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FINAL REPORT OF THE

Somali Interactive Radio Instruction Program

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CHAPTER 1

Executive Summary

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Executive Summary

Somalia has experienced conflict and had almost no functioning national government since 1991. In this context, the United States Agency for International Development (USAID) – funded Somali Interactive Radio Instruction Project (SIRIP) was begun in order to improve reading, math, and life skills for Somali children by ensuring equitable access to quality basic education. The project, implemented by Education Development Center in collaboration with Somali authorities and Somali and international non-governmental organizations (NGOs), used Interactive Radio Instruction (IRI) accompanied by capacity building, partnerships with communities and governments, and the provision of educational resources to create sound, sustainable education services. Begun in 2006, SIRIP originally focused on improving quality in existing schools, later shifting its emphasis to providing access to quality education for out-of-school, displaced, and otherwise marginalized children and youth.

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By using IRI and an extensive network of local training and monitoring partners, SIRIP reached 330,000 children and youth over five years, 40,000 of whom were out-of-school, displaced, or marginalized. Two studies of student learning achievement demonstrate that participating in SIRIP programming significantly improved learning gains. In contexts where little or no educational system existed, it was often the only source of education available to children. In a 2007 assessment, first-graders in schools supported by SIRIP earned higher post-test scores in Somali literacy and mathematics than first-graders who did not take part in the program, with statistically significant results. A 2010 study concluded that out-of-school children attending grade 1 through 3 lessons in SIRIP learning centers achieved equal or greater learning gains compared to children in formal schools.

SIRIP increased access to education in a country with some of the world's lowest enrollment figures. The program reached many of the 40,000 out-of-school, displaced, and marginalized learners by opening learning centers in camps of internally displaced persons (IDPs). Others were reached by helping rural communities build schools or rehabilitate crumbling ones, or by helping Quranic schools which previously only offered religious studies to include Somali literacy, math, and life skills in their curriculum. In a context where there were few educational materials and those that existed were nearly universally of poor quality, SIRIP provided five grade levels of IRI lessons, produced and distributed tens of thousands of age-appropriate and culturally appropriate books in Somali and English, and delivered 30 teacher training audio programs and teaching materials.

SIRIP collaborated closely with numerous Somali institutions and individuals to build capacity for the continued growth and improvement of the country's educational services. With the support of its network of NGO partners, many of them local NGOs, SIRIP trained over 9,300 teachers in basic teaching competencies and over 500 principals or school leaders in school planning, management, and pedagogical support.

Additionally, SIRIP trained Community Education Committee members, most of them parents; assessment specialists; Ministry of Education officials; and NGO staff members. SIRIP also motivated communities to support education and garnered attention for the cause in national and even international circles, including the establishment of a rare gathering of experts and leaders across regional and clan lines in the first annual conference on education for Somali-speaking children.

SIRIP faced formidable challenges—particularly a fragile security context, weak government institutions, and clan differences--throughout its five years and leaves lessons learned, such as the value of adaptive program development and ways to build successful relationships that facilitate navigating such a fragile social system. Though Somalia still faces extreme development challenges, not least of which is the provision of education, SIRIP helped Somalis establish sustainable activities and systems that can continue to advance education access and quality for some of the world's hardest-to-reach learners.

CHAPTER 2

Introduction

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Introduction

Somalia has ranked as the most failed state since 2008. Years of conflict have devastated the safety, stability, and livelihoods of thousands of Somalis. According to the UN Human Rights Commission, about 1 million Somalis have been displaced internally and about 250 thousand have fled to neighboring countries. The outbreak of violence that began in early 2007 forced an estimated 60 percent of Mogadishu's residents to leave their homes, many going to internally displaced person (IDP) camps at the city outskirts. In these camps, refugees live close together in tents and makeshift structures, safer from violence but subjected to ever-increasing hardships with little to no facilities or services. Children have been affected most by the breakdown of state institutions, as schools became the first casualties (Education Development Center 2011 2).

However, the decline of education quality and standards began in the mid-1980s and intensified with the disintegration of the state and subsequent breakout of civil war in 1991. In this period, the number of primary schools and pupil enrollment dropped dramatically; textbooks and supplies disappeared; teacher attrition soared; classrooms deteriorated; and the overall quality of education declined. Public allocations for education declined from 2.2 percent of GDP (gross domestic product) in 1975 to 0.3 percent in 1989. Today, Somalia has one of the lowest student enrollment rates in the world with an estimated 20–30 percent gross enrollment and among the lowest public financing of any country. Girls continue to be underrepresented at all levels of education, especially in rural areas. By the 8th grade, girls make up a mere 25 percent of all students, and their numbers continue to decrease thereafter (Education Development Center 2011 2).

The Somali Interactive Radio Instruction Program (SIRIP) introduced a different strategy—Interactive Radio Instruction (IRI) accompanied by capacity building, partnerships with communities and governments, and the provision of educational resources including a series of attractive reading materials for Somali children and youth.

Under these fragile conditions, conventional approaches to education do not work. The Somali Interactive Radio Instruction Program (SIRIP) introduced a different strategy—Interactive Radio Instruction (IRI) accompanied by capacity building, partnerships with communities and governments, and the provision of educational resources including a series of attractive reading materials for Somali children and youth. The aim was to improve reading, math, and life skills for Somali children by ensuring equitable access to quality basic education.

SIRIP was designed to build on the successes and use of existing resources from two previous USAID-funded programs, Interactive Radio Instruction for Somalis (IRIS) and FOCUS, which developed and delivered IRI programs for Somali speakers in Ethiopia. Launched in 2005, SIRIP concluded at the close of 2011 having achieved remarkable success despite significant obstacles encountered throughout the program. SIRIP helped Somali children learn more, provided access to learning and resources where there were none, laid a foundation for the continued delivery of quality education, and motivated Somalis to work together to advance education. SIRIP has left a legacy of access to education. A great number of children are now attending school, or have made the transfer from the IRI learning centers to government schools.

How Interactive Radio Instruction Works

SIRIP acted in many domains, including community involvement, government capacity building, and awareness raising, to improve education in Somalia, but at the project's heart was a system used to deliver quality education--even in hard-to-reach places—and improve teachers' skills in a cost-effective manner: Interactive Radio Instruction (IRI).

Each day, the teacher—or the person designated as the teacher—uses a radio either to receive a broadcast or to play a sound file on a flash drive loaded with that day's program. Wind-up and solar-powered radios are used where power sources and batteries are not available. Each 30-minute program is made up of a series of activities, songs, poems, dramas, and interviews that address the day's learning objectives. The same radio characters appear each day, including a radio teacher and students who model the activity and skills for those in the listening audience. For example, a reading program might address one letter, its sound and what it looks like, through a song. The radio teacher might then instruct the classroom teacher to lead an activity about that letter. This instruction is guided and assumes that most teachers have not had access to teacher training and may not even be completely literate. Thus, the radio teacher will say (in Somali), "Now, teacher and students, let's play a game with the word BOOK. Remember, students, BOOK is spelled B-O-O-K." In this way, poorly educated teachers who are not sure how a word is spelled in Somali are confident that the spelling is correct. The radio teacher then directs the class teacher to lead the activity, giving step-by-step instructions.

The teachers' guide and the radio program instruct the teacher what to do after the program to carry out what has been modeled in the lesson. For example, the students may create posters in which they use a letter to create a personality with traits that begin with that letter—Miss R wears a red scarf and rings, is very rich, lives near a river—and decorate their classroom walls with the posters. The readers that accompany the radio program reinforce the lessons (Education Development Center 2011 3-4) .

Program Content

In addition to the series of lessons in reading and math, the IRI programs offer vital information on the prevention of malaria, treatment of diarrhea, importance of vaccinations, good nutrition, prevention of conflict and conflict-mediation techniques. Information is detailed but also simple enough for a primary school student to understand. In the IRI programs, messages are not didactic. The story may present a conflict situation that is more akin to an argument on the soccer field than a lesson in conflict prevention. Yet the story dramatizes conflict-resolution techniques that may be used in real life situations. Listeners love the characters and gladly attend to an elder in a drama who ultimately comes around to understand the importance of sending his daughter to school. Parents want their children to learn math and reading; thus the programs have been acceptable by all. Quranic school teachers are often the most enthusiastic population. Integrating health and other life-skills messages into reading and math lessons is effective, because, after decades of being courted or conquered by foreigners, warlords, and now terrorist groups, Somalis are often wary of messages from sources they might not know or trust that tell them how to behave.

The radio programs include drama segments that portray scenes in which children deal with and manage conflict and learn to tolerate and celebrate differences between people. Triggers of conflict, including differences between clans, are presented in dramatic situations in which children find ways to resolve conflicts without using violence. The programs also include lessons in gender awareness, health, and the physical environment (Education Development Center 2011 4).

After training Somali educators, writers, actors and producers to develop the IRI programs, SIRIP distributed rugged LifeLine radios with windup capability and, later, mp3 player capability, then trained teachers to use the IRI programs and the research-proven teaching methods the programs model. The project provided existing schools with this support for its first two to three years, then shifted its focus to establishing new learning centers for out-of-school children as well as supporting Quranic schools.

CHAPTER 3

Achievements of the Somali Interactive Radio Instruction Program

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Achievements of the Somali Interactive Radio Instruction Program

The introduction of the interactive radio programme enriched the teaching, with consequent positive contribution to increased enrolment and retention of children in school. Teachers are ill prepared with learning aids . . . The radio program helped to correct this. - ***Report from SIRIP partner ADRA, Puntland***

3.1 TANGIBLE RESULTS: SIRIP HELPED SOMALI CHILDREN LEARN MORE.

3.1.1 Enrollment numbers

With SIRIP, "people simply want to participate without being pushed … they come … just to listen, to hear, to learn, to sing and … even to DANCE!"
- Mohamed Moalin, Chairman, SAFE

The target was revised after the outbreak of conflict in 2007 to approximately 350,000 learners

Given the widespread need for educational support in Somalia and the ability of Interactive Radio Instruction to reach large audiences, SIRIP was designed as a large-scale program: its initial target was to reach approximately 400,000 learners in Somaliland, Puntland, and the South Central Zone, including 40,000 out-of-school, internally displaced, and/or marginalized children. The target was revised after the outbreak of conflict in 2007 to approximately 350,000 learners, and Galmudug was later added to the geographic reach of the program. SIRIP succeeded in reaching

Table 1. Number of learners reached

Learners Reached	2006	2007	2008	2009	2010	2011
Target:						
Male	32,500	103,500	88,260	14,000	7,200	720
Female	32,500	91,500	72,260	11,000	4,800	480
Total	65,000	195,000	160,520	25,000	12,000	1,200
Actual:						
Male	45,301	67,881	32,083	12,800	7,271	657
Female	35,713	50,585	27,322	10,946	6,855	480
Total	81,014	118,466	59,405	23,746	14,126	1,320
Cumulative:						
Male		113,182	145,265	158,065	165,336	165,993
Female		86,298	113,620	124,566	131,421	131,901
Actual		199,480	258,885	282,631	296,757	298,077

approximately 300,000 learners throughout the four zones, as listed in Table 1, 40,000 of whom were out-of-school, internally displaced, or otherwise marginalized.

The rapid scale-up of IRI in schools throughout SIRIP's three initial zones is evidence that SIRIP quickly gained status as a popular educational program highly regarded by teachers and parents. The increase in demand for IRI is demonstrated by the pattern of schools and learning centers registering to participate in IRI (from 219 in June of 2006 to 1,483 in September of 2007) and the number of students participating in IRI (200,108 in September of 2007) just over one year after its launch in schools (Letshabo, Kariuki, and Yasin 6). With SIRIP shifting its focus in 2009 to supporting out-of-school, IDP, and otherwise marginalized students—a more labor- and resource-intensive effort than supporting formal schools-- the number of new centers and learners participating in SIRIP reduced. However, nearly all of these learners would have had no access to education without SIRIP. By the end of 2011, 300,000 learners had actively participated in the IRI program; Table 1 lists them by year and gender.

3.1.2 Learning gains: 2007 student assessment

SIRIP learners began to demonstrate improved learning after a single year of participating in the program as measured by a study of impact on learning achievement among first-graders. Roughly 3,000 IRI learners in Somaliland, Puntland, and the South Central Zone (SCZ) took a pre-test on basic Somali literacy and math skills in October and November of 2006. Because renewed conflict made SCZ inaccessible for the April/May 2007 post-test, the sample was reduced to 1,104 learners, approximately 264 of those being control group students who had not participated in IRI nor taken the pre-test (Letshabo, Kariuki, and Yasin 9).

IRI learners achieved a mean gain of 31.5 percentage points (from 30.3 percent correct answers to 61.8 percent) in Somali literacy and a mean gain of 20 percentage points (from 51 percent to 71 percent correct) in mathematics. A paired-samples comparison indicated that differences in the pretest and posttest are significant, an indication that after a year of schooling children did benefit from a number of learning activities that schools undertook, including IRI. Table 2 lists the pre-test and post-test scores for the sample of IRI learners (Letshabo, Kariuki, and Yasin 16).

Table 2. 2007 Student test results: Pretest and posttest means for IRI learners, by subtest

	Subtest	N	Maximum Score	Mean	Mean Percent	Mean Gain %
IRI Learners	Somali Pretest	852	34.0	10.3	30.3	31.5
	Somali Posttest	681	34.0	21.7	61.8	
	Math Pretest	849	20.0	10.2	51.0	20.0
	Math Posttest	683	20.0	14.2	71.0	

Table 3. 2007 Student test results: Posttest means for IRI and non-IRI (Control) learners, by subtest

	Subtest	N	Maximum Possible	Mean	Mean Percent	Mean Diff (%)
Somali Posttest	IRI Learners	681	34.0	21.7	61.8	8.0
	Control Learners	245	34.0	18.3	53.8	
Mathematics Posttest	IRI Learners	683	20.0	14.2	71.0	12.0
	Control Learners	245	20.0	11.8	59.0	

A comparison between IRI participants and non-IRI participants demonstrates that SIRIP boosted achievement among learners in the sample. The posttest score for IRI learners was 61.8 percent in Somali Literacy, compared to a posttest score of 53.8 percent for control learners. In mathematics, the IRI posttest score was 71.0 percent compared to a posttest score of 59.0 percent for control learners. An independent samples t-test comparison of means between IRI and control learners yielded significant differences, an indication of the value added by IRI. Table 3 compares the data between the IRI and non-IRI learners (Letshabo, Kariuki, and Yasin 18), and the full report is included in Appendix A.

The SIRIP learners in non-formal schools, many of them located in IDP camps, generally achieved learning gains as large or larger than the non-IRI participants learning in formal schools.

3.1.3 Learning gains: 2010-2011 student assessment

SIRIP once again measured student learning achievement in 2010 and 2011, this time comparing students in non-formal IRI learning centers with those in formal schools not receiving IRI. The assessment in mathematics and Somali literacy was intended to examine the effectiveness of SIRIP's methods of teaching and learning among children who do not have an opportunity to enroll in regular elementary schools. Comparative indicators used in the tests were 1) academic achievement gaps between children enrolled in non-IRI school versus those in the IRI schools; 2) gender comparison between boys and girls; 3) age comparison; 4) rural versus urban learners; and finally between children whose teacher was a female versus children whose teacher was a male. Both the Somali literacy test and the mathematics test were based on EDC's learning objectives developed for SIRIP and curriculum frameworks developed for Somali-speaking primary school students. Additionally, the Somali literacy test was developed under the guidelines of the Early Grade Reading Assessment (EGRA), a tool and procedures developed with the sponsorship of USAID and the World Bank and used in over a dozen countries worldwide. A total of 3,461 students in grades 1 through 3 took the Somali literacy and mathematics pre-test in December of 2010, and 2,950 completed the same tests as a post-test in May of 2011 (Dirir 2-6).

The SIRIP learners in non-formal schools, many of them located in IDP camps, generally achieved learning gains as large or larger than the non-IRI participants learning in formal schools. In mathematics, SIRIP first graders started lower and made greater gains in all five domains tested than did formal school learners, second graders in the

two groups showed roughly equivalent gains, and SIRIP third graders' mean post-test scores surpassed those of their counterparts after beginning lower at the pre-test stage (Dirir 9-10). In literacy, first-grade results were mixed, the groups of second graders again made approximately equivalent gains, and third-grade SIRIP learners made slight to moderate gains in all domains, while formal learners generally stayed flat or, in some cases, appeared to lose ground. In all grades, the achievement gains by SIRIP learners were higher than gains by non-SIRIP learners in most instances, and the differences in gains were statistically significant (Dirir 8-9). Additionally, these achievement gains were the result of only five months of instruction. This suggests that the instructional methods SIRIP implemented were more effective or as effective as methods used in formal schools. Tables 4 and 5 list illustrative results from the 2010-2011 assessment, highlighting first grade mathematics and third grade literacy, respectively. The full report of the 2010-2011 student assessment is in Appendix B.

Table 4. Student test results 2010: 1st grade mathematics

The results for 1st grade mathematics are presented in table 5. In all sections in math, the gains for the SIRIP schools were higher than the gains for the formal schools. The gain in total math scores, for example was 6.0 points (10.2 – 16.2) for SIRIP and 2.8 points for formal schools. That implies the SIRIP schools gained more than twice as much as the formal schools gained. Similarly, the scores for the Sequence section went up by 33 percent for SIRIP schools and 11 percent for formal schools. The pattern of the differential gains between the two groups was evident in all math domains in 1st grade.

		Mean Score						Percent Scored 1 Or 2					
		Numbers		Addition		Total		Place Value		Recognize Shape		Sequence	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Puntland	IRI	5.6	9.1	1.4	3.0	8.2	14.8	27	52	29	70	19	28
	Formal	7.9	9.7	3.2	4.1	14.0	17.7	62	80	72	96	43	46
Somaliland	IRI	7.7	9.1	1.7	3.8	11.0	17.3	23	70	56	74	19	71
	Formal	10.6	10.3	3.5	4.1	17.3	18.7	51	76	97	98	41	58
South Central	Formal	9.4	10.2	3.4	4.5	15.5	18.8	34	53	76	88	62	74
All Zones	IRI	7.1	9.1	1.6	3.4	10.2	16.2	24	62	49	73	19	52
	Formal	9.4	10.1	3.4	4.3	15.7	18.5	48	70	83	95	49	60
All Students		**8.5**	**9.8**	**2.7**	**4.0**	**13.5**	**17.8**	**39**	**67**	**69**	**88**	**37**	**58**

Table 5. Student test results 2010: 3rd grade literacy

In most sections of the literacy assessment, third grade SIRIP students gained a little while formal school students did not gain at all or slightly lost ground. In the reading and listening sections, however, both groups gained scores, but the SIRIP gains were much higher than the gains for the other students.

		Orientation: % Correct All 3		Letters/ Min		Phonemes: % Correct		1-Syllable Words/Min		2-Syllable Words/Min		Nonword/ Min		Listening		Reading	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Galmudug	IRI	78	100	35	74	63	58	31	37	25	29	23	27	3.0	4.5	3.7	3.1
	Formal	95	99	74	93	98	0	46	47	30	42	29	38	4.3	4.9	4.2	4.5
Puntland	IRI	79	100	49	63	80	91	24	27	19	21	17	19	3.3	4.3	0.5	3.9
	Formal	100	95	54	69	95	98	27	36	23	30	18	27	3.5	4.6	4.2	4.1
Somaliland	IRI	99	96	66	76	88	90	29	36	25	30	23	26	4.3	4.8	2.1	4.4
	Formal	98	99	84	72	83	90	41	33	35	25	29	24	4.2	4.7	3.6	4.5
South Central	IRI	88	80	79	81	92	95	47	51	33	32	27	24	4.1	4.5	3.6	4.1
	Formal	99	80	87	56	89	64	40	25	34	22	26	16	3.8	3.6	4.6	3.6
All Zones	IRI	90	94	63	75	86	88	35	39	27	29	23	25	3.9	4.6	2.5	4.0
	Formal	98	96	79	72	88	87	40	34	32	28	27	25	4.1	4.5	3.9	4.3
All Students		**95**	**95**	**72**	**73**	**87**	**87**	**38**	**36**	**30**	**28**	**26**	**25**	**4.0**	**4.6**	**3.4**	**4.2**

3.2 EXPANDING OPPORTUNITY: SIRIP PROVIDED ACCESS TO LEARNING AND EDUCATIONAL RESOURCES WHERE THERE WERE NONE.

The learning gains made by SIRIP participants and measured in the 2010-2011 assessment are made even more remarkable when considering the situation of the learners assessed. The participants were children attending non-formal learning centers because they did not have access to formal schools, in many cases due to internal displacement. SIRIP also provided an array of educational resources for children in both non-formal and formal settings, including an extensive supply of beautifully illustrated books containing authentically Somali stories printed in Somali and English.

3.2.1 Enrollment of out-of-school, IDP, and marginalized learners

This radio program is a golden opportunity for our children to continue their learning in the camp's tent school. ***- Halima Ibrahim, mother of two in an IDP camp southwest of Mogadishu***

Seeking to provide equal access to education for all learners, the SIRIP program concentrated on meeting the needs of out-of school, IDP, and marginalized children who did not have access to education. SIRIP worked with local NGOs, local community education committees (CECs) and the non-formal education offices of the three Ministries of Education to identify these learners and teachers and to provide them with quality education through the IRI audio programs, teacher guides, supplementary reading materials, and in-service teacher training. These partnerships with the local NGOs and the CECs, along with high quality audio and print materials, allowed the SIRIP program to reach a wide range of learners and teachers in marginalized communities.

Surpassing its target of 320 learners, SIRIP helped Quranic school provide basic education to 494 children.

In the program's first 16 months alone, SIRIP opened 183 learning centers in IDP camps. The project also helped build new schools in remote communities (see 2.3.3). Through these efforts, SIRIP achieved its target of providing access to education for 40,000 out-of-school, IDP, and marginalized learners.

3.2.2 Enrollment in SIRIP-supported Quranic schools

Quranic schools in Somalia generally provide instruction in Arabic and the Quran, but most do not offer literacy, mathematics, and life skills instruction. Surpassing its target of 320 learners, SIRIP helped Quranic school provide basic education to 494 children. SIRIP supplied the schools with radios, teacher training, and learning materials to enable their participation in the program. Some Quranic schools accepted the IRI programs but insisted that the music be eliminated. For those schools, the music was replaced by a capella chants or songs suitable to the culture of the learners. Appendix C lists the number of Quranic schools active at the end of the project and indicates how many in each zone continue to operate.

3.2.3 Addressing gender equity

Recognizing Somalia's low rate of girls' enrollment and sometimes discriminatory treatment of girls when they are in school, SIRIP advanced gender equity through its outreach, training, and learning materials. SIRIP reached 131,901 girls, a major accomplishment. Participating schools and learning centers were required to seek gender equity in enrollment, which meant raising awareness of the importance of girls' schooling.

In the IRI programs, both characters and teaching objectives were explicitly named and designed to model girls' ability to do well in school and to encourage further study or potential careers. Teaching objectives required teachers to involve girls in classroom interactions and the radio modeled teaching strategies aimed at improving girls' education.

3.2.4 Shadow audiences

As they traveled, program monitors working for SIRIP and its NGO partners witnessed dozens—even hundreds—of IRI lessons in schools and learning centers. Evidence of SIRIP's impact was also abundant outside of the classroom, however. In the town of Boroma, for example, men in cafés debated the source of the radio programs, referring to specific characters and storylines during their animated discussions. In Dhoqoshay in Buroa, villagers in cafés and other public areas tuned in each morning to what they called "The Fox Channel," hoping to learn of the latest escapades of the clever and funny female fox character featured in SIRIP programs (Letshabo, Kariuki, and Yasin 23).

Because Interactive Radio Instruction programs are broadcast, people other than the direct audience--often referred to as "shadow audiences"—can listen. In Somalia and elsewhere, numerous anecdotes like these illustrate the use of IRI by people other than teachers and learners in schools and learning centers: parents, cab drivers, shopkeepers, street children, and other children unable to attend schools or learning centers, among others.

One implementing NGO partner, SAFE, noted that SIRIP has 'demystified' education by bringing it to the homes and the streets because anyone is able to listen and know exactly what their children are learning in school. And because the parents like what they hear and now know what is being taught in school, they are more inclined to encourage their children to attend.

Besides encouraging school attendance among children, IRI can provide educational opportunities for people of all ages who have little education or are not able to attend a school or learning center. Such is the case for Mohamed, a 19-year-old herdsman in Sanaag, who stumbled upon the programs on his radio. "I enjoy listening to the radio lessons . . . because they are very interesting," Mohamed reports. "I like to educate myself as I look after my animals no matter how long it will take to do that." Similarly, Bashir Hassan, a shopkeeper at Bakara market in Mogadishu, says that he regretfully cannot send all six of his children to school. Of the IRI program, he says, "When I heard this program, I immediately realized that it will be a good alternative for any child like my daughters. Then I bought exercise books and pencils and asked them to listen in." (Letshabo, Kariuki, and Yasin 24) It has not been possible to quantify the size of SIRIP's shadow audiences.

3.2.5 A new home for learning: SIRIP community construction project

Fourteen-year-old Fatima Abdi Salah's nomadic community, Ceel-Lamaan, was among the many rural Somali communities with no school facility. Unlike many such communities, Ceel-Lamaan was able to provide classes, but they took place in far-from-ideal conditions. "During the time when I used to learn under the tree, I used to see animals, people passing," recalls Fatima. "I used to see dust in every corner of the class." (Education Development Center 2009) SIRIP helped 18 communities including

Table 6. Schools built or rehabilitated by SIRIP-Community partnerships

Zone	Region	District	School	# of class rooms
Somali-land	Maroodi Jeex	Hargeisa	Maluugta	2
	Togdheer	Burco	Galoolay	2
	Sanaag	Erigavo	Madare	2
			Mala-wade	2
			Gorgor	2
			Ceel lamaan	2
			Midhisho	2
			Daray	2
	Hargeisa	Hargiesa	Goryo	2
	Sool	Las-anod	Jamalaaya	4
Puntland	Garowe	Garowe	Barwaago	2
	Garowe	Garowe	Bo`ame	4
	Galkaio	Galkaio	Cirjeef	4
	Garowe	Garowe	Dangoray	2
	Galkaio	Galkaio	Bursalah	2
South Central Zone	South Galkaio	South Galkaio	Bajela	2
	Dhusa mareed	Gal-gadud	Horseed	6
	Moqadisho	Moqadisho	Mohamud mire	6

SIRIP helped 18 communities including Ceel-Lamaan build 32 classrooms, in every case providing the only permanent learning facility within at least dozens of miles.

Ceel-Lamaan build 32 classrooms, in every case providing the only permanent learning facility within at least dozens of miles.

The initiative was both a construction project and a community empowerment project, as SIRIP created or strengthened community education committees (CECs) which led the building effort; provided over $5,000 worth of in-kind support such as land, stones, and site clearance; and pledged to ensure ongoing material support for mentors who would teach the children. SIRIP provided funding, management support, educator training, learning materials, and furniture. Featuring one or two classrooms, an office, storage space, and latrines, the schools are now the pride and joy of their towns. Table 6 lists the communities that built schools in partnership with SIRIP.

3.2.6 Audio-visual technologies and materials distributed

My daughter is all morning busy with the radio programs. She has great enthusiasm for these radio programs and made us also love the program. I really wondered how fast she memorized the lesson stories and songs. My daughter is intelligent! - Mother of Najmo, a then-eight-year-old-girl living in the Hodan district of Mogadishu. Though her school closed due to conflict, Najmo continued to learn by listening to SIRIP programs on the radio at home.

SIRIP developed 940 Interactive Radio Instruction episodes—200 each for primary grades 1 and 2 and 180 each for grades 3-5—featuring lessons in Somali, math, and life skills. Each series was carefully scoped, sequenced, scripted and developed into radio programs, with the reading and math segments mirroring the existing curricula for Somali-speaking learners. The life skills segment includes material related to health, conflict prevention and mediation, violence prevention, girls' education, the environment and disaster awareness. There are companion teachers' guides which assist the teacher and serve to guide instruction if there is an interruption in audio reception.

An additional 30 programs and guides were created for teacher professional development. These programs were based on universal teaching competencies, such as 1) understanding teacher professionalism and a code of conduct; 2) lesson planning; 3) managing learning and implementing learning; 4) monitoring and evaluating students; 5) implementing IRI pedagogy and 6) understanding teacher reflection. Each program is divided into several segments which include an introduction to the teaching concept, a drama on the concept, audience Q&A, interview with an expert in the field, a poem related to the concept, and finally a review of the concept. These programs, loaded on MP3 players, were given to the teachers trained so they could continue their professional development individually or in the schools with their peers.

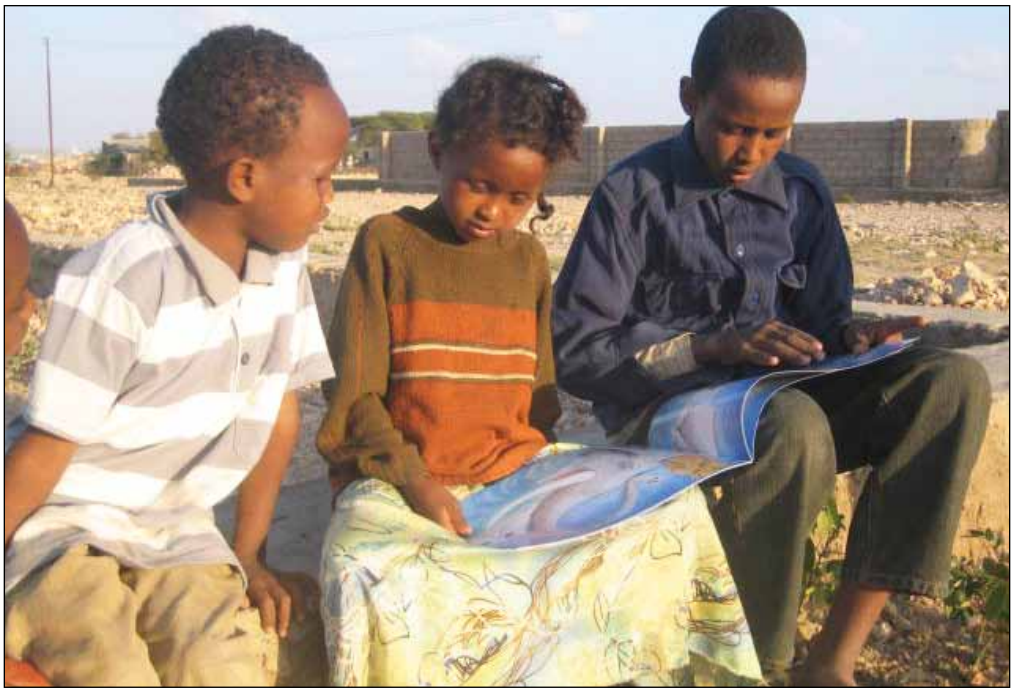
The Ministries of Education in all three zones and the Ministry of Information in Somaliland are now custodians of the programs and have pledged to retain and use th IRI series. Starting in 2009, episodes were stored in Lifeline radios—rugged machines featuring solar and/or wind-up power--with MP3 players so that schools and communities would have access in locations where radio signals and/or electricity were unavailable. More than 40,000 learners have relied on this alternative; their schools or communities still hold the radios and can continue to make use of the programs.

SIRIP built one recording studio each for the Ministries of Education in Somaliland and Puntland, equipped the studios with recording equipment, and trained personnel to manage them. With these fully operational studios, the ministries are capable of developing further programs or revising the existing ones as needed in the future. Both ministries have expressed interest in hiring trained SIRIP staff members for those purposes.

With instructional materials very scarce in Somalia, SIRIP delivered learning materials such as notebooks, flashcards in math and Somali, coloring and regular pencils, pens, erasers, pencil sharpeners, math kits, and reading books to tens of thousands of students. Large numbers of teachers received tools such as a teacher planner and record book, an MP3 player loaded with all 30 teacher training audio programs and the companion teacher's guide, notebooks, pens, a T-shirt, math flashcards, a Somali language high frequency words chart, and an alphabet and word poster. Beginning in 2010, the materials were placed in attractive kits, of which 2,000 were distributed to students and several hundred to teachers. The materials allow learners to independently explore by drawing, creating, coloring and learning math and vocabulary, while teachers can more easily implement the planning, classroom management and quality instruction learned through their training.

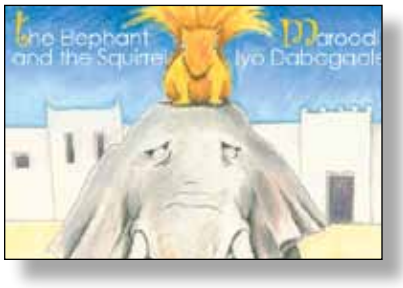
3.2.7 Book Development and Distribution

Reading materials are also very limited in Somalia, particularly attractive, age-appropriate and culturally appropriate books for primary school-age learners and youth. SIRIP developed an unprecedented and expansive book production and distribution program to remedy the problem for tens of thousands of Somali learners.



In all, there are five books for early grade readers, five for primary school, eight for middle school, and two for high school students.

The long and violent conflict has resulted in the slow erosion of many aspects of Somali culture, including folklore and history, which is largely passed on by oral tradition. SIRIP thus looked for ways to help children learn traditional stories as they learned to read. EDC staff undertook an extensive search to find Somali folktales that could be made into books. Surprisingly, the search took them to a school district in Minnesota, to a teacher who had collected folktales from her Somali students and written them down in both English and Somali. EDC adapted the stories as a series of bilingual books for early readers and commissioned an artist, who illustrated them with beautiful art reflective of the region.



In *The Elephant and the Squirrel*, for example, the title characters enjoy doing many things together. When the elephant happily splashes into the water, however, her squirrel friend is afraid. The story ends with the message, "Don't expect everyone to like what you like, and don't think that you should like what everyone else likes." These slim volumes carry a certain weight with them, providing much-needed education through Somali folktales that have been all but lost. They also convey critical messages of peace, safety, and other social values. Each story concludes with educational resources and lesson ideas to assist teachers.

To locate source material for older readers, SIRIP sought out Somali students themselves, holding a writing contest that drew more than 1,500 entries. The top submissions were

selected, edited, and developed into a series of books for middle school learners. (See more about the writing contest in 3.4.3.)

In all, there are five books for early grade readers, five for primary school, eight for middle school, and two for high school students. All books printed were distributed to formal schools, IRI learning centers, public libraries and youth centers. SIRIP trained teachers and mentors in how to teach reading and other skills effectively using the readers (see 3.3.1).

3.3 PREPARING THE FUTURE: SIRIP BUILT CAPACITY AND LAID A FOUNDATION FOR LASTING CHANGE IN SOMALI EDUCATION.

After two decades of conflict, Somali institutions are weak. SIRIP recognizes, however, that the opportunity for real change depends on improved capacity within the country. SIRIP worked closely with Somali institutions and organizations to establish capacity at a number of levels. SIRIP committed a great deal of time and energy to improving teachers' and school leaders' skills to ensure success at the school level. Teachers and principals do not work in a vacuum, however; they benefit immeasurably from support from a system that includes the government and the community. SIRIP collaborated with and built capacity among systemic actors such as the ministries of education, community education committees (CECs), test administrators and assessment coordinators, and local and international NGOs to help communities establish and sustain high quality teaching and learning.

3.3.1 Teacher and school leader professional development

I had no prior teaching experience, but the partner and CECs are happy about the way I teach my students. EDC trained me on basic teaching competencies and IRI methodology and from then everything has changed. My students started loving me more, the interactivity increased, parents came into my center to say thank you and my students started doing a better job in every aspect of their lives. ***- Mustafe Abdi Yusuf, IRI teacher, Akare IRI learning center, Hargeisa***

It is estimated that fewer than half of Somalia's primary school teachers have qualifications beyond primary schooling, and even those who do have not generally been well trained to teach. SIRIP has trained 9,353 teachers on universal teaching competencies, which are reinforced by the IRI lessons in the classroom. Including 513 principals and 789 other educators and supporters (community education committee members, master trainers, monitors, test administrators, Ministry of Education staff, and media staff), SIRIP trained a total of 10,655 educators and supporters. Many of the teachers trained are among the displaced, and they are working to ensure learning continues even in difficult circumstances. SIRIP trained teachers in tent schools in the camps, where wind-up radios and other materials were distributed to encourage tuning in to the broadcasts.

IRI programs offer opportunities for young people with a few years of primary schooling to become IRI teachers. SIRIP provided them with a three-day, face-to-face training program which helped them acquire the skills and confidence to facilitate IRI lessons and to be appreciated by their communities. But the most important and lasting teacher training is embedded in the daily IRI lessons that children receive. Every IRI lesson has a teaching objective that provides skills such as how to manage the classroom, develop teaching and learning resources, and use effective teaching strategies. The programs reinforce these skills daily as teachers practice them, guided by the radio characters and monitored by their students. For example, if the teacher is instructed to "ask a girl what Rooble should do next," the children will protest if the teacher calls on a boy. Thus the teacher gets in the habit of engaging students of both genders in learning.

The communities often selected youth to become teachers. These young men and women have an equivalent of an eighth grade diploma or are in high school. The community often relies on them for all literacy-related needs. Since they can read and write, people come to their classroom for help in writing a letter or reading something for them.

Every IRI lesson has a teaching objective that provides skills such as how to manage the classroom, develop teaching and learning resources, and use effective teaching strategies.

Ahmed Mohamed Hassan is a youth teacher in the community of Barwaqo camp for IDP in the outskirts of the city of Garowe in Puntland. Ahmed, 17, has been teaching grade one and two math and Somali at the center for two years. One of the youngest and most active members in the community who could read and write, Ahmed was elected by his community to be a teacher. When paid a visit in his classroom by SIRIP staff, he was teaching time and how to read the clock. He was leading his students in a chorus of numbers; they were shouting excitedly. With the support of USAID, SIRIP has given this young man the opportunity to learn IRI methodology and basic teaching competencies and become a successful primary school teacher, while some of his peers are involved in destabilizing activities.

Ahmed is committed to use the opportunity to benefit his community. On his own, he decided to teach a literacy class for adults in the afternoon. He is the pride of the community, as evidenced by his interactions with others during the SIRIP visit. He is well respected, and parents trust him with their children despite his young age. Ahmed is now in grade 11 in secondary school. He told his visitors that he is not going to school any more, as he cannot afford his school fees. When the EDC staff saw the impact Ahmed has in his community, an anonymous staff member pledged to pay his school fees. "I want to finish my school, go to university, learn and be a real teacher," he said with a shy smile.

SIRIP further reinforced teachers' skills and good habits through a series of 30 teacher professional development interactive radio programs to be followed outside of class time. The series promotes the universal teaching competencies of 1) Professionalism and Understanding of the Teaching Profession; 2) Lesson Planning; 3) Implementing Plans and Managing Learners; 4) Evaluating and Monitoring Learners; 5) Implementing the IRI Methodology; and 6) Teacher Reflection.

SIRIP recognized the need for quality school leaders to support the goal of improved teaching and learning at the school level, and therefore designed and developed a high quality training program for school principals and other administrators. The objective of the training, delivered to 513 school leaders in 2011, was to help participants understand the theories and concepts related to school leadership and thus develop motivated and responsible leaders who understand and fulfill their educational leadership mandate. Training topics included understanding the roles and responsibilities of principals, types of school leadership, supervision and monitoring, school-based assessment, data management, time management, organizational structure, school finances, scheduling,

Table 7. Teachers and school leaders trained by zone and gender

Teachers and school leaders trained									
		2006	2007	2008	2009	2010	2011		Grand Total
		Teachers	Teachers	Teachers	Teachers	Teachers	Teachers	Princi-pals	
Somaliland	Female	295	194	233	57	53	146	17	978
	Male	949	653	623	146	188	259	203	2,818
	Total	1,244	847	856	203	241	405	220	4,016
Puntland	Female	150	181	261	43	31	47	2	713
	Male	503	599	167	138	116	118	119	1,641
	Total	653	780	428	181	147	165	121	2,475
South Central	Female	26	193	413	54	53	41	18	780
	Male	142	670	1,030	224	219	138	154	2,423
	Total	168	863	1,443	278	272	179	172	3,375
Yearly Total	Female	471	568	907	154	137	234	37	2,471
	Male	1,594	1,922	1,820	508	523	515	476	6,882
	TOTAL	2,065	2,490	2,727	662	660	749	513	9,866

and dealing with internal and external pressures. Participants were challenged to be transformational leaders who are change agents. Principals were trained in Somaliland, Puntland, SCZ and Galmudug.

Table 7 lists the numbers of teachers and school leaders trained in each zone.

3.3.2 Capacity building among CECs, assessment specialists and university administrators

This training was like a catalyst, an activation catalyst indeed. The test administrators really needed it . . . I am happy about the fact that the heads of national exams boards were in the training and hopefully they will implement the one- million-dollar-worthy ideas we collected from this unforgettable training.
- Mohamed Jama Bulale, a 30-year veteran of the Ministry of Education and a participant in the Somaliland test administrators' training

SIRIP designed a sustainability training program for CECs to effectively support schools. The training provided communities with the tools necessary to sustain the teaching and learning activities at the SIRIP IRI learning centers serving out-of-

school, IDP and marginalized children. The CECs were provided scenarios to solve to overcome challenges they may face once independent of international organizations. All CECs trained promised to continue to provide IRI teaching and learning to their children beyond the life of the project. CEC members were also challenged to actively contribute to the operations of the learning centers. They were instructed to sustain the centers as environments conducive to teaching and learning, free of weapons, violence, clannism and discrimination. They were also asked to keep an environment that is clean, hygienic, safe and secure for the children.

EDC conducted a capacity building training for test developers, test administrators, and university admissions officers and registrars from Somaliland, Puntland, SCZ, and Galmudug. The SIRIP training team explored with participants the importance of assessments as an integral part of national educational reforms, with examples from developed and developing countries. Test uses for accountability, achievement evaluation, and university admissions were explained. Participants were trained on concepts and theories related to large scale standardized assessment: defining test purposes, designing test reports, developing test blueprints, and test item writing. Scoring, test data storage, and reporting were also addressed. The vital test properties of validity and reliability, and the importance of comparability among forms of the same test, were introduced. An international consultant was engaged to provide this training. As he completed the training, he visited with examination officials at the MOE and analyzed their test item bank and suggested further improvement in keeping the test items and how to standardize the items in the bank without repetitions.

SIRIP worked with the Ministries of Education in Somaliland, Puntland, and SCZ to establish IRI as an integral part of the Somali curriculum.

Participants were challenged to design tests and write items for testing, and they had opportunities for discussions as they were continuously challenged by the SIRIP trainers to create more effective test items for the Somali context. Participants were also given tools for evaluating students and writing effective and unbiased testing. With this capacity, Somalis can continue to assess their children's learning, understand the progress being made, and adjust programs where necessary to address indications of learners lagging behind.

3.3.3 Collaborating with and building the capacity of Ministries of Education

SIRIP worked with the Ministries of Education in Somaliland, Puntland, and SCZ to establish IRI as an integral part of the Somali curriculum. The project incorporated Ministry officials' input into the IRI programs and trained government education officials in quality assurance, project management, and time management, giving them the tools to continue to support and oversee SIRIP activities beyond the life of the project. SIRIP also built local capacity by developing a cohort of Somali staff with skills in scriptwriting and the production of audio programs.

3.3.4 Collaborating with International and Local NGOs

Somalia, and particularly the South Central Zone, was deeply affected by active conflict throughout much of the program period. As a result, for stretches of time, SIRIP staff members were restricted from traveling to and from numerous project sites. SIRIP's

extensive efforts to develop a network of capable, implementing partner NGOs proved vital in its remarkable success at keeping project activity going despite the turmoil. Its work with over 30 local NGOs in particular helped to establish the program's sustainability as USAID-funded activities draw to a close.

Collaborating NGOs provided a wealth of activities and services. These included training teachers and school leaders, distributing radios and instructional materials, training CECs, monitoring the program, and many more. EDC trained these NGOs, delivered materials to them, and provided oversight and support as necessary to ensure their success.

3.3.5 Research studies

Data of any kind regarding education in Somalia, and particularly high quality data, are scarce. In addition to its assessment, monitoring, and evaluation activities, SIRIP led research studies to provide data that is valuable for decision-making and build Somali research capacity.

SIRIP conducted a teacher quality survey in Somaliland and produced a profile of the 150 participating teachers, over 50% of whom were primary teachers and over 40% of whom were intermediate-grade teachers, with a small cohort of secondary teachers. Key findings of the January 2011 study included that 86% of the respondents report loving their teaching jobs, but that nearly half have only a secondary education or less and 87% express a need for more training as teachers (SIRIP 1-8). The survey report is in Appendix D.

SIRIP collaborated with the Centre for Public Policy, an interdisciplinary research center in Hargeisa that promotes good governance and the informed exploration of important policy issues, on an eight-week survey of 282 Quranic schools in four districts of Somaliland. Data show that 72% of the schools teach only the Quran and no other academic subjects (though an unknown number of students in those schools also attend a primary school where academic subjects are taught). The average class size was just over 50 students, with the average number of teachers in a class 1.26, yielding a student-teacher ratio of just under 40. These and other data were provided to actors including the Ministry of Education in hopes that Somaliland's institutions might support basic education in Quranic schools through steps such as monitoring and oversight, development of a curriculum, and teacher training. The report included 11 recommendations regarding these potential steps to extend basic education to Quranic school learners (Center for Public Policy and SIRIP 10-19).

3.4 A RALLYING POINT: SIRIP MOTIVATED COMMUNITIES TO ADVANCE EDUCATION.

Somalia's public expenditures on education and enrollment numbers are at or near the lowest in the world, and education receives limited attention amid many other extremely pressing priorities. SIRIP sought to raise awareness among the populace

of the importance of education and the possibility of successfully educating learners amid the country's difficult circumstances. By establishing credibility and respect in the region and reaching out through many channels to various audiences, SIRIP helped focus Somalis' attention on this important endeavor.

The IRI teaching and learning methods were new to the Somali context. However, because of the rich oral tradition of the Somali people, radio was an appropriate medium of instruction. The various segments in the programs, which include songs, dramas and physical activities to help participants learn the concepts, created audiences that were beyond the intended target audience.

3.4.1 Global Campaign for Education

The Global Campaign for Education (GCE) is an international movement advancing the cause of Education for All (EFA). The campaign consists of diverse actors including UN agencies, governments, non-governmental organizations both local and international, children, youth, and adults in both developed and developing countries around the world. SIRIP and EDC were leaders in Somalia's participation in the campaign, organizing and chairing interagency meetings to ensure participation in GCE's annual Action Week activities and other events. SIRIP's efforts helped galvanize Somali actors to ensure the country's voice is heard externally on education issues and to encourage internal action toward improving education.

3.4.2 SIRIP in the public sphere

SIRIP gained attention in news outlets and other public arenas across the region for its activities and for the importance of education in Somalia. Given the volume of negative press coverage regarding Somalia over the last several years, with stories on conflict, piracy, drought and famine, Islamic militancy, and government dysfunction dominating the headlines, SIRIP was able to demonstrate that well-designed and well-executed interventions and policies can have a positive impact in the country.

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SIRIP's activities were acclaimed numerous times in Somali news outlets, illustrated by the coverage for the visit to Somalia by USAID's Deputy Assistant Administrator for Africa in the *Somaliland Press* and other outlets. The project also gained international attention, such as in USAID's *FrontLines* newsletter and with the selection of Feysal Osman, a regional coordinator, as one of Edutopia's Global Six, a select list of professionals who have achieved advancements in education around the world, in 2008. See Appendix E for a selection of press and other public descriptions of SIRIP's accomplishments.

SIRIP hosted the first international conference on improving education for Somali-speaking children, a policy and planning dialogue that boasted as guests Abdirahman Saylici, Vice President of Somaliland; Mrs. ZamZam Aden, the Minister of Education of Somaliland; the Directors General of the Ministries of Education and Higher Education; and Kent Noel, EDC's regional director for East and Southern Africa. The conference program included a 250-word poem by well-known Somali poet Yuusuf Shaacir dedicated to the event and emphasizing the importance of education. Shaacir

is just one of several writers and musicians who lent their names and talents to support SIRIP's efforts. (See more on the conference in section 6.2.) In addition, conference participants worked on the standardization of the teaching and learning of the Somali language in the schools. Several Somali language experts in the East Africa region presented papers on what educators could be doing to standardize how the Somali language is taught. They came with a conference resolution which they presented the last day of the conference and a promise of continued dialogue among experts to draft a policy toward the standardization of the Somali language.

3.4.3 Promoting a culture of reading through the middle school writing contest

Though the severe lack of Somali-language written materials is clearly a challenge, SIRIP recognized an opportunity as well. SIRIP held a writing competition whose purposes were to have children write authentic stories about their experiences in Somalia and to promote a culture of reading and writing, both important methods for promoting literacy. SIRIP targeted schools in Puntland, Somaliland and the South Central Zone and gave middle school students the task of producing original stories. Over 1,500 stories were collected, and SIRIP staff combed through them to select a pool of top entries. The project then gathered the most prominent Somali poets and playwrights from different regions and asked them to read the stories and select the best ones, which they did. SIRIP asked the poets and playwrights to edit the stories for language and content, group the stories into books, and select appropriate titles. SIRIP staff further edited the books. The winners received scholarships and books, and their stories were published as a set of eight books entitled the Somali Readers Series. The contest gained education and literacy high-profile attention in the press (all major Somali radio and TV outlets covered the contest, as did some shows viewed internationally), validated Somali students' own culture and experiences, helped preserve Somali culture, and supplied quality reading material to address the shortage.

3.4.4 Community mobilization through the reading campaign

SIRIP literacy activities and production of printing materials prompted the mobilization of a reading campaign in the three zones. Government representatives of various ministries, political leaders, religious leaders, university presidents, poets, artists, youth leaders, community members and parents all participated in the reading campaign. Once billboards of famous Somalis appeared in the center of the towns, people became interested in the campaign. Poets such as Hadrawi in Somaliland and Awtgal in Puntland were interviewed by the local radio on teaching literacy to the children. The interviews broadcast via radio also gave an opportunity to disseminate the message on the importance of reading to all communities. The first lady of Somaliland supported the reading campaign by posing for one of the pictures on the billboards. The campaign was received very well, as it presented a very important message through community mobilization and support.

3.4.5 Community support for SIRIP

Communities regularly banded together to collaborate with SIRIP in advancing education for their own children. The most tangible and dramatic example was the community building project (see 2.3.3), which resulted in 18 rural communities whose children had little or no access to basic education helping to build brand new schools or rehabilitate old ones.

Communities also continue to make major contributions to IRI learning centers and schools, particularly through community education committees. Usually comprised primarily of parents along with some teachers and occasionally other community members, CECs take on a number of school support roles such as raising money or in-kind contributions for teachers' salaries, leading school improvement projects, and monitoring teachers' attendance. In terms of sustainability, communities in places such as Marka, Borama, Garowe, Galkaio, Las Canood, Hargeisa, Burco and Baydhabo have kept the IRI learning centers open after the conclusion of SIRIP's technical activities. Some of these communities said that they will continue to keep the centers open because the centers are the only places where their children receive an education. In Marka, for example, despite the insecurity, some centers continue to operate under the management of the community and of the mothers in particular. In Garowe, the community looked for support from other INGOs to keep the center open. See Appendix C for a list of centers still operational thanks to local support.

In terms of sustainability, communities in | places such as Marka, Borama, Garowe, Galkaio, Las Canood, Hargeisa, Burco and Baydhabo have kept the IRI learning centers open after the conclusion of SIRIP's technical activities.

Bajela, a community in the Galmudug region, demonstrates the level of community support for IRI. In 2011, the community contacted a SIRIP implementing partner, SOSDA, and asked for a school building. SODSA contacted EDC, and it was decided that SIRIP would build a school for Bajela. The school was completed in late October, marking the first time it had a school house in town and providing a source of public pride. Numerous community members came to be registered.

"We were looking for five years to have a school built for our children," said one of the elders. "Five years, we went everywhere, asked everyone for help, and we did not have success until now. Now you see we cannot wait until the school is open. Children should be busy or they will busy with something else." The enrollment lines were long and parents waited a long time to have the chance to enroll their children. Subsequently, UNICEF recognized SIRIP's contribution to the community and decided to build additional classrooms close to the school for the children.

SIRIP enrolled roughly 200 learners from this community through implementing partner SOSDA and trained two teachers. The Minister of Education of Galmudug, Mr. Burhan Egal, promised to maintain close ties with the community and the implementing partner and to support them.

CHAPTER 4
Challenges and Objectives Not Met

CHAPTER 4.

Challenges and Objectives Not Met

4.1 INSECURITY

Violence and insecurity in major areas of the South Central Zone often hampered SIRIP activities. When rebels targeted humanitarian workers in Mogadishu or kidnappings and killings threatened project staff, they had to be evacuated or otherwise protected. The uncertainty caused by ongoing conflict made long-term planning difficult. EDC worked with the Horn of Africa FM radio station in Mogadishu to broadcast programs that were especially valued when children were confined to their homes during conflict. But when the station owner and his staff were killed, those programs came to an abrupt end. Arbitrary and sudden changes replaced planning with improvisation. Teacher training and monitoring schedules sometimes had to be revamped. The violence made transporting people and materials on the treacherous roads of the south and central regions risky; one group of staff members was carjacked and robbed, but survived. Outside major towns, the roads were non-existent in many locations. Even in the more stable regions of Puntland and Somaliland, only a few new roads had been built or rehabilitated. To distribute materials and monitor activities, EDC mostly relied on a large network of local training and monitoring partners.

In this insecure environment, IRI programs could be delivered with fewer training sessions than conventional face-to-face training programs, requiring less transporting of people. IRI is by nature less susceptible to periods of unrest as content can be regularly delivered from afar.

In this insecure environment, IRI programs could be delivered with fewer training sessions than conventional face-to-face training programs, requiring less transporting of people. IRI is by nature less susceptible to periods of unrest as content can be regularly delivered from afar. And while IRI content is most effective with a facilitator or teacher who conducts pre- and post-broadcast sessions, small radios are widespread in Somalia, and many children are able to take advantage of the programs outside of a classroom setting. In fact, SIRIP persevered and delivered services for six volatile years, managing to stay active even in Mogadishu despite occasional evacuations of SIRIP offices there, during which time the project was one of the very few internationally supported education interventions in the region.

4.2 DIFFICULTY WITH RADIO RECEPTION IN SOME AREAS

4.2.1 Limitations of shortwave radio and radio infrastructure

Somaliland originally received broadcasts from a shortwave signal only. Monitoring reports indicated the signal was sometimes affected by climatic conditions and/or difficult to receive clearly.

The main delivery channel for SIRIP was broadcast radio. Somalia has enjoyed a proliferation of private radio stations. The exception has been Somaliland, where only a government radio station is allowed to function. While the fragmentation of the country brought about the privatization of the radio broadcast industry, no one radio

station existed that could reach the entire country, and private radio stations could not operate freely in areas controlled by rebels. Hence, while SIRIP relied on a network of FM radio stations (namely, HornAfrik, Danan, and Radio Shabelle in the South Central Zone; Radio Daljir and SBC Radio in Puntland; and Radio Hargeisa), an alternative delivery mechanism became essential.

4.2.2 Addressing broadcast delivery limitations

SIRIP continued to utilize the effective delivery mechanisms in use, primarily the network of local FM stations. Beginning in 2009, the project added another channel for delivery to compensate for those channels that were proving ineffective--programs were stored on Lifeline radios with MP3 players so that schools and communities would have access in locations where radio signals were unavailable. More than 40,000 learners have relied on this alternative delivery method. SIRIP monitoring indicates that schools and learning centers using the MP3 players were highly successful in following the programs (Education Development Center 2011 7).

4.3 GOVERNMENT DYSFUNCTION

Somalia's division into three administrative zones after 1991 gave rise to three separate ministries of education that operate independently with little coordinated planning. Each runs its own schools, but each has insufficient human and other resources to operate a supportive system. SIRIP was required to collaborate with four different Ministries of Education in Somaliland, Puntland, Galmudug and South Central Zone,, requiring additional time spent on government relations and outreach as compared to a more typical country with a single government. Additionally, the varied and often adversarial authorities placed demands on the project that caused implementation delays (Education Development Center 2011 8).

4.4 CLAN TENSIONS

The radio programs were designed to reach all Somalis, regardless of clan or nationality. Because of the fragile social environment and hostilities among sub-clans and sub-sub-clans, the characters and vocabulary of the programs reflect all regions, as do the drama and storyline in each program.

Technically, this has meant recruiting Somali scriptwriters and actors from all regions so that the programs could be acceptable to all listeners. Moreover, SIRIP had to be adaptable; the program could not produce one single version of each program but had to produce different versions for different audiences. For example, many religious extremists have accepted the programs but insist that the music be eliminated. For those schools, the music has been replaced by a capella chants or songs suitable to the culture of the learners (Education Development Center 2011 7).

4.5 CONSTRUCTION SUSTAINABILITY

The community construction project was a success, helping 18 communities build 32 new or rehabilitated classrooms in rural areas. There were, however, some challenges in achieving and sustaining the intended outcomes of the project. With limited budgetary means to sponsor construction, SIRIP established clear and objective criteria for selecting the participating communities, including a requirement that each community pledge its resources to help construct and maintain the buildings, as well as support the teacher or teachers. Rival communities and clans competing for the support and then participating in the project caused delays and complications. Some communities then required very robust monitoring of their progress toward fulfilling stated commitments. One SIRIP leader visited a community proud to show off its attractive new school building, but learned that the community had supplied neither a teacher nor furniture as pledged. In general, schools and communities have been enthusiastic and diligent in providing the pledged support, but SIRIP has recommended that the relevant authorities monitor the communities well going forward.

The community construction project was a success, helping 18 communities build 32 new or rehabilitated classrooms in rural areas.

CHAPTER 5
Lessons Learned

CHAPTER 5.

Lessons Learned

5.1 THE VALUE OF ADAPTIVE PROGRAM DEVELOPMENT

Development practitioners generally must be able and willing to adjust programming based on changing social, economic and environmental factors. SIRIP was required to go far beyond the typical level of flexibility in order to succeed within the emergency setting of Somalia.

Early in the program's tenure, for example, the Islamic Courts gained control of Mogadishu and additional territory. SIRIP staff members were questioned about the presence of music in the IRI programs. The staff members explained the purpose of the music and played some songs for the questioners, who concluded that, being culturally appropriate and educationally valuable, the music was acceptable. However, Al Shebab later gained influence and again SIRIP was asked about its music. This time, the questioners were unconvinced. SIRIP re-recorded the programs for use in areas controlled by Al Shebab, removing songs in favor of culturally and religiously appropriate a cappella chants or simple drumming. This adjustment enabled the program to continue in Al Shebab-controlled areas and gave Quranic schools elsewhere an additional option for providing basic education in a way that they see as culturally appropriate.

SIRIP activities were embraced enthusiastically, and student achievement studies show that SIRIP participant learners achieved more than those who did not participate.

5.2 THE CONTINUED NEED FOR ACCESS TO EDUCATION

SIRIP activities were embraced enthusiastically, and student achievement studies show that SIRIP participant learners achieved more than those who did not participate. Reaching 330,000 students is an important achievement, but many more students in Somalia still face limited access to education. Somalia's government, local and international NGOs, and international donors must continue to use innovative methods such as IRI, which can reach a large number of students in a relatively short amount of time, and must continue to build Somalia's capacity to expand educational access, particularly given the progress that has been made in recent years. In fact, in all of the regions of \Somalia there is visible progress being made toward improving the quality of education. MOEs and educational administrators are requesting better services and support from INGOs involved in education.

5.3 SUCCESSFULLY NAVIGATING THE SOCIAL STRUCTURE WHERE GOVERNMENT IS WEAK

The central government in Mogadishu wields little control over the rest of the country, and the regional governments are limited in their capacity. As a result, clans and relationships play a much more important role in many public functions and processes and in many Somalis' lives than does any government presence or structure. Having Somali staff who understood the clan system and the culture and had the relationships and skills to act successfully within that system proved invaluable for SIRIP. In fact, much of SIRIP's success can be attributed to this reason; the Somali staff was aware of cultural nuances and adapted their activities accordingly.

CHAPTER 6
The Way Forward

CHAPTER 6.

The Way Forward

Somalia's challenges remain numerous and daunting, but there have been some recent signs of hope, such as the international community's increased support for the regional governments that appear to be the country's best hope for progress and development at the moment (*The Economist*). SIRIP worked with the regional governments and with non-governmental organizations on a regular basis, helped empower them to continue the project's efforts (see sections 3.3.3 and 3.3.4), and provided a real possibility for continuing to provide quality education to underserved learners. With this foundation, continued commitment to improve education from Somali governments, and support from the international community, there is a viable way forward for education in Somalia.

6.1 CONTINUATION OF SIRIP ACTIVITIES

SIRIP activities continue under the aegis of local and international NGO partners and Quranic schools, with support from the local communities they serve.

SIRIP activities continue under the aegis of local and international NGO partners and Quranic schools, with support from the local communities they serve. As illustrated in Appendix C, 178 learning centers for out-of-school and otherwise marginalized learners continue to offer the services developed through SIRIP, as do 54 Quranic schools. These institutions have the trained personnel, materials and community support they need to succeed in delivering quality basic and life skills education. The managers of Radio Hargeisa in Somaliland dedicated an entire channel to SIRIP programming--on which it broadcasts IRI eight hours per day—and promised that they will continue broadcasting the lessons and will look for sources to support the broadcasting themselves.. The state-run station has pledged to continue the broadcasting and has shown interest in hiring SIRIP staff members to sustain and manage the program. Similarly, the manager of Radio Daljir in Puntland promised two hours a day for the programs to be broadcast gratis. As noted, many communities vowed to support the teaching and learning for their children in their respective communities.

6.2 COLLABORATION OF DIVERSE ACTORS TO SUPPORT EDUCATION GOING FORWARD

Somalia's regional governments, clans, and other actors have experienced tensions and conflict in their relationships, often rendering attempts at brokering collaboration—or even convening diverse actors—ineffective. SIRIP took unprecedented steps toward fostering collaboration in the education sector.

SIRIP hosted an international education conference in September 2011. The aim of the conference was improve the quality of education for all learners. Participants from numerous Somali-speaking territories—Somaliland, Puntland, South Central Zone, Galmudug, and regions of Ethiopia, Djibouti, and Kenya—convened, led by MOE

education officials, university administrators, Somali language experts, linguists and national and international educational experts. The event was held in Hargeisa and was titled Improving the Quality of Education for Somali Speaking Children. The conference provided an opportunity for participants to interact, share and discuss real and pressing educational issues in their respective contexts. A resolution including the standardization of the teaching and learning of the Somali language was reached along with the promise to preserve the Somali culture and tradition.

This was the first international conference on improving education for Somali-speaking children, and the building blocks are in place for continued collaboration. Two private telecommunications companies sponsored the event and competed to be the lead sponsor, and those companies have demonstrated interest in continuing to support the activities established by SIRIP. Additionally, in SIRIP's absence, another organization has requested to host the conference on an annual basis in the future.

Like most sectors of Somali society and government, the country's education system and institutions remain extremely fragile and continue to face major problems. The use of effective IRI programs in schools and learning centers, the provision of hundreds of thousands of learning materials, improved capacity, increased awareness of the importance of education, and the beginnings of positive collaboration to advance education, among SIRIP's other achievements, have not fully solved those problems or removed the fragility. However, in the face of very challenging circumstances, SIRIP has helped Somalis establish important building blocks for continued progress. The project has introduced concrete products from effective audio programs to myriad reading materials to new or rehabilitated schools. It has connected governments, political leaders, NGOs, teachers and principals, communities, artists and writers, the private sector, and more, building their capacity and facilitating relationships and actions that advance the cause of improved education. SIRIP has demonstrated that quality education can be provided to displaced, out-of-school, and otherwise marginalized children and youth in Somalia, and that they can learn effectively; the project has also established the infrastructure and training for that learning to continue where it is already being provided and, potentially, to be expanded. With continued commitment from Somalis and from the international community, Somali children can have the opportunity to acquire a basic education, empowering them to contribute to the social and economic betterment of their country.

APPENDIX A
Grade 1 Evaluation 2006/2007

Somali Interactive Radio Instruction Program (SIRIP)

Grade 1 Evaluation 2006/2007

December, 2007

ACKNOWLEGEMENT

According to Ministry of Education officials, this is the first evaluation of Somali learners at the Grade 1 level. It shows that the Somali Interactive Radio Instruction Program (SIRIP) is becoming an increasingly important part of the Somali education system. It also shows that SIRIP is increasing access, improving quality and sustaining learning even when war, displacement and uncertainty threaten to bring education to a halt.

The evaluation represents an important milestone in assessing learner achievement for the purposes of informing policy and program development and guiding teachers in the overall goal of improving the quality of basic education for Somalis. Learners, teachers and parents alike appreciate SIRIP's educational radio methodology and the continuity it provides. The evaluation not only highlights areas of achievement and improvement; it demonstrates to potential users of the program that it is worthy of their time and further support.

We wish to thank the Ministry of Education officials, teachers and learners from all zones who participated in this evaluation. Much gratitude is also owed to the implementing partners who have supported the program in commendable ways, as well as to the parents and community members who shared their stories and experiences with us. We look forward to working with them in the coming years.

We also deeply appreciate the moral and financial support from the United States Agency for International Development (USAID), the contribution of all SIRIP staff and the editorial support from colleagues at the Education Development Center (EDC).

Dr. K. Letshabo (Assessment Specialist)
Dr. S. Kariuki (SIRIP Project Director)
Dr. S. Yasin (SIRIP Chief of Party)

December, 2007

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LIST OF ACRONYMS

ADRA: ……Adventist Development and Relief Agency
DG: ……Director General
EA: ……...Education Advisor
EDC: ……Education Development Center
EU: ……..European Union
IDP: ……..……..Internally Displaced Persons
IRI: ……..……...Interactive Radio Instruction
M&E: ……..……..Monitoring and Evaluation
MOE: ……..Ministry of Education
MOU: ……..Memorandum of Understanding
NFE: ……Non Formal Education
NGO: ……..Non Profit Organization
PAE: ……...Primary Alternative Education
RC: ……..Regional Coordinators
SACB: ……...Somalia Aid Coordination Body
SAFE:……School Association for Formal Education
SCZ: ……South Central Zone
SCOTT: ……..Strengthening Capacity of Teacher Training
SOW: ……..Scope of Work
SIRIP: ……..Somali Interactive Radio Instruction Program
TFG: ……..Transitional Federal Government
TOT: ……...Training of Trainers
TTI: ……...Teacher Training Institute
USAID: ……United States Agency for International Development

EXECUTIVE SUMMARY

Somali Interactive Radio Instruction Program (SIRIP) is a radio-based learning intervention to increase access to quality education opportunities and to improve teaching at the lower primary level. Mathematics and Somali literacy programs for Grade 1 and Grade 2 that support the Somali curriculum first went on air in 2006. Since then programs have been introduced in Grade 3 classes while Grade 4 and Grade 5 programs are being developed. This report presents findings of the first evaluation of selected SIRIP activities. It answers questions about whether there was demand for Interactive Radio Instruction (IRI), the characteristics of learners and teachers who use IRI programs, adherence to prescribed IRI classroom practices, and whether there has been any value-added in learning at Grade 1 as a result of having introduced IRI programs as part of instruction in Somali classrooms.

To answer evaluation questions, data about demand and learner characteristics were collected through routine monitoring activities. For learning assessment, Grade 1 curriculum-based achievement tests were administered in October/November, 2006 and April/May, 2007 to a sample drawn from all three zones (Puntland, Somaliland and South Central Somalia). The sampling plan comprised 75 schools with 3000 learners selected to represent IRI schools throughout the country. However, South Central Somalia became inaccessible and many learners were displaced as a result of the war. For this reason, the final sample was smaller comprising of 36 schools, 26 IRI and 10 non-IRI control. The total sample size was 1 104 of 10 111 Grade 1 learners. Findings summarized below respond to evaluation questions related to demand for IRI, learner and teacher characteristics, and student mastery of Somali Literacy and Mathematics.

The widespread use of IRI in schools throughout all three zones is evidence that SIRIP is a popular educational program highly regarded by teachers and parents. The increase in demand for IRI is established first from the pattern of schools registering to participate in IRI (from 219 in mid 2006 to 1 483 by the end of 2006), the number of students who participate in IRI (200 108 in 2007), and teachers who attended IRI training. There are 1 435 Grade 1 classes, 1 315 Grade 2 classes and 1 058 Grade 3 classes in 1 483 schools registered as using IRI. While the original plan was to have IRI for the lower primary level in Somali Literacy and Mathematics, there is a demand to develop and broadcast IRI programs to support the teaching of English, teacher training, early childhood education and other topics. There is also anecdotal evidence about shadow audiences for adult learners and other special groups such as new groups of Internally Displaced Persons (IDPs). The project needs to develop a mechanism for documenting use in these audiences.

Somali schools enroll more boys than girls at all levels of primary school education. However, overall enrolment statistics indicate that the proportion of girls accessing the formal school system is increasing. Other characteristics of IRI learners are a high proportion of above-age Grade learners, with 53.8 percent of Grade 1 learners being older than 8 years. At 88.2 percent, most teachers in IRI classes indicated that they have some form of formal teaching qualification and the majority (60 percent), have also been trained in IRI.

This evaluation, the first that has been conducted for SIRIP, offers a number of conclusions on how project activities have taken hold, what its successes are and what improvements and follow-up

actions have to be conducted. The main focus of the evaluation is impact assessment through learning achievement.

Overall learners in IRI schools performed better than learners in non-IRI control schools. The mean posttest for IRI learners was 61.8 percent in Somali Literacy, compared to a posttest score of 53.8 percent for control learners. In Mathematics the IRI posttest score was 71.0 percent compared to a posttest score of 59.0 percent for control learners. Boys and girls performed at par in Somali, while boys performed better than girls in Math. Disparities in performance were wider in Mathematics, both for IRI and non-IRI control schools. Older learners performed better in both IRI and non-IRI schools. Puntland registered the highest overall gains. Learners in Puntland started significantly lower in Mathematics at 30.5 percent and finished with a posttest mean of 74.5 percent. In Somali literacy, the pretest mean was 23.5 while the posttest mean was 78.2 percent.

Information from teachers and communities indicate that IRI has taken the classroom into peoples' homes and that parents are now more familiar with what children do and learn in schools. An important spin-off of being aware of what happens in the school, by some parent's admission, is the increased likelihood of allowing children, and girls in particular, to participate in schooling. The success of IRI is attributable, in part, to a network of partners who perform important activities such as teacher training and IRI monitoring activities.

While many suggestions for improvement were made in the report, recommendations for follow-up action and project improvement are as follows:

1. Intensify efforts to reach out-of-school populations who require assistance the most, especially in Puntland where IRI participation rate is lowest and amongst out of school populations in all regions such as the large numbers of IDPs**;**
2. Working in partnership with the Ministries of Education and the Strengthening Capacity of Teacher Training (SCOTT) program, encourage recruitment and appointment of untrained female teachers to teaching positions while SIRIP trains them in IRI, with an aim to increase role models for girls in schools;
3. Explore opportunities for partnership between SIRIP and Koranic schools. In addition, or as an alternative, SIRIP should consider providing programming for pre-school learners in the general population. This would not only provide developmentally appropriate and valuable learning, but would also expose families and children to IRI so they are familiar with it when they reach school age and
4. Explore the use of alternatives to radio broadcasting in regions where broadcasting has been difficult.

1.0 BACKGROUND

"We thank you for helping us, giving us food, shelter, medicines, but the best that you have done for us was to give our children education. Food and other things we will finish but education will always be there wherever we go."

(Ethiopian refugee father, 2003)

1.1 Somalia Education Context

Somali Interactive Radio Instruction Program (SIRIP) is an educational intervention aimed at addressing issues of access, quality, and equity in education in Somalia. With a grant from USAID in 2005, the Education Development Center (EDC) introduced radio-based learning to increase quality of and access to education and improve teaching at the primary level. When EDC introduced SIRIP, the challenge was to rapidly reach a large number of school age children both in and out of the formal education system, and do this in a country that has experienced significant disruptions to that system.

The deterioration of the Somali education system came with the advent of civil war in 1991. During this time textbooks and supplies disappeared, teacher attrition soared, classroom conditions deteriorated, and many primary schools ceased to operate, resulting in a dramatic decline in learner enrolment. Somalia currently has one of the lowest enrolment rates in Africa. It also ranks among the lowest in public financing for education in the world, and according to UNICEF, educational and formal classroom learning opportunities are still limited and unavailable for many children. Most existing schools are concentrated in and around urban areas and are mainly financed by fees or other forms of support from parents and communities, with some input from external agencies leaving vast numbers of rural school-age children with little or no access to education services (UNICEF, 2005).

Gender-related disparities remain an area of concern. Girls comprise only 37 percent of total enrolment in lower primary, and their dropout rates are higher than boys. Low participation of girls is attributed to a combination of factors including societal attitudes and perceptions on the roles of girls and women, timing of classes, opportunity costs and other economic considerations. Moreover, girls do not have role models since women comprise only about 20 percent of all teachers. However, substantial increases in the number of operational schools and in enrolment rates have been noted, even though considerable disparities in quality of and access to primary education exist due to socio-economic, cultural and political realities, and the sector still suffers from technical and financial resource limitations, as well as a lack of consistency in curricular standards (UNICEF, 2005). SIRIP's core activities are aimed at addressing the issues mentioned above related to educational quality and access.

1.2 Brief overview of SIRIP

USAID's grant to SIRIP is intended to provide IRI programs and supplemental learning materials to students in Grades 1-5. IRI programs enable teachers to transform the classroom into a dynamic interactive learning environment. In addition to basic Somali literacy and math in Somali, the

programs contain life skills segments which include content on health, environmental awareness, gender issues, conflict prevention and mediation, and democracy-building. SIRIP tapped into EDC's experience of using Interactive Radio Instruction (IRI) programs for children in similar circumstances in countries such as Zambia, Guinea, India, Ethiopia, and Sudan. In all these countries, introduction of IRI has provided quality instruction via radio and improved access to quality basic education. Also, SIRIP was built on the experience of IRI programs for Somali speaking children which were developed and tested in Ethiopia.

SIRIP programs are currently broadcast by one international shortwave broadcaster and three local FM radio stations. Each of the stations broadcasts SIRIP programs for three hours a day, and up to five days a week. The rest of SIRIP activities are largely implemented through a network of on-the-ground partners who train teachers in the methodology, distribute materials and monitor the teaching and learning in the classrooms as well as collect data about the intervention. SIRIP's goal is to reach approximately 350,000 children with IRI programs in all regions of Somalia. By September 2007, IRI had reached 200,108 learners in Somaliland, Puntland and South Central Somalia as shown in Table 1.

Table 1: Number of IRI learners in 2006-2007, by region and sex

Region	**Female**	**Male**	**Total**
Puntland	10 526	14 879	25 405
Somaliland	28 248	40 036	68 284
South Central	47 660	58 759	106 419
Total	86 434	113 674	200 108

Boys comprised 56.8 percent of the learners, while girls were 43.2 percent. The proportion of boys and girls in IRI participating schools indicates that girls' participation in formal schooling is growing nationally. One of SIRIP's objectives is to promote the education of girls, not only through the requirements of opening up access to girls in the target schools, but also through giving girls roles that cast them as role models in the radio programs. For example, teachers are reminded daily through the programs to include girls in activities and discussions. Deliberate efforts to promote the visibility and active participation of girls in other IRI programs (e.g. Guinea, Papua New Guinea and Zambia) have resulted in girls performing on par with boys for IRI learners, in contrast to non-IRI control learners where boys typically perform significantly better than girls.[1]

The 200,108 IRI learners attend 1 483 schools in all three zones. Table 2 indicates the number of schools using IRI, and the number of classes at Grades 1-3.

1 World Bank, 2005. *Improving Educational Quality through Interactive Radio Instruction: A Toolkit for Policy Makers and Planners*. Development Research Group, Working Paper Series No. 52, Washington.

Table 2: Number of IRI classes (and schools) in September 2007, by zone

Zone	Number of Gr. 1 classes	Number of Gr. 2 classes	Number of Gr. 3 classes	Total IRI classes	*Number of IRI Schools*
Puntland	199	179	157	**535**	*200*
Somaliland	521	494	424	**1439**	*418*
SCZ	715	642	477	**1834**	*865*
Total	**1435**	**1315**	**1058**	**3808**	*1483*

SIRIP started broadcasting for Grades 1 and 2 in the second semester of the 2005/2006 school year. Grade 3 broadcasts were tested on local stations in the second semester of the 2006/2007 school year and all three grades aired at the beginning of the 2007/2008 school year. South Central Zone (SCZ) has the highest number of schools and classes participating in IRI. SIRIP has also made progress in training Grade 1 - 3 teachers in the IRI methodology, a necessary condition for effective and efficient use the IRI programs. A total of 4 652 teachers have been trained in IRI methodology, 22.8 percent of whom are female. The percentage of IRI female teachers reflects the proportions of female teachers in the country. Table 3 presents the number of teachers trained, as well as the total number of teachers according to the UNICEF survey.

Table 3: Number of teachers trained in IRI by September 2007, by zone and sex

Zone	Female	Male	Total trained	Grand Total teachers	*Percent trained*
Puntland	327	1,106	1,433	2,104	*68.1*
Somaliland	498	1,663	2,161	3 218	*67.2*
South Central	235	823	1 058	7 465	*14.2*
Total	1 060	3 592	4 652	12 787	*36.4*

Puntland and Somaliland trained the highest number of teachers. Even though there are more teachers in SCZ, a smaller percentage was trained in this zone. Teacher training could not proceed as planned in many instances because of the civil unrest in SCZ.

According to the summaries of SIRIP major activities provided in this section (student enrolment, teacher training and participating in IRI at different grade levels), IRI is becoming part of the major education programs in Somalia and Somaliland.

2.0 METHODOLOGY

2.1 Purpose of the Evaluation

The purpose of this exercise is to evaluate whether learners exposed to IRI programs achieved basic numeracy and functional literacy in Somali as stipulated in the curriculum. The evaluation also investigates whether there is a demand for IRI programs, and whether teachers use IRI programs as expected in terms of their interaction with the radio lesson, interaction with learners and use of other IRI materials such as teachers' guides. There may be other learner or teacher factors, or factors in the learning environment that enhance the effectiveness of IRI. These as well as the perceptions and experiences of users and stakeholders will be taken into account. The specific evaluation questions are:

1. What is the level of demand for IRI?
2. What are the characteristics of the children? (sex, age)
3. Are learners achieving Somali Literacy and Mathematics as expected at Grade 1 level?
4. What are the contextual factors (learner, teacher, or learning environment) that enhance the effectiveness of IRI?
5. What are the perceptions and experiences about the effectiveness of IRI?

The evaluation was conducted under the guidance of EDC's Regional Monitoring Evaluation Research (MER) advisor as part of SIRIP project improvement activities. The MER Advisor straddles the roles of both the internal/external evaluator. She is an internal evaluator because of her status as an EDC employee who possesses certain insider knowledge of IRI and this IRI activity in particular, and she has an interest in seeing SIRIP succeed and can push to have the project follow through on evaluation recommendations once the evaluation is complete. She also performs the role of an external evaluator because she is not SIRIP staff, which means she brings a fresh, independent and objective perspective to SIRIP activities while facilitating an evaluation process.

2.2 Sample

The population of IRI learners in the three zones of Somaliland, Puntland and South Central in the study currently stands at 200 108 learners attending 1 483 schools. At the time when the evaluation study was planned, the population of learners was 57 398. A multi-stage purposive sampling strategy was used in both the pretest and posttest. Factors which were considered in the selection of evaluation sites included:

- The radio at the school was working for most of the school year;
- The radio signal was good;
- The teacher in the Grade 1 class received IRI training and
- Practical and logistical considerations such as accessibility of sites.

First, 10 regions were selected out of a total of 19 regions participating in IRI in the three zones. Second, 75 IRI schools that have had good radio reception throughout the year were selected, disaggregated by zone as shown in Table 4. Seventy-five classes were sampled, one in each school.

Table 4: Sampling plan, by zone and region

Zone	Estimated No. of Classes	Total No. of Learners	Sample of IRI Classes	Pretest Sample
South Central Somalia	1078	43 128	54	2 160
Somaliland	320	12 789	16	640
Puntland	38	1 481	10	200
All Zones	**1436**	**57 398**	**75**	**3 000**

Some schools in the sample were supported by partner organizations (in terms of teacher training, distribution of materials, monitoring of IRI and other implementation activities), while others were MOE schools where SIRIP and MOE staff shared the responsibilities of training teachers, distributing materials and monitoring. At the school level, a random sample of 40 learners was selected by test administrators. Test administrators were instructed to select learners who have attended at least 80 percent of the lessons, and as far as possible, an equal number of boys and girls.

There were some variations in the planned and the actual sample that was used. First, while schools in South Central Somalia (SCZ) participated in the pretest, it was not possible to administer the posttest due to a renewed eruption of war. In addition to serious security concerns for traveling in SCZ, many children became displaced and some of the schools which participated in the pretest were closed. Second, the investigators modified the original design in the two zones (Somaliland and Puntland) by selecting a number of control schools against which the performance of IRI schools could be compared. Ten (10) control schools were chosen, relative to the number of sampled IRI schools in the zone. Table 5 reflects these changes.

Table 5: Sample participating in both pretest and postest, by zone and region

Zone	Estimated No. of Classes	Total No. of Learners	Sample of IRI Classes	Sample of Control Classes	Total sample
Somaliland	320	12 789	16	6	836
Puntland	38	1 481	10	4	268
All Zones	**358**	**14 270**	**26**	**10**	**1 104**

The total number of learners that participated in both the pretest and the posttest was 1 104 learners, 554 boys and 550 girls. The sample for Somaliland was 836 (of the expected 880). There was a shortfall in Puntland (268 of the expected 560) due to the fact that classes were smaller, and only 20 learners per school were tested.

2.3 Test Development

This section describes the process and rationale for developing Somali language literacy and mathematics curriculum-based tests. Curriculum-based achievement tests are essentially meant to be mastery tests. Stages of the test development process included test planning, item writing and pilot testing. The test administration procedure is also described briefly.

Curriculum review and test planning

Test development was conducted by the SIRIP team comprising of the Education Advisor (EA), three Regional Coordinators (RCs), EDC's test development specialist, and representatives from the curriculum and examinations sections of the Somaliland Ministry of Education. Activities commenced with a content analysis for Grade 1, performed by the SIRIP team and educators from partner organizations and the Somaliland MOE. Instructional objectives in the Grade 1 Somali Language and Mathematics syllabi were reviewed with the intent to distinguish between developmental and terminal objectives, and SIRIP coverage of the curriculum. In the absence of grade-level reading lists that usually indicate the reading levels of learners, the SIRIP teachers' guide was particularly useful in that it specifies new vocabulary and the numeracy skills that are presented in each lesson and the cognitive skills that children have to master at this formative stage of being introduced to formal learning.

Test Construction

The purpose of the test was to assess and evaluate if learners have mastered basic literacy skills in a local language, as well as basic numeracy skills. The guiding principle during test development was that assessment procedures should match the intentions of each learning target, hence the behaviors which were elicited from the learners included recalling and performing certain tasks.

For instance, the intention of the learning targets on language during the early stages of learning is that learners should comprehend language and begin to produce simple language. Their comprehension of language in the lessons is demonstrated by the acting out of simple instructions, hence the assessment of language skills comprised mainly of requesting students to perform actions when given simple instructions. One test form was constructed for each of the two learning areas of Somali literacy and Mathematics. Where possible, a set of parallel items was included such that test administrators would select an item to present to the learner.

Trial Testing

Trial testing assessed whether the questions elicited the intended behavior/skills, and whether the correct difficulty levels in terms of content and language were maintained. The amount of time it took to administer the test was important in that children at the Grade 1 age have short attention spans. We also examined whether the proposed administration procedure was reasonable and adequate. After trial testing, a debriefing session was convened to receive additional feedback from test administrators on how the test functioned and the interactions between learners, test administrators, and the test were noted for interpretation, and to improve the test. Explanatory notes for each test form were included in a Test Administrator's booklet as a quick reference for use by test administrators during the live pretest and posttest administrations. Overall, trial testing provided feedback on the reasonableness and appropriateness of the test for testing literacy and numeracy skills at Grade 1, and whether the learners were able to handle the format of the test.

The final test comprised of nine items in Somali literacy, while 10 items assessed numeracy skills. Test administration instructions and scoring rubrics were embedded in each test form. Table 6 below provides a summary of the skills assessed in each test, and corresponding items.

Table 6: Skill areas and corresponding test items for Grade 1 Test, 2007

Skill Area	Intended Learning Target	Test Items
Somali Language Literacy	1. Reciting the alphabet and sounds	1 and 2
	3. Comprehension of language (reading)	3 and 4
	4. Production of language (speaking)	6 and 7
	5. Production of language (writing)	5, 8 and 9
Mathematics/ Numeracy	1. Counting and writing numbers	1 and 2
	2. Number operations	3 and 4
	3. Place value and number sequences	5 and 7
	4. Naming/drawing shapes	6

In the interest of keeping the test short and simple, no items were included for the lifeskills component. Also, the objectives for the lifeskills component are not expressed explicitly in the curriculum, which means that a different strategy will have to be used to assess whether children are learning in this area.

2.4 Data Collection

Training of test administration

Training of test administrators was conducted twice, the first being training of the SIRIP team who in turn trained the actual test administrators. Following a detailed test administration booklet, test administrators were briefed on the purpose of test, how the test was developed, how it was to be scored, and the behaviors that each item intends to elicit. Test administrators practiced administering the test in pairs, and then went out to the schools to conduct live trial testing. The training sessions were used as an opportunity to receive feedback on the reasonableness and appropriateness of the test for evaluating literacy and numeracy skills at different grade levels, and whether learners will be able to handle the format of the test.

The second training of test administrators was conducted in Garowe and Hargeisa by the EDC test development specialist and the SIRIP team. Areas covered in the training were situating learning assessment in the context of SIRIP monitoring and evaluation, and making necessary connections between assessment, curriculum delineation, choices of content, classroom practice, and decisions that educators make about individual learners. Test administrators had already been to the field for the pretest, so they brought information on how learners understood the tasks, and suggested slight improvements, mainly to do with the correctness of the tests.

Live testing: pretest and posttest

Pretests were conducted in October/November 2006, close to the beginning of the school year, while posttests were conducted in April/May 2007 towards the end of the school year. There were 10 teams of test administrators, each consisting of 4 people. Team members were assigned different responsibilities; pretests were conducted over a period of 7 days, while administration of posttests took 12 days to complete.

2.5 Data entry and analysis

Data entry commenced soon after the testing in September 2006 and June 2007. Two data entry assistants entered the data into the MS-Excel spreadsheet. The data was transported into SPSS for both cleaning and analysis by the MER Advisor. Data tables were produced and results discussed with the SIRIP team comprising of the COP, Education Advisor, and Regional Coordinators.

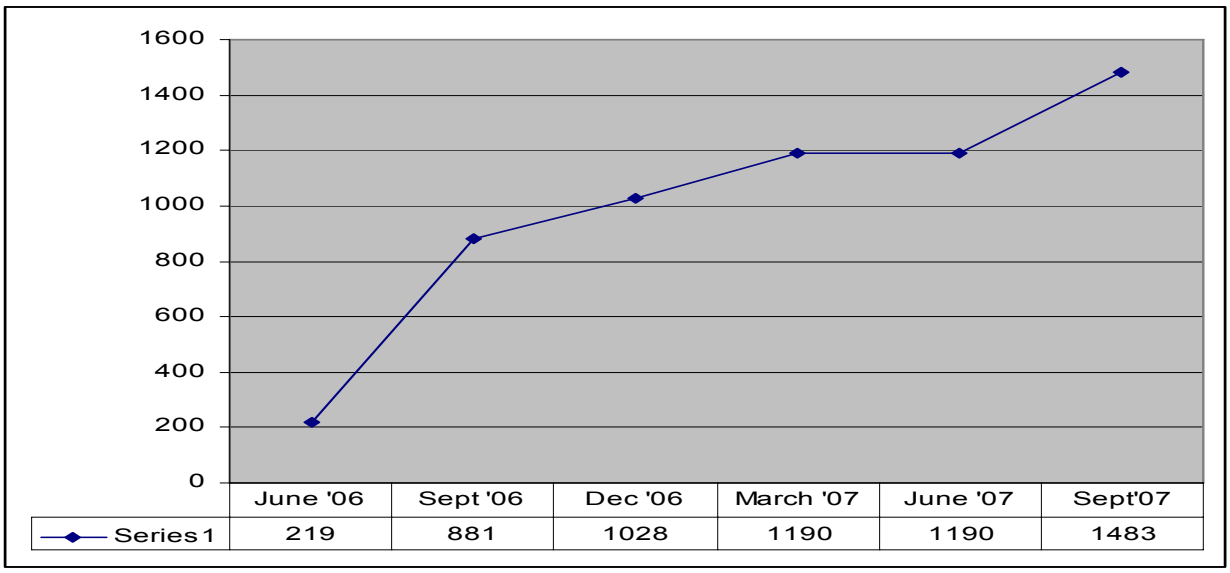
3.0 RESULTS

This section presents the results of the evaluation. Demand for IRI is addressed using population data from 2006 and 2007. The characteristics of those who participate in IRI are discussed next, where a profile on a number of teachers' characteristics is summarized. The third research question - whether or not learners exposed to IRI programs achieve basic skills in Somali language literacy and numeracy as expected at the Grade 1 level - is addressed next, with data being disaggregated by type of learner (IRI versus control), age, sex, and locality. To conclude the section, effectiveness of IRI is discussed based on perceptions, experiences and success stories involving a number of different IRI users and/or partners.

3.1 Demand for IRI

At its inception in 2006, 219 schools in Somaliland, Puntland and South Central Somalia (SCZ) received radios and started using IRI programs for Grade 1 and 2 learners. SIRIP field staff had worked with partners to introduce IRI to schools, train teachers, distribute radios and get schools started on using IRI. By September, 2007, the number of Grades 1 to 3 learners who were listening to IRI programs in the three zones had reached 200 108. Figure 1 shows the number of schools that were participating in IRI, also by the end of September 2007, was 1 483.

Figure 1: Schools that use in IRI Somaliland, Puntland and South Central Somalia (SCZ)



The number of primary schools and Primary Alternative Education (PAE) centres in all three zones is estimated at 2 324[2], which means that IRI has reached 63.8 percent of the schools in the targeted zones. Data was disaggregated to indicate the level of participation in each zone as shown in Table 7 below. Puntland has the lowest proportion of schools that use IRI. The uptake of IRI was slowest in Puntland, both in terms of reaching an agreement with the Ministry of Education and establishing a working relationship with them, getting EDC registered, recruiting personnel and partners, and the

[2] Survey of Primary Education in Somalia, 2005/06 (UNICEF, 2007)

logistics of distributing learning materials.

Table 7: Number of schools participating in IRI, by zone

	Somaliland	Puntland	SCZ
June '06	69	6	156
Dec '06	252	110	666
June '07	285	126	666
Sept '07	418	200	865
Total schools in zone	**659**	**461**	**1204**
Percent reached	*63.4*	*43.3*	*71.8*

Since inception, the SIRIP project has put a great deal of effort in promoting the program in the South Central Zone which is the largest and most populated. Learners here are also the most disadvantaged due to recurrent outbreaks of war, subsequent displacements and school closures. At the same time, the response to the program by communities and organizations has been extremely positive. Consequently, SCZ has the highest number of schools participating in IRI, supported by a network of partners. SIRIP is working with at least 23 partners in SCZ, each of which is responsible for a number of schools. Hence when a decision is made to participate in IRI, each organization typically registers a block of schools. The partners are also responsible for implementing IRI activities in their schools. This is in contrast with Somaliland and Puntland where SIRIP has the two Ministries of Education as its main partner, with a few other organizations assisting. In this case SIRIP has to carry out the bulk of implementation activities.

Demand can also be understood in terms of the types of audiences reached. For instance, IDP centers increased from 135 to 183 between March and September 2007, an indication that IRI use is growing with this population in SCZ.

3.2 Who participates in IRI?

While IRI is meant to enhance the learning experience of students primarily, teachers also participate in IRI as facilitators of learning by modeling the instructions of the radio teacher. Embedded in each IRI lesson is implicit teacher training as the radio supports the teacher by modeling of child centered pedagogic strategies. Other support includes effective use of locally available resources, traditional songs and games and effective management of the class including how to organize group work, lead student activities and knowing what to write on the board and when to write it.

A teacher questionnaire was administered in schools that were sampled for assessment. The questionnaire covered demographic information as well as certain teacher practices that are believed to be important for the success of IRI.

3.2.1 Characteristics of the learners

The mean age for learners that were sampled was 8 years 10 months. This is indicative of the age of the learners in the Grade 1 population. Learners were further categorized into three groups. The first group was that of 5-6 year olds, learners who are considered to be under-aged, assuming that the official school-going age in Somalia is 7 years old. The second group are learners who would turn 7

years old during the Grade 1 school year, or those who would have been at the official school-going age of 7 years at the beginning of the school year, and would turn 8 during the same school year. Learners who were 9 years and older were considered over-aged for Grade 1. Table 8 presents the frequencies in the three age categories.

Table 8: Learners by sex and age

Age Category	All learners (percent)	Male (percent)	Female (percent)
5 to 6 years	332 (10.1)	155 (9.4)	177 (10.9)
7 to 8 years	1173 (35.8)	596 (36.2)	577 (35.4)
9 years and above	1772 (54.1)	895 (54.4)	877 (53.8)
Total	**3277**	**1646**	**1631**

10.1 percent were under-aged learners, and as can be expected in areas where access to schooling is low, the highest percentage was over-aged learners at 54.1 percent. Girls were slightly younger than boys, fewer than boys in the over-aged category, and more than boys in the under-aged group. Differences by zone were even more dramatic, with Puntland having only 3.4 percent of under-aged learners, compared to Somaliland at 12.0 percent, and 68.7 percent of over-aged learners, compared to Somaliland at 50.7 percent.

3.2.2 Characteristics of the teachers

Fifty-one (51) teachers in the school where learners were assessed responded to the teacher questionnaire. Of these, 78.4 percent were male and 24.6 were female (about the same as the proportion in the general population). The youngest teacher was 20 years old, while the oldest was 63. All teachers were Somali speaking, and were using Somali as a medium of instruction in their classes. Two-thirds (66.7 percent) were either teachers of Somali Language, or had Somali Language as one of their teaching subjects. A similar proportion (64.7 percent) was either teachers of Mathematics, or had Mathematics as one of their teaching subjects. Teachers in the sample were well prepared; 88.2 percent have a teaching qualification, while 60.0 percent received IRI training.

The mean teaching experience is 9.1 years; the teacher with the lowest experience has only 1 year of teaching while the two longest serving teachers each had 30 years of teaching experience. Table 9 shows teaching experience for teachers in the sample.

Table 9: Teaching experience by sex of teacher

	All teachers (percent)	Male (percent)	Female (percent)
5 years or less	19 (37.3)	14 (35.0)	5 (45.5)
6 to 10 years	14 (27.5)	13 (32.5)	1 (09.1)
11 to 15 years	9 (17.6)	7 (17.5)	2 (18.2)
20 years and above	9 (17.6)	6 (15.0)	3 (27.3)

A higher proportion of female teachers had teaching experience of 5 years or less; (45.5 percent of female teachers, compared to 35.0 percent for male teachers). The proportion of female teachers

was also higher in the group with the most experience; (27.3 percent of female teachers, compared to 15.0 percent for male teachers). Female teachers can be positive role models for girls; hence SIRIP would be in favor of initiatives by partner organizations to increase participation of women in the teaching profession, as well as of actively recruiting untrained women and helping them to succeed as teachers through the teacher improvement component built into the IRI methodology.

3.3 Achievement in Somali literacy and numeracy

The original sample of learners selected for the study was from Somaliland, Puntland and South Central Somalia (SCZ). Learners from SCZ took the pretest at the beginning of the year, but IRI broadcasts were disrupted due to the war that erupted in December, 2006 which meant that learners did not receive the full complement of IRI programs. Hundreds of thousands of people were displaced, SIRIP and partner operations were disrupted and many schools were closed or turned into shelters for the displaced. The fighting and unrest persisted well into the school year and access to schools was not feasible at the time of the post test. As a result, SCZ did not participate in the posttest. Except in Table 15 where SCZ pretest scores are included, the results that are presented in this section are for Somaliland and Puntland.

3.3.1 Overall performance on the pretest and posttest

The mean pretest for IRI learners was 30.3 percent in Somali Literacy, while the posttest score was 61.8 percent. Learners registered a gain of 31.5 percent. In mathematics the pretest score was 51.0 percent, while the posttest scores was 71.0 percent as shown in Table 10.

Table 10: Pretest and posttest means for IRI learners, by subtest

Learners	Subtest	N	Maximum Score	Mean	Mean Percent	Mean Gain (%)
IRI Learners	Somali Pretest	852	34.0	10.3	30.3	**31.5**
	Somali Posttest	681	34.0	21.7	61.8	
	Math Pretest	849	20.0	10.2	51.0	**20.0**
	Math Posttest	683	20.0	14.2	71.0	

The pretest scores were higher in Mathematics than in Somali Literacy. This is typical of performance at the Grade 1 level, mainly because children acquire more numeracy skills from non structured and non deliberate learning in their day to day lives than they do with literacy skills. Additionally, the Mathematics programs had, as a resource, IRI math programs that have been used and improved upon in other countries for over 20 years. The Somali IRI programs are the first IRI programs ever to be developed in Somali and therefore do not have other programs to use as a resource. Math scores in IRI programs generally show more significant learning gains than do literacy programs; conventional wisdom generally suggests that this is due to the fact that literacy is a much more visual medium and therefore more of a challenge in terms of using radio.

A paired-samples comparison indicates that differences in the pretest and posttest are significant,[3] an indication that after a year of schooling children did benefit from a number of learning activities that schools undertake, including IRI. IRI methodology deliberately sets out to make learning

[3] Somali Literacy Pretest/Posttest: t =35.52, p =.00; Mathematics Pretest/Posttest: t=20.29, p = .00

interactive and interesting, and to motivate all children to attend and participate.

Curriculum-based tests are ideally mastery tests, and in a situation where there are grade level curriculum standards learners are usually compared against those standards. Mastery data is also useful in providing feedback for corrective action. For instance, item and subtest level data can be used in this case to focus teacher training efforts on certain learning targets, or in future IRI programming. Table 11 below presents the percent of learners mastering each skill as well as mean scores for each skill area for IRI learners.

Table 11: Mastery by item and (skill area) domain

Test	Skill Area	Items	Non-Masters	Partial Masters	Full Masters	Mean for skill area
Somali Literacy	Reciting alphabets and Sounds	Item 1	0.1	4.5	95.3	5.6 of 7
		Item 2	6.7	46.7	46.6	(80.4 percent)
	Comprehension of language (reading)	Item 3	19.0	30.5	50.5	4.7 of 9
		Item 4	28.7	51.2	20.1	(52.5 percent)
	Production of language (speaking)	Item 6	1.8	5.5	92.7	4.1 of 5
		Item 7	11.8	38.5	49.7	(81.1 percent)
	Production of language (writing)	Item 5	26.2	43.6	30.2	
		Item 8	42.8	32.4	24.8	7.3 of 13
		Item 9	8.1	13.9	78.0	(56.0 percent)
Maths	Counting and writing numbers	Item 1	0.4	4.1	95.5	5.7 of 6
		Item 2	1.8	11.2	87.0	(95.8 percent)
	Number operation	Item 3	7.9	6.7	85.4	3.3 of 4
		Item 4	15.7	11.2	73.1	(83.7 percent)
	Place value and number sequences	Item 5	58.2	22.8	19.0	2.7 of 6
		Item 7	18.2	13.1	68.7	(44.5 percent)
	Naming and drawing shapes	Item 6	6.9	58.1	35.0	2.4 of 4 (59.5 percent)

The analysis shows that in Somali literacy, learners were strongest in speaking skills. 95.3 percent were able to recite the alphabet correctly (see Item 1 in Appendix A) while 92.7 percent were able to generate conversation by answering a question about the days of the week. Apart from Item 9 where they were asked to write their names, they were weakest in reading (Item 4) and writing (Items 5 and 8). The weakest skill area in Mathematics was place value where only 19.0 percent of the learners were able to identify tens and ones (Item 5 in Appendix B). Only 35.0 percent were able to identify and draw simple shapes, while 58.1 percent could identify the shape but not draw it (see scoring rubric for Item 6, Appendix B).

3.3.2 Comparison of IRI learners and a non-IRI control group

The original design was to administer the pretest and posttest to IRI learners, and measure their gains. However the investigators were looking for opportunities to draw a comparison group, hence 10 non-IRI schools were recruited at the posttest stage. The control group had no pretest scores, but it is assumed that they would have got similar scores if they had taken the pretest (30.3 percent for Somali Literacy and 51.0 percent for Mathematics). Table 12 below compares performance of IRI learners on the posttest with that of control learners.

Table 12: Posttest means for IRI learners, by subtest

Learners	Subtest	N	Maximum Possible	Mean	Mean Percent	Mean Diff (%)
Somali Posttest	IRI Learners	681	34.0	21.7	61.8	**8.0**
	Control Learners	245	34.0	18.3	53.8	
Mathematics Posttest	IRI Learners	683	20.0	14.2	71.0	**12.0**
	Control Learners	245	20.0	11.8	59.0	

The mean posttest for IRI learners was 61.8 percent in Somali Literacy, compared to a posttest score of 53.8 percent for control learners. In Mathematics the IRI posttest score was 71.0 percent compared to a posttest score of 59.0 percent for control learners. The difference between IRI and control learners was wider in Mathematics. An independent samples t-test comparison of means between IRI and control learners yielded significant differences[4], an indication of the 'value-added' by IRI.

3.3.3 Mean scores by sex

The number of girls and boys in the sample was about equal. Table 13 below shows non significant differences between boys and girls in the pretest scores.

Table 13: Pretest and posttest mean percent scores, by sex

Learners	Sex	Somali Pretest	Somali Posttest	Math Pretest	Math Posttest
IRI	Male	30.1	64.6	51.3	73.2
	Female	30.7	62.9	50.6	68.0
Control	Male	-	49.8	-	58.3
	Female	-	58.0	-	59.9

Girls in the control group performed significantly better than boys in Somali literacy. Motivation to succeed in a school culture where girls are a minority has been posited as a possible explanation for this result, coupled with the conventional wisdom that girls are more gifted in verbal abilities.

However, the result was different amongst IRI learners where boys scored higher in both the Somali and Mathematics posttests. The differences in Somali were not significant, while differences in Mathematics were significant. Superior performance of boys was not expected because the IRI methodology typically nurtures a learning achievement that gives equal opportunity to boys and girls. An analysis of several mid-1990s IRI programs showed that IRI reduced gender gaps; where girls' baseline achievement was much lower than the boys', their post-test achievement was approximately the same. The overall gain for girls was greater. This finding was demonstrated for upper primary school science in Papua New Guinea, lower primary school English in South Africa, and adult basic education in Honduras, the implication being that neither the age of the learner nor the subject taught was an obstacle to girls' achievement[5]. Similar findings were reported in later studies in the

[4] Somali Posttest: t =4.89, p =.00; Math Posttest: t=8.46, p = .00

[5] World Bank, 2005. *Improving Educational Quality through Interactive Radio Instruction: A Toolkit for Policy Makers and Planners.* Development Research Group, Working Paper Series No. 52, Washington.

Democratic Republic of Congo, Guinea, Haiti, Mali, Nigeria, Tanzania and Zambia. In this evaluation however, IRI did not work as well for girls as it did for boys, hence more effort should to be directed to redressing this discrepancy.

3.3.4 Mean scores by age

The age of each learner was recorded during the pretest, near to the beginning of Grade 1. The mean age of Grade 1 learners was 8 years 10 months, compared to 7 years old which is the recommended age for Grade 1. Age was recorded into three groups, the first being learners who were younger than the recommended age (5 to 6 years old); the second group was Grade 1 age learners (7 to 8 years), while the third group was 9 years or older. Table 14 shows that age had a positive relationship with the performance of the learners.

Table 14: Pretest and posttest mean percent scores, by age category

Age Category	Learners	Somali Pretest	Somali Posttest	Math Pretest	Math Posttest
5 and 6 years (109)	IRI learners	23.1	49.7	47.8	62.6
	Non-IRI learners		26.1		48.5
7 to 9 years (634)	IRI learners	28.7	61.6	48.9	67.9
	Non-IRI learners		52.3		58.7
10 years (358)	IRI learners	32.9	68.1	52.9	74.2
	Non-IRI learners		59.0		60.8

As expected, mean scores (percent) increased with age, with learners who were below the recommended age for Grade 1 performing the lowest, and those who were oldest (10 years and above) posting the highest performance in both the pretest and post test. Learners from all age groups made significant gains, while mean comparisons within each age category were also significant[6]. When comparing learners within their own group, the youngest learners gained more from IRI compared to the non-IRI control group in both Somali and Mathematics. It is not surprising that IRI would work best with the youngest learners since IRI programs for early childhood development in other countries have shown it to be a methodology that is consistent with effective learning strategies at the lower ages.

3.3.4 Mean scores by zone

Overall, all learners performed well. There were differences in performance by zone in the Somali literacy and Mathematics pretests and posttests as shown in Table 15.

[6] 5-6years (Somali: t =**3.33**, Math: t=2.72); 7-8 years (Somali: t =**4.00**, Math: t=7.19); 9 years and older (Somali: t =**2.17**, Math: t=4.12); p = .05 for all t-test.

Table 15: Pretest and posttest mean scores, by province

	Subtest	N	Mean	Mean Percent
Somali Pretest	Somaliland	653	11.0	32.4
	Puntland	199	8.0	23.5
	SCZ	2146	13.2	38.9
Somali Posttest	Somaliland	675	18.7	55.0
	Puntland	251	26.6	78.2
	SCZ	-	-	-
Math Pretest	Somaliland	652	11.4	57.0
	Puntland	197	6.1	30.5
	SCZ	2104	7.0	35.0
Math Posttest	Somaliland	677	13.0	65.0
	Puntland	251	14.9	74.5
	SCZ	-	-	-

First, there were differences in learners' pretest scores. Puntland posted the lowest pretest scores. Learners started significantly lower in Mathematics (30.5 percent) compared to Somaliland (57,0 percent). Conversely, Puntland gained more as shown by the posttest scores. The mean score for the Somali literacy posttest was 78.2 percent compared to Somaliland at 55.0 percent. Similarly, the mean score for the Mathematics posttest was 74.5 percent compared to Somaliland at 65.0 percent.

Possible reasons why Puntland learners performed better in the posttest include the fact that their children were older. Overall, older learners performed better than younger learners as shown in Table 14 above. Secondly, Puntland received broadcasts six times per week, while Somaliland received it four times per week. Third, Somaliland received broadcasts from a shortwave signal only (which monitoring reports indicated were sometimes affected by climatic conditions) while Puntland broadcasts came via both shortwave and a local FM station with a clearer signal.

3.4 Contextual factors which promote IRI effectiveness

Like any other methodology, certain factors are necessary for effective learning using IRI. A well functioning radio and clear signal are necessary; teachers have to be trained in the IRI approach and to understand their critical role in the three way relationship between the radio teacher, the learners and themselves. They need to use the radio consistently, follow instructions carefully and ensure learners participate as directed by the radio teacher. Finally, they must use the teacher's guide to prepare for the lessons and follow through with activities prescribed for the period before and after the broadcast. These and related issues were the subject of the questionnaire administered to a total of 41 teachers in IRI schools sampled for assessment.

In the schools that were sampled for assessment, 60.0 percent of Grade 1 IRI teachers received face-to-face IRI training. The original strategy was to provide the necessary training and preparation for teachers in schools that were ready to use IRI. However, many of those who were trained did not go on to participate for various reasons. In fact, 3 of 10 teachers in non-IRI control schools were also trained.

A total of 120 Math and 80 Somali lessons were broadcast during the school year. One third of the

teachers (29.3) reported that their radios worked well through the year hence they never missed any broadcast. The number goes up to 73.2 percent if you include those who missed only 10 days or less due to a radio malfunctioning or a poor radio signal, as shown in Table 16.

Table 16: Teachers missing broadcast due to radio problems

Days Missed	N	Percent	Cumulative Percent
0 days	12	29.3	29.3
1 to 10 days	18	43.9	73.2
11 to 20 days	6	14.6	87.6
21 days and over	5	12.2	100.0
Total	41	100.0	100.0

The table further shows that 26.8 percent missed 11 or more days, corresponding to 11 or more lessons missed. Teachers' participation on pre and post broadcast activities is shown in Table 17.

Table 17: Teaching time spent on IRI pre-broadcast and post-broadcast activities

Time on broadcasts	Pre-broadcast	Post-broadcast
No time at all	31.7	29.3
1 – 10 minutes	53.7	63.4
11 – 30 minutes	12.2	4.9
31 minutes and over	2.4	2.4
Total	100.0	100.0

SIRIP provides a teacher's guide to accompany the radio lessons. The SIRIP guide is more than just a guide; it lays out the content of each lesson in more detail than the guides that are typically prepared for other IRI projects. SIRIP anticipated the challenges with radio reception from the onset and wanted to ensure that teachers could still conduct a good IRI lesson even if reception was poor.

About one third of IRI teachers did not conduct pre-broadcast and post-broadcast activities. IRI programs have activities prescribed for the period before and after the broadcast that teachers must complete to introduce the lessons, to clarify content covered by the broadcasts or to provide practice and reinforcement. One in three teachers reported that they do not use those segments of the guides (31.7 percent for pre-broadcast activities and 29.3 percent for post-broadcast activities). The majority of the teachers (53.7 percent for pre-broadcast activities and 63.4 percent for post-broadcast activities) spent up to 10 minutes on the activities, while the remaining teachers spent considerable time on the activities. Evaluations in other countries have shown that learners benefit greatly from pre broadcast activities at the beginning of the lesson and reinforcement after the broadcast particularly where teachers are untrained or undertrained. For this reason SIRIP's teacher training must emphasize the importance of these activities. During training and/or monitoring, teachers' attention should be drawn to the "during the lesson" part of the guide for each lesson which they should follow carefully in the case of poor reception or no radio signal.

While 65.8 percent had the teacher's guide and used it part of the year or all year round, 34.1 percent

did not have the teacher's guide at all. They relied solely on the instructions from the radio teacher. The majority of the IRI teachers (63.4 percent) reported that they had no materials apart from the teacher's guide. At 9.8 percent, only a small proportion of those who used the teacher's guide found it too difficult to understand. In light of these findings, SIRIP must speed up efforts to get guides to all participating teachers and encourage them to use the guides at all times.

3.5 Effectiveness of IRI: perceptions and experiences

In many parts of Somalia, among itinerant populations and where war has become a daily occurrence and uncertainty has prevailed for the past 16 years, radio is becoming the only constant in people's lives. For many learners, and for displaced children in particular, SIRIP radio broadcasts are the only source of learning they receive. Feedback in this section summarizes perceptions and experiences about the effectiveness of IRI radio programs from teachers and learners in schools, from other learners who represent 'shadow audiences', and from parents and SIRIP partners.

3.5.1 Feedback from parents and community members

Feedback from ordinary families indicates that SIRIP has been a success in a number of ways. First, **learners get continuity of their learning at home** as illustrated by the experiences of 8-year old Najmo and her family. When fighting erupted in her town, Najmo happened to be in a school which followed SIRIP programs so her family did the only thing they could do to keep their child in school – they turned on the radio. It was, in fact, Najmo who asked her parents to tune in to the IRI radio lessons for her every morning. Najmo had this to say about the programs;

> *"I like the radio lessons too much because I learnt many lessons without going to school. I am happy now, but I truly hate the fighting. I am scared about the bullets…it is not getting stopped."*

Second, **SIRIP gives parents rare insights into what happens in the school and engages them in children's learning;**

> *"…my daughter is busy all morning with the radio programs. She has great enthusiasm for these radio programs and made us also love the program. I was really amazed at how fast she memorized the lesson and stories and songs. My daughter is intelligent!"*
>
> Najmo's mother

SAFE, one of SIRIP's partners in the south also reported similar sentiments from parents: with one of their major goals to influence parents to appreciate the value of education and to send their children (especially girls) to school, they said:

> *… with SIRIP, "people simply want to participate without being pushed … they come … just to listen, to hear, to learn, to sing and … even to DANCE!"*
>
> *Mohamed Moalin,*
> *Chairman, SAFE*

SAFE explained their appreciation of the radio programs saying that SIRIP has 'demystified' education by bringing it to the homes and the streets and now anyone and everyone is able to listen

anywhere and know exactly what their children are learning in school. And because the parents like what they hear and now know what is being taught in school, they are more inclined to encourage their children to attend.

Third, **SIRIP gives parents feedback on whether or not children understand what they are learning and provides the opportunity to assist (where they can) in their learning;**

> *"She asks me questions about her lessons and she required us to listen to the radio programs with her every day and answer her questions"*
>
> Najmo's father

In Najmo's town programs are broadcast on a clear local FM radio signal several hours a day. Hence, SIRIP has become part of the children's daily lives. In this and in similar cases, SIRIP broadcasts are not only an effective means to educate a child, but in difficult times, sometimes *it is the only* path to education available to many families.

Fourth, there is anecdotal evidence that **SIRIP programs have a wide listenership** consisting of an interesting mix of shadow audiences. People are curious about the program and converse about it in some of the remote villages of Somalia. For instance, in a recent SIRIP monitoring visit in the town of Borama, staff members were pleasantly surprised to discover men in cafés debating the source of the program. The conversations included animated discussions about SIRIP drama characters and storylines – an indication of active listening among this non target audience. However, it has not been possible to determine the size or characteristics of the shadow audience.

People in Dhoqoshay village in Buroa also gather in cafeterias and public areas every morning and tune in to what they call "The Fox Channel" through which they listen to the IRI lessons as they conduct other activities. They are particularly fascinated by the clever female fox character in the drama segments of the radio programs The fox lives with human beings, is learning human ways and often talks about how she is no longer wild and beastly, constantly making the audience laugh by telling jokes and being funny about the new things she is learning. From time to time, she goes back to the animal kingdom and shares all the education she has gained with her old animal friends. The fox song, which admonishes the fox from scaring the baby goats, is very popular with this shadow audience.

A cattle herdsman in Sanaag who happened upon the SIRIP programs by chance reported how the radio lessons are making a difference in his life:

> *"One day while I was tuning the radio, I accidentally found this channel which attracted me … I liked it a lot because it is the only channel where I can find a language that I understand for long periods of time since the BBC only comes on for half an hour. Since I discovered this channel, I enjoy listening to the radio lessons and I love them because they are very interesting and I like to educate myself as I look after my animals no matter how long it will take to do that."*
>
> *Mohamed, 19-yr old herdsman*

The radio also offers parents who are unable to meet financial demands of sending all their children to school another option of ensuring their children get an education as illustrated by the story of Bashir Hassan, a shopkeeper at Bakara market in Mogadishu.

Bashir is a father of six children all under the age of 14. His shop is very small though he sells a wide variety of items. At the front of the shop are two big loud speakers conspicuously hanging from the roof. Bashir initially connected the speakers to his radio to attract people's attention and hopefully get more business. Bashir loves to listen to programs from Horn Afrik and has become a consistent and faithful listener of IRI programs from Horn Afrik. As a result, a number of people at Bakara market have become very interested in the programs and always hang around Bashir's shop when SIRIP programs are on air.

Like the herdsboy, Bashir first accidentally tuned in the SIRIP program from Horn Afrik in April 2006. The lessons captured his interest for many reasons. He said,

> *"I have two daughters and a son of school going age and do not afford to send all of them to the school. Therefore, I have sent my son to the school and left my daughters at home …but fortunately, when I heard this program I immediately realized that it will be good alternative for any child like my daughters, then I bought exercise books and pencils and asked them to listen in. Unfortunately I can not teach them because I am working during broadcast hours but their mother helps them."*

Another interesting audience consists of young shoe shine boys in the streets of Mogadishu and Garowe who have been observed singing along with SIRIP songs and debating the life skills segments from their small portable radios. SIRIP lifeskills objectives in particular target young children, youth and adult audiences, in an effort to influence attitudes and behavior.

3.5.2 Feedback from schools (teachers, learners, or education authorities)

Feedback from the school setting indicates that **SIRIP programs enrich learning and have an impact that lasts beyond the classroom.** An example would be how "the fox" mentioned above has become a legend. The fox is quick witted and entertaining. One SIRIP partner in South Somalia reported a story entitled "even a fox can learn." The story originated from SIRIP radio lessons and became a strategy for teaching children and encouraging young children. When children are reluctant to complete their learning tasks, one of them says "even the fox can learn... why can't you?"

"Even the fox can learn" is used as a slogan to denote that any child is better than a fox and to encourage any children who do not put effort in their learning. Parents also use the phrase when children are reluctant to go to school or learn. In their daily conversations with children, parents use phrases such as "Please learn as fox learned" or, "go to school to compete with and win against the fox." As a result, learning becomes an interesting and goal-driven activity for children when they set out to compete and win against the witty fox. The fox character has become a household name and is synonymous with working hard in school.

Learning through SIRIP programs captivates children: the headmaster of one school decided to stop the programs because students in upper grades were also interested in listening to programs. According to the headmaster, students in other non-IRI classes were interested in the programs' songs and activities and would say they needed to use the bathroom. Instead of going to the bathroom they would hide and stand near the IRI classrooms. As a result, the headmaster decided to discontinue the program. Staff convinced the headmaster to restart the program and helped him create a plan for older children to join in. SIRIP partner ADRA reported similar challenges and

offered the following suggestion:

> *The programme should be extended to include other grades depending on the availability of resources. This is important because some pupils from other grades prefer to absent themselves from their various classes but attend the radio programme in lower grades. This in a way is disrupting learning as planned. Some pupils admitted to staff that they often skipped their class lessons so as to attend a radio class.*

Teachers appreciate and value SIRIP programs: Teachers have also found other ingenious ways to share the radio and programs. One school in Borama, Somaliland records the programs in the mornings and plays them again for students in other shifts. In another school, the radio is attached to speakers so that programs can be shared by several classrooms.

A similar situation was found in Jowhar in the South Central zone, where two teachers needed each of their classes to follow the radio lessons at the same time. Rather than wait for the second radio they had requested from EDC, they used their creativity to devise a strategy to have both classes listening at the same time by connecting a long wire and microphone from the radio in one class to a speaker in the second class.

3.5.3 Feedback from partner and non-partner organizations

As mentioned above, SIRIP partners play a critical role in implementation, monitoring the program on the ground, and providing feedback. So far, SIRIP has received very useful feedback from partners. ADRA for example provided further indication of the important role the radio lessons play in motivating students and boosting attendance:

> *Teachers assessed the program as useful to them as it enables them to make the lessons `more interesting besides enhancing proper class management. The pupils are always very motivated. There is high attendance rate during the IRI sessions. If the attendance rate and the high motivation on the part of the teachers and the pupils can be used as proxy indicators of the impact of the teaching approach on learning, it would thus be assessed as very positive.*

And the commitment teachers display in following the radio lessons:

> *It is noteworthy that all schools are keenly following the timetable in their coverage of the radio lessons. Those schools without radios are also able to tune to other personally owned radios and follow the instruction. This of course means that an innovative teacher is still able to conduct lessons using their own radio on occasions of malfunctioning of the EDC provided radios.*

As well as the critical support provided by the radio to untrained or undertrained teachers, especially in the remote hard to reach areas:

> *The IRI program serves as a good complement to the poor teaching skills possessed by the rural teachers, most of whom are not professionally trained as teachers. The location of the schools makes supervision by the Ministry of Education staff difficult considering that the supervisory arm of the ministry is under funded. The IRI has some element of self supervision as the sessions are provided at specific times covering uniform content for all schools. This creates some level of "equity" between schools from poor economic settings and those from the more affluent neighborhoods - ADRA report.*

Other partners report how the radio has provided a sense of continuity amidst war:

"In fact, I can say we have the 'experience' of war" explains the Director of the Somali Association of Formal Education (SAFE), one of SIRIP's implementing partners in the SCZ where in the absence of a fully functioning government, organizations such as SAFE continue to shoulder what typically is a government's responsibility to provide education. The Director made it clear how the 'experience of war' can, in a most ironic way, become 'handy' and be used positively under extremely difficult circumstances. He explained that the fleeing was not always as random as one might think. People *"moved to safer ground … but … not very far*". In many cases, they knew exactly where to go on the outskirts of the city or in nearby towns to escape the intense fighting. And it also turns out, communities in the south have a very clear sense of priorities and took care to ensure that "some sort of learning continued" through it all … *"they took the radio, they took the blackboard, some chalks … and teachers went there".*

Due to the war, SIRIP was unable to conduct the post test in SCZ at the end of the school year. However, SAFE reports that in the Benadir, Lower Shabelle and Middle Shabelle areas where they have schools, SIRIP has, without a doubt, had an impact on both children and parents. They love the *"sounds, songs, poems, proverbs …"*

After monitoring the teachers using IRI in their schools in Puntland, ADRA simply summed it up as follows:

> *The introduction of the interactive radio programme enriched the teaching, with consequent positive contribution to increased enrolment and retention of children in school. Teachers are ill prepared with learning aids which makes lessons boring. The radio program helped to correct this.*

4.0 DISCUSSION AND RECOMMENDATIONS

This section discusses select findings, followed by conclusions and recommendations for consideration by SIRIP as well as the respective Ministries of Education.

4.1 Discussion

The critical findings of the evaluation are that IRI is growing and is increasingly becoming part of the educational landscape in Somalia in terms of the number of schools that are participating, the number of teachers that have been trained in IRI, and the ongoing production of IRI programs for additional grades. An equally important result is that IRI learners are performing significantly better than their counterparts in non-IRI schools in both Somali literacy and Mathematics.

The evaluation also shows that girls are participating and are generally learning as well as boys, and that girls are performing better than boys in some areas and not as well as boys in other areas. However, these results indicate IRI has not been the equalizer that it was hoped to be in the performance of boys and girls. Also, while SIRIP has developed a good network of partners, more should be done to identify partners that can assist in reaching IDPs and other out-of-school populations whose needs are great and to whom IRI broadcasts would be perhaps even more beneficial.

4.1.1 Demand for IRI

The evaluation revealed that there is demand for IRI. 63.8 percent of schools participate in IRI. The take up of Grade 3 broadcasts by the end of the school year has been excellent, with more than 70 percent of the classes already tuning in. However, there are differences in IRI participation between the zones (71.8 in SCZ, 63.4 percent in Somaliland, and 43.4 percent in Puntland). There is still opportunity for growth, both in terms of the number of additional schools that need to come on board and the expansion of broadcasts to include Grades 4 and 5, which will occur in the coming months. With only 43.4 percent of the schools participating in Puntland, SIRIP needs to devise a strategy to increase participation in IRI for Puntland schools. As suggested above, the strategy should include identifying more NGOs to work with, as well as reaching more schools or learning centers for IDPs and other out-of school populations.

It was noted during the course of the evaluation that IRI has been particularly useful as a means of ensuring educational continuity for children whose schooling is disrupted, in that they can listen to the radio at home or at the places where they seek refuge. It was reported from conversations with partners that IRI is being used as part of play by younger children of non-school age. Seeing children singing along with the IRI radio programs and performing activities has become a common scene in many Somali towns. These are powerful first experiences that initiate children into learning as an enjoyable activity.

4.1.2 Teacher and learner characteristics

One of the most encouraging occurrences in the Somali education system is that girls are increasingly enrolling in schools. The population of learners in IRI schools, which is more than 60 percent of all schools in Somalia, is 43.2 percent female as noted earlier. Feedback from partners

suggests, also, that IRI is a useful tool for increasing girls' enrolment because it gives parents a glimpse of what happens in school, hence making them less suspicious and more likely to allow girls to attend. It is important, though perhaps harder, to push for enrolment of the remaining 6.4 percent to achieve gender parity between boys and girls, and so some deliberate actions should be undertaken by the MOE and its partners to ensure that girls stay in school. With female teachers in the country making up only 22.8 percent of all teachers, one strategy would be to increase the number of female role models in the schools, and to make sure that they receive training that prepares them to create learning environments that empower both boys and girls.

One method of increasing the number of female role models within the existing IRI program would involve encouraging the respective MOEs to recruit more female teachers, even if they are untrained. SIRIP could then train them in IRI methods before they start teaching lower grade classes. With the continuous training that they receive from consistent guidance and modeling of good teaching practices through the radio teacher, and the right motivation, untrained teachers have a high chance of succeeding as teachers. EDC has extensive experience in other countries with IRI facilitators with no formal teacher training functioning effectively as teachers and getting children to learn as well, or better than, children in schools with trained teachers. If funding permits, current programming could be enhanced by special teacher training IRI programs such as those developed in Mali and Guinea.

Only 35.8 percent of learners in the sampled schools were at the age of 7/8 years recommended for Grade 1, and in the case of SCZ and Somaliland an additional 10 percent of the learners were younger. Other than that, Grade 1 learners were older than the recommended age of 7/8 years old (54.1 percent). While distance, poverty, availability of schools and many other reasons contribute to why Somali children don't start school at the right age, issues of stability and safety also seem to explain the late start, at least in Puntland and SCZ. Parents are less likely to allow younger children to be out of the home. IRI becomes a useful tool in that learning becomes accessible from anywhere - homes, IDP camps, non formal centers, under trees and other places not confined to the walls of a conventional classroom.

Another reason why children start formal schooling late may be that an overwhelming majority attend Koranic schools for 1 to 2 years before they enroll in Grade 1 at a non-religious school. From the children's performance on the pretest, it was quite evident that there is learning in the Koranic schools, particularly in numeracy skills (the pretest score for mathematics was 57.0 percent in Somaliland). It is not surprising that IRI would work best with the youngest learners in that it is a methodology that is consistent with what we know about learning at the lower ages. But now that IRI is increasingly becoming known as a learning tool, and IRI children in the 5-6 age category registered the greatest learning in comparison to their non-IRI counterparts, there is evidence that IRI programs would benefit younger learners. There may be an opportunity for SIRIP to partner with Koranic schools and/or target new programming specifically for this age group.

4.1.3 Learning and performance

IRI has been shown to have a significant impact on learning, both in terms of overall gains for IRI learners and the difference between IRI learners and non-IRI control learners. IRI methodology deliberately sets out to make learning interactive and interesting. Using song, drama, games and a variety of activities, learners are required to listen attentively and respond actively to different activities several times during the broadcast. Implicit in each lesson are teacher training strategies

designed to motivate the learners and increase the chances of success for both teachers and learners. For example, the radio teacher actively provides guidance in organizing the class during the lesson by asking children to complete specific tasks using different approaches under the guidance of their teacher. In addition, the lessons make a point of reviewing and reinforcing skills and concepts taught in earlier lessons and suggesting activities for the teacher to conduct with the learners before and after the broadcast.

In the comparison between IRI and control learners, IRI learners were shown to have registered more gains in Mathematics than in Somali Literacy. A number of explanations for the bigger effect size in Mathematics may be postulated. For example, IRI programs were designed around richer Mathematics content delivery that exceeds the expectations of the Somali Mathematics curriculum. The IRI Math programs have been used and improved upon since the 1970s when the original IRI series was created in Nicaragua. Literacy via IRI on the other hand is very new and much less likely to be used and improved upon in other countries. Moreover, one can transfer Math skills between cultures fairly easily by translating the programs. Somali literacy programs, on the other hand, are the first ever developed and can only be used in Somali-speaking regions.

The comparison between boys and girls yielded two important results. First, boys and girls performed at par on the Mathematics test, but girls in the control group performed significantly better than boys in Somali literacy. Research amongst other groups has suggested that girls could have stronger innate verbal abilities. Superior performance of girls could also be due to motivation to succeed in a school culture where girls are a minority. However, more assessments of a wider group of Somali learners are recommended to see if the results would yield consistent findings over time across both subjects.

Second, girls in the IRI group performed as well as boys in Somali literacy, but significantly lower in Mathematics. The results suggest that IRI has not worked as well for girls in Mathematics so far. The IRI methodology has been successful in providing equal opportunity to boys and girls, and being an 'equalizer' in learning achievement in other countries. SIRIP should examine its programming, teacher training, and actual classroom practices to ensure that IRI practices are adhered to and that girls are not being unduly disadvantaged in any subject. Also, if motivation to succeed in a school culture where girls are a minority is indeed a strong factor, SIRIP should take advantage of this and find additional strategies to make Mathematics learning more accessible to the already motivated girls. As suggested above, one possible action would be to increase role models for girls by bringing more women teachers into the schools. This could also have the added benefit of female teachers spending more time with girls on the crucial pre and post broadcast activities where having male teachers spend such time with girls in this conservative society may pose some challenges.

Differences in performance were observed between Somaliland and Puntland. Puntland started lower in both Somali literacy and Mathematics at the beginning of the year, and finished higher on both Somali and Mathematics posttests. Starting lower provides more room for growth. However there are three other reasons that may explain superior performance in Puntland. First, there were differences in the broadcast arrangements. Most Puntland sample schools use a local radio station that broadcasts on a clear FM frequency, while Somaliland receives its broadcasts via shortwave which is not as reliable as FM. Second, Puntland received broadcasts on every school day (six days per week) while Somaliland had only four broadcasts per week. Third, Puntland learners were older. Older learners performed better than younger ones. SIRIP should continue to work with the

shortwave broadcaster for optimum radio signal and to seek out possibilities of using local radio in Somaliland. In addition, SIRIP should also consider increasing the number of broadcast days in other regions.

4.1.4 Contextual factors and feedback from users

IRI seemed to have worked particularly well because participating teachers are well prepared. Even though the Somali system has many untrained teachers, self reports indicated that most of the ones surveyed were qualified, experienced, and the received IRI training. 73.2 percent reported that they missed only 10 or fewer broadcasts, which means that reception was good and they had a functioning radio most of the time. Teachers were not using pre and post broadcast activities as expected, the main reason being timetabling issues. This anomaly needs to be addressed in subsequent teacher training sessions. More importantly, teacher training sessions should be used to explore other more creative ways to use the content offered in pre and post broadcasting segments to circumvent timetabling issues. Monitoring visits have also indicated a lack of ownership in cases where head teachers are not supportive of the IRI initiative. In Puntland, SIRIP has started efforts to train head teachers as a way to expose them to IRI and get them to support the teachers in their schools more.

Feedback from parents and community members indicates that IRI programs have restored some semblance of normalcy as some learners have continued to study from the safety of their own homes or even in displaced people's camps. They also report that SIRIP gives parents rare insights into what happens in the school and engages them in their children's learning, gives parents feedback on whether or not children understand what they are learning, and provides the opportunity to assist in their learning. One particularly important contribution has been the Friday "Children's Hour" that is part of Horn Afrik's to SIRIP's efforts. This special call in show (designed along the lines of "*It's Academic!*") is listened to by both children and adults on the day off school and work. It informs parents and energizes children by consolidating the week's learning through fun quizzes, competitions and prizes for winners. This amount of interest from parents increases the likelihood that they will send their children to school and at a younger age because they see them enjoying learning.

Schools and the organizations that work with schools report that SIRIP programs enrich learning and have an impact that lasts beyond the classroom. SIRIP is reported to be doing particularly well in standardizing classroom practice and helping fill in the gap for learners where the quality of classroom instruction is poor.

4.2 Recommendations

A number of suggestions for improvement were made in the discussion of findings. Some of these are recommended for follow-up action by SIRIP and the respective MOEs.

1. **Intensify efforts to reach out-of-school populations who require assistance the most.** The need is perhaps greatest in Puntland where the IRI participation rate is lowest and amongst out of school populations in all regions, including the large numbers of IDPs as the war in the south continued to displace hundreds of thousands throughout the school year. One way to bolster participation would be to expand SIRIP's partner network by identifying NGOs that work with IDPs and other out-of-school populations.

2. **Working in partnership with SCOTT, assist MOEs to recruit and appoint untrained female teachers to teaching positions while SIRIP trains them in IRI, to increase role models for girls in the schools.** In view of SIRIP's goals to increase participation of girls in school and to promote their success in learning, SIRIP should consider requesting that the MOE recruit more female teachers who can be trained in IRI, coached and monitored more frequently so as to help them acquire the skills that will facilitate their success as teachers. SIRIP should take advantage of existing partnerships with Save the Children, CARE, ADRA and any other SCOTT implementers to increase the likelihood of success with this effort.

3. **Explore opportunities for partnership between SIRIP and Koranic schools and consider providing programming for pre-school learners in the general population.** Koranic schools are the predominant providers of preprimary education in Somalia. Because Grade 1 programs have been shown to work as well for 5-6 year old learners (the majority of which are in the Koranic schools), SIRIP should explore a working relationship with the intention of enhancing the quality of education by bringing IRI programs to the schools. However, caution should be exercised and efforts made to ensure that children are provided with the appropriate grade level programming. Because some of the children attending Koranic schools are very young, it may be more appropriate for SIRIP to expand its programming to include early childhood IRI programs. This would not only provide developmentally appropriate and valuable learning, but would also expose families and children to IRI so they are familiar with it when they reach school age.

4. **Explore alternatives to broadcasting**. Several IRI projects are exploring the use of or already using technology alternatives in areas where broadcasting is difficult. For example, the IRI programs could be loaded onto an inexpensive MP3 player or iPod and paired with wind-up or solar-powered speakers so that pastoralists, displaced groups, adults or youth in alternative basic education programs who are currently unable to access SIRIP broadcasts due to poor signal or other commitments during regular broadcast times could have access to them at any time. Such alternatives would ease the challenges encountered with poor shortwave reception in some areas or frequent closures of local broadcasters attributed to the political instability in the south.

APPENDIX A: SOMALI LITERACY TEST – 2006

<table>
<tr>
<td>1. Recite the Somali alphabet, consonants

1. Sheeg B, T, J Af-Soomaaliga.</td>
<td></td>
<td>Ask the learner to recite the alphabet as you listen to it.

Sequence is not important</td>
<td colspan="2">Maximum 2 points</td>
</tr>
<tr><td></td><td></td><td></td><td>Mumbles something which is not the alphabet, or fails to attempt the task</td><td>0</td></tr>
<tr><td></td><td></td><td></td><td>Recites consonants, but not all of them</td><td>1</td></tr>
<tr><td></td><td></td><td></td><td>Recites all consonants correctly</td><td>2</td></tr>
<tr>
<td>2. Identify the sounds that are presented to you.

2. Aqoonso dhawaqa ereyga aan ku dhawaaqo</td>
<td>LI BA HE

HO BI LE

HI FU BO

XII REE HAA

KUU QEE FII</td>
<td>Present the learner with a sound and ask him/her to circle the sound you just made (the sounds in bold/italic)

Make sure learner understands the task.</td>
<td colspan="2">Maximum of 5 points (1 per correct sound)</td>
</tr>
<tr><td></td><td></td><td></td><td>Mumbles something which is not audible, or fails to attempt the task</td><td>0</td></tr>
<tr><td></td><td></td><td></td><td>Identifies the sound correctly</td><td>1</td></tr>
<tr><td></td><td></td><td></td><td colspan="2">_____ out of 5</td></tr>
<tr>
<td>3. Read the following words

3. Akhri ereyada soo socda:</td>
<td>CIR

CAB

BOOD</td>
<td>Present words in a flash card ans ask the learner to read it.

Allow a second chance if necessary</td>
<td colspan="2">Maximum of 3 points (1 per word)</td>
</tr>
<tr><td></td><td></td><td></td><td>Mumbles something which is not audible, or fails to attempt the task</td><td>0</td></tr>
<tr><td></td><td></td><td></td><td>Reads the word correctly</td><td>1</td></tr>
<tr><td></td><td></td><td></td><td colspan="2">_____ out of 3</td></tr>
<tr>
<td>4. Read the following words

4. Akri ereyada soo socda</td>
<td>KOOR

DAMBIIL

GARAAFO</td>
<td>Present words in a flash card ans ask the learner to read it.

Allow a second chance if necessary.</td>
<td colspan="2">Maximum of 6 points(2 per word)</td>
</tr>
<tr><td></td><td></td><td></td><td>Mumbles something which is not audible, or fails to attempt the task</td><td>0</td></tr>
<tr><td></td><td></td><td></td><td>Attacks the word with the correct sound, but does not read the whole word correctly</td><td>1</td></tr>
<tr><td></td><td></td><td></td><td>Reads the word correctly</td><td>2</td></tr>
<tr><td></td><td></td><td></td><td>_____ out of 6</td><td></td></tr>
</table>

5. Write any two words that you know 5. Qor labo erey oo aad taqaano		*On a separate answer sheet provided, ask the learner to write any two words of their choice.* *During scoring, write the number of syllables against each word before scoring it and say it loud to determine the number of syllables.*	***Maximum of 6 (Up to 3 points per word)***	
			Writes something that is not legible, a nonsense word, or fails to attempt the task	0
			Writes a one/two syllable word that is recognizable, but not spelt correctly	1
			Writes a short word of one or two syllables correctly; OR Writes a complex word of three or more syllables with one spelling mistake;	2
			Writes complex words of three or more syllables correctly	3
			_____ out of 6	
6. Recite the seven days of he week 6. Sheeg maalmaha todobaadka		*Ask the learner to recite the days of the week as you listen to it.* *Sequence is not important*	***Maximum of 2 points***	
			Mumbles something which is not the days of the week, or fails to attempt the task	0
			Recites the days of the week, but not all of them	1
			Recites all the days of the week, correctly	2
7. Tell me the difference between the two pictures. 7. Sheeg farqiga u dhexeeya labadan sawir.		*Present pictures to the learner ask him/her to tell you as many differences as they can see* *You can prompt by pointing out one such difference to clarify the task if need be.*	***Maximum of 3 points (1 for each difference)***	
			_____ out of 3	
8. Write this sentence 8. Qor weedhan soo socota	I am a student Anigu waxaan ahay arday	*Dictate a sentence and ask the learner to write it on the answer sheet*	***Maximum of 4 points***	
			Writes something that is not legible, a nonsense word, or fails to attempt the task	0
			Writes one word correctly, even though there are spelling errors on others	1
			Writes two words correctly, even though there are spelling errors on others	2
			Writes three words correctly, even though there is a spelling error on one of the words	3
			Writes all words of sentence correctly	4
9. Write your name 9. Qor magacaaga?		*Ask the learner to write his/her name on the space provided in the answer sheet*	***Maximum of 3 points***	
			Writes something that is not legible, a nonsense word, or fails to attempt the task	0
			Writes his/her name that is recognizable, but with multiple spelling errors	1
			Writes his/her name legibly, but with a minor spelling error	2

			Writes his/her name legibly and correctly	3

APPENDIX B: MATHEMATICS TEST – 2006/07

Item Stem	*Content for the item*	*Instructions to administrator*	*Instructions for scoring*	
1. Count from 1 to 20. Now count from 9 – 15. 1. Tiri 1 illaa iyo 20. Tiri hadana 9 illaa 15.	1 to 20 9 to 15	*Have one card for each option.* *Show one to the learner and present one of the items* *Allow a second chance if necessary*	***Maximum of 3 points***	
			Does not count numbers correctly, or fails to attempt the task	0
			Begins from 1, counts some numbers correctly, does not finish, or mixes up numbers.	1
			Counts 1-20 sequence correctly, attempts second sequence, but begins from 9 and overshoots the sequence to include 20	2
			Counts 1-20 sequence correctly, and recite the second sequence from 9 to 15 as required, without overshooting to 20.	3
2. Write the following numbers 2. Qor tirooyinkan soo scoda.	7, 38	*Give the instruction orally.* *Ask the learner to write both numbers* *Allow a second chance if necessary*	***Maximum of 3 points***	
			Does not write the number correctly, or fails to attempt the task	0
			Writes the one-digit number (7) correctly; and fails to attempt the two-digit number	1
			Writes the one digit number (7) correctly; and, attempts the two-digit number, but gets only one digit correctly, or writes the digits in reverse order.	2
			Writes the one digit number (7) correctly; and writes the two-digit number (38) correctly	3
3. Add the following numbers 3. Ka shaqee isugeynta.	52 + 21 36 + 22 23 + 45 12 + 67	*Present only **ONE** number sentence.* *Ask the learner to work it either on the floor, on a piece of paper.* *Allow a second chance if necessary*	***Maximum 2 points***	
			Attempts addition but gets a completely wrong answer, or fails to attempt the task	0
			Attempts the addition gets the tens correctly and the ones wrong, or vice versa, or numbers are in reverse order	1
			Adds the two-digit number correctly	2

Item Stem	***Content for the item***	***Instructions to administrator***	***Instructions for scoring***	
4. Work out the following subtraction 4. Ka shaqee kala goynta.	55 - 23 35 - 21 66 - 32 47 -34	*Present only **ONE** number sentence.* *Ask the learner to work it either on the floor, on a piece of paper.* *Allow a second chance if necessary*	***Maximum of 2 points***	
			Attempts subtraction, gets a completely wrong answer, or fails to attempt the task	0
			Attempts the subtraction gets the tens correctly and the ones wrong, or vice versa, or numbers are in reverse order	1
			Subtracts one two-digit from the other number correctly	2
5. How many tens and ones are there in this number? 5. Immisa tobnaad iyo koowaad ayaa ku jira tiradan.	35 47 43 64	*Present only **TWO** numbers.* *Ask the learner to point at tens and ones. Allow them to use fingers or bundles if necessary*	***Maximum of 4 (2 points each)***	
			Does not at all identify tens and ones, or fails to attempt the task	0
			Identify tens and ones correctly, with assistance using the bundles and fingers exercise	1
			Identify tens and ones correctly with no assistance	2
			_____ out of 4	
6. Draw a triangle. Draw a circle 6. Sawir Saddex xagal. Hadana sawir goobo.		*Ask the learner to draw on a paper, the ground, on any surface that is available to them.* *Score the response for each shape as shown in the scoring guide.*	***Maximum of 4 (2 points each)***	
			Not able to draw the triangle/circle, or fails to attempt the task	0
			Draws a shape, but not the one that was required	1
			Draws the required shape correctly	2
			_____ out of 4	
7. Complete the sequence 7. Dhameystir sida ay isugu xigxigaan tirooyinkan.	2, 4, 6, __, 10, 12__, 16, 18	*Present the task with the assistance of a flash card* *Ask the learner to provide the missing numbers in the sequence*	***Maximum of 2 points***	
			Attempts the sequence and not able to supply the correct number, or fails to attempt the task	0
			Supplies 8 or 14 correctly, but not both.	1
			Supplies both 8 and 14 correctly	2

APPENDIX B
Hargeisa Somaliland Report on the 2010 Study

EDUCATION DEVELOPMENT CENTER

HARGEISA SOMALILAND

Somali Interactive Radio Instruction Program

(SIRIP)

Report on the 2010 Study

Prepared By: Dr. Mohamed A. Dirir

October 2011

Connecticut, USA

Introduction

The Education Development Center (EDC) launched Somali Interactive Radio Instruction Program (SIRIP) for out-of-school children in three areas inhabited by Somali speakers (Somaliland, Puntland, and South Central) in 2008. The goal of SIRIP was to provide an opportunity to children at school age who were not fortunate to have access to formal education. The reasons for lack of education opportunity for these children include internal displacement, poverty, and lack of parental support. To offer education services to these less fortunate children, EDC created learning centers in Somaliland, Puntland, and South Central Somalia. The centers were staffed with EDC-trained teachers who are skilled in using Interactive Radio Instruction programs.

In order to evaluate the effectiveness of the services for the out-of-school children, EDC has prepared an assessment tool which consisted of mathematics and Somali literacy. The instrument was not intended to measure individual student achievement, or to evaluate schools. But the goal was to examine the effectiveness of the program in general. Hence the assessment tool was a survey that used samples of schools and students within these schools. The sampled examinees were tested twice during the course of a single school year; pretest and posttest. The same test was used at both sessions, and there was no concern on test security because the assessment was secure at EDC headquarters. Neither students nor their teachers were able to see the test material before or after the testing sessions. Education Development Center conducted the first administration of the test in 2009 with first grade students who attended the learning centers in two zones; Somaliland and Puntland.

The results of the 2009 study have shown favorable impact of SIRIP on the literacy and numeracy of the served population. Encouraged by the outcome of the 2009 study, EDC commissioned abroader study that addresses more questions in 2010. Among the enhancements of the new study were the additions of two more grades; grades 2 and 3, and the expansion to two more zones that were served by SIRIP: South Central and Galmudug. More importantly, a control group of students who attend formal schools in served zones was added to the 2010 study.

The pretest was administered in November and December 2010. The post-test was administered in May 2011 using the same instrument with the same samples of students. The following sections of the document explain the design of the assessment, research methodology, the sampling plan, the test administration, the data analyses, and the study results.

Test Development

Purpose of the assessment

The assessment in mathematics and Somali literacy were intended to examine the effectiveness of SIRIP services in helping children who do not have an opportunity to enroll regular elementary schools. Its utilities also include informing public policy on non-formal education for out-of-school children. In addition, it was intended to help decisions about resource allocation and teacher preparation to alleviate certain weaknesses in SIRIP that could be exposed by the test.

Somali Literacy test

The Somali literacy test was based on two documents: The EDC literacy learning objectives developed for the formal schools served by SIRIP, and the curriculum frameworks developed for Somali speaking elementary students. The two documents were similar in content, breadth, and depth. At Grade 1, for example, both EDC and the Somaliland Ministry of Education emphasize on reading and reciting the Somali alphabet. For instance, 39 of the 68 Somali literacy objectives at EDC are recognition of Somali alphabet. Based on the weights given to learning the alphabet by both EDC and the Somaliland Ministry of Education, the test for the out-of-school children was heavily represented by alphabet recognition and reciting.

The Somali literacy test was built with guidelines from the Early Grade Reading Assessment (EGRA). It was recognized early in the decade that the early grades are not tested in most of the national and international assessments (PISA, NAEP). Moreover, it has been found in many studies that reading proficiency at early grades (1-3) is highly correlated with reading achievement at later grades and age. These findings suggest that intervention to increase reading proficiency at a young age would be beneficial at later years of schooling. However, one has to assess reading at early grades in order to launch effective remedial interventions at early grades. As a result, the EGRA protocols and procedures were developed under the sponsorship of the USAID and the World Bank. The main basis of the EGRA procedures are speed (fluency) and comprehension. In other words, most of EGRA tasks are timed. That implies test administrators need to measure, with accuracy, the speed at which each student recognizes or reads the alphabet and simple words.

Countries such Kenya, The Gambia, Senegal, Egypt, and Guyana have thus far used EGRA procedures to assess reading at early grades. Furthermore, EGRA was adopted in languages other than the English language such as Arabic by Egypt, French by Senegal, Kiswahili by Kenya, and Spanish by Peru. In these multi-country studies, the reliability and the validity of the EGRA test were supported. In addition, the Research Triangle Institute carried out studies to validate the EGRA procedures and support its reliability. As a result of these findings, EDC has decided to adapt EGRA for the assessment of grades 1-3 out-of-school students in Somali literacy. The Following chart presents the composition of the Somali literacy test:

Chart 1: Scores on Somali Literacy Tasks

Learning objectives	# of items	Number of score points	Assessment and expected responses
Print orientation	3	3	Recognizes the flow of reading text; begins at top left, flows left to right, and top to bottom
Alphabet recognition	100 letters	LCPM*	Recites the Somali alphabet (both consonants & vowels) as many as she/he can in a minute
Phonemic awareness	12	12	Recognizes phonemes said by the examiner among 12 phonemes presented
Reading words	100 words	WCPM**	Reads 50 1- and 50 2-sylluable words , as many as he/she can in a minute
Invented words	50	WCPM	Reads non-words as many as possible in a minute
Listening comprehension	5	5	Answers comprehension questions from the paragraph read to him/her
Reading *** comprehension	5	5	Answers comprehension questions after reading a short paragraph

*Letters correct per minute ** Words correct per minute *** Not tested in grade 1

The Somali literacy test was administered as a structured interview on one-on-one basis. Most of the items were timed, and the test was administered by EDC staff and EDC-trained teachers at the learning centers. The test administrators used stop watches for the timed tasks, and followed guidelines and scoring rubrics that were developed by EDC consultants. The answers were recorded on a paper that contained the test items first and later transferred to a scoring grid that has other information about the examinees. The Somali literacy test took about 15 minutes per examinee.

Mathematics test

The mathematics test was based on EDC mathematics objectives developed for SIRIP, and curriculum frameworks developed for Somali speaking primary school students. The two documents overlap in content focusing on the same mathematics skills and learning objectives. Both contain a large portion of counting, as well as basic addition and subtraction. For example, some of the skills tested in grade 1 included counting, reading and writing numbers 1-9, ordering numbers 1-9, place-value, recognizing shapes, adding 1-and 2-digit numbers, and subtracting 1- and 2-digit numbers. The skills tested in grade 2 included addition of 2-digit numbers, multiplication, division, and numeric progression. In grade 3, the test included place-value, numeric progression, addition, multiplication, division, geometry, and measurement.

The mathematics test for the study was developed from the contents in EDC's mathematics objectives and mathematics textbook for Somaliland Schools. The composition of the grade 1 test and its scoring rubrics are presented in chart 2. Charts of tests for grades 2 and 3 are presented in Appendix B. The mathematics test was administered as a structured interview on one-on-one basis. It was conducted by trained examiners from EDC staff and SIRIP partners, and took about 15 minutes per examinee. The test examiners followed guidelines and scoring rubrics that were developed by EDC. The results from the interview were recorded on a scoring grid, in which other student information was also recorded. The actual mathematics test is shown in Appendix A.

Chart 2: Scores on Mathematics Tasks in Grade 1

Learning objectives	# of items	Maximum score points	Assessment and expected responses
Counting numbers	2	7	Counts 1-20; starts at 9 and counts thru 15
Writing numbers	2	6	Writes single- and two-digit numbers
Addition	2	4	Adds one- and two-digit numbers without carrying over, and up to 99
Subtraction	2	4	Subtracts one- and two-digit numbers without carrying over, and up to 99
Place value	2	2	Indentifies tens and ones in two-digit numbers
Geometric shapes	2	2	Recognizes two simple geometric shapes
Number sequence	1	2	Recognizes number sequence and fills in missing numbers in a series with 20 at the highest

The Sample

The target population in the study was children who do not have chances to attend formal school, and are taught through SIRIP. At the time of the study, close to 30,000 children in Somaliland, Puntland, Galmudug, and South Central Somalia were enrolled in the program.Practically, it was not feasible to assess each child in the program so a sample was taken from each zone and region. Logically, this choice would make the cost of the assessment affordable, without any loss of information and generalization. Ten regions from the four zones were selected for the study, with number of regions from each zone varying from one in Galmudug to four in Somaliland. Moreover, each region was represented by a single town that has several formal schools and SIRIP centers. The only exception was at the Lower Shabbelle region, which was represented by three towns: Merka, Carbiska, and Ceelasha.Table 1 presents a summary of the number of students pre-tested in each region and town, along with the number attended in formal schools and the number enrolled SIRIP center.

Table 1: Examinee Counts by Region/Town and Type of School

Zone	Town	Grade 1		Grade 2		Grade 3		Total
		Formal	IRI	Formal	IRI	Formal	IRI	
Galmudug								
	Galkaio					128	131	**259**
Puntland	**Bosaso**	40	40	40	40	39	40	**239**
	Galkaio	29		60	82	38	39	**248**
	Garowe	63	30	64	58	35		**250**
Somaliland	**Borama**		80	61	61	60	42	**304**
	Burco	40	40	60	61	40	62	**303**
	Hargeisa	42	72	137	77	480	31	**839**
	Laascaanood	64		32	64	100		**260**
South Central	**Carbiska**				55		54	**109**
	Ceelasha				70		58	**128**
	Merka				41		45	**86**
	Mogadishu	144		146		146		**436**
Total		**422**	**262**	**600**	**609**	**1066**	**502**	**3461**

As shown in the tables, a total of 3461 examinees were tested in December 2010; 684 in grade 1, 1209 in grade 2, and 1,568 in grade 3. The table also highlights that the number of students tested in formal schools were markedly higher than the number of students tested in SIRIP learning centers in grades 1 and 3. Additionally, some of the regions/towns contain empty cells, which could make some of the comparisons among school types difficult. For example, it will not be possible to compare Formal and SIRIP schools in all regions in South Central, or grades 1 and 3 in Laascaanood, or grade 3 in Garowe, or grades 1 and 2 in Galmudug.

In the posttest, which was administered in May 2011, the numbers tested in some locations have changed. In the towns where the differences in counts existed, the number of students in the pretest sample was more than the number of students in the posttest sample.The numbers of children in the posttest were 569, 1064, and 1317 respectively for 1st grade, 2nd grade, and 3rd grade. Expectedly, the formal schools have shown slightly better retention rates than the SIRIP learning centers. The changes in the numbers of enrolled or served students could be attributed to political instability in the areas where the schools/centers were located. There could have been continual insecurity and persistent internal displacement in these areas. The largest changes occurred in the South Central zone while the changes in Somaliland were negligible.

The ages of the target population varied because each child might have left formal school at different point in time due to unexpected circumstances or had never attended school. The distribution of the age of the control group was similar to that of the target group. The median ages of the sample (both groups) were 9 years for grade 1, 10 for grade 2, and 11 for grade 3. The comparable median ages in developed countries are 6, 7, and 8 respectively for grades 1, 2, and 3.

In general, the livelihood might be different between children who attend formal schools and children who attend SIRIP centers. Some of the children served by SIRIP might be engaged in some kind of work for living. Some might be street peddlers, some might be in the shoe shinning service, and others might be waiters. The proficiency levels in numeracy and Somali literacy of the children in SIRIP centers might also varied. Theymight have includedsome who have never attended school and others who may have left school at different grades and at different ages. Hence, some would have spotty knowledge in basic mathematics and Somali literacy, while others might have none. Due to these differences among the group served, extra caution was used in sampling this heterogeneous population.

Finally, the circumstances under which the SIRIP students were in and the settings in which they were taught were markedly different from their peers in regular schools. The SIRIP population faces a host of challenges in schooling, most daunting of which is lack of permanent home. These students might have been displaced from their homes one or more times, and face new beginnings in living conditions and in education each time they migrate. And the detrimental effect of mobility on education and student achievement is well documented. Logically, many of the students in SIRIP might have been displaced from homes where they had attended regular schools with normal teaching-learning environment. They would reasonably need time and effort in adapting to the new setting in SIRIP, and the success in the adaptation could vary among students. Also, this process could have adverse effects on their academic performance and achievement.

Data Analysis

The purpose of the study was to examine the effectiveness of SIRIP in teaching out-of-school children Somali literacy and numeracy. The study was not set to proof that SIRIP is superior to regular classroom learning, but was intended to assess if the program has delivered learning experiences that was not inferior to the regular classroom learning experiences. In other words, the objective of the study was to proof that SIRIP is as effective as regular teaching. To that end two sets of analyses were conducted. First the average statistics and percentages for the whole sample were computed for the pretest and the posttest, and performances by type of school, zone, age group, and gender were examined. Second, Repeated Measures Analysis of Variance (ANOVA) was employed to assess the significances of differences, if any, in performances in pretest and posttest for students who had both scores. The main comparison was by school type, which reflects the instruction delivery mode (Formal or SIRIP.) Rationally, the null hypothesis in the ANOVA was that the instruction time of formal schools was more effective than the instruction time of SIRIP. Rejecting this null hypothesis would indicate that SIRIP is at least as good as the formal school. In addition to the school type, the significance of differential effects by gender and age, as well as their interactions with school type, were also examined.

For the Somali literacy, the scoring procedure on Chart 1 was used. As children at the different grades are expected to differ in literacy proficiency levels, it might be practical to focus at different levels of literacy results for each grade. At 1st grade, for example, it might be sensible to focus easiest parts of the test such text orientation, letters correct per minute (LCPM), phonemes. For the 3rd grade, on the other hand, the focus could be on 1- and 2-syllable words (WCPM), non-words, listening, and reading.

For the mathematics test, the scores for each grade were grouped into math domains. In grade 1, for example, five clusters were formed: Number proficiency, addition /subtraction, placing value, geometric shapes, and number sequence. For number proficiency and addition /subtraction, the average scores were computed. For the other three domains, which were scored in 0-2 rubric, the percent of students who received a score of 1 or 2 were computed. These five indicators were used to evaluate the performance of the 1st grade students on the mathematics test.In grade 2, the mathematics item scores were grouped into four sections: Addition, multiplication, date, and number sequence. Average scores were computed for the first two sections while percent of 1 and 2 scores were computed for the last two. Similarly, grade 3 mathematics scores were grouped into four sections: Numbers, addition, multiplication, and geometry and measurement. The average scores were computed in all

sections of the grade 3 mathematics. Finally, average mathematics total scores were computed in each grade.

Results

Comparisons of average scores

In this section, the analyses results of the pretest and posttest data are presented.Table 2 presents the summary of the Somali literacy test for 1st grade by zone. As the test was developed following the EGRA procedures, the results are presented in EGRA units.The South Central zone did not have SIRIP schools. The last row (All) represents the performance of all students regardless of school type or zone. It shows that students made achievement progress between the pretest and posttest administrations. At this grade, the gains were greater in the easy tasks (LCPM, Phonemes) than in the harder section (WCPM, Non-words). We can examine the relative performance of the SIRIP and Formal schools in the row for the school type. About 66 percent of the students in SIRIP knew the direction to which the text flows during the pretest. That number went up by 14% during the posttest. Further, the average scores for the listening went up more for SIRIP than for formal schools.

Table 2: Average Literacy Scores for 1st Grade

		ORIENTATION: % CORRECT ALL 3		LETTERS/MIN		PHONEMES: % CORRECT		1-SYLLABLE WORDS/MIN		2-SYLLABLE WORDS/MIN		NONWORD/MIN		LISTENING	
		PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Puntland	IRI	54	72	14	40	16	37	8	14	4	10	5	8	2.9	3.7
	Formal	83	89	29	49	63	97	11	23	8	18	7	15	4.0	4.6
Somaliland	IRI	70	86	38	42	53	81	24	23	22	18	21	16	3.0	4.1
	Formal	96	97	36	70	70	84	16	30	11	36	10	30	3.8	4.5
South Central	Formal	97	96	46	64	74	83	22	30	25	30	22	26	4.2	4.7
All Zones	IRI	66	80	30	41	40	57	20	20	18	15	17	13	3.0	3.9
	Formal	93	95	38	64	70	86	16	28	14	30	12	25	4.0	4.6
All Students		**82**	**90**	**35**	**58**	**59**	**78**	**18**	**26**	**15**	**25**	**14**	**21**	**3.6**	**4.4**

Table 3 summarizes the literacy results for 2nd grade. All students in the sample made gains in achievement in all units. The gains were similar for both subgroups; SIRIP and Formal. This could be an indication that the two teaching methods are equally efficient.

Table 3: Average Literacy Scores for 2nd Grade

		ORIENTATION: % CORRECT ALL 3		LETTERS/MIN		PHONEMES: % CORRECT		1-SYLLABLE WORDS/MIN		2-SYLLABLE WORDS/MIN		NONWORD/MIN		LISTENING		READING	
		PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Puntland	IRI	81	90	32	70	83	81	15	34	12	27	10	24	4.0	4.5	1.9	3.2
	Formal	86	98	40	65	85	98	17	31	15	27	12	20	3.7	4.7	2.0	3.7
Somaliland	IRI	94	99	71	71	84	91	37	36	30	29	27	45	4.4	4.8	2.3	4.2
	Formal	94	99	60	70	86	87	30	33	24	29	23	29	4.4	4.8	2.1	4.3
South Central	IRI	67	61	64	74	78	80	29	36	24	27	17	19	3.7	3.3	2.6	3.1
	Formal	99	92	70	75	88	90	35	33	30	28	20	19	4.0	4.0	4.6	3.9
All Zones	IRI	83	87	58	72	82	86	27	35	23	28	19	33	4.1	4.3	2.3	3.6
	Formal	93	97	57	69	86	90	28	32	23	28	19	25	4.1	4.7	2.7	4.1
All Students		**88**	**92**	**57**	**71**	**84**	**88**	**28**	**34**	**23**	**28**	**19**	**29**	**4.1**	**4.5**	**2.5**	**3.9**

Table 4 shows similar results for the literacy test in 3rd grade. At this grade, it might be sensible to focus the comparative results at the high end or more difficult sections such as reading and listening. In all other sections, SIRIP students gained a little while formal school students did not gain at all or slightly lost ground. In the reading and listening sections, however, both groups gained scores. But the SIRIP gains were much higher than the gains for the other students.

Table 4: Average Literacy Scores for 3rd Grade

		ORIENTATION: % CORRECT ALL 3		LETTERS/MIN		PHONEMES: % CORRECT		1-SYLLABLE WORDS/MIN		2-SYLLABLE WORDS/MIN		NONWORD/MIN		LISTENING		READING	
		PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Galmudug	IRI	78	100	35	74	63	58	31	37	25	29	23	27	3.0	4.5	3.7	3.1
	Formal	95	99	74	93	98	0	46	47	30	42	29	38	4.3	4.9	4.2	4.5
Puntland	IRI	79	100	49	63	80	91	24	27	19	21	17	19	3.3	4.3	0.5	3.9
	Formal	100	95	54	69	95	98	27	36	23	30	18	27	3.5	4.6	4.2	4.1
Somaliland	IRI	99	96	66	76	88	90	29	36	25	30	23	26	4.3	4.8	2.1	4.4
	Formal	98	99	84	72	83	90	41	33	35	25	29	24	4.2	4.7	3.6	4.5
South Central	IRI	88	80	79	81	92	95	47	51	33	32	27	24	4.1	4.5	3.6	4.1
	Formal	99	80	87	56	89	64	40	25	34	22	26	16	3.8	3.6	4.6	3.6
All Zones	IRI	90	94	63	75	86	88	35	39	27	29	23	25	3.9	4.6	2.5	4.0
	Formal	98	96	79	72	88	87	40	34	32	28	27	25	4.1	4.5	3.9	4.3
All Students		**95**	**95**	**72**	**73**	**87**	**87**	**38**	**36**	**30**	**28**	**26**	**25**	**4.0**	**4.6**	**3.4**	**4.2**

The results for 1st grade mathematics are presented in table 5. In all sections in math, the gains for the SIRIP schools were higher than the gains for the formal schools. The gain in total math scores, for example was 6.0 points (10.2 – 16.2) for SIRIP and 2.8 points for formal schools. That implies the SIRIP schools gained more than twice as much as the formal schools gained. Similarly, the scores for the

Sequence section went up by 33 percent for SIRIP schools and 11 percent for formal schools. The pattern of the differential gains between the two groups was evident in all math domains in 1st grade. We will test the significance of these differences later in the ANOVA section.

Table 5: Average Mathematics Scores for 1st Grade

		MEAN SCORE						PERCENT SCORED 1 OR 2					
		NUMBERS		ADDITION		TOTAL		PLACE VALUE		RECOGNIZE SHAPE		SEQUENCE	
		PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Puntland	IRI	5.6	9.1	1.4	3.0	8.2	14.8	27	52	29	70	19	28
	Formal	7.9	9.7	3.2	4.1	14.0	17.7	62	80	72	96	43	46
Somaliland	IRI	7.7	9.1	1.7	3.8	11.0	17.3	23	70	56	74	19	71
	Formal	10.6	10.3	3.5	4.1	17.3	18.7	51	76	97	98	41	58
South Central	Formal	9.4	10.2	3.4	4.5	15.5	18.8	34	53	76	88	62	74
All Zones	IRI	7.1	9.1	1.6	3.4	10.2	16.2	24	62	49	73	19	52
	Formal	9.4	10.1	3.4	4.3	15.7	18.5	48	70	83	95	49	60
All Students		**8.5**	**9.8**	**2.7**	**4.0**	**13.5**	**17.8**	**39**	**67**	**69**	**88**	**37**	**58**

The mathematics results for 2nd grade are summarized in table 6. The score gains for SIRIP and formal schools were the same or close in all areas. This suggests that the effects of the two instructional methods might have been similar.

Table 6: Average Mathematics Scores for 2nd Grade

		MEAN SCORE				PERCENT SCORED 1 OR 2				TOTAL SCORE	
		ADDITION		MULTIPLICATION		MONTHS		SEQUENCE			
		PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Puntland	IRI	2.6	4.5	1.7	3.0	45	78	15	37	5.3	9.3
	Formal	3.3	4.1	0.9	2.2	25	76	18	30	4.7	7.9
Somaliland	IRI	2.8	2.8	1.3	1.5	29	39	13	17	4.5	5.1
	Formal	2.7	2.9	1.0	1.8	32	48	6	22	3.9	5.6
South Central	IRI	3.4	3.1	2.1	2.2	49	79	29	43	6.6	6.7
	Formal	4.2	3.7	2.1	2.4	88	77	40	49	8.4	7.8
All Zones	IRI	2.9	3.4	1.7	2.1	40	60	19	29	5.3	6.7
	Formal	3.2	3.4	1.3	2.0	46	61	20	28	5.2	6.6
All Students		**3.1**	**3.4**	**1.5**	**2.0**	**43**	**60**	**19**	**29**	**5.3**	**6.6**

The third grade mathematics results are shown in Table 7. Similar to grade 2, the gains in math scores for SIRIP and formal schools were close in most of the subsections tested. The gains in total math, however was notably larger for SIRIP schools (6.1 to 11.3) than for formal schools (6.6 to 9.9).

Table 7: Average Mathematics Scores for 3rd Grade

		NUMBERS		ADDITION		MULTIPLICATION		GEOMETRY & MESUREMENT		TOTAL SCORE	
		PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Galmudug	IRI	1.0	2.1	1.3	2.5	0.7	1.7	0.1	2.9	2.3	9.3
	Formal	2.8	3.4	3.3	3.4	1.5	1.8	0.3	0.9	7.6	9.6
Puntland	IRI	1.4	1.3	1.6	2.1	1.4	0.9	0.5	0.5	4.9	4.7
	Formal	2.4	2.9	2.5	3.0	1.2	1.4	1.1	1.8	7.3	9.2
Somaliland	IRI	2.6	3.7	2.5	3.8	0.4	2.2	0.6	4.1	5.9	13.8
	Formal	2.1	3.3	2.3	2.9	0.6	1.6	0.9	2.1	5.7	9.7
South Central	IRI	2.5	3.0	2.8	2.8	1.5	2.1	2.3	4.1	9.2	12.0
	Formal	3.1	3.1	3.1	3.4	1.7	2.0	0.5	3.2	8.3	11.7
All Zones	IRI	2.3	2.9	2.3	3.1	0.9	1.9	1.2	3.4	6.1	11.3
	Formal	2.4	3.2	2.6	3.1	1.0	1.6	0.8	2.1	6.6	9.9
All Students		**2.3**	**3.1**	**2.5**	**3.1**	**1.0**	**1.7**	**1.0**	**2.6**	**6.4**	**10.4**

The results for all grades and both subjects indicate that the achievement gains between the pretest and the posttest were close. In fact, the gains by SIRIP schools were slightly higher in many instances. This implies the instructional method implemented in SIRIP was not less effective than the instructional methods used in formal schools. Next, we test the significance of some of the differences in score gains between SIRIP and formal schools.

Repeated Measures Analysis of Variance

As was mentioned earlier in the report, the second phase of the analysis was to test the significance of the score differences between pretest and posttest. Repeated Measures ANOVA was used for this purpose, and only students with scores at both times were included in the analysis. The number of matched examinees varied among grades; 1061 in grade 3, 871 in grade 2, and 512 in grade 1. The main goal in this analysis was to examine whether students achievement gains in SIRIP schools are lower than the achievement of students in formal schools. This was captured in instruction or school type crossed with time or repeated test. The time indicator represents the re-test condition, and examines whether students' scores have increased between the pretest and the posttest. In other words, time assesses the effectiveness of the instruction between the two testing times for both types of schools.

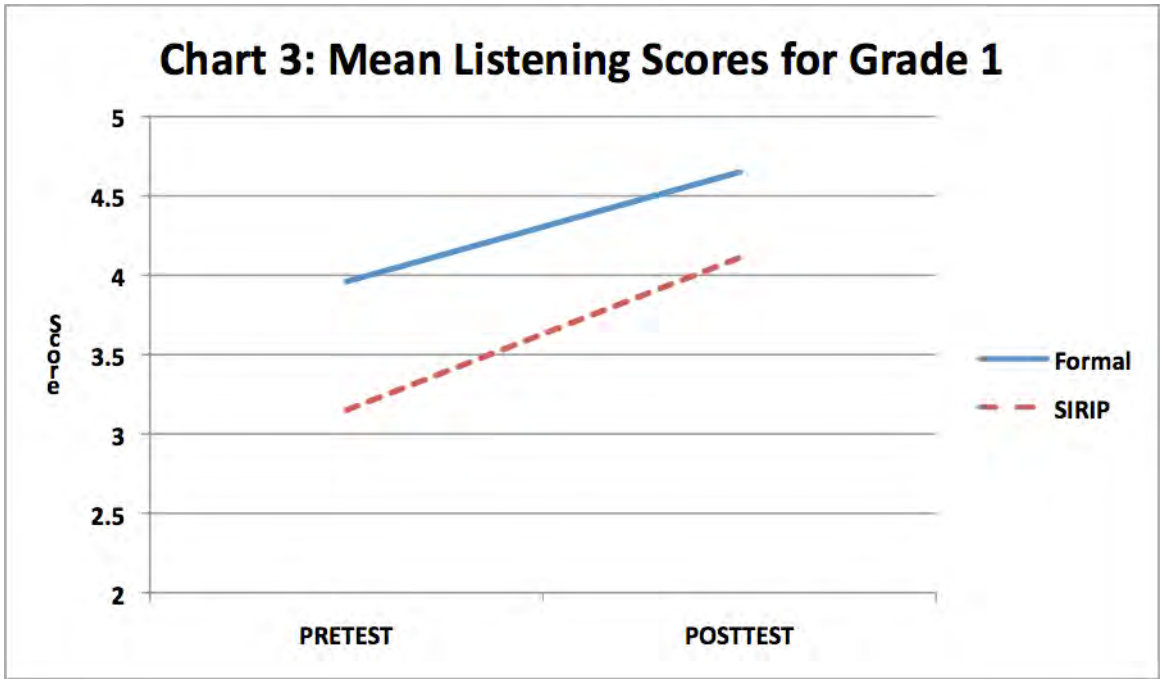
The school type obviously assesses the effects of the instructional program on scores. It tests the significance of the differences in mean scores between SIRIP students and the control sample. The interaction between school type and time enables to test whether the instructions received by the two groups between the pretest and posttest were differentially effective. Two other indicators were added to this analysis: student's gender and age. For the age, two age groups were formed in each grade. The older half was called 'Old' and the younger half was called 'Young'. The significance of differences between the groups was also examined along with their interactions with time and school type. The ANOVA results for main variables such as reading, listening, some EGRA scores, and total math are presented in body of the report. The ANOVA tables for the rest of the scores are reported in Appendix B.

The first ANOVA table, which contains the results of listening test for grade 1, is presented below. Generally ANOVA tests the significance of differences in mean scores among groups. The first row of the table is the significance test of the mean score difference between school types, and there is significant difference as indicated by the F value. The second row is the significance test of the score gains for all subjects. Put it differently, TIME effect assesses the significance of score change due to instruction between the pretest and the posttest. Expectedly, the TIME effect (instruction) is significant in most of scores. The third line tests whether the TIME between the two exams has affected the school type differently. This answers the question: Have the formal school instruction produced better results than the SIRIP instruction? The F Value indicates that the interaction was not significant. Hence we can conclude that the two instruction modes did not result in significant differences in listening scores.

Table 8: Repeated Measures Analysis of Variance
Listening Grade 1

Source	DF	Type III SS	Mean Square	F Value	Pr > F
TYPE (Between Subjects)	1	86.54	86.54	44.52	<.0001
TIME (Within Subjects)	1	128.64	128.64	137.15	<.0001
TIME*Type	1	3.49	3.49	3.72	0.0544
TIME*Gender	1	0.38	0.38	0.41	0.5236
TIME*AGEGROUP	1	0.86	0.86	0.92	0.3378
TIME*Type*Gender	1	1.60	1.60	1.71	0.1921
TIME*Type*AGEGROUP	1	0.65	0.65	0.69	0.4067
Error(TIME)	494	463.36	0.94		

Although the interaction was not significant, it might be helpful to compare the means of the groups in the pretest and the posttest. Chart 3 highlights the changes in listening scores of SIRIP and non-SIRIP students. As can be seen at the slopes of the lines in the chart, the SIRIP students were gaining at a rate higher than the students in the formal schools.



Tables 9 through 11 present the ANOVA results for different scores and grades. In table 9 the difference between means for the school types was significant, and the means between testing times was significant. The only other significant effect was the interaction among time x type x gender. This implies the changes in scores between pretest and posttest was different between boys and girls, and also

Table 9: Repeated Measures Analysis of Variance
One-Syllable words for Grade 2

Source	DF	Type III SS	Mean Square	F Value	Pr > F
TYPE (Between Subjects)	1	2887.53	2887.53	8.17	0.0044
TIME (Within Subjects)	1	12613.58	12613.58	36.25	<.0001
TIME*Type	1	46.44	46.44	0.13	0.715
TIME*Gender	1	997.15	997.15	2.87	0.091
TIME*AGEGROUP	1	1.14	1.14	0	0.9544
TIME*Type*Gender	1	2195.28	2195.28	6.31	0.0123

TIME*Type*AGEGROUP	1	2.84	2.84	0.01	0.9281
Error(TIME)	647	225143.96	347.98		

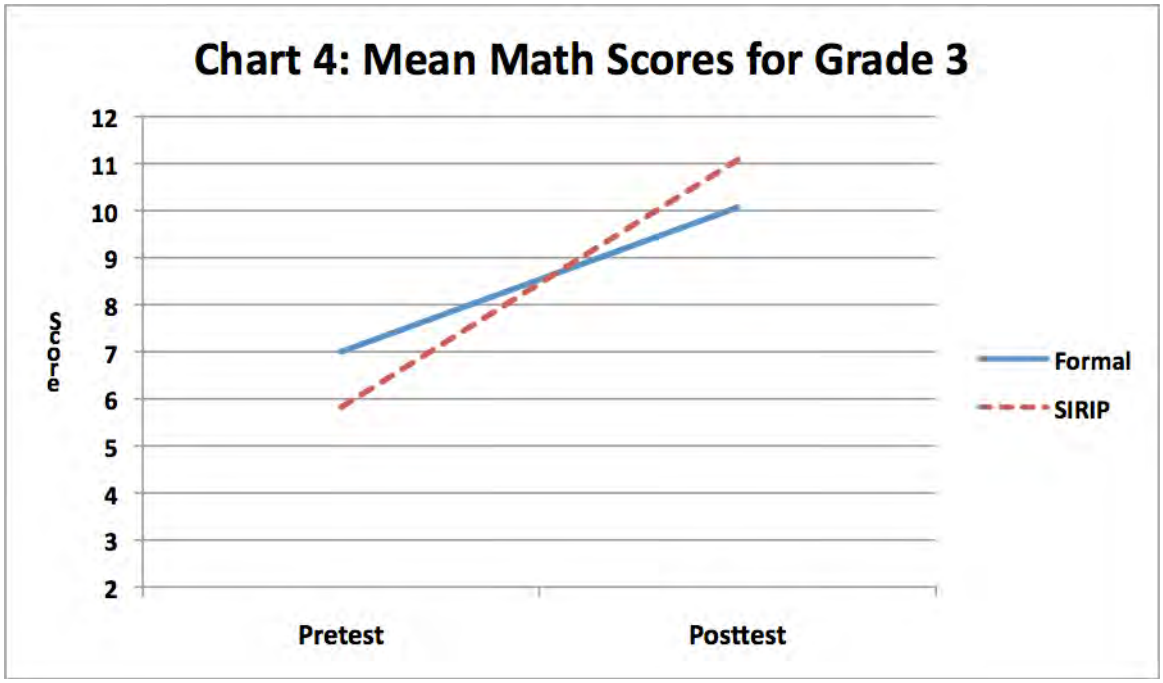
depended on which school type they have attended. A closer look of the data reveals that scores for boys and girls in formal schools were close in the pretest. But boys scored higher than girls in the posttest. For SIRIP students, on the other hand, the boys scored slightly higher than girls in the pretest, and this difference decreased in the posttest.

In table 10, all independent variables and their interactions, except TYPE and TIME x Gender, were significant. This suggests that instruction time had notable effect on score change, and its interaction with other variables (except gender) was also significant. Hence we could say the mathematics instruction was effective, and had differential effects on school type and age group.

Table 10: Repeated Measures Analysis of Variance
Mathematics for Grade 3

Source	DF	Type III SS	Mean Square	F Value	Pr > F
TYPE (Between Subjects)	1	3.59	3.59	0.12	0.7256
TIME (Within Subjects)	1	8535.66	8535.66	375.47	<.0001
TIME*Type	1	591.32	591.32	26.01	<.0001
TIME*Gender	1	27.77	27.77	1.22	0.2693
TIME*AGEGROUP	1	130.68	130.68	5.75	0.0167
TIME*Type*Gender	1	112.69	112.69	4.96	0.0262
TIME*Type*AGEGROUP	1	93.80	93.80	4.13	0.0425
Error(TIME)	1064	24188.09	22.73		

The results in table 10 are presented graphically on chart 4. The SIRIP students were performing lower than their peers at the pretest, but performed higher after five months of instruction. There are other findings in the data that portray similar situations where SIRIP students gained ground on non-SIRIP students.



The AVOVA result grade 3 for reading is presented in table 11. The school type, time and their interaction were all significant. As explained earlier in the report, this indicates that SIRIP and non-SIRIP school means were different in general, and changes in scores from pretest to posttest were different

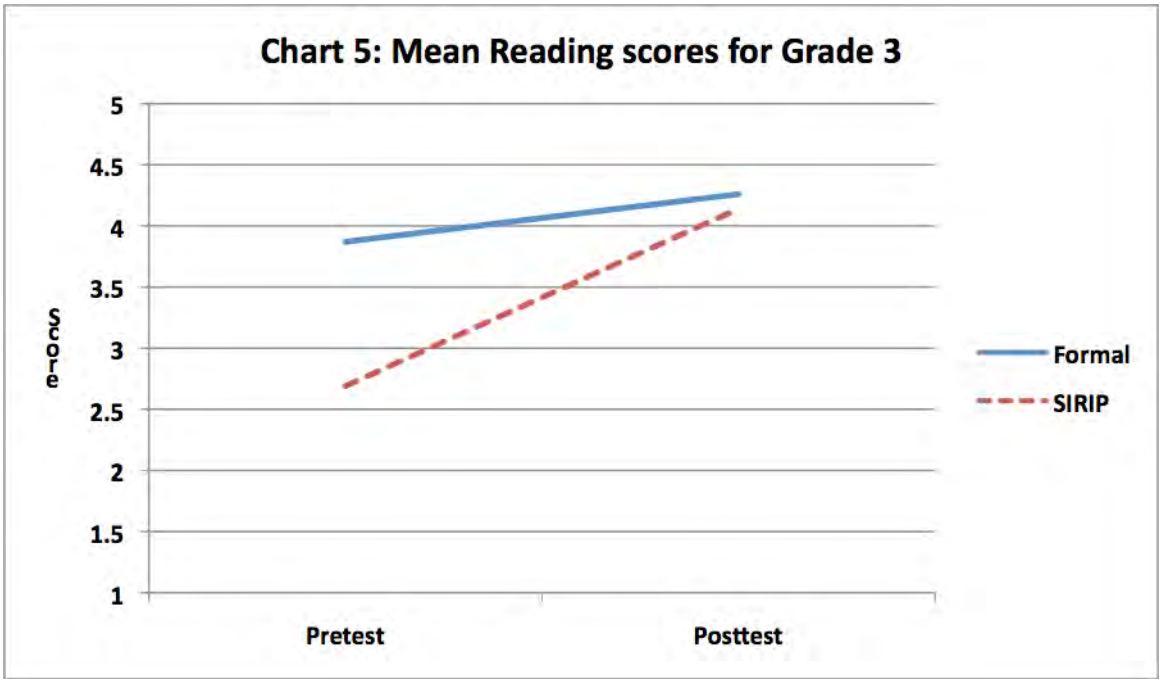
Table 11: Repeated Measures Analysis of Variance
Reading for Grade 3

Source	DF	Type III SS	Mean Square	F Value	Pr > F
TYPE (Between Subjects)	1	167.14	167.14	43.60	<.0001
TIME (Within Subjects)	1	336.25	336.25	171.47	<.0001
TIME*Type	1	113.01	113.01	57.63	<.0001
TIME*Gender	1	1.30	1.30	0.66	0.4158
TIME*AGEGROUP	1	23.39	23.39	11.93	0.0006
TIME*Type*Gender	1	0.10	0.10	0.05	0.8197
TIME*Type*AGEGROUP	1	5.39	5.39	2.75	0.0976

Error(TIME)	894	1753.16	1.96		

for the two groups as well. This could imply that the effects of the instructions were different. The interaction between TIME and age group was also significant, which could mean TIME had different effects on age.

The results in table 11 are shown in a graphical form on chart 5. Again, average reading for SIRIP schools in grade 3 got closer to average reading for non-SIRIP school.



Conclusion

The purpose of this study was to examine the effectiveness of SIRIP as a tool of instruction for children who were not able to attend formal schools. A sample of 3500 students from SIRIP schools and formal schools in grades 1, 2, and 3 were selected for the study. All students took a mathematics test and a Somali literacy test in December 2010. After five months of instruction, the same test was administered to all students in May. The SIRIP and non-SIRIP students did not have many things in common except grade level and perhaps age. Their livelihoods, homes, learning environments, security and safety, and social wellbeing might all have been different. Additionally, SIRIP was not the choice for those who enrolled but the only alternate to an unavailable formal school.

The literacy test was based on EGRA tools, which mainly focus on fluency in early grades. The mathematics test was based on EDC's math objectives and Somaliland's curriculum and textbooks. Students were assessed in eight section of ERGA, and five sections of math problems. The EGRA test was structured interview, while the math test was a mixture of interview and work-alone formats.

The results show that SIRIP students have gained from learning more than non-SIRIP students. Tables 2 through 7 present data that support the average gains for SIRIP students were greater or equal to those of their peers in formal schools. The ANOVA tables (8-11) show the significance tests of the differences in gains between SIRIP and non-SIRIP students. In all cases presented (and many in Appendix B), the score gains for SIRIP students were greater than the score gains for non-SIRIP students. Charts 3 through 5 highlight the differential gains between the two groups. In all cases presented, the SIRIP students were performing lower the beginning of the school year, but closed the gap in performance between them and the non-SIRIP children within five months. It is tempting to imagine how gain scores of the two groups would stack up if the comparisons were for full school year. In fact, this could be predicted with statistical extrapolation.

At the onset of the study, the goal was to evaluate SIRIP, and see if it is less effective than formal schools. But the outcome of the study portrays SIRIP as an effective instructional tool that would help the less fortunate children who could not get into regular schools. It might serve well other groups of children in addition to internally displaced. For example, families who live in remote areas in the country side might benefit from a program like SIRIP. Although this is an education policy issue beyond the scope of the study, but the evidence to support such policy is presented here.

APPENDIX C
Functioning IRI Learning Centers Across Somalia

Functioning IRI Learning Centers across Somalia

#	Partner's name	IRI learning centers established	Zone	Region	Location	Functional IRI learning centers post-SIRIP	Area		Transferred
							Rural	Urban	
1	Says	23	Somaliland	Awdal	Borama	20	3	17	Formal School
2	Soydavo	16	Somaliland	Togdheer	Burco	9	0	9	Community
3	Togyovo	10	Somaliland	Togdheer	Burco	6	2	4	Togyovo
4	Ayvo	7	Somaliland	Sool	Las-Anod	3	2	1	Communities
5	Sowda	7	Somaliland	Marodijeex	Hargeisa	5	3	2	Sowda & Communities
6	Hyda	9	Somaliland	Marodijeex	Hargeisa	3	0	3	Hyda
7	Socsa	6	Somaliland	Marodijeex	Hargeisa	0	0	0	All Centers Closed
8	Safe	87	Scz	Banadir	Muqdisho	20	0	20	Community
9	Scc	33	Scz	Gal Gaduud	Muqdisho	7	7	0	Community
10	Saredo	33	Scz	Lower Shabele	Merka	33	26	7	Community
11	Sosda	23	Galmudug	Mudug	South Galkayo	12	12	0	Community
12	Kfcc	10	Scz	Galgaduud	Dhusmareb	3	0	3	Community
13	Sard	12	Scz	Banadir	Muqdisho	5	0	5	-
14	Sysa	13	Puntland	Nugal	Garowe	7	3	4	Nrc Formal Sc
15	Yodo	18	Puntland	Bari	Bosaso	14		14	Unicef/Nrc
16	Nado	18	Puntland	Mudug	N. Galkayo	10	7	3	Moe
17	Pmwdo	22	Puntland	Mudug	N. Galkayo	21	0	21	Nrc/Pmwdo/Afs
	Subtotal	**347**				**178**			
					Quranic Schools				
18	Hanad	15	Somaliland	Marodijeex	Hargeisa	15	5	10	Community
19	Andp	15	Somaliland	Marodijeex	Hargeisa	15	7	8	Community
20	Iida	30	Scz	Galgaduud	Dhusmareb	12	10	2	Community
21	Sce	17	Puntland	Nugal	Garowe	12	0	12	Community
	Subtotal	**77**				**54**			

APPENDIX D
EDC/SIRIP Survey Results on Teacher Quality

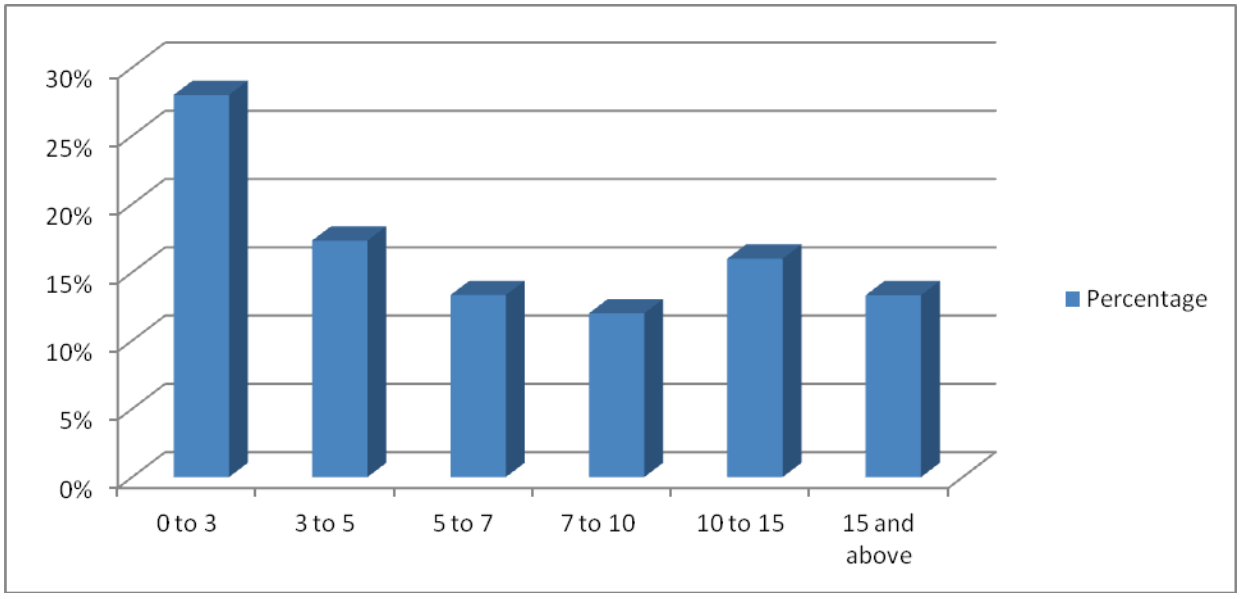
EDC/SIRIP SURVEY RESULTS ON TEACHER QUALITY

EDC/SIRIP project conducted a survey on teachers' quality, qualification and professional development needs in Somaliland on the 9th – 12th of January, 2011. The survey assessed 150 teachers from the 6 regions of Somaliland (Sanaag, Sool, Togdher, Sahil, Marodijeh and Awdal regions) with the approval of Ministry of Education. Mr. Ibrahim Khalif representing the MOE went with EDC staff to conduct the surveys.

The teacher's years of expertise varied between a year to fifteen years and even more. The table below shows the number of teachers and their years of experience:

Years of experience	Number of teachers
0-3 years	42
3-5 years	26
5-7 years	20
7-10 years	18
10-15 years	24
15 years and more	20
Total	150

The following graph shows the percentage of the different teaching experience groups:-



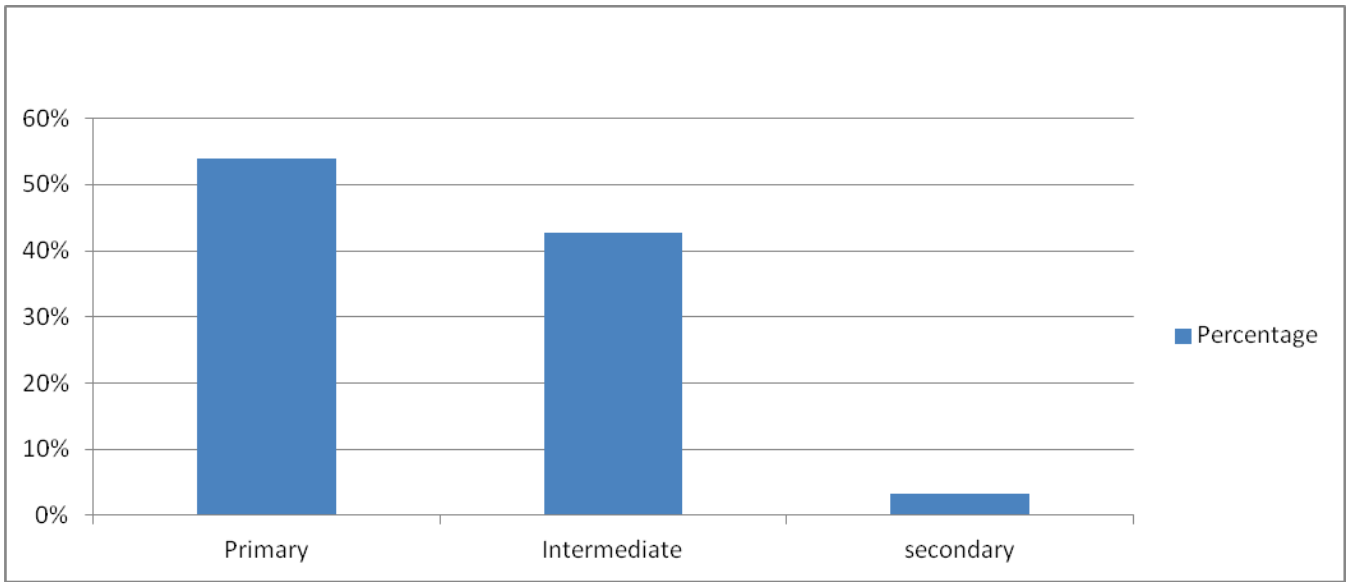
The graph shows that 28% of the teachers had less than 3 years teaching experience, while 17% of the teachers have 3 to 5 years of experience, roughly 13% had 5 to 7 years of experience, while 12% have 7 to 10 years of teaching experience, 16% have 10 to 15 years of experience

and 13% have 15 and above years of experience. Most of the teachers are young, untrained teachers, and are in dire need of professional development.

Grade levels in which teachers teach.

Grades	Number
Primary	81
Intermediate	64
Secondary	5

The graph below shows, the percentage of teachers teaching the different school levels.

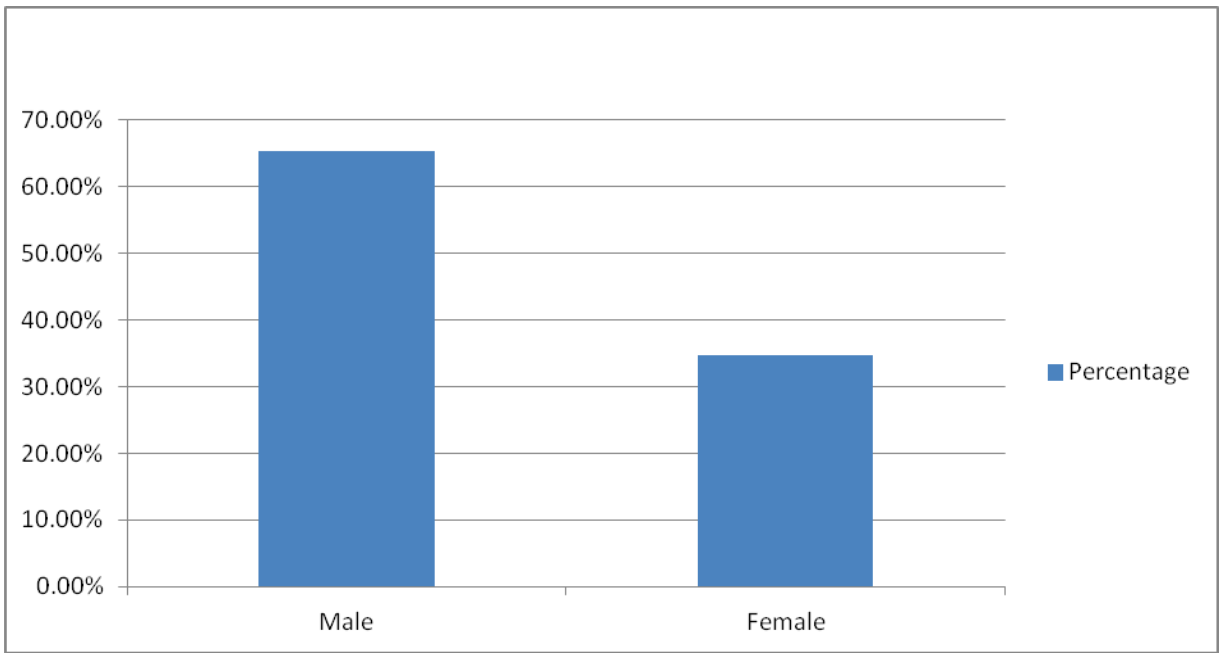


This graph shows 96.67% of the teachers were primary and intermediate teachers. Only five of them were secondary teachers.

In the following table, we disaggregated the teachers into male and female.

Gender	Number
Male	98
Female	52

The following graph shows the percentage of male teachers and female teachers in the sample teachers

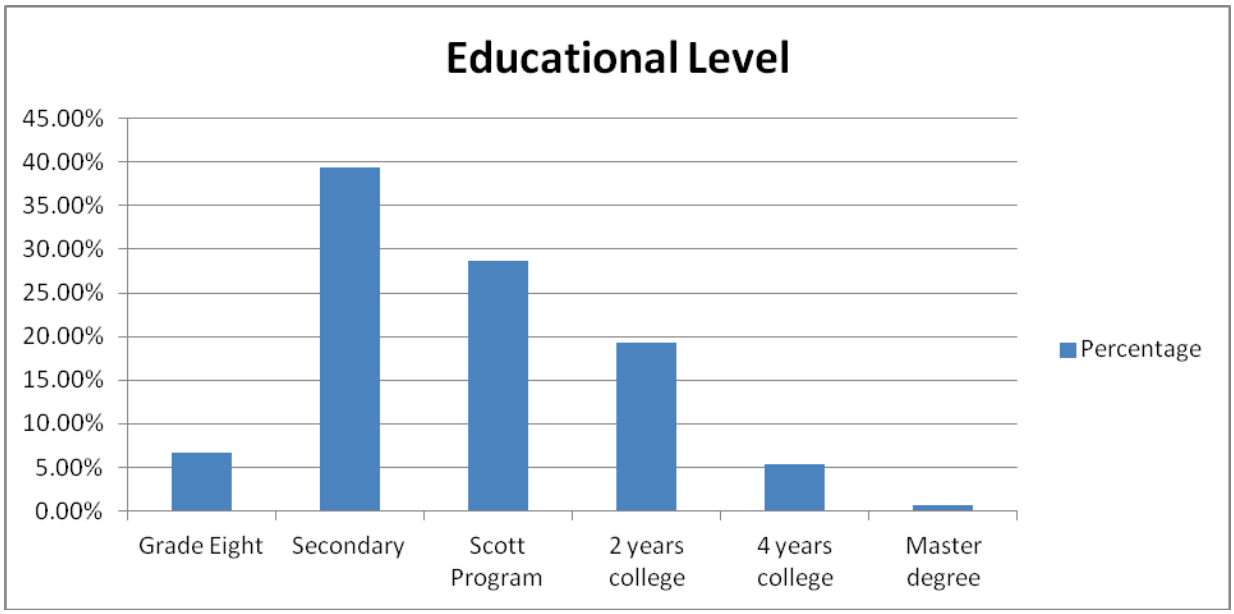


This graph shows that there are more male teachers than female teachers teaching in Somaliland schools. 65.33% of the teachers are male, while only 34.67% are female teachers

In the following table, we can see the education level of the teachers and the number of teachers under each educational level.

Educational level	Number of teachers
Grade eight	10
Secondary	59
Scott program	43
2 years college	29
4 years college	8
Master degree	1
Total	150

The following graph shows the percentage of teachers under each educational level.

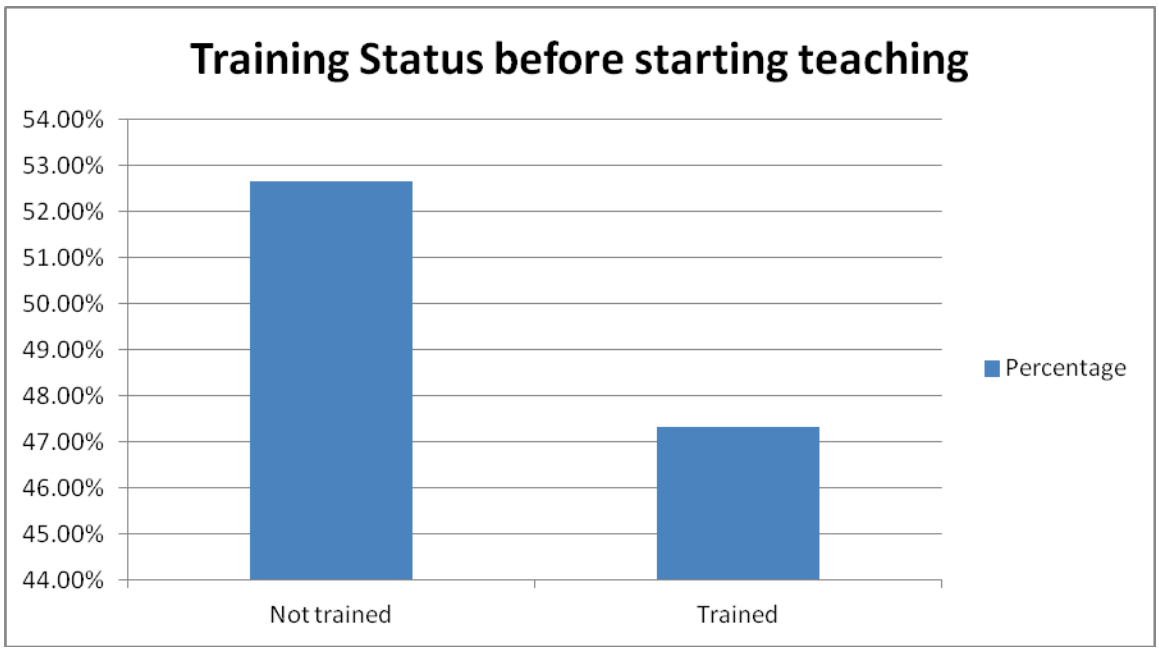


The graph reveals that almost half of the teachers have a secondary level education and lower. Roughly 29 % of the teachers had the SCOTT training program and 19 % of the teachers had two years in a teaching college. The graph also shows that only 6 % of the teachers had four years in a teaching college and there was one with a Masters degree. These results indicate that there is high demand for capacity building for teachers. Teachers need quality training to improve the teaching and learning in Somaliland schools. Majority of the teachers are not certified nor qualified to teach. There is no system in place and there are no criteria and guidelines to select teachers. Anybody who wants to be a teacher becomes one, regardless of age, capability and knowledge.

The teachers were also asked if they had teacher trainings before becoming teachers. The table below shows the number of teachers who had training and those who did not receive any training before they started teaching.

Either trained or Not trained	Number of teachers
Not trained	79
Trained	71
Total	150

The graphical representation of the above table is shown below:

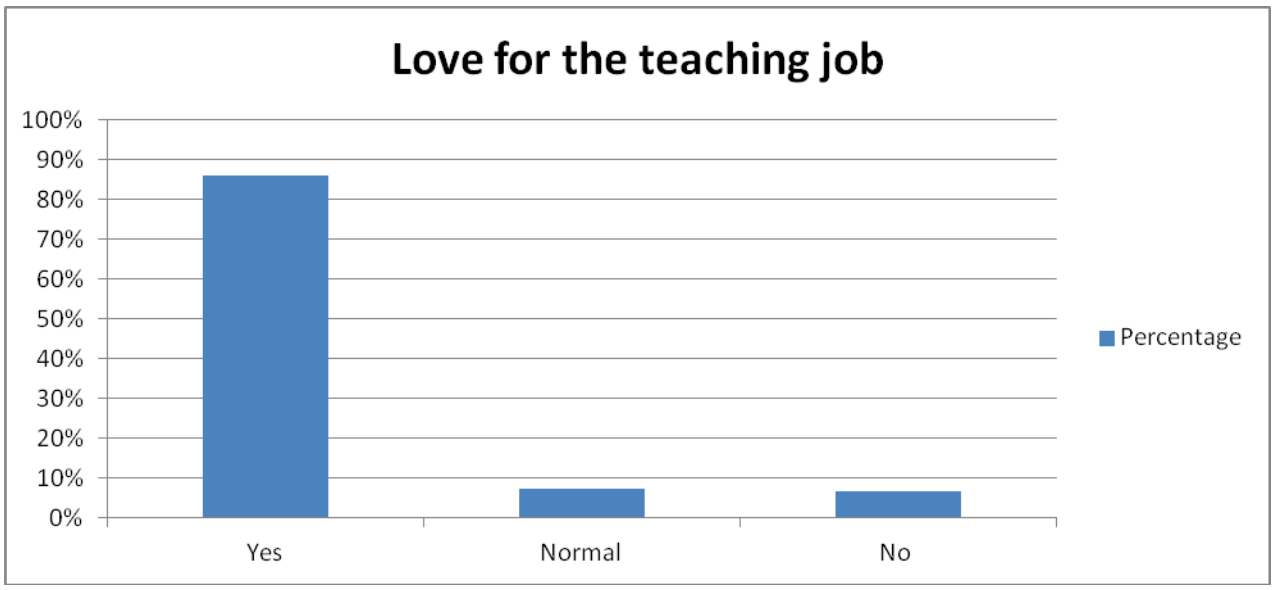


The graph shows, that more than 50% of the teachers had no training prior to their teaching, and approximately 47% of the sample teachers received trainings before they started teaching. The training they received was the SCOTT program. It has been proven by research that qualified teachers raise and impact on students' academic achievement. The reality is that everybody who is literate can become a teacher.

The teachers were also asked if they are satisfied with their jobs as teachers. The table below shows their answers

Satisfied with the job	Number of teachers
Yes	129
Normal	11
No	10
Total sampled	150

The graphical illustration of the of the above data is shown below;

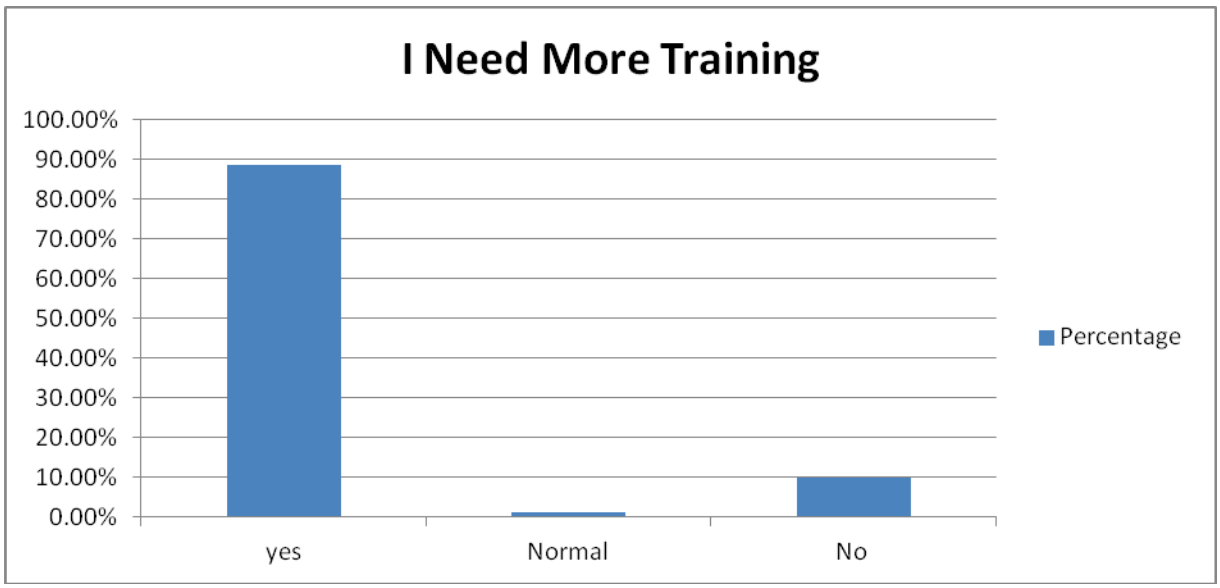


Exactly 86% of the respondents answered that they love their jobs as teachers, and 7.33% replied they are satisfied with their jobs, while the remaining 6.67% said they do not like being teachers, and their reason for being teachers is that they do not have other alternatives.

The teachers were also asked if they need training to improve their capacity as teachers. Their answers for professional development needs are shown in the table below

Do you need professional development trainings?	Number of teachers
Yes	133
It is ok	2
No	15
Total	150

The graph below shows the percentage of the sample teachers that need professional development training.

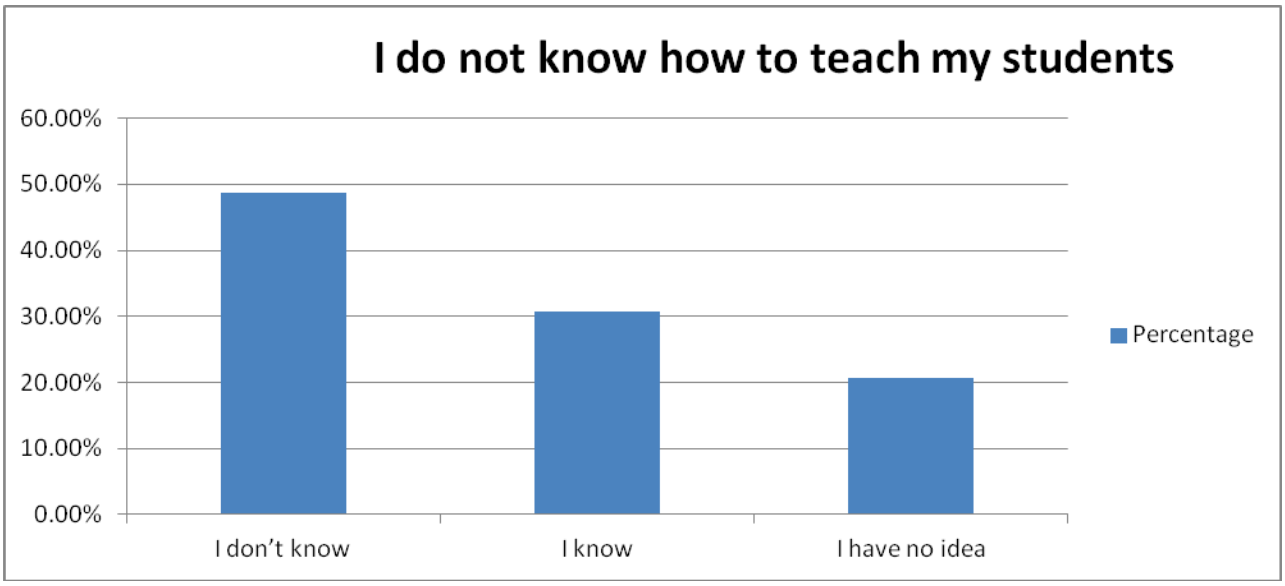


The graph shows that almost 87% of the teachers need professional development training, while only 10% feel that they are well prepared and the remaining 3% have no opinion either way.

The teachers were also asked, if they were confident in teaching their subjects and in their practice. The table below shows their answers

I know my subject but I don't know how to teach.	Number of teachers
I don't know how to teach my subject	73
I know how to teach	46
I have no idea	31
Total	150

The graphical repressention of the above table is shown below:



The graph shows that 48.67% answered that they are not comfortable with the way they teach. 30.66% say they are confident and believe in the way they teach and the remaining 20.66% of teachers answered that they cannot judge themselves.

The second part of the survey was open-ended questions, where the teachers were given the autonomy to express their needs. They mostly pointed out the need for professional development trainings, to update their skills. The teachers also spoke about the need for support from the MOE, educationaladministrators and decision makers, the need for teaching materials, and a positive environment for teaching and learning.