility, and this is considered appropriate in view of the village population, although the use of a handpump is possible as the groundwater level is shallow. Although, a nearby river may be used as a source, to do so would require the implementation of educational programs on sanitation.
		Arusha Chini	—	1,654	Flowing Spring (1km)	This is a small but compact village 8km northwest of Kitaya Village. The village currently gets water from a spring about 1km down the valley. In 1975, the Ministry of Water constructed a water supply facility for Arusha Chini and Arusha Juu villages under the Arusha Chini Water Supply Scheme. The facility is no longer used, however, since the pump broke down in 1993, followed by the destruction of the well. The villagers want a level 2 facility. During the pilot study, a small scale level 2 system consisting of a well, a pump and a tank, was constructed in the village. Although this would meet future needs, the scale of the village would necessitate distribution pipelines and communal faucets.

Water Supply and Water Use Conditions in the Selected 100 Villages (4)

Mtwara Rural District, Mtwara Region

Division	Ward	Village	Population		Water source for domestic use as of 2000	Condition of Existing Water Supply Facility and Facility Plan
			Census 1988	Actual 2000		
Kitaya	Kiromba	Mayambe Juu	—	887	Ruvuma River (8km)	This is a small village 10km west of Kitaya Village. Water is currently taken from the Ruvuma River 8km away. Water vendor collect water from the river and sell it in the village for 500TSH/bucket. Although a level 2 system is planned under the Kitaya Scheme, nothing has been implemented. The villagers want a level 2 system. Although a handpump facility would meet the needs of the village in terms of population, a level 2 system would be necessary as the groundwater level is deep.
	Mahurunga	Kitunguli	1,633	4,530	Dug Well (800m)	Kitunguli used to be a sub-village of Mahurunga and forms the residential section. In 1980, FIN constructed a ring well for the two villages under the Mahurunga Scheme. The facility has not been used, however, since the pump broke down in 1989. Besides this ring well, however, Kitunguli was also taking water from a traditional well, while Mahurunga uses a ring well dug beside a pond. The Mahurunga Scheme planned to deliver water to public faucets in the village by conveying water by gravity to a 250m ³ tank at a ground elevation about 100m higher than the site where the well is located. However, as the pressure is so high, a secondary tank is used to neutralize the pressure. Both villages want a level 2 system. In view of the structure and population of these villages, the construction of one level 2 system to accommodate the water needs of both villages is deemed appropriate. There is no need to use the elevated 250m ³ tank. There is, however, a need to divide the area into two distribution sections: highland section and lowland section.
		Mahurunga	2,279	4,628	Dug well (700m)	
Dihimba	Dihimba	Dihimba	1,244	1,587	Tap water 10TSH/20l	The villages of Dihimba and Mpondomo combine to form one residential section. In 1980, FIN constructed a borehole for both villages under the Dihimba Scheme. The study in January 2000 showed that the borehole is not being used. Now it is, however, as the well has been cleaned and the pump was repaired. Of the 12 public faucets in both villages, only the three faucets in the village of Dihimba are being used. Water from the faucet is being sold for 10TSH/20 liters. The faucets have undergone repair more than several times to date. According to DWE, the well is at the end of its life span with the screen destroyed and the pump damaged by gravel that has entered through the screen. Since the construction of a new well is necessary, a level 2 system that accommodate the water needs of these two villages seems appropriate in view of the structure and population of these villages.
		Mpondomo	1,349	2,556		

Water Supply and Water Use Conditions in the Selected 100 Villages (5)

Tandahimba District, Mtwara Region

Division	Ward	Village	Population		Water source for domestic use as of 2000	Condition of Existing Water Supply Facility and Facility Plan
			Census 1988	Actual 2000		
Namikupa	Mihambwe	Mihambwe	1,792	3,279	Ruvuma river (8-10 km)	This is a large village (a population of over 3,000) located 18km east of the town of Tandahimba. Together with neighboring Ruvuma Village, this village forms a residential section with a total population of 6,217 people. The water source at present is rainwater in the rainy season and the Ruvuma River (8 to 10km away) in the dry season. In 1985, FIN constructed a level 2 system to serve as a terminal facility of the Kitangar Scheme. An elevated steel tank was constructed at the border of Mihambwe and Ruvuma villages, and a total of 10 faucets were installed in the two villages. From 1987, however, water has not been transmitted from Kitangar. The construction of one water supply system to meet the water needs of the two villages is deemed appropriate. Although the villagers want a handpump facility, this is impossible as the groundwater level is low. A level 2 system will be constructed therefore. The villagers also said that they can afford the O/M expenses.
	Kitama	Kitama	2,918	6,198	Pond (2.0km)	This is a large village along the road connecting Mtwara and Tandahimba. This village is the combination of the residential sections of the 4 villages of Kitam, Mwengea A and B, and Namunda, that is a total population of 6,070 people. Water is taken from a nearby pond in the rainy season and is purchased through pipelines from Tandahimba (10km away) for 20 to 30TSH/20 liters in the dry season. In 1988, FIN constructed a level 2 facility (terminal facility) under the Kitangar Scheme. However, water has not been transmitted from Kitangar since 1995. It is presumed that the topography prevents water from getting stored in the tank. Although the residents say that water did come out, they refer to the water that came out of the faucet that was affixed to the pipe after it was directly connected to the transmission pipeline, and not the fact that water was stored in the tank and distributed thereafter through the net. The construction of a level 2 system is appropriate in consideration of the population and structure of the village.
		Mitondi A	1,517	1,333	Traditional Dug Well (2km)	This is a small village 5km northeast of Tandahimba. Water is taken from a ring well located 100m down a valley 2km away. In the rainy season, water is taken from a pond 500m away. A water supply facility has never been constructed in this village. The villagers desire the construction of a dam, but they will not be able to afford the expenses for the treatment of the water and the maintenance of the facility. In view of the village scale, a handpump facility would be enough. But because the groundwater level in this area is low, a motor pump should be installed instead.

Water Supply and Water Use Conditions in the Selected 100 Villages (6)

Tandahimba District, Mtwara Region

Division	Ward	Village	Population		Water source for domestic use as of 2000	Condition of Existing Water Supply Facility and Facility Plan
			Census 1988	Actual 2000		
Namikupa	Mkoreha	Misufini	—	883	Ruvuma river (8 km)	This is a small compact village 15km southeast of Tandahimba. Water is taken from Ruvuma River (8km away) at present. In the rainy season, the villagers use rainwater. In 1984, FIN constructed a level 2 facility, as one of the facilities under the Kitangar Scheme. However, since there is not enough water pressure, the facility has never transmitted water for distribution, hence the tank, distribution pipes and the 3 communal faucets have never been used as well. Even with this condition, the residents still want handpump facilities. However, a motor pump would be recommendable in view of the low groundwater level.
Litehu	Luagala	Litehu	1,273	840	Pond (1.5km)	This is a small village of 840 people located 30km north of Tandahimba. Water is taken from a pond 1.5km away. In 1988, FIN constructed a level 2 facility as one of the facilities under the Kitangari Scheme. From sometime in 1990, however, there was not enough pressure to transmit water to the tank. At present, a faucet is attached onto the end of a pipe that is directly connected to the transmission pipe. A bucket is placed in front of the faucet to collect the water; time is usually wasted waiting indeterminately until water comes out. The villagers want a handpump facility. However, a motor pump should be provided as the groundwater level in this area is low.
		Mmeda	778	823	Pond (300m)	This is a small village about 3km northwest of Litefu Village. Water is taken from a pond located 300m from the center of the village. In 1999, the Ministry of Water constructed a ring well with a handpump at the edge of this pond. The well, however, dried up right away and is not used at present. In view of the village population, a handpump facility would be appropriate. However, because of the low groundwater level in the area, a motor pump should be provided instead.
		Mabeti	—	850	Pond(8km)	This is a small village of 850 people. There is no water resource near the village. In the dry season, the villagers either get water from a pond in Namindondi (8km away) or purchase water from the pipes of Luagala (17km) for 10TSH/20 liters. Rainwater is collected for use in the rainy season. FIN had a plan under the Kitangar Scheme to extend the pipelines of Nangudyane to provide water to this village. The plan, however, never materialized. The villagers desire the implementation of this plan.
	Mkwiti	Mkwiti Chini	1,768	1,034	Spring (2km)	This village is located on the northern end of a plateau where the highway linking Masasi and Newala is constructed upon. At present, water is taken from a spring at the bottom of a valley 2km away. FIN had a plan under the Kitangar Scheme to extend the pipelines of Nangudyane to provide water to this village. The plan, however, never materialized. The villagers desire the implementation of this plan.

Water Supply and Water Use Conditions in the Selected 100 Villages (7)

Tandahimba District, Mtwara Region

Division	Ward	Village	Population		Water source for domestic use as of 2000	Condition of Existing Water Supply Facility and Facility Plan
			Census 1988	Actual 2000		
Litehu	Ngunja	Namindondi Juu	1,310	1,550	Spring (1.6km)	This village is on the northern end of a plateau. Water is taken from a spring somewhere down the cliff on the northern side of the valley. In 1982, a ring well with a handpump was constructed. The pump broke down in 1994 and has not been used since then. FIN had a plan under the Kitangar Scheme to extend the pipelines from Ngunja to provide water to this village. The plan, however, never materialized. The villagers want a ring well with a handpump.
		Nanjanga	—	1,525	3km to Mangombya	This is a small village of 525 people without any water supply source. In the rainy season, rainwater is collected for use. In the dry season, water is taken from the pipelines of Mangombya (3km away) for a certain amount. FIN had a plan under the Kitangar Scheme to extend the pipelines from Mangombya to provide water to this village. The plan, however, never materialized. In view of the village population, a handpump facility would be appropriate. However, the low groundwater level in the area would require a motor pump.
		Mkuti	—	1,620	5km to Chikuti	There are no water resources near the village. In the rainy season, rainwater is collected for use. In the dry season, water is purchased from Chikuti village through the pipe scheme.

Water Supply and Water Use Conditions in the Selected 100 Villages (8)

Newala District, Mtwara Region

Division	Ward	Village	Population		Water source for domestic use as of 2000	Condition of Existing Water Supply Facility and Facility Plan
			Census 1988	Actual 2000		
Newala	Nanguruwe	Mnanje	813	780	Traditional Dug Well (5km)	This village (small population) is located on the southern end of the Makonde Plateau and the houses are sporadically distributed over a considerably vast area. The village relies on a traditional dug well 5km away and a rainwater collection tank for water supply. In the dry season when the well dries up, the villagers use the water supply system in the town of Newala (6km away). Water vendor collect water and sell it in the village for 100TSH/bucket. A plan to install pipelines from Newala all the way to the village was made but never implemented. To the villagers, any water supply system that could provide them with water is good. In view of the village structure and population, a handpump facility would be appropriate. However, a level 2 system should be constructed as the groundwater level is deep.
	Mnekachi	Kilidu	781	1,780	River (12km)	This village is along the road connecting the Masasi highway to the town of Newala. Water is taken from the Kitangari River 12km away. Water vendor collect water from the river and sell it in the village for 300 to 600TSH/bucket. In the rainy season, the villagers collect and use rainwater. In 1981, the Ministry of Water constructed a level 2 system under the Kitangari water supply scheme. In 1991, the water pressure decreased and transmission became difficult. To the villagers, any water supply system that could provide them with water is good. A level 2 system will be constructed as the groundwater level is deep.
Chilangala	Mnyambe	Mnima	1,172	1,162	Spring (8km)	This village takes water from a spring down a valley 8km away. In 1972, the Ministry of Water constructed a level 2 system under the Mwinji water supply scheme and developed a spring as the water source. This source however was destroyed in the 1990 flood, consequently rendering the whole scheme inoperative. There are two tanks in this village. An elevated tank for the distribution of water within the village and a ground tank (250m ³) to water transmission to other villages. The successful development of groundwater resources in this village would also likely revive the Mwinji water supply scheme.
	Chilangala	Miyuyu	792	850	Spring(2.5km)	This is a deserted/impoverished village at the northern limit of Makonde Plateau, the most elevated section (940m) of Newala. The villagers use a ladle to collect in a bucket the small amount of water coming out about 100m down a steep cliff. In 1982, the Ministry of Water constructed a level 2 system under the Mwinji water supply scheme developing a spring as water source. This source however was destroyed in the 1990 flood, consequently rendering the whole scheme inoperative. Under the Mwinji water supply scheme, two springs were developed as water sources: in this village and in Mnyamba. Neither sources however survived the 1990 flood, leaving the scheme without a water source. This village also has a ground tank (250m ³) constructed for the water transmission to other villages. Although the village has a small population, a level 2 facility will be constructed as the groundwater level is deep. Immediate measures should be taken for this village.

Water Supply and Water Use Conditions in the Selected 100 Villages (9)

Newala District, Mtwara Region

Division	Ward	Village	Population		Water source for domestic use as of 2000	Condition of Existing Water Supply Facility and Facility Plan
			Census 1988	Actual 2000		
Chilangala	Chilangala	Namangudu	—	722	Spring(9km)	This is a deserted/impoverished village at the northern limit of Makonde Plateau. The villagers purchase water (10TSH/bucket) from the elevated tank in Mkongi through the faucet attached to the tank. (This tank is operated under the Pipe water supply scheme and only contains a small amount of water.) Water is also taken from Chinyanyila (a spring along the Mipiti River) which is 20km away. Rainwater is collected and used in the rainy season. Water vendor sell water for 200TSH/bucket. In view of the village population, a handpump facility would be desirable. However, a level 2 facility is required because the groundwater level is deep. The drilling of a well in the village, the installation of a tank at the well site, and affixing a tap would be a satisfactory water supply system for this village.
Kitangari	Kitangari	Mitanga	—	1,271	2km to Maputi	This small village purchases water (10TSH/20 liters) from Maputi Village (2km away) which is under the Kitangari water supply scheme, and collects and uses rainwater in the rainy season. There has never been a water supply construction plan for this village. In view of its population, a handpump facility would be appropriate, but the deep groundwater level in this area would require a level 2 facility.
		Likwaya	—	507	3km to Maputi	This is a small village of 507 people along the highway that connects Newala to the Masasi highway. The villagers purchase water (10TSH/20 liters) from Maputi Village (3km away) which is under the Kitangari water supply scheme. Water is also purchased for 50TSH/20 liters from a private borehole down a valley 90m ahead. In the rainy season, the villagers collect and use rainwater. There has never been a water supply construction plan for this village. In view of its population, a handpump facility would be appropriate, but a level 2 facility will be constructed because the groundwater level is deep. The construction of a well would be futile because the village has a very small population and therefore maintenance would be a problem.
	Malatu	Malatu juu	1,845	2,230	Traditional Dug Well (7km)	This village takes water from a traditional dug well (7km away) and a ring well with handpump (8km away) along a valley, together with 7 other villages. In the rainy season, the villagers collect and use rainwater. In 1992, the Ministry of Water and the villagers conducted an experiment by connecting a pipeline to the facilities of the Mukunya water supply scheme to provide water through two communal faucets. The operation was terminated after 6 months when problems were found with the pipe. In view of the village population and the groundwater level, a level 2 system will be constructed. The villagers indicated willingness to pay the O&M expenses.

Water Supply and Water Use Conditions in the Selected 100 Villages (10)

Newala District, Mtwara Region

Division	Ward	Village	Population		Water source for domestic use as of 2000	Condition of Existing Water Supply Facility and Facility Plan
			Census 1988	Actual 2000		
Kitangari	Mchemo	Mdimba	1,448	1,362	4.5km to Kitangari Schem	This village is along the road connecting the Masasi highway to the town of Newala. The villagers purchase water 4.5km away in a village where the Kitangari water supply scheme is being operated for 10TSH/20 liters. In the rainy season, they collect and use rainwater. A water supply system has never been constructed in this village. In the past, FIN had a plan to extend the pipelines of the Kitangari water supply scheme to the village. The plan, however, never materialized. The villagers long for the plan to be implemented. In view of the village population, a handpump facility would be desirable. However, a level 2 system will be constructed because the groundwater level is deep.
	Chiwonga	Chiwonga	—	1,558	9km to Maputi	This village is along the road connecting the Masasi highway to the town of Newala. The villagers purchase water (10TSH/20 liters) from Maputi Village (9km) which is under the Kitangari water supply scheme. In the rainy season, the villagers collect and use rainwater. A water supply facility has never been constructed in this village. In the past, FIN had a plan to extend the pipelines of the Kitangari water supply scheme to the village. The plan, however, never materialized. In view of the village population and the groundwater level, a level 2 system will be constructed.
		Mmulunga	1,497	1,593	8km to Maputi	This village purchases water (10TSH/20 liters) from Maputi Village (8km away) which is under the Kitangari water supply scheme. A water supply facility has never been constructed in this village. In the past, FIN had a plan to extend the pipelines of the Kitangari water supply scheme to the village. The plan, however, never materialized. In view of the village population and the groundwater level, a level 2 system will be constructed.

Water Supply and Water Use Conditions in the Selected 100 Villages (11)

Masasi District, Mtwara Region

Division	Ward	Village	Population		Water source for domestic use as of 2000	Condition of Existing Water Supply Facility and Facility Plan
			Census 1988	Actual 2000		
Chikundi	Nanganga	Nanganga	2,051	2,385	Traditional Dug well	This village is located along the Masasi highway and uses the traditional dug well in a nearby valley as water source. Although there is a ring well nearby, the handpump of the well is broken. In 1978, the Ministry of Water constructed a level 2 system under the Liputu-Mkungu Water Supply Scheme. Water was provided through 6 communal faucets. These faucets however stopped working since 1991. The tank is located in the adjacent village. There is also a gasoline station in this village: the Nanganga Filling Station. This makes diesel quite accessible to the area. Because the groundwater level is shallow, a handpump facility would be satisfactory. However, in view of the village population, a level 2 system would be more appropriate.
Lisekese	Lisekese	Namkungwi	1,220	1,339	Traditional Dug well	This village is located along the new road west of Masasi. The villagers get water from a traditional dug well in the village. In the dry season, the well dries up and the villagers use the dug wells of the villages of Matawale (7km), Sululu (6km), and Namajani (6km). In 1979, the Ministry of Water constructed a level 2 system under the Mlingula water supply scheme. The system, however, has not been used since 1982. The villagers want a level 2 system.
	Mikangaula	Kilosa	1,909	2,001	Traditional dug well (1.3km)	This is a long and narrow village along a road. The villagers use the traditional dug well 1.3km away. There has never been a water supply facility in this village, although the village is considered to be capable of operating and maintaining pump facilities. Because the groundwater level is shallow, pumping can be carried out with a handpump facility. However, a level 2 system would be appropriate in view of the village scale.
	Namatutwe	Chikoweti	2,259	3,273	Traditional dug well	Despite the fact that it is a combination of Juu and Chini, this is a straggling village. The villagers take water from a traditional dug well and 9 ring wells. The ring wells dry up in the dry season so the villagers rely more on the dug well. In 1982, the Ministry of Water started the construction of a water supply system made up of 3 boreholes, a tank, and 3 communal faucets, but never completed the work and left the machinery and pipelines uninstalled. Because groundwater level is shallow in the area, pumping is possible even with a handpump. However, a level 2 system is appropriate in view of the village scale.
		Mlingula	3,619	3,321	Traditional dug well (1km)	This village is located along the new road west of Masasi. The villagers get water from a traditional dug well nearby. In 1981, FIN constructed 21 ring wells with handpumps. Only 1, however, is working at present. This ring well is 1km from the dug well and is hardly used. In 1979, the Ministry of Water constructed a facility to provide water to the villages of Mlingula and Namkungwi, under the Mlingula water supply scheme. This facility, however, has not been working since 1982. Because the groundwater level is shallow, a handpump facility would be satisfactory. However, a level 2 system is appropriate in view of the village scale.

Water Supply and Water Use Conditions in the Selected 100 Villages (12)

Masasi District, Mtwara Region

Division	Ward	Village	Population		Water source for domestic use as of 2000	Condition of Existing Water Supply Facility and Facility Plan
			Census 1988	Actual 2000		
Lisekese	Lukuledi	Chiwale	2,193	9,567	Traditional dug well (1km)	This is a huge village of 9,000 people. The village currently uses a traditional dug well constructed on a dam site in the northwest. This dug well is not very productive at all. In the past, FIN constructed a water supply system consisting of a dam, tank and 3 communal faucets. The dam, however dried up in 1987 and the system has not been used since then. The villagers want a level 2 system. The tank is made of steel and cannot be used again. The groundwater level in the area is shallow so a handpump facility would be okay. However, it would be appropriate to construct a level 2 system in this village in view of the population.
Nanyumbu	Nanyumbu	Nanyumbu	1,079	1,205	Traditional dug well (1km)	This is a long and narrow village along a road. The villagers take water from a traditional dug well in the northeast. The dug well however does not produce water of good quality (red and turbid, but low salinity levels). Although there is also a ring well with a handpump, the water from this well is not used for drinking as it contains EC2,650 μ S/cm. In 1979, the Nanyumbu Scheme was constructed by FIN. Under the scheme, water is to be transmitted to a tank in the neighboring village of Mkuula through a pipe for distribution. However, the tank has never been used. The villagers want a handpump facility. In view of the village population, there is a need to increase the number of boreholes with handpumps in the village.
		Namasogo	1,026	1,304	Traditional dug well (5km)	This is a long and narrow village along a road. The villagers use the traditional dug well located 5km away on an area that is not accessible by car. The village structure is simple: houses line a flat land along a road. The difference of the northern end and the southern end elevation is only 10m. There has never been a water supply facility in this village, but the villagers said that they can operate and maintain the pump facilities.
Lulindi	Namalenga	Msanga	951	954	Traditional dug well (1.6km)	This is a mountain village at the center of the Makonde Plateau. The village currently uses the traditional dug well 1.6km north. In 1978, China constructed a water supply system consisting of boreholes, tanks and communal faucets. Within a year, however, the facilities broke down and has never been used since then. This village is made up of the Juu and Chini communities. The villagers want a level 1 system. Although a handpump would suffice in view of the village scale, a level 2 system will be constructed because the groundwater level is deep.

Water Supply and Water Use Conditions in the Selected 100 Villages (13)

Masasi District, Mtwara Region

Division	Ward	Village	Population		Water source for domestic use as of 2000	Condition of Existing Water Supply Facility and Facility Plan
			Census 1988	Actual 2000		
Chiungutwa	Chiungutwa	Mpeta	2,399	2,117	Dug well (200m)	This is a village along the road connecting Masasi and Newala. The villagers use 20 ring wells; only 3 ring wells have functioning handpumps. These facilities were constructed in 1984 by FIN. In the dry season, all the wells dry up. The villagers then use the Mwititi (8km) and the Miesi (16km) rivers. In 1976, a level 2 system (borehole) was constructed. The facility has not been used however ever since the pump broke down. A handpump facility would be suitable for the village because the groundwater level is shallow. However, a level 2 system would be appropriate because of the population scale.
	Mbuyuni	Mitonji	831	2,500	Traditional dug well (1km)	This village currently uses a traditional dug well as water supply source. In 1988 FIN constructed ring wells with handpumps (Indian Mark II) in 2 places. These broke down in 1995 and 1999 and have not been repaired due to the lack of spare parts. The village consists of the Juu and Chini communities. The villagers want a level 2 facility. Although the team explained how costly this system is, the villagers raised no resistance. A handpump facility would be okay as the groundwater level is shallow. However, in view of the population, a level 2 system would be appropriate.

Water Supply and Water Use Conditions in the Selected 100 Villages (14)

Kilwa District, Mtwara Region

Division	Ward	Village	Population		Water source for domestic use as of 2000	Condition of Existing Water Supply Facility and Facility Plan
			Census 1988	Actual 2000		
Pwani	Kikole	Migeregere	1,355	1,400	Nakurukuru (tap)(15km)	This is a small village by the Kiwa-Liwale highway. The village does not have any water supply source. The villagers have to travel to 3 places for water intake. They either purchase water from the Nakurukuru water supply system (15km away) for 20TSH/20 liters or from a water vendor for 200TSH/20 liters; use the water supply system of Ruhawe (10km away); use the tank of Mubati (10km away). In 1973, the Ministry of Water constructed a level 2 system using borehole as a source. The facility, however, has not been used since 1983 and this is attributed to the lack of a pump that is compatible with the well water level. The villagers want a level 2 system. The tank is made of concrete and cannot be used again.
Miteja	Tingi	Mtandango	818	909	Traditional dug well (1.5km)	This is a small village along the Dar es Salam-Lindi highway. The village only has one water source: a traditional dug well located 1.5km away. The dug well produces very little water and usually makes the villagers wait 5 to 6 hours until it produces water. In 1979, FIN constructed 5 shallow wells. All the system sources however have dried up. The dug well produces turbid water. The interview with the residents during a village assembly confirmed that the residents want a level 2 system based on a motor pump since the handpumps dry the wells up in the dry season. The residents expressed the ability to pay for fuel. However, the team explained that, depending on the water level, the O&M expenses and BH of a handpump facility would be manageable. The study results conclude that a handpump facility would suffice even if the system is to be operated in the dry season. It is also appropriate in consideration of the population and groundwater level.
	Kinjumbi	Somanga Ndumbo	2,188	3,800	Protected dug well	This village is located along the Dar es Salaam-Lindi highway. Houses are sporadically distributed and only a small section is relatively densely populated. In 1978, FIN constructed 17 ring wells with handpumps. All the handpumps are damaged at present and only 3 ring wells are being used (by removing the well cover and the handpumps). For domestic use, however, the villagers use a traditional dug well as water from the three ring wells are high in EC (2,638 μ S/cm). The villager want a level 2 system. Although a handpump facility would be okay in view of the shallow groundwater level, a level 2 system would be appropriate in consideration of the village population.