IMPLEMENTATION FRAMEWORK FOR ICT IN EDUCATION

The implementation phase will have 4 phases:

- Phase I: 2015- 2016 --- Existing budget line: 880,000,000 Rwf
- Phase II: 2016-2017 --- 12,004,000,000 Rwf
- Phase III: 2017-2018 – 14,874,000,000Rwf
- Phase IV: 2018-2019 – 8,139,00,000,000 Rwf

Total Budget: **35,897,000,000 Rwf**

Comments: In 2018/2019, the implementation framework will undergo review to determine the continuation of the program or there will be a need for changing the strategy in place.

The 880,000,000 Rwf include Microsoft contract as well as ongoing device deployment thus making the actual budget for the implementation framework with the FY 2016/17, 2017/18 and 2018/19 be 35,017,000,000 Rwf

Strategic Objective 1: Develop a competent & relevant ICT professional base to meet industry needs										
Expected results	Indicator	Activities	Stakeholders	Baseline	Target for 2018	Target for 2015/16	Target for 2016/17	Target for 2017/18	Target for 2018/19	Budget
										RwF
1. All stakeholders aligned to common strategy for the use of ICT in Education	ICT in Education Policy and Implementation strategy Approved and widely communicated to all stakeholders	1. Develop ICT in education policy and implementation strategy in consultation with stakeholders	MINEDUC, REB, WDA, HEC, RDB, MYICT, MININFRA, Private sector, Partners, schools, parents	-	Nationwide awareness and contribution to the implementation of the use of ICT in Education	1. ICT in Education Policy and Implementation strategy Approved and widely communicated to all stakeholders				
		2. Develop a structure to oversee implementatio				2. Develop an entity to coordinate the				

Output/Objective	Indicators	Activities	Responsible	Baseline	Target	Year 1	Year 2	Year 3	Year 4	
		n of Master Plan				implementation of ICT in Education				
		3. Launch and communicate the Master Plan widely				3. Launch of awareness campaign on Masterplan implementation	continue Awareness campaign (media, documentaries, school open house)	continue Awareness campaign (media, documentaries, school open house)	continue Awareness campaign (media, documentaries, school open house)	
							50,000,000	150,000,000	50,000,000	
2. Digital content available to all students in primary and secondary schools to promote learning of languages, STEM and make learning more engaging and interactive	1. No of e-books and other digital content per grade in use in schools.	1. Define Digital Content and e-books acquisition strategy	REB, MINEDUC	OLPC deployed digital lessons in Math, science and English in P4, P5 and P6	All learning resources are available in electronic format and all formative assessments are available electronically	Development of required standards				
		2. Avail relevant E-books in line with the new curriculum				100,000 students have access to existing digital books	350,000 students have access to digital books	750,000 students have access to digital books	1,500,000 students (50%) have access to digital books	
	2. No of Students learning through the access of digital content, smart links, videos, animations, etc.	3. Procurement of digital courses aligned with the new curriculum and procurement of electronic books					Digital Courses/ E-books for P1,P2,P4,P5,S1,S2, S4, S5 based on new curriculum are made available	Digital Courses/E-books for P3,P6,S3,S6 based on new curriculum are made available	Acquisition of supplementary content aligned with the curriculum for all levels	
							2,000,000,000	3,000,000,000	1,000,000,000	
3. Establish an education sector communication platform as well as	Up to-date statistics available for data-driven decision making	1. Upgrade all Ministry and public education institutions to a modern	MINEDUC, REB, WDA, HEC, UR, IPRCS	No could solution for education, No ability for desk teleconference	Real-time data collection tools for evaluation of ICT usage in classroom	Microsoft office 365 rolled out in the ministry and all its agencies with cloud	Microsoft Project, and Analytics, PowerPivot implemented in MINEDUC			

Expected Output	Indicator	Activities	Stakeholders	Baseline	Target for 2018	2015/16	2016/17	2017/18	2018/19	Budget
real time management and information system		email and data sharing system				solution installed	and all agencies			
		2. Review and improve EMIS system to enable real time data collection and analytics		EMIS acquires data on a yearly basis		Gap Analysis on Current EMIS to enable a real time data collection	Procurement and installation of a solution for real time data acquisition and analytics	Deployment of the solution at school level	All indictors with the educations sector have automated analytics and reports	
		4. Capacity Building of staff to run the new platforms					All ministry and agencies staff trained on the new EMIS platform	All DEO, SEO, and Head of School trained for data collection and report generation		
							750,000,000	750,000,000	750,000,000	
Total budget Strategic objective 1							**2,800,000,000**	**3,900,000,000**	**1,800,000,000**	**8,500,000,000**

Strategic Objective 2: Increase ICT penetration and usage at all educational levels										
Expected Output	**Indicator**	**Activities**	**Stakeholders**	**Baseline**	**Target for 2018**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**Budget**
1. 2 Smart classrooms are established in schools with a total of 100 laptops	No of schools with smart classrooms deployed	1. Define minimum requirements of software for each level of the education system for	MINEDUC, REB, WDA, MYICT, MINAFRA, RDB, Schools	1:15 computers to student ratio in primary schools, 1:44 in secondary schools	- 1300 primary schools enabled with smart classroom - 500 secondary	1. Build an Image for schools devices including: OS, Office 365, education content	1. upgrade the image with digital courses /books aligned with the new curriculum	1. Upgrade the image (software package) with the latest digital courses/books	1. Upgrade the image(software package) with the latest digital courses/bo	

		both teachers and students			schools equipped with smart schools			aligned with the new curriculum	ok aligned with digital curriculum	
		2. Power connection to schools: coordinate with MININFRA priority schools for power access - electrical wiring of classrooms		38% of primary schools connected to power 60% of high schools connected to power		150 primary schools wired	1.MININFRA to connect 900 schools to power 2.500 schools wired	1.Proposal is for MININFRA to connect another 900 schools 2.200 schools wired	1.Proposal is to connect another 1000 schools to reach all schools 2.200 schools wired	
		3. Install in schools Smart classroom IT infrastructure		1% of primary and 31% secondary schools have networked lab		200 primary schools (OLPC) equipped with Smart classroom IT infrastructure	500 schools equipped with WLAN with Smart classroom IT infrastructure	200 schools equipped with WLAN with Smart classroom IT infrastructure	200 schools equipped with WLAN with Smart classroom IT infrastructure	
		4. Deployment of devices: new Positivo devices & redistribute XOs for primary schools in a smart classroom model				Deployment of laptops in 121 primary schools & deployment of smart classrooms in 12 secondary schools & TSS	1.redistribution of Xos in an additional 300 primary schools into a smart classroom model 2Deployment of smart classroom in 200 secondary schools	1.50 primary schools enabled with smart classroom 2.150 secondary schools enabled with smart classroom	1.50 primary schools enabled with smart classroom 2.150 secondary schools enabled with smart classroom	

Objective	Indicator	Activities	Stakeholders	Baseline	Target			
						306,000,000	5,400,000,000	5,400,000,000	5,400,000,000
2. All teachers are using ICTs regularly inside and outside the school	1. No of teachers with their own laptop	1. Define mechanisms for teacher purchase program through MWALIMU SACCO	Lead: UMWALIMU SACCO Stakeholders: MINEDUC, MYICT, REB	1:8 computer teacher ratio	100% of all teachers have own laptop for 1:1 ratio	1. Put in place the Teacher purchase program	20% (12,000) of teachers own a laptops	50% (30,000) of teachers own a laptops	100% (61,000) of teachers own a laptops
	2. 75% of Teachers preparing and delivering lesson through the use of ICT	2. Define SW bundle for teachers including teacher professional development content and certification			75% of teachers use laptops to teach using technology	2. Avail pre-defined SW bundle to teachers with laptops	10% of teachers use laptops to teach using technology	50% of teachers use laptops to teach using technology	75% of teachers use laptops to teach using technology
3. One Digital Identity per school staff, per teacher and per Student and per UR faculty	Number of schools with teachers and students enrolled in the One Digital ID program	1. Roll out of the One digital Identity program with Microsoft Office 365	MINEDUC, REB, MYICT	0 school enrolled	2000 schools enabled with the one digital ID program All UR faculty and students are enrolled in the one digital ID program	12 schools enabled with the one Digital ID program 10,000 UR Faculty/ Students are enabled with a single digital ID	500 schools are enabled with a single digital ID program 31,000 UR Faculty/ Students are enabled with the single digital ID	1000 schools are enabled with the digital ID	500 schools are enabled with the digital ID program
Budget						574,000,000	574,000,000	574,000,000	574,000,000

4. Schools connected to the internet and students regularly using internet resources	No of schools connected with broadband.	1. Define an education sector internet service (bandwidth and cost)	Lead MINEDUC stakeholders: MYICT, REB,RDB	6% of primary and 14% of secondary schools have access to internet	- 1300 primary schools are online - 600 high schools connected to the internet	Work with MYICT to develop an education sector internet service				
		2. Connect schools with broadband				100 Group Schoolaire (primary and secondary) schools connected to 4G LTE	400 primary schools connected 200 high schools connected	400 primary schools connected 200 high schools connected	400 primary schools connected 200 high schools connected	
							900,000,000	1,000,000,000	150,000,000	
5. Private Schools have implemented the smart classroom model	No of Private schools with smart classroom	Create standards for private schools for the insertion of technology in schools	MINEDUC, MYICT, RDB			Create standards based on the master plan to enable private schools insertion of technology in education	120 of private schools have installed a smart classroom program	300 private schools have installed a smart classroom	600 private schools have installed a smart classroom	
	No of students in private schools with access to a device at home	Purchase program for parents				Setup a purchase program for parents	120 private schools have enrolled into the purchase program	300 private schools have enrolled into the purchased program	600 private schools have enrolled into the purchase program	
							100,000,000	200,000,000	50,000,000	
7. Establish maintenance and support	Number of failed devices repaired	1. Train at least 1 teacher per school	MINEDUC, REB, WDA	765 schools with OLPC devices have teachers	95% of computers working at any one time	A teacher in 133 schools is trained for first line	A teacher in 1500 schools is trained for first line	A teacher in 500 schools is trained for first	A teacher in 500 schools is trained for first line	calculated based on 5% of the

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structure for the school IT infrastructure and devices	Time to repair a device when it has failed	for first line of support		been trained for first line XO laptops troubleshooting		computer troubleshooting	computer troubleshooting	line computer troubleshooting	computer troubleshooting	investment over 3 years
		2. setup with the manufacturer approved repair centers					SLAs: Broken laptops are repaired and returned within 72 hours	SLAs: Broken laptops are repaired and returned within 48 hours	SLAs: Broken laptops are repaired and returned within 24 hours	
							665,000,000	900,000,000	35,000,000	
Total budget Strategic objective 2							**7,639,000,000**	**8,074,000,000**	**6,209,000,000**	**22,802,000,000**

Strategic Objective 3: Develop teachers capacity and capability in and through ICT										
Expected results	**Indicator**	**Activities**	**Stakeholders**	**Baseline**	**Target for 2018**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**Budget**
1. Teachers are adequately trained and supported to use ICTs in teaching and learning	1. No of teachers completing annual courses with certificates	1. create a teacher professional development curriculum including the use of ICT for better teaching and learning	Lead: REB	10,251 primary and secondary teachers trained through current exist programs	100% of all teacher with access to devices have taken at least 120 hours of training	1.Teacher Professional development is completed and approved				
		2. Training of teachers through a blended model including a				2.30 Master trainers full trained. 3.726 teachers in	1.3,000 Primary school teachers trained	1.6,000 primary school teachers	1.10,000 primary school teachers trained	

			Stakeholders							
		cascading model online and face-to-face with a certification end goal				primary schools trained

4.120 high school teachers trained | 2.3,000 secondary school teachers trained

3.Online line training availed to all teachers with access to devices | 2.6,000 secondary school teacher are trained

3.Online training provided to all teacher with access to devices | 2.10,000 secondary school teacher trained

3.Online training provided to all teacher with devices | |
2 All teachers take at least 40 hours per year of online ICT courses		3. Develop a teacher platform for online professional development with tracking capabilities	Stakeholders MINEDUC, TTCs,				A professional development online platform is setup to enable training of all teachers with access to devices	Additional training content not related to ICT are added for teacher training	Continued development of the portal with additional online training content	
		4. Provide to all teachers with access to devices official email and skype for business				Teachers in the 12 secondary schools with smart classroom have access to an official email and skype for business	All teachers with access to device are enabled through a portal to apply for an official email and skype for business	Ongoing: All teachers with access to device are enabled through a portal to apply for an official email and skype for business	Ongoing: All teachers with access to device are enabled through a portal to apply for an official email and skype for business	
							500,000,000	1,000,000,000	500,000,000	

3. Schools principles and local education administration officers are trained in basic ICTs and the use of ICT for better management	1. No of school heads and district/sector education staff trained	1. Train all head teachers through a blended model including face to face and online	REB, MINEDUC	-	100% of all head teachers and education officers trained by June 2016 and completing at least 4 hours of virtual training per month	1.train 121 primary schools head teacher 2.train 12 secondary schools head teachers	1.500 primary schools head teacher are trained 2.500 secondary head teacher trained	1.1000 primary head teacher trained 2.1000 secondary school teachers	1.1000 primary school teachers trained 2.All secondary head of schools provided with online training	
		2. Train all DEO/SEO through a blended model including face to face and online				2. Provide initial face to face training to DEOs and SEOs	2. Provide online training to all DEO and SEOs through a certification program	2.Ongoing online training for DEO/SEOs	2. Ongoing online training for DEO/SEO	
							200,000,000	400,000,000	10,000,000	
3. Pre-service teacher training includes the of ICT for better teaching and digital courses development	1. All teachers graduating from TTC in year 2017 have been certified to teach using ICT in education	1. Insert instructional technology lessons aligned with the smart classroom deployment in all TTC final year	Lead: UR-CE Stakeholders: REB,HEC,MINEDUC	0%	100% Pre-service teachers have at least 100 hours of training in ICT integration in education	1. Define curriculum that incudes ICT in Education for TTCs	1. Insert the proposed curriculum to the TTC final year to ensure all graduate are certified			
						65,000,000	400,000,000	20,000,000		
Total budget Strategic objective 3						765,000,000	1,800,000,000	80,000,000		2,645,000,000

Strategic Objective 4: Enhance teaching, learning & research through ICT integration in HLIs

Expected results	Indicator	Activities	Stakeholders	Baseline	Target for 2018	2015/16	2016/17	2017/18	2018/19	Budget
Every student in Higher Learning Institution including IPRCs owns a computer device	All first year students own a device	1. Setup a Student Purchase program for affordable devices	Lead: MINEDUC, HEC, MYICT, HLI	30% of students equipped with devices	100% of students have computers	A student Purchase program is launched in partnership with a financial institution	1.100 % of public HLI new intake students have their own devices 2.30% of all HLI students at other levels have devices	1.100 % of HLI new intake students have their own devices 2.60% of all HLI students at other levels have devices	1.100 % of HLI first year students have their own devices 2.100% of all HLI students at other levels have devices	Financed by Students through financial institutions
		2. Launch program starting with UR				1. Awareness campaign at all HLI campus and Program is launched at UR. 2.All students with a scholarship are provided with a device as part of their loan				
HLI are equipped with portals enabling students with online services and education material	No of HLI with a portal providing: registration, payment services, e-libraries, course syllabus and lessons	1. Provide standards for HLI portals including an anti-plagiarism software	MINEDUC, HEC, all HLI	Higher Learning Institutions have portals and online services but there are no established standards or minimum requirements for online services	100% of HLI have their portal providing services and education material to students	HLI portal standards are defined and shared as a requirement to all institutions	HLI portals are published and provide education material as well as email services and skype for business for faculty and students	HLI portals are providing online services including: registration, payment services, assignment submission, marking etc.…	HLI portal are automating all faculty/students management services	HLI/ ODL will sponsor

World class Education network infrastructure Established	No of HLI connected to the Education Network	1. Set up Rwanda education network as service provider for all education institutions	MINEDUC, HEC, all HLI, MYICT	No Education network is currently up and running	All HLI and all research centers are inter-connected and connected regionally and worldwide to HLI and research centers	1. Restructure RwEdNet into a legal entity managing the Education Network legal 2.Create partnership with existing ISPs to provide dedicated education service	The Established Education Network will Connect at least 5 HLI and 5 research centers and provide them with services	The Established Education Network will Connect at least 10 HLI and 5 research centers and provide them with services	The Established Education Network Connect all HLI and research centers to the education and provide them with services	
							400,000,000	500,000,000	50,000,000	
Enable the use of ODEL through E-learning platforms	Education network and ODEL standards are available	Define ICT standards for an ODEL online learning platform and portal	MINEDUC, HEC,HLIs	No ODEL IT network or platform is available	ODEL IT Network and Platform is available	ODEL ICT requirements are defined and shared with all HLI	Education Network and Platform is up and running providing services to ODEL online programs	Expansion of the network and platform to private higher learning Institutions		
							400,000,000	600,000,000		
Total budget Strategic objective 4							**800,000,000**	**1,100,000,000**	**550,000,000**	**2,000,000,000**
Total budget for the implementation framework										**35,897,000,000 Rwf**