

# A CASE STUDY ON SOMALILAND, IN THE FRAMEWORK OF THE WDR PROJECT

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## PREFACE

This report contains a case study of Somaliland, prepared in the framework of WDR program. Among the case countries in WDR project, Somaliland is by far the poorest with an ICT development in its very infancy. The report maps the development of ICT in Somaliland and gives an analysis of potentials and barriers related to ICT development and investment, which is the overall theme of WDR this year.

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## INTRODUCTION

Somaliland, one of the poorest countries in Africa, finds itself in a very complicated environment located in the north-central region of the Horn of Africa and formerly a part of Somalia.

On May 18, 1991 Somaliland declared its independence of Somalia. This has not been officially recognized by any other country, but Somaliland Republic became a *de facto* independent nation, and corresponds to the former colonial territory of the British Somaliland protectorate. Contrary to the situation in the other parts of Somalia there is a relatively well-functioning civil society and peace in Somaliland.

The level of ICT-usage in Somaliland is very low, but with clear development potentials associated especially with presence of telecom companies from neighboring countries and expatriates engaged in the universities and other sectors. The presence of five telecom operators and a number of VSAT operators also indicate demand for ICT services and networks.

The low income levels in the developing countries generally explain the low level of development of ICT. To cope with this Foreign Direct Investment has been suggested as a method of promoting ICT development in developing countries (ZHU 2001). Another approach could be to include development of

ICT as a part of foreign assistance to the developing countries. The approach has

generally been considered as relevant by different world organisations and cemented by establishment of the UN task force for ICT development in developing countries.

## BACKGROUND

Like all African states, Somaliland Republic as British Somaliland came into being during the European colonial period. To the north, Somaliland faces the Arabian Peninsula, to the west, lies Republic of Djibouti, while Ethiopia and Somalia are its southern and eastern neighbors.

Somaliland located in the north part of Somalia in East Africa is a small country with an area of 109,000 km<sup>2</sup> and a population estimated to around 3 million. The average population growth rate is 3.1%. Population density is approximately 25 persons per sq. kilometre. Fifty-five percent of the population is either nomadic or semi-nomadic, while 45% live in urban centres or rural towns. The average life expectancy for the male is 50 and for females it is 55<sup>1</sup>. It has been difficult to find exact data on Somaliland, as the country is not recognized internationally so in the following table some basic data on Somalia is given.

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<sup>1</sup> <http://www.somalilandgov.com/cprofile.htm>



Population (millions):	7.06
Poverty (% of population below 1\$ a day):	43.2
Adult literacy rate (% ages 15 and over):	17.1
GNI per capita (Atlas method, \$):	678

Table 1: Basic data. Somalia<sup>2</sup>

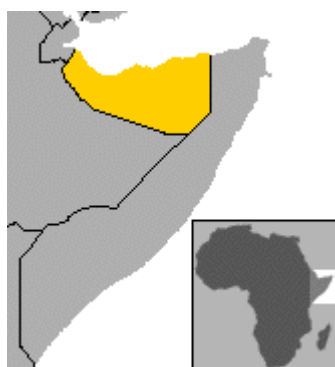


Figure 1: Map of Somaliland

<sup>2</sup> Sources: Somalia Human Development Report 2001; UNDP Somalia/World Bank Somalia Watching Brief Somali Telecom Association, Dubai.

Hargeisa is the capital of Somaliland with an estimated population of 0.3 million. The other main towns are Burao, Borama, Berbera, Erigabo and Las Anod.

The country has a republican form of government. The legislative assembly is composed of two chambers - an elected elder's chamber (clan representatives), and a house of representatives (members appointed by general elections). An elected President and an elected Vice-president head the government<sup>3</sup>. The President nominates the cabinet which is approved by the legislature<sup>4</sup>.

There are 163 primary schools with student population of 33,000 as per the no of teachers in primary education in the same educational year 1996/97 was 954. Several private schools catering for primary, secondary and vocational trainings exist<sup>5</sup>. Two universities have been opened in Somaliland during the last few years: Hargeisa University and Ahmud University (situated outside Boroma approx. 120 km from Hargeisa).

## ECONOMY

Somaliland is in terms of average income one of the world's least developed countries. It exhibits the typical features of a low-income African economy with a high ratio of foreign trade to gross domestic product, a low level of monetization and urbanization, and a dominant informal sector. Its natural resources have been listed as: "Sun, Sand and Somalis" (Rayne, 1921). The backbone of the economy is livestock and the total livestock in the country is estimated at 24 million. In 1996, 3 million heads of livestock were exported through Berbera to the Arabian Peninsula markets. The economic performance is heavily dependent on this export of livestock and the regional prices of this. The country also exports Hides, Skins, Myrrh and Frankincense, but in smaller scale<sup>6</sup>. The vulnerability of this situation was demonstrated in 2000-02 when

<sup>3</sup> <http://www.somalilandgov.com/cprofile.htm>

<sup>4</sup> Local district elections and the first presidential election (for president and vice-president) were held in December 2002 and in May 2003 respectively. Both elections were peaceful and held with international assistance.

<sup>5</sup> <http://www.somalilandgov.com/cprofile.htm>

<sup>6</sup> *ibid*

the Arab countries and especially Saudi-Arabia blocked the import of livestock from Somaliland as its export was accused for being the source of the outbreak of the Rift Valley Fever<sup>7</sup>. Exports were affected very substantially (a drop by almost 50% has been mentioned, but real statistics are only published with big delays).

The fishing industry is still underdeveloped, but the country has 600 mile long coast with rich fishing grounds. Somaliland is strategically located at cross roads between Africa, Europe, The Middle East and South East Asia. In 1996 up to 846 vessels called on Berbera port on the Red Sea<sup>8</sup> which has the potential to develop into a major commercial centre.

## ICT DEVELOPMENT

Somaliland is one of the Worlds Least Developed Countries and this is also the case when it comes to ICT development. Table 2 gives an overall picture of ICT development in Somalia.

The impression of people working with ICT in Somalia is that the level of development in Somaliland is higher than the rest of country but unfortunately at this moment we do not have any data to support this.

### Actors in ICT market

In the following the relevant actors in the Somaliland ICT market are described.

### Telecom companies in Somaliland

Somaliland currently have five telecom companies: Aerolite, Barakat (now Telcom),

<sup>7</sup> Rift Valley fever (RVF) is an acute, fever-causing viral disease that affects domestic animals (such as cattle, buffalo, sheep, goats, and camels) and humans. RVF is generally found in regions of eastern and southern Africa, but in September 2000, a RVF outbreak was reported in Saudi Arabia and subsequently Yemen. These cases represent the first Rift Valley fever cases identified outside Africa. In early 2002 FAO acquitted Somaliland as the source of the fever, but the import ban was only lifted after long negotiations.

<sup>8</sup> <http://www.somalilandgov.com/cprofile.htm>

Sitco, Soltelco and STC. All of the companies provide fixed line telephony and Barakat and Aerolite offers mobile services. They all cooperate in Somaliland Telecom Operators Association where they agree on prices and give information on this to the Ministry. It is, however not possible to call directly between subscribers on different networks. You therefore see several phones –dedicated to

different companies on the desk in institutions/offices

Prices are uniform and adjusted according to inflation and the exchange rate to the US-dollar.

In the table 3 the cost of fixed telephony international calls is listed:

Telephone fixed mainlines:	105,000
Tele-density (per 100 people)	1.5
Mobile phones:	36,000
Tele-density (per 100 people)	0.5
Personal Computers (per 1,000 people):	0.5
Internet users (per 1,000 people):	1.4
National ICT Strategy (Y/N):	No

*Table 2: Basic data on ICT development<sup>9</sup>*

Name of Telephone Company	Telephone Charges per Minute in US \$ (International Calls)
Aerolite	N/ A
Barakat (now Telcom)	1
Sitco	1
Soltelco	1,3
STC	1,3

*Table 3: Cost of international calls<sup>10</sup>*

<sup>9</sup> Sources: Somalia Human Development Report 2001; UNDP Somalia/World Bank Somalia Watching Brief Somali Telecom Association, Dubai

<sup>10</sup> Sources: Telecommunication companies in Hargeisa (2002)

Regarding the cost structure of national and local calls, some specific characteristics can be identified in the Somali market<sup>11</sup>:

- Local telephone calls within an area are free of charge if they belong to the same company.
- There is no direct interconnection between operators
- Each operator has its own physical infrastructure
- Local calls between two companies even within an area are treated as international calls
- Telephone calls between different areas within Somalia are charged between 0.5 – 0.8 US \$ per minute.
- Regarding mobile taxes there is no differentiation between local and international calls. All calls are charged one US\$ per minut.

Barakat and Sitco companies started operating in 1999, while Aerolite is in the process of starting its operation.

#### **Soltelco**

According to the management this company is a 100% Somali company and Somaliland's largest telco. Soltelco offers fixed line telephony and dial-up Internet access via Telenor. They plan to introduce mobile services. They provide free telephony to, e.g., the university, schools and police.

#### **Barakat (now Telcom)**

Described by management as a 100% Somali company operating in 6 regions including, e.g., Puntland and Mogadishu with a general management in Dubai. Barakat offers fixed line, GSM900 and Internet access services. The Internet access is offered via an earth station in UAE where, e.g., 'un-desired' services are filtered away by a proxy server. Currently the access is a 64 kbit connection.

#### **STC**

According to the management, STC –Somali Telecommunications Company – is the country's leading company and the fastest

growing. It provides services in all Somali regions via a number of sister companies. The services offered include fixed line, Internet access and e-mail. Mobile services will be introduced within a short period. The Internet subscribers include 6 international organizations and approx. 30 other subscribers also including an Internet café. STC is based on US-capital and draws on technical assistance from the US.

#### **Governmental institutions with relation to ICT**

Two ministries are directly involved in the ICT issues:

- Ministry of Planning
- Ministry of Telecommunications

#### **Other institutions with relation to ICT**

There are a number of other national and international institutions that in different degrees are related to the ICT development in Somaliland:

- The Institute for Practical Research and Training
- UNESCO
- Soyaal Training Institute<sup>12</sup>.
- UNDP

#### **International ICT development partners**

The international partners involved in ICT development programs in Somaliland include:

- *The Government of Denmark (through UNDP projects):* Financial and technical assistance in the installation of a VSAT system in Hargeisa, Northwest Somalia (see later in this report)
- *The Government of Japan:* Has awarded US \$60,000 from the ICT TTF (activities yet to be implemented)
- *World Bank:* Through the Low Income Countries Under Stress (LICUS) initiative
- *World Bank Institute:* Through support to higher education

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<sup>11</sup> These data are from late 2002

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<sup>12</sup> The Soyaal Training Institute is a facility run by the War Veteran's Association to train and re-integrate war veterans.

**ICT development Activities**

Existing VSAT nodes include (see the case description in chapter 4)

- Ministry of Planning, University of Hargeisa, UNDP compound – established 2002
- Ministry of RRR, Ministry of Foreign Affairs, President Palace – established 2003

According to UNDP, some of the major ongoing ICT activities in Somaliland are<sup>13</sup>:

- Development of a ‘National ICT for Development Strategy’ (yet to be formulated)
- Development of a Regulatory Framework for the Telecom industry for Somalia (yet to be formulated)
- UNDP will recruit a consultant to develop a suggestion for the ICT Strategy for Somalia / Regulatory Framework - Planned for 2003/4
- Establishment of GIS facility within the municipality of Hargeisa (in collaboration with UN Habitat)
- Connecting academic and public institutions to the Internet via installation of VSAT systems in Somalia (in collaboration with the World Bank / World Bank Institute)<sup>14</sup>

- Planned for 2003 – VSAT for Amoud University
- Planned for 2003 – VSAT for UNDP compound in Garowe, Puntland
- Establishing Learning Centres within the universities

**A CASE ON ICT DEVELOPMENT:  
ESTABLISHMENT OF ICT  
CONNECTIVITY TO THE UNIVERSITY  
AND GOVERNMENTAL INSTITUTIONS**

This chapter describes a specific project on ICT development. It is included as it illustrates the activities needed to set ICT connections up from scratch and data gathered through this project go beyond this project and indicate general ICT demands.

**Box 1:** *A case on establishing ICT connectivity for university and governmental institutions in Somaliland.*

<sup>13</sup> UNDP, Laila Shamji, Head, Data and Information Unit

<sup>14</sup> See one example in the next chapter

***Background***

One of the many areas that need assistance in Somaliland is the information and teaching structure and on the basis of its many years of experience in Ghana, Center for Tele-Information (CTI)<sup>15</sup> was asked to assist in developing a program for the construction of an electronic communication infrastructure relating especially to the university area. In this chapter, this case is described in more details.

Following a request from the UNDP, a representative from CTI in 2001 participated in a mission to Somaliland. The primary purpose of the mission was to assist the UNDP in determining the state of readiness among universities, research and government institutions in Somaliland for Internet connectivity and to assist in drawing up a plan for establishing such a connectivity. This included an assessment of existing telecommunication facilities, additional investments that might have to be made to establish the connectivity - as well as a preliminary assessment of the need for the development of the regulatory structure for telecommunications.

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<sup>15</sup> Located in Technical University of Denmark



***Demand for ICT connectivity and services (interviews)***

To map the development and the need of ICT in Somaliland, CTI conducted interviews with some of the main actors in the ICT market. The key issues, the interviewees were confronted with was demand for ICT and the necessity for a regulatory framework.

The data gathered in the interviews goes beyond this particular project and indicate general demand for ICT.

In the following the results of the interviews are given:

***Ministry of Planning***

With regards to improving ICT connectivity, the Director General (DG) expressed strong interest in development of ICT and getting access to as well electronic communication with the universities as the Internet. The DG saw this as a way of enhancing the quality of the administration through better access to training and information.

***Ministry of Telecommunications***

The representatives expressed strong support to the proposed network facilities. Further they expressed strong interest in assistance to build a regulatory framework for the telecommunications sector in Somaliland. A request for this was already sent to UNDP in 1999.

***Telecom Operators***

The management of the telecom companies, Solteco, Barakat and STC, recognized the need for and expressed support to the development of a regulatory framework for the sector.

***The Institute for Practical Research and Training***

The director recognized the potentials for teaching and research in the proposed project. He had already been engaged in discussions of the possibilities to establish similar facilities. He expressed strong support and interest in being connected to the network resulting from the proposed project.

***UNESCO***

The principal priority of UNESCO in Somaliland is training of teachers. UNESCO would like to introduce tele-training in this activity. It has been discussed, e.g., in relation to activities in Garowe. UNESCO would like to use the facilities of the proposed project for its activities and it was characterized as 'just the right time for such an activity'.

***Soyaal Training Institute***

The management recognized the potentials in access to the Internet and welcomed a possibility to include this in their activities.

***Project plan***

On the basis of interviews with government officials, universities and organizations and a general assessment of the situation in Somaliland it was concluded that:

- There was a need for an electronic network linking universities, government and research institutions in Somaliland and giving high speed access

to the Internet

- There was strong support for such a project among the relevant institutions
- There was a relevant resource base (knowledge and pc's) making such a project feasible
- The telecommunication companies showed very positive attitudes towards the project.

Consequently the Danish Embassy and the UNDP decided on a two-phased plan to realize a research and education network:

*Phase 1* included the establishing of a basic high speed Internet connection giving access to three institutions in Hargeisa (the university, Ministry of Planning and the UNDP).

*Phase 1* was implemented by CTI in October-November 2002. It included the installation of a VSAT at the UNDP compound and the setting up of microwave connections to the Ministry of planning and Hargeisa University<sup>16</sup>.

*Phase 2* was foreseen to establish links to sites such as the Ahmud University (situated outside Boroma approx. 120 km from Hargeisa) and the Sheik Veterinary School (situated in Sheik approx. 75 Km from Hargeisa). Furthermore, a project for development of the regulatory framework of the telecom sector and for long-distance teaching systems using the electronic networks were planned to be developed.

Concerning the *phase 2* links, it was concluded that a VSAT-solution would be the most efficient solution for the Ahmud University and that a VHF-solution would be the most efficient solution for the Sheik Veterinary School.

It is seen as vital for the project that long-term financial self-sustainability is achieved. This may be assured by setting up payment schemes for different types of users including commitments from organizations willing and able to pay contributions adding up to cover the necessary costs.

These will include not only the current communication costs, but also administration and technical maintenance/ development of the system. The current international tensions have, however necessitated a postponement of the activities following phase 1.

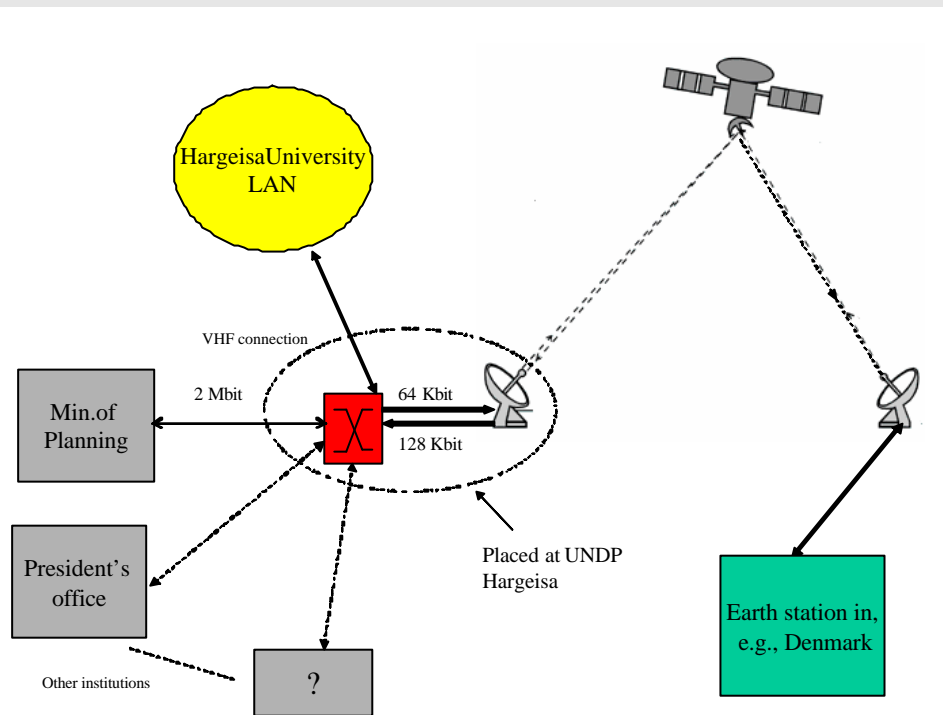
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<sup>16</sup> In June 2003 the office of president is also connected to this network

### Deployed Technology

The aim of the proposed project was to provide high-speed Internet access to research education and government institutions through a network. As depicted in the figure 2 the network consists of different research, education and government institutions in Somaliland.

- The connection between the network and outside world is a VSAT connection to Denmark.
- The connections to other institutions are 2 Mbit/s Line of Sight microwave connections.



**Figure 2:** Network architecture

## ESTABLISHMENT OF ICT CONNECTIVITY

Based on cost figures and experiences from the case project described in Box 1 this chapter outlines some realistic scenarios for establishment of ICT connectivity in Somaliland.

### Cost of VSAT connectivity

In the following the fixed and running cost of a VSAT system is given. The figures for an actual system will vary depending on the VSAT operator. The following figures are representative 2002 prices estimated by CTI.

#### Fixed costs:

Fixed costs are the cost of equipments like modems, routers, transceivers, antenna, etc. needed to establish VSAT IP connectivity. The cost for a system that can operate link speeds of up to 2 Mbit/s is estimated at 35.000 USD.

#### Running costs:

Running costs depend on the link capacity. As an example the cost of having 128/64 (128 Kbit/s down stream and 64 Kbit/s upstream) is 2000 USD per month.

#### Total cost:

Thus, the total cost of establishing an asymmetrical 128/64 connection in an any

given location in Somaliland is 30.000 per year and 2500 \$ per month<sup>17</sup>.

If the VSAT connection is used, 24 hours a day, seven days a week then the minute charge (to cover the direct costs) is 0.058 \$ per minute. The connection may be shared by several PCs and the 'per minute charge' can then be lowered accordingly. However, there is a trade off between the number of PCs and the perceived quality as sharing the connection decreases the quality of services.

### TELE CENTER SCENARIO

In this section the costs of using the system for establishing a tele center in a city in Somaliland are explored. It is assumed that the tele center will have 20 PCs and is open 24 hours a day. The cost of 20 PCs and additional networking equipment etc. is estimated to 30.000 \$ and the rental of the location (including electricity) is estimated to be 500\$ per months. The center will need to employ 3 staffs, one in charge of accounting and 2 technical people. Their salary is estimated to be 500\$ per month each, resulting in a running cost of 2000 \$ per month.

The non VSAT cost of establishment of a tele center will be around 2275 \$ per month. And the total cost (VSAT included) will be 4775 \$ per month.

The per minute rate per PC will then be 0.005 \$ to cover costs at full capacity use. If the center is only used for 1/3 of the time (8 hours a day) at ½ capacity (10 PCs used), then the cost covering per minute rate increases to 0,033 \$.

The calculation show that if there is a willingness of paying 0.03 - 0.005 \$ per minute<sup>18</sup>, it is realistic to establish VSAT connectivity to serve a tele center.

### Using microwave links :

As illustrated in Box 1, it is not necessary to establish VSAT at every site. When a VSAT is

established the new sites can connect to it using wireless technologies like microwave. The price of establishing microwave link using WIFI technology is currently around 6000 \$ per site. Consequently it is economically reasonable to deploy microwave links to connect to an established VSAT system if the new sites are situated near enough (in a radius of about 20 Km.<sup>19</sup>). If the distance is farer away a calculation is needed to find out if it is more efficient to use other far reaching wireless technologies like VHF, radio chain, etc. or it is more rational to establish a new VSAT system.

### DEMAND FOR ICT DEVELOPMENT AND INVESTMENT IN SOMALILAND

#### Opportunities

According to UNDP there are two main needs on the Somaliland ICT market<sup>20</sup>:

- Provision of technical assistance for the regulatory framework to define the technical requirements, protocols, data standards, training and staffing needs.
- Establish networks (and enhance the current ones) to enable academic, research and public institutions to communicate, exchange information and better manage and deliver services to businesses and citizens.

A functioning Regulatory framework is almost a precondition for the ICT market to function properly and for establishing conditions for foreign capital to invest in Somaliland. This task therefore has very high priority and as seen in the case analysis both the telecom industry and governmental institutions recognize the importance of this task.

<sup>17</sup> The calculation is based on amortization of 35,000 \$ with an interest rate of 10% over 10 years.

<sup>18</sup> Of course the real charging scheme will depend on if people use the system in day, evening or night hours.

<sup>19</sup> Intel has just introduced a new standard, 802.16 claimed a high speed reach of around 50 kms

<sup>20</sup> UNDP, Laila Shamji, Head, Data and Information Unit

The lack of regulatory framework for telecom market can be identified as one of the major barrier for development of ICT in Somaliland.

Establishing a modern network infrastructure, serving also the activity within the priorities of the international aid agencies is vital in the case of Somaliland. The case study shows that the users, both in the government and outside, emphasize the need for such activities and its importance in relation to fulfill their daily

tasks. It is especially important to give the research and education sector high priority as the gains obtained through ICT are so obvious and important for this sector. The presence of highly qualified, returned expatriates makes a good case for potential efficient use of an up-to-date ICT-environment.

Somaliland is one of the least developed countries in the world and the development of ICT, e.g., in the governmental institutions need that the international donor organizations give ICT development a high priority.

As the cost of establishing VSAT connectivity decreases it will become more and more likely that the local firms and organizations will implement ICT connectivity to gain efficiency in production and distribution of their services and goods. A recent example is that one of the hotels in Hargaisa has implemented its own VSAT to give the guests possibility for ICT connectivity.

livestock. ICT projects with the aim of implementing more efficient processes in the production, transport and export of livestock will have vital effects on the economy. The fishing industry that is under development will also gain efficiency by implementing ICT solutions. For both of the traditional industries there potential gains associated with ICT usage in training, production, transport and export.

As indicated earlier the economy of Somaliland is based mainly on export of

It is important to bring actors from livestock, transport and fishing sectors together with actors from ICT sector to investigate in new possibilities for production and identify the new investment areas, which are needed.

### Threats

The problems of generating general economic and specific ICT development in Somaliland are immense. Since the onset of the civil war in 1988, Somaliland has experienced both economic dislocation and widespread social dislocation brought about by insecurity and military massacres. The civil war had also created a massive stream of refugees with estimated one million fleeing to other countries.

Economic growth has traditionally been modest and this has been explained by the neglect of post-colonial governments (and of the British colonial administration), the small size of the domestic market, the lack of raw materials, shortage of finance and management

skills and with investments deterred by political uncertainty.

A positive change of this economic environment depends very much on the external economic relations which are affected by the country's uncertain international status. Foreign assistance is necessary to realize economic development in Somaliland that is externally recognized as still formally part of Somalia. The Somaliland government, however, refuses to acknowledge this status. It is thus denied membership in international institutions, including postal and telecommunication agencies, and has difficulty in negotiating formal agreements with foreign governments.

Somaliland has been able to obtain assistance from international organizations as UNDP and UNESCO and several NGOs, but Somaliland's indeterminate international status is a severe threat to potential assistance and to development.

## CONCLUSION

Without a substantial surplus in traditional sectors as agriculture and fishery it seems unlikely that the economy can develop to support a modern state. Further this seems to require the introduction of an ICT infrastructure (and rehabilitation of health and transport structures not treated here) and massive investment in development of education. These investments seem justified by the potentials, but Somaliland's indeterminate international status is a severe threat to realization of the potentials.

## LIST OF INTERVIEWED PERSONS

University

### **Hargeisa University**

President of the University

### **Ahmud University**

Prof. Suleiman Ahmed Gulaid, President of the University

Prof. Ahmed Hashi Abib, Vice-president of the University (Development Planning, Administration & Public Relations)

Eng. Abdirahman Haji Dahir

Government

*Ministry of Planning*

*Ministry of Telecommunications*

Eng. Mohammed Abdillahi Ehui, Technical Consultant of Minister

Eng. Hassan Jama Dualleh, Advisor of Minister

### **Telecommunication Companies:**

*Soltelco*

*Barakat (now Telcom)*

*STC*

Other institutions

*The Institute for Practical Research and Training*

Director Ahmed H.Esa, Ph.D.

*UNESCO*

Director Ahmed A-Dáar, Somaliland Institute of Education & colleagues

*Soyaal Training Institute*

*UNDP*

Laila Shamji, Head, Data and Information Management Unit

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