

First Mile Project

ICT Survey

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Table of Content

1. INTRODUCTION – FIRST MILE PROJECT	7
2. OBJECTIVES OF THE MISSION.....	7
3. METHODOLOGY	7
3.1 REVIEW OF BACKGROUND DOCUMENTS	7
3.2 PREPARATION OF THE CONFORMITY TABLE	8
3.3 PREPARATION OF TOOLS.....	8
3.4 LOGISTICS	8
4. SUMMARY OF FINDINGS	9
4.1 CONNECTIVITY SITUATION	9
4.1.1 <i>Internet</i>	9
4.1.1.1 National Internet Service Providers	9
4.1.1.1.1 SatCom.....	9
4.1.1.1.2 AfSat	9
4.1.1.1.3 SimbaNet.....	10
4.1.1.1.4 Summary of VSAT options	10
4.1.1.1.5 Tanzania Telecommunication Company Ltd (TTCL)	11
4.1.1.1.6 Mobile Internet.....	12
4.1.1.1.6.1 Celtel	12
4.1.1.1.6.2 Vodacom	12
4.1.1.1.7 Average Internet connectivity cost through mobile providers.....	13
4.1.2 <i>Situation in each District</i>	13
4.1.2.1 Hai District.....	13
4.1.2.2 Babati District	14
4.1.2.3 Muheza District.....	14
4.1.2.4 Mufindi District	15
4.1.2.5 Songea District.....	15
4.2 MOBILE PHONE	16
4.2.1 <i>National Mobile Phone companies</i>	16
4.2.1.1 Celtel	16
4.2.1.2 TIGO	16
4.2.1.3 Vodacom	16
4.2.2 <i>Summary of mobile phone prices</i>	16
4.2.3 <i>Mobile phone coverage in each surveyed District</i>	17
4.3 ADVANTAGES AND DISADVANTAGES OF EACH CONNECTIVITY OPTION	17
5. COVERAGE BY NATIONAL AND LOCAL RADIO STATIONS.....	18
5.1 NATIONAL RADIO STATION.....	18
5.1.1 <i>Radio coverage by Radio Tanzania Dar es Salaam (RTD)</i>	18
5.2 RADIO COVERAGE IN THE DISTRICTS.....	19
5.2.1 <i>Hai District</i>	19
5.2.2 <i>Babati District</i>	19

5.2.3 <i>Muheza District</i>	19
5.2.4 <i>Mufindi District</i>	19
5.2.5 <i>Songea District</i>	20
6. ENHANCING CONNECTIVITY OF MACS.....	20
6.1 INTERNET CONNECTION.....	20
6.1.1 <i>Hai District</i>	20
6.1.2 <i>Babati District</i>	21
6.1.3 <i>Muheza District</i>	21
6.1.4 <i>Mufindi District</i>	21
6.1.5 <i>Songea District</i>	22
6.2 SUMMARY OF RECOMMENDATIONS FOR INTERNET CONNECTIVITY	22
6.3 COST IMPLICATIONS	22
6.3.1 <i>Hai District</i>	22
6.3.2 <i>Babati District</i>	23
6.3.3 <i>Muheza District</i>	23
6.3.4 <i>Mufindi District</i>	23
6.3.5 <i>Songea District</i>	24
6.4 ISSUES TO CONSIDER	24
6.4.1 <i>Hai District</i>	24
6.4.2 <i>General</i>	24
6.5 PRESENT STATUS OF MACS	25
7. TRAINING REQUIREMENTS FOR MAC MEMBERS.....	25
8. LIST OF COMPANIES / ORGANIZATIONS AND PEOPLE CONTACTED... 25	
8.1 DAR ES SALAAM	25
8.2 HAI DISTRICT	26
8.3 BABATI DISTRICT	26
8.4 MUHEZA DISTRICT	27
8.5 MUFINDI DISTRICT	27
8.6 SONGEA DISTRICT	27
8.7 MOSHI DISTRICT	28
8.8 ARUSHA REGION	28

LIST OF TABLES

Table 1 – Conformity table	8
Table 2 – Summary of visits	8
Table 3 – Connection speed and monthly subscription - SatCom	9
Table 4 – Connection speed and monthly subscription – C band - AfSat	10
Table 5 – Connection speed and monthly subscription – Ku band – AfSat Ku – Band... ..	10
Table 6 – Average price per Kbps through VSAT providers	11
Table 7 – Packages offered by TTCL	11
Table 8 – Prices for different bundle options provided by Celtel.....	12
Table 9 – Prices for different bundle options provided by Vodacom.....	13
Table 10 – Internet connectivity cost through mobile operators	13
Table 11 – Average cost per second through various mobile phone providers	17
Table 12 – Summary of advantages and disadvantages of Internet connectivity options ..	17
Table 13 – Summary of costs for broadcasting advertisements through RTD	18
Table 14 – Summary of recommendations for Internet connectivity	22
Table 15 – Initial cost for establishing Internet connectivity – Hai District.....	22
Table 16 – Initial cost for establishing Internet connectivity – Babati District	23
Table 17 – Initial cost for establishing Internet connectivity – Muheza District.....	23
Table 18 – Initial cost for establishing Internet connectivity – Mufindi District	24
Table 19 – Initial cost for establishing Internet connectivity – Songea District.....	24
Table 20 – Registration Status of MACs	25

Executive summary

The First Mile Phase 1 was implemented in collaboration with the Agricultural Market Systems Development Programme (AMSDP) of the Tanzanian Government. Phase 1 of the First Mile achieved remarkable success and impact and the many lessons and good practices that emerged have been well-documented and widely shared.

Phase 2 of the First Mile Project is aiming to support the emergence of commercially viable rural service companies that use ICTs to provide marketing services to small farmers in Tanzania.

One of the activities to be completed in order to achieve the goal of Phase 2 of the First Mile Project was to conduct a survey of the present ICT situation in the five Districts covered by the project.

The main findings of the survey were:

- There were a variety of options for connection to the Internet.

In each of the five Districts surveyed, a number of options were identified in relation to Internet connectivity. These options included the following:

- Wireless dial-up
- Wireless CDMA
- Via mobile phone
- ADSL
- VSAT, and
- Local ISP providers (in some of the Districts)

From these options, the wireless dial-up was the least expensive but at the same time it was the least reliable service, while the most expensive option was through a VSAT.

- ICT landscape is changing very rapidly

The ICT situation in Tanzania is changing very rapidly. This fact was shown by the increased number of ICT related services and Internet connectivity options growing both in number and quality of the service. This fact is at the same time related with an increased competition in both mobile and Internet related services.

- Lack of flexibility in changing service provider

Once a customer has decided to go with a specific service provider, it is very difficult to change service provider after a certain amount of time. This is due to the fact that the initial cost is high (especially in the case of VSAT).

- Mobile phone coverage is available in all the Districts

All the major national mobile phone providers were present in all the five Districts under the project. The mobile phone coverage was the best alongside the main roads.

Key recommendations

- Connecting the MAC office

In the Districts that have the broadband connectivity option, arrange for this type of connectivity.

In the Districts that do not have the broadband connectivity option, start with a contract with one of the local Internet Café. Then when the broadband option becomes available re-evaluate the situation.

- Internet connection for the mobile members

The best connectivity option that provides mobility to the members of MAC is through a USB modem (provided through one of the mobile service providers).

- Computer related training is needed

To better utilize the resources provided and to better serve their customers, MAC members will have to complete a computer related training which should focus on general computer use, a number of applications (word-processing, spreadsheets, and databases), and Internet use

1. Introduction – First Mile Project

The First Mile Phase 1 was implemented in collaboration with the Agricultural Market Systems Development Programme (AMSDP) of the Tanzanian Government. Phase 1 of the First Mile achieved remarkable success and impact and the many lessons and good practices that emerged have been well-documented and widely shared.

Phase 2 of the First Mile Project will explore ways to strengthen the link between mobile phones and knowledge sharing by exploring use of SMS to access on-line databases of local market intelligence.

The goal of Phase 2 of the First Mile Project is to support the emergence of commercially viable rural service companies that use ICTs to provide marketing services to small farmers in Tanzania.

2. Objectives of the mission

One of the activities to be completed in order to achieve the goal of Phase 2 of the First Mile Project was to conduct a survey of the present ICT situation in the five Districts covered by the project.

The following were the objectives of the survey:

- Provide an overview of the present ICT situation with regard to Internet connectivity, mobile phones, and local radios as well as plan that might exist by various ICT providers to expand the presence of ICT in the Districts under the project area
- Provide options on how the Market Access Company (MACs) in each District under the project need to follow in order to achieve the connectivity that will be required to conduct their operations
- Propose training that operators of MAC will need to undergo in order to be able to operate the required ICTs
- Propose trials that could be initiated or planned by the First Mile Project within the next to-three months for the establishment of MACs

3. Methodology

3.1 Review of background documents

Some of the background materials that were consulted before and during the completion of the ICT survey include:

- Materials presented at Linking Local Learners (LLL) web site (<http://www.linkinglearners.net>)
- Phase 2 First Mile Project proposal, and
- Various briefs related with First Mile Project and the establishment of Market Access Companies (MACs)

3.2 Preparation of the conformity table

To make sure that all the objectives of the mission were addresses, the following conformity table was prepared:

Table 1 – Conformity table

No	Objective	Tools	Locations	Organizations to contact
1	Identify the present and near future ICT service delivery, and the reliability of these services	Survey with ICT service providers	Dar es Salaam	ISPs, Mobile operators
		Survey with ICT service users	Hai, Babati, Songea, Mufindi, Muheza	ISPs, Districts, Government organizations, NGOs
2	Provide connectivity options for each potential MAC	Survey with ICT providers	Dar es Salaam, Hai, Babati, Muheza, Mufindi, Songea	ISPs, Districts, Government organizations, NGOs
3	Enhancing connectivity of MACs	Survey with First Mile team members	Hai, Babati, Mufindi, Songea, Muheza	First Mile team members
4	Propose training that MAC operators will have to undergo	Survey with First Mile team members	Hai, Babati, Mufindi, Songea, Muheza	First Mile team members
5	Propose trials to be conducted within the next 2 – 3 months	Survey with First Mile team members	Hai, Babati, Mufindi, Songea, Muheza	First Mile team members

3.3 Preparation of tools

To achieve the objectives of the mission, the following tools were prepared:

- Semi-structured interview guide for national ISP providers,
- Semi-structured interview guide for local ISP providers,
- Semi-structured interview guide for local Internet users,
- Semi-structured interview guide for national mobile operators,
- Semi-structured interview guide for national and local radio stations, and
- Semi-structured interview guide for First Mile team members

3.4 Logistics

The mission was completed during the period July 23^d – August 22^d, 2007, and the District under the project were visited during the following periods:

Table 2 – Summary of visits

No	District / Location	Dates	Team members
1	Dar es Salaam	July 23 – 26, and Aug 1 – 4, 2007	Amour Usi, Galin Kora
2	Hai District	July 27 – 28, 2007	Amour Usi, Galin Kora
3	Moshi District	July 28, 2007	Amour Usi, Galin Kora
4	Babati District	July 29 – 31, 2007	Amour Usi, Galin Kora
5	Muheza District	Aug 12 – 15, 2007	Amour Usi
6	Mufindi District	Aug 16 – 17, 2007	Amour Usi
7	Songea District	Aug 19 – 23, 2007	Amour Usi

4. Summary of findings

4.1 Connectivity situation

4.1.1 Internet

4.1.1.1 National Internet Service Providers

The Internet service providers that at the time of the survey provided coverage on national basis included the following:

4.1.1.1.1 SatCom¹

SatCom Networks Africa was established on 2002 and is one of the major Internet providers in Tanzania.

In the Districts covered by the project, SatCom could provide Internet connectivity through VSAT (Ku Band). The cost for the equipment and the installation is \$ US 3,811. The download / upload speeds and the related monthly subscriptions fees are provided in Table 3.

Table 3 – Connection speed and monthly subscription - SatCom

No	Connection speed	Monthly subscription ²
1	Download 48 Kbps – Upload 16 Kbps	\$ US 125
2	Download 96 Kbps – Upload 32 Kbps	\$ US 350
3	Download 192 Kbps – Upload 64 Kbps	\$ US 575

4.1.1.1.2 AfSat

AfSat Communications Tanzania Ltd was established in 1994, and provides a number of services in Tanzania. In the Districts covered by the project, AfSat could provide Internet connectivity through VSAT (utilizing both C and Ku bands).

In order to set up a VSAT connection through AfSat, customers would have to pay a total of \$ US 2800 (equipment cost = \$ US 1,950, installation cost = \$ US 550, and logistics cost = \$ US 300).

The various connection speeds and related monthly subscription fees for the C-band version are provided in Table 4, and Table 5 shows the speed and monthly subscription related to Ku band.

¹ The exchange rate between the \$ US and TSH through this report is \$ US 1 = 1,250 TSH

² All the prices presented in this report are based on the prices for the period July – August 2007

Table 4 – Connection speed and monthly subscription – C band - AfSat

Data rate	Non-refundable deposit			
	\$ US 10,000	\$ US 15,000	\$ US 20,000	\$ US 25,000
64 / 64	\$ US 1,425	\$ US 1,155	\$ US 885	\$ US 615
64 / 128	\$ US 1,940	\$ US 1,670	\$ US 1,400	\$ US 1,130
128 / 128	\$ US 2,265	\$ US 1,995	\$ US 1,725	\$ US 1,455
128 / 256	\$ US 3,460	\$ US 3,190	\$ US 2,920	\$ US 2,650
256 / 256	\$ US 4,445	\$ US 4,175	\$ US 3,905	\$ US 3,635
64 / 512	\$ US 4,090	\$ US 3,825	\$ US 3,555	\$ US 3,285
128 / 512	\$ US 4,970	\$ US 4,700	\$ US 4,430	\$ US 4,160

Table 5 – Connection speed and monthly subscription – Ku band – AfSat Ku – Band

No	Download / Upload speed	Usage volume	Monthly subscription
1	64 Kb download – 50 Kb upload	1.0 Gb	\$ US 175
2	100 Kb download – 50 Kb upload	1.5 Gb	\$ US 300
3	175 Kb download – 50 Kb upload	3.0 Gb	\$ US 425
4	225 Kb download – 100 Kb upload	4.5 Gb	\$ US 550
5	200 Kb download – 100 Kb upload	3.0 Gb	\$ US 395
6	75 Kb download – 100 Kb upload	4.0 Gb	\$ US 550
7	300 Kb download – 100 Kb upload	6.0 Gb	\$ US 700
8	375 Kb download – 100 Kb upload	7.5 Gb	\$ US 825
9	450 Kb download – 100 Kb upload	9.0 Gb	\$ US 950

4.1.1.1.3 SimbaNet

Another company that provides Internet connectivity in all the Districts where the project operates is SimbaNet. The cost of connecting to the Internet through SimbaNet includes:

- Equipment - \$ US 1,500
- Installation cost - \$ US 750 - 1,000

The monthly subscription cost is \$ US 1,920 for a dedicated line (download speed 256 kbps and upload speed 64 kbps), and \$ US 250 for a shared line (download speed 128 kbps and upload speed 32 kbps).

4.1.1.1.4 Summary of VSAT options

Based on the above-mentioned information, the average price per unit (Kbps) from each of the three VSAT providers is as follows:

Table 6 – Average price³ per Kbps through VSAT providers

No	Provider	Connection speed (download ⁴)	Intsllation & equipment cost	Monthly fee	Cost per unit (US \$ / Kbps)
1	SatCom	64 Kbps	3,811	125	2.0
2	AfSat	64 Kbps	2,800	175	2.7
3	SimbaNet	128 Kbps	2,500	250	2.0

4.1.1.1.5 Tanzania Telecommunication Company Ltd (TTCL)

There are three options that one can get Internet connection through TTCL. These options are:

- Regular dial-up
- Wireless dial-up, and
- Asymeric Digital Subscriber Line (ADSL)

In order to establish an ADSL Internet account, the use would have to purchase a modem from TTCL (cost 75,000 TSH or approximately \$ US 62), and choose one of the packages that TTCL offers. In addition to the cost of the modem, the user will have to incur a one-time installation fee of 25,000 TSH (or approximately \$ US 20), and within 5 business days the Internet account would be operational. Charges for installing the phone line are separate from the above-mentioned costs. TTCL is currently expanding this service across the country. This is a pre-paid service and the pre-paid cards are provided in the following denominations:

- 10,000 TSH (or approximately \$ US 8)
- 50,000 TSH (or approximately \$ US 40)
- 135,000 TSH (or approximately \$ US 108)
- 240,000 TSH (or approximately \$ US 192)
- 360,000 TSH (or approximately \$ US 288)
- 450,000 TSH (or approximately \$ US 360), and
- 1,000,000 TSH (or approximately \$ US 800)

The various broadband packages offered by TTCL include:

Table 7 – Packages offered by TTCL

Type of connectivity	Usage charge	Speed	Other
Standard (Home)	40 TSH / Mb	2 Mb Download / 512 Kb Upload	2 email accounts, 10 Mb mail box
Businesses	360,000 TSH / month	2 Mb Download / 1 Mb Upload	Static IP address, 10 email accounts
Business café	450,000 TSH / month	2 Mb Download / 1 Mb Upload	5-static IP addresses, 10 email accounts
Broadband hotspot	1,000,000 TSH / month	2 Mb Download / 1 Mb Upload	5-static IP addresses, 20 email accounts

Usage charges is the sum of up and down traffic, and there is no restriction on the number of computers connected.

³ The price is in US \$

⁴ The basic assumption is that all the providers will respect the connection speed

The other type of Internet connectivity offered by TTCL is the wireless dial-up service. In order to establish an Internet account, the user would have to purchase a wireless phone terminal (cost 95,000 TSH or approximately \$ US 76). The wireless phone terminal comes with a connection cable that allows the computer to be connected with the phone line. For this service to be available, the customer must be within a certain distance from the TTCL tower. For each computer that the user would like to connect with the Internet through this method, there is a need to purchase individual wireless phone terminals. This service is pre-paid.

4.1.1.1.6 Mobile Internet

Two of the major mobile operators (Celtel and Vodacom) offer through a Mobile Internet Modem, Internet connectivity anywhere they provide mobile coverage.

4.1.1.1.6.1 Celtel

In order to have access to Internet through this option, customers have to purchase a USB modem, which cost 195,000TSh (approximately \$ US 156).

The cost for accessing Internet through Celtel is as follows:

- Pay as you go - 475 TSH / Mb (approximately \$ US 0.38)
- Bundle (provided in Table 8)

Table 8 – Prices for different bundle options provided by Celtel

No	Option	Monthly cost		Base amount of MB	Cost ⁵ / Mb – Base amount	Cost / Mb – Additional amount
		TSH	US \$			
1	Option A	5,250	4.2	15	0.28	
2	Option B	25,000	20.0	100	0.20	0.20
3	Option C	71,400	57.0	600	0.10	0.10

4.1.1.1.6.2 Vodacom

Vodacom offers two different types of modems - model E220 with a price of 345,000TSH (approximately \$ US 276), and model E620, which costs 335,000 TSH (approximately \$ US 268)

In the case of Vodacom, the different packages for accessing the Internet using the mobile Internet modem are as follows:

- Pay-as-you-go – 250 TSH / Mb⁶ (approximately \$ US 0.20)
- Bundle⁷ (provided in Table 9):

⁵ In US \$

⁶ Prices quoted do not include the VAT

⁷ In order to get the Bundle packages, the customers will have to sign a contract for two years

Table 9 – Prices for different bundle options provided by Vodacom

No	Option	Monthly cost		Base amount of MB	Cost / Mb – Base amount
		TSH	US \$		
1	My Meg 500	60,000	48.0	1024	0.05
2	My Gig One	92,160	74.0	2048	0.04
3	My Gig Two	163,840	131.0	4096	0.03

4.1.1.1.7 Average Internet connectivity cost through mobile providers

Based on the above-mentioned information, the average Internet connectivity cost from each of the mobile operators is as follows:

Table 10 – Internet connectivity cost⁸ through mobile operators

No	Provider	Cost of modem	Cost per unit (Mb)	
			Out-of-bundle	Bundle
1	Vodacom	268	0.20	My Meg 500 - 0.05
				My Gig One - 0.04
				My Gig Two - 0.03
2	Celtel	156	0.38	Option A - 0.28
				Option B - 0.20
				Option C - 0.10

While the cost of the modems offered by Vodacom is relatively higher compared to the one offered by Celtel, the cost per Mb provided by Vodacom is much lower than the one provided by Celtel, thus making the mobile Internet connectivity offered through Vodacom much more attractive.

4.1.2 Situation in each District

4.1.2.1 Hai District

At the time of the survey, the options to connect with the Internet in the Hai District were:

- VSAT through one of the main national service providers,
- Wireless dial-up offered by TTCL,
- Dial-up (offered by Kicheko.com – based in Moshi District), and
- Mobile Internet through mobile phone operators

At the time of the survey the District had a VSAT connection – which was linked with the office of the Executive Director of the District, and two small businesses (an Internet Café with only one computer, and an Internet Café / Computer training centre with four computers but only one connected with the Internet). The small businesses had open accounts with TTCL (wireless dial-up) but were concerned about the reliability of the connectivity (it was difficult to have access to Internet during the day time).

⁸ In US \$

In Hai District, customers had to be within a 6 Km radius (and have line of sight) from the TTCL tower in order to be able to get the Internet connection.

4.1.2.2 Babati District

The options for Internet connectivity in Babati District included:

- VSAT connectivity through one of the main national service providers,
- Through a local “ISP provider”,
- TTCL, and
- Mobile Internet through mobile operators

One of the two Internet Cafes presently operating in Babati (Huddinge Internet Café) plans to start offering Internet connectivity to individual customers from September 2007. The cost for the connectivity will be around 50,000 TSH per month (approximately \$ US 40), but this does not include the cost of installation and the cost of all the necessary equipment (these were being still under consideration when the research team visited Babati District).

At the time of the survey, TTCL offered Internet connectivity through their wireless dial-up system. In order to have access to Internet through this option, the customers had to purchase a wireless phone terminal, which provided voice and data connection for the amount of 95,000 TSH (approximately \$ US 76), or purchase a wireless phone terminal for the cost of 200,000 TSH (approximately \$ US 160) and this equipment will provide voice, data, and fax connectivity. This service is a pre-paid service only.

TTCL offered connection to Internet through a leased line. In order to have this service, the customers must be within 1 Km from the office of TTCL and they would have to pay 1,000,000 TSH (approximately \$ US 800) for the cost of installing a copper wire from the offices of TTCL to their premises. In addition to the cost of installation, the customers will have to purchase two modems (for the total cost of 2,400,000 TSH (approximately \$ US 1,920)). The monthly subscription fee for this service is 300,000 TSH (approximately \$ US 240). This option would provide a guaranteed speed of 64 kbps.

In September, TTCL plans to start offering broadband Internet in Babati.

4.1.2.3 Muheza District

At the time of the survey, the options to connect with the Internet in the Muheza District were:

- VSAT through one of the main national service providers,
- Mobile Internet through mobile phone operators.

There were only two centres providing Internet services to the public: the MCTC Internet Cafe with only one computer, and the Internet centre operated by TCCIA (with 5 computers). Both centres get their Internet connection through VSAT terminals. The MCTC Internet Café had a contract with SimbaNet and TCCIA had a contract with SatCom. While the MCTC Internet Café has been in operation for a while, the Internet Centre operated from TCCIA only started operating at the end of July.

Both centres were charging 1000 TSh per hour for using the Internet, and they were willing to provide discount prices for pre-paid customers.

In October 2007, TTCL plans to start offering Internet in Muheza through wireless CDMA technology.

4.1.2.4 Mufindi District

At the time of the survey, the options to connect with the Internet in the Mufindi District were:

- TTCL – Broadband (ADSL) connections.
- VSAT through one of the main national service providers,
- Through a local “ISP provider”.
- Mobile Internet through mobile phone operators.

There were three Internet Cafes / Centres in Mufindi that were providing Internet services to the public (Mufindi DotCom Internet Café, Awado Internet Café, and Datanet Internet Café). Two of these Internet Cafes were using VSATs to connect to the Internet (both had SatCom as their provider), while one Internet Café (Awado Internet Café) was connected to the Internet through TTCL. The rate for an hour of Internet use in all the three centres was 1000 TSh.

When asked about the possibility to act as a local ISP provider, only the owner of Mufindi DotCom Internet Café stated that he was willing to do so, but he stated that for this to happen, the customers needed to be within 100 meters from the Internet Café.

4.1.2.5 Songea District

At the time of the survey, the options to connect with the Internet in the Songea District were:

- TTCL – Broadband (ADSL) connections.
- VSAT through one of the main national service providers,
- Mobile Internet through mobile phone operators.

There were three Internet cafes in Songea at the time of the survey. Two of them (TRUSTCAD Internet Café, and Valongo Computer Centre) were connected to the Internet using the broadband option offered by TTCL, and one of those was using a VSAT (with service from SatCom). The Internet Café using the VSAT connectivity is operated by TTCIA, and the management of this Internet Café stated that they are willing to share connectivity with other customers in the area.

The other two Internet Cafes were providing Internet connectivity to clients who were within 100 meters from the location of the Internet Cafes.

4.2 Mobile phone

4.2.1 National Mobile Phone companies

4.2.1.1 Celtel

The mobile coverage provided by Celtel is one of the widest in Tanzania. Celtel provides mobile coverage along all the major routes. The packages offered by Celtel include:

- Voice
 - o 5 TSH⁹ per second within Celtel network during peak time (peak time is considered between 06:00 and 20:00)
 - o 4.17 TSH per second off-peak
 - o 5 TSH per second outside of Celtel network all price

4.2.1.2 TIGO

TIGO is another company that provides mobile coverage in Tanzania. In general the voice services that they offer are pre-paid as the post-paid services are mainly reserved for corporate clients.

The price for one second within the TIGO network is 3 TSH¹⁰ for the pre-paid and 1 TSH for the post-paid option. The price outside of the TIGO network for one second is 5.2 TSH for the pre-paid option and 3 TSH for the post-paid option.

A simple SMS within the TIGO network cost 38 TSH

4.2.1.3 Vodacom

As in the case of Celtel and TIGO, Vodacom offer voice services in pre-paid and post paid options. The prices for the pre-paid option are as follow:

- Cost per second during peak time within the Vodacom network is 5 TSH
- Cost per second for calls to national mobile networks is 5 TSH
- Cost per second for calls to national fixed network is 7.5 TSH
- Cost per second during off-peak time is 4 TSH
- Cost per second late at night is 0.85 TSH
- Cost per SMS is 45 TSH

The post-paid option is mainly geared towards corporate clients.

4.2.2 Summary of mobile phone prices

The following table (Table 11) provides a comparison of the cost per second provided by the national mobile service providers.

⁹ VAT is not included

¹⁰ VAT is not included

Table 11 – Average cost¹¹ per second through various mobile phone providers

No	Provider	Cost per second within own network (Peak time)	Cost per second within own network (Off-peak time)	Cost per second outside own network
1	Celtel	5	4.17	
2	Tigo	3		5.2
3	Vodacom	5	4	5

4.2.3 Mobile phone coverage in each surveyed District

In all the five District surveyed, the coverage from the mobile services providers was good and all the main mobile phone operators were providing coverage alongside the main roads.

4.3 Advantages and disadvantages of each connectivity option

The advantages and disadvantages of each of the available connectivity options are summarized in the following table.

Table 12 – Summary of advantages¹² and disadvantages of Internet connectivity options

No	Type of connection	Advantage(s)	Disadvantages
1	Wireless dial-up	Low initial cost	Unreliable Slow connection speed Need to be within a certain distance from the main terminal
2	Wireless CDMA	Mobile connection	With increased distance from the tower, the connection speed is reduced
3	Wireless via mobile phones	Mobile connection	With increased distance from the tower, the connection speed is reduced
4	ADSL	Constant bandwidth	Need to have a phone line
5	VSAT	Can be set-up in wherever the client wants the connection	High initial cost Difficulty to control bandwidth Very difficult to change provider

In general, the main challenge for establishing Internet connection through VSAT is that if the user wants to change the Internet service provider it is very difficult to do so due to the relatively high installation and equipment cost.

Apart from having an high initial cost (the lowest price for equipment and installation is US \$ 2,500), the other challenges that connectivity through a VSAT provider presents are that:

- Once the MAC has signed a contract with a specific VSAT provider it will be very difficult to change it,

¹¹ Cost in TSH

¹² These advantages and disadvantages are based on the situation on the ground at the time of the survey

- In order to offset the monthly subscription fee, MAC will have to become a “local ISP provider” - which has other implications for MAC
- Most of the VSAT users contacted during the survey expressed reservation about the control of bandwidth (most of the time the real bandwidth provided was less than the ones contracted).

5. Coverage by national and local radio stations

5.1 National radio station

The only national radio station in Tanzania is the Radio Tanzania Dar es Salaam (RTD).

5.1.1 Radio coverage by Radio Tanzania Dar es Salaam (RTD)

RTD had a total of five branches across the country. These branches are located in:

- Arusha
- Dodoma
- Mwanza
- Kigoma
- Mbeya
- Nachangwea
- Songea, and
- Lindi

RTD offers broadcasting of paid advertisements. The cost of airtime for advertisements is as follows:

Table 13 – Summary of costs¹³ for broadcasting advertisements through RTD

No	Airtime	60 sec	45 sec	30 sec	15 sec
1	05:01 – 06:00	19,500	14,625	9,750	4,875
2	06:01 – 06:30	25,250	19,000	12,625	6,250
3	06:31 – 07:30	27,875	20,875	13,875	6,875
4	07:31 – 09:00	25,250	19,000	12,625	6,250
5	09:01 – 12:00	19,500	14,625	9,750	4,875
6	12:01 – 18:00	20,250	15,375	10,125	5,125
7	18:01 – 19:55	25,250	19,000	12,625	6,250
8	20:16 – 22:00	20,250	15,375	10,125	5,125
9	22:01 – 24:00	19,500	14,625	9,750	4,875
10	00:01 – 05:00	15,000	11,250	7,500	3,750

In order to make an advertisement, a customer has two options:

- Prepare the whole advertisement and deliver it to RTD in a CD, or
- Have RTD staff help them to prepare the advertisement

If the customer chooses the second option, then they will have to pay 50,000 TSH (approximately \$ US 40) for the preparation of the script and 100,000 TSH

¹³ Cost provided are in TSh

(approximately \$ US 80) for the production of the script. The advertisement could be prepared at any RTD regional branches, but in case staff from Dar es Salaam will have to travel to the location where the customer resides then the customer will have to pay the transportation cost and the cost for food and accommodation.

5.2 Radio coverage in the Districts

5.2.1 Hai District

On February 2007, with the financial support from UNICEF and the District, Radio Boma Hai FM 89.4 started broadcasting its programs. The programs that the radio station offers so far include news, entertainment, and education programs. Presently the radio station has coverage of approximately 150 Km (radius), but the staff would like to extend the coverage to include Arusha, Kilimanjaro, and Manyara Region.

The radio station broadcasts from 05:00 until midnight. In relation to the agriculture sector, the radio station every morning (from Monday to Friday) broadcasts the prices of various products that are sold at a number of local markets. At the same time the radio station has an agriculture related program named Twendeni Shambani (“Let’s go to the farm”). During the program they interview farmers and this is on air on Mondays and Fridays.

In order to generate revenues the radio station broadcasts paid advertisements. The cost per one minute of airtime for the business sector is 15,000 TSH (approximately \$ US 12), while for development programs is 10,000 TSH (\$ US 8).

5.2.2 Babati District

There is no community radio in Babati District. In terms of broadcasting, the following radio stations cover the District:

- Radio Tanzania Dar es Salaam
- Radio One, and
- Radio Free-Africa

5.2.3 Muheza District

There was no local radio in Muheza District, but at the time of the survey, the radio stations that were servicing the area were:

- Radio Tanzania Dar es Salaam
- Radio Free Africa
- Radio One
- ZENJ FM, and
- Clouds FM

All these radio stations sell airtime for advertisement.

5.2.4 Mufindi District

In terms of radio coverage, apart from being covered by Radio Tanzania Dar es Salaam, and Radio Free Africa there is a local radio in Mufindi. The local radio had a coverage radius of 5 Km. As the management of the radio station intends to expand its operations

(both in terms of programming and in terms of reach) they were in discussion with the District Authorities in order to secure the necessary funds.

The programs that the radio station offers so far include news, interviews, and entertainment. Currently there are no agriculture related programs, but there are plans to prepare and broadcast agriculture related programs (interviews with farmers, agriculture specialists, etc). Presently the local radio sells airtime for advertisement (3 minute advertisement broadcasted three times per day would cost 10,000 TSh), but this price might change as they expand the coverage in order to include Iringa, Mbeya, Makambako and all the villages within the Mufindi District.

5.2.5 Songea District

The radio stations that cover the Songea District include:

- Radio Tanzania Dar es Salaam
- Radio Free Africa
- Radio Maria, and
- The local community radio owned by Ruvuma Municipally

All these radio stations offer paid airtime for advertisement, and the prices vary in accordance with the time of the day and the length of the advertisement.

Radio Maria is one of the radio stations that broadcasts the agriculture programs prepared by Technoserve in Songea. The cost for airtime for advertisement / programmes with Radio Maria is as follows:

- 100,000 TSH for 60 minutes (just one time broadcasting),
- 75,000 TSH for 45 minutes,
- 50,000 TSH for 30 minutes, and
- 25,000 TSH for 15 minutes

6. Enhancing connectivity of MACs

6.1 Internet connection

6.1.1 Hai District

Based on the information collected during the survey, the best option for connecting to the Internet in Hai District will be as follows:

- Internet connection for the MAC office
 - o As both Internet Cafes in Hai District are not very reliable (in terms of Internet connectivity), it is recommended that the office be linked to the Internet via mobile phone. Once the connectivity through the wireless dial-up option (service provided by TTCL) becomes more reliable (both in terms of connectivity speed and down-time), then this might become the best option.
- Internet connection for mobile members

- The best option the mobile team members to connect to the Internet is through a USB modem¹⁴

6.1.2 Babati District

Based on the information collected during the survey, the best option for connecting to the Internet in Babati District will be as follows:

- Internet connection for the MAC office
 - The office could start through an agreement with one of the Internet Cafes in Babati (for a set number of hours – i.e. 60 hours / month) and with a reduced cost (as part of a pre-paid service). Once TTCL will provide ADSL service in Babati, then MAC might check the price for this option and compare.
- Internet connection for the mobile members
 - The best option the mobile team members to connect to the Internet is through a USB modem

6.1.3 Muheza District

Based on the information collected during the survey, the best option for connecting to the Internet in Muheza District will be as follows:

- Internet connection for the MAC office
 - The office could start through an agreement with one of the Internet Cafes in Muheza (for a set number of hours – i.e. 60 hours/ month) and with a reduced cost (as part of a pre-paid service). Once TTCL will provide CDMA service in Muheza, then MAC will have to check the price and compare.
- Internet connection for the mobile members
 - The best option the mobile team members to connect to the Internet is through a USB modem

6.1.4 Mufindi District

Based on the information collected during the survey, the best option for connecting to the Internet in Mufindi District will be as follows:

- Internet connection for the MAC office
 - One option will be to establish the connectivity through TTCL – broadband (ADSL), and they could start with the pay-as-you-go option, which cost 40Tsh/Mb.
- Internet connection for the mobile members
 - The best option the mobile team members to connect to the Internet is through a USB modem

¹⁴ The research team did not have a chance to test the connectivity through this option while in the Districts, so all the data are based on the discussions with the service providers

6.1.5 Songea District

Based on the information collected during the survey, the best option for connecting to the Internet in Songea District will be as follows:

- Internet connection for the MAC office
 - o One option will be to establish the connectivity through TTCL – broadband (ADSL), and they could start with the pay-as-you-go option, which cost 40Tsh/Mb.
- Internet connection for the mobile members
 - o The best option the mobile team members to connect to the Internet is through a USB modem

6.2 Summary of recommendations for Internet connectivity

The following table summarizes the recommendations provided in relation to achieving Internet connectivity for MAC offices and team in each of the five Districts.

Table 14 – Summary of recommendations for Internet connectivity

No	District	MAC Office	Mobile MAC members
1	Hai	Mobile phone – Later wireless dial up from TTCL	USB modem
2	Babati	Agreement with Interne Café - later ADSL from TTCL	USB modem
3	Muheza	Agreement with Interne Café - later CDMA from TTCL	USB modem
4	Mufindi	Broadband from TTCL	USB modem
5	Songea	Broadband from TTCL	USB modem

6.3 Cost implications

While the number and type of equipment that each MAC will have will depend on the budget available, for the purpose of providing some initial estimates on ensuring Internet connectivity for each of the Districts, the following estimates will be provided for one PC (to be placed in the MAC office) and one laptop. In the case the composition of the equipment is changed, then the initial estimates will have to be arranged accordingly.

6.3.1 Hai District

Based on the above-mentioned information and assumptions, the initial cost for ensuring Internet connectivity for the MAC in Hai District is provided in Table 15

Table 15 – Initial cost¹⁵ for establishing Internet connectivity – Hai District

No	Connectivity option	Equipment	Quantity	Cost / Unit	Total
1	USB modem	PC	1	700	700
2		USB modem	1	276	276
3	Sub-total PC				976
4	USB modem	Laptop	1	1,000	1,000
5		USB modem	1	276	276
6	Sub-total Laptop				1,276
7	Grand total				2,252

¹⁵ Costs provided in Tables 15 to 19 are in US \$

6.3.2 Babati District

Based on the above-mentioned information and assumptions, the initial cost for ensuring Internet connectivity for the MAC in Hai District is provided in Table 16

Table 16 – Initial cost for establishing Internet connectivity – Babati District

No	Connectivity option	Equipment	Quantity	Cost / Unit	Total
1	ADSL ¹⁶	PC	1	700	700
2		ADSL modem	1	75	75
3		Installation	1	25	25
4	Sub-total PC				800
5	USB modem	Laptop	1	1,000	1,000
6		USB modem	1	276	276
7	Sub-total Laptop				1,276
8	Grand total				2,076

6.3.3 Muheza District

Based on the above-mentioned information and assumptions, the initial cost for ensuring Internet connectivity for the MAC in Muheza District is provided in Table 17

Table 17 – Initial cost for establishing Internet connectivity – Muheza District

No	Connectivity option	Equipment	Quantity	Cost / Unit	Total
1	CDMA Wireless	PC	1	700	700
2		CDMA modem	1	75	75
3	Sub-total PC				775
4					
5	USB modem	Laptop	1	1,000	1,000
6		USB modem	1	276	276
7	Sub-total Laptop				1,276
8	Grand total				2,051

6.3.4 Mufindi District

Based on the above-mentioned information and assumptions, the initial cost for ensuring Internet connectivity for the MAC in Mufindi District is provided in Table 18

¹⁶ When this service becomes available in Babati

Table 18 – Initial cost for establishing Internet connectivity – Mufindi District

No	Connectivity option	Equipment	Quantity	Cost / Unit	Total
1	ADSL	PC	1	700	700
2		ADSL modem	1	75	75
3		Installation	1	25	25
4	Sub-total PC				800
5	USB modem	Laptop	1	1000	1,000
6		USB modem	1	276	276
7	Sub-total Laptop				1,276
8	Grand total				2,076

6.3.5 Songea District

Based on the above-mentioned information and assumptions, the initial cost for ensuring Internet connectivity for the MAC in Songea District is provided in Table 19

Table 19 – Initial cost for establishing Internet connectivity – Songea District

No	Connectivity option	Equipment	Quantity	Cost / Unit	Total
1	ADSL	PC	1	700	700
2		ADSL modem	1	75	75
3		Installation	1	25	25
4	Sub-total PC				800
5	USB modem	Laptop	1	1000	1,000
6		USB modem	1	276	276
7	Sub-total Laptop				1,276
8	Grand total				2,076

6.4 Issues to consider

6.4.1 Hai District

First Mile team members were convinced to have a MAC that will work for the FM team and members, and in order to control the cost of information they would like to operate an Internet Café so they can subsidize the cost for information sharing

They strongly supported the idea of a collective solution to market information and were not very keen about a private company providing market information to farmers

The team members would like to be the ones who will elect the three people that would work for the MAC.

6.4.2 General

The members of First Mile team expect that the project (First Mile 2) would pay for the establishment of the MAC and provide support for one or two years

6.5 Present status of MACs

At the time of the survey, the following was the registration status of MACs in each District:

Table 20 – Registration Status of MACs

No	District	Status
1	Hai	Not registered yet
2	Babati	Registered
3	Muheza	In the registration process
4	Mufindi	In the registration process
5	Songea	In the registration process

7. Training requirements for MAC members

In general, all the potential MAC members have limited computer knowledge, and even the potential MAC members who were presently using computers acknowledged that they would have to undergo a computer training session in order to become more efficient in the use of computers.

The computer training session should focus on:

- General computer use (accessing different software; creating, manipulating and storing files; basic computer maintenance tasks such as virus checks, installing new software, etc)
- Use of Open Office / Microsoft packages (word processor, spreadsheet) while paying attention to database creation, maintenance and storage, and
- Internet use (focused on conducting searches, uploading and downloading documents, and e-mail use).

One option for completing the computer-training program is as follows and it includes three steps:

- First step is to have a “conventional” training session (learn about computers, Open Office / Microsoft package (spreadsheet, word processor), and Internet
- Second step will be on-the-job-training. During this time the members of the “Network” will work and note all the challenges they would face in using the computers and other ICT
- Third step would be to go back to a training sessions and try to address all the challenges that they faced during the on-the-job-training period

8. List of companies / organizations and people contacted

8.1 Dar es Salaam

- Stanslaus M. Joseph – Sales Manager – SimbaNET – mobile phone 755 257565
- Imelda Gerald – Assistant Value Added Service Manager – TIGO – mobile phone 713 123 855
- Salim Madati – Technical Assistant Value Added Services – TIGO – mobile phone 713 123 705
- Bhavesh Bhatt - Marketing Executive – SatCom – mobile phone 774 500 633

- Happiness Misanga - Sales Representative - Radio Tanzania Dar es Salaam (RTD) – mobile phone 222 121 315
- Cynthia Ponero- Marketing Coordinator – AfSat
- Francis Ndikumwami – Production Manager – Celtel – mobile phone 784 670 840
- M. Kabinda – IT Manager – Tanzania Chamber of Commerce – mobile phone 786 070 762
- Sales representative – Tanzania Telephone Corporation Ltd

8.2 Hai District

- Rabson Kiliopa – Farmer – Member of the First Mile Project - mobile phone 753 496 356
- Matilda Mfoi – Coordinator for the AMSDP
- Issa Ramadhan – Operator of Internet Café – mobile phone 714 420 044
- Godlizem Kimaro – Farmer – Member of the First Mile Project – mobile phone 754 015 965
- Eva Mallya – Member of First Mile Project
- TTCL Hai Branch – Sales Representative
- Dismound Mfuru – Executive Officer – TCCIA Hai Branch – mobile 754 374 473
- Leverend Simbo Kirundwa – Member – TCCIA Hai Branch
- Fabian Kagama – Member and Livestock Consultant – TCCIA Hai Branch
- Radio Boma Hai FM 89.4 – Hai District
- Cornel Moshi – Farmer – Chairman for the Network
- Aisimbo Swai – Operator of Internet Café – Hai – mobile phone 757 412 441
- Twaha Abdallah Mueta – Farmer – Secretary of the Network – mobile phone 784 880 176
- Clarence Chitemi – District Program Coordinator – Hai District

8.3 Babati District

- Lean Munishi – IT Manager – Babati District – mobile phone 784 269 365
- Mr. Salutarisla – Policy and Research officer – Farm Africa
- Musa Singishisha – AMSDP Focal Point – Babati
- William Swai – Partner agent AMSDP
- Monika Ninga – Secretary of Galapo Farmers Saccos – Galapo – mobile phone 786 567 226
- Kosmas Gustav – Members of Galapo Farmers Saccos – Galapo
- Abraham Dai – Farmer – Galapo
- Operator - Internet Café Huddinge – Babati
- Grason Gama – Chairman of Magugu Saccos – Magugu – mobile phone 787 285 250
- Mr. Mchone – Member of Magugu Saccos – Magugu – mobile phone 784 291 353
- Abdy Jamal – Secretary of Mapambano Saccos – Galapo – mobile phone 784 488 129
- Athman Karunde – Executive offices – TCCIA Babati Branch
- Sales managers – TTCL Babati Branch

8.4 Muheza District

- Mohamed Baghoza – MCTC internet cafe owner and operator - mobile phone 0754009992.
- Fatuma Tupa chairman TCCIA Saccos Muheza - mobile phone 0786 035087.
- Mwanaidi Kitwana- TCCIA Internet Cafe operator – email kitwanamwanaidi@yahoo.com.
- Antony Senkoro – DFP core member - mobile phone 0754624405.
- Musa Omary Karata - Chairman market committee Mkuma village- mobile phone 0787722516.
- Julius Mbwana - Chairman cooperative society - mobile phone 0784 489577.
- Goerge Charles Hiza – Secretary Mkumba market committee - mobile phone 0787094457.
- Rajesh Sanjey - Tanga Cyber Café
- Mr Mariki – Partner Agent AMSDP Muheza - mobile phone.
- Miss Amina - Counter TTCLMuheza.

8.5 Mufindi District

- Nuswe Nyanzali – AMSDP focal personal.
- Bahati Tweve – Core member and Mkulima Shushu - mobile phone 0754829751.
- Mr malangali - Mufindi dotcom Internet Cafe owner - mobile phone 0755415290.
- Salome muhame - Datanet Internet Cafe - mobile phone 0262772033.
- Perida Benjamin - AWADO Internet Cafe operator/owner - mobile phone 0752899233.
- Msese K. – Core member.
- TTCL Branch manger – Mufindi.

8.6 Songea District

- Mr Maswaga K – DALDO Songea.
- Job Mushi - AMSDP Focal Point – Ruvuma - mobile phone.
- Yusufu Mruma – DED
- Hassan Naheka – UWAMAVIRU member - mobile phone 0754 983253
- Florence Komba – Valongo Computer Centre Internet Cafe owner - mobile phone 0754 848443
- Erick Mapunda – TRUSTCAD CAFE owner - mobile phone 0784 375799.
- Mahmoud Mabruki – TTCL branch manager - mobile phone 0734 467607.
- Mays Mkwembe – TCCIA Ruvuma, Vice chairman - mobile phone 0754 626052.
- Eliza Nyoni – TCCIA Internet cafe operator and P/secretary - mobile phone 0786 051499
- Father Noe Doe – Director of Radio Maria Ruvuma - mobile phone 0784 498266
- Mbilinyi Antony – Agriculture Specialist WIDA/WINO/LIRONDO Saccoss.

8.7 Moshi District

- Sales person – Kicheko Internet Services

8.8 Arusha Region

- Vincon H. Nyimbo – Agriculture market Specialist – AMSDP – mobile phone 784 242 422
- Walter E. Swai – Agriculture Program Coordinator – AMSDP – mobile phone 784 383 940

8.9 Tanga Region

- Rajesh Sanjey - Tanga Cyber Café

Appendix A

Summary table for assessing the availability and cost of mobile phone services

District (Name)			
Mobile phone coverage			
No	Provider	Services	Cost / service
1	Celtel		
1.1			
1.2			
2	Vodacom		
2.1			
2.2			
3	TIGO		
3.1			
3.2			

Summary table for assessing the availability and cost of Internet connectivity options

Internet Connectivity				
No	Provider	Service	Characteristics	Cost
1	TTCL			
1.1		Wireless dial up		
1.2		CDMA		
1.3		Broadband		
1.4				
1.5				
2	Local ICT provider			
2.1				
2.2				
2.3				
2.4				
3	Celtel			
3.1		USB modem		
4	Vodacom			
4.1		USB modem		
5	Other			
5.1				
5.2				