

Science and Technology for Education and Human Resource Development in Eritrea

Semere Russom
Minister of Education, Eritrea



Outline

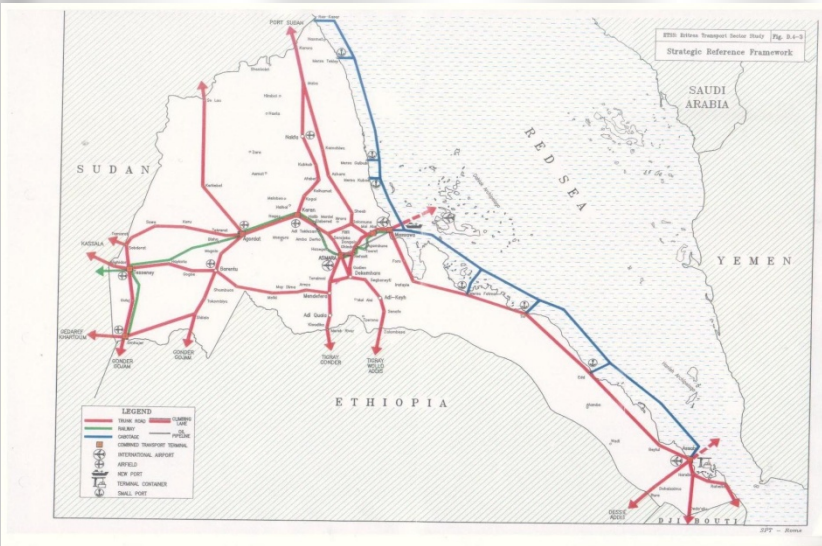
- Introduction
- Promotion of Science and Technology
- Status of ICT in education
- Current challenges
- ICT Collaboration between Eritrea and Japan
- Conclusion

Brief profile of Eritrea

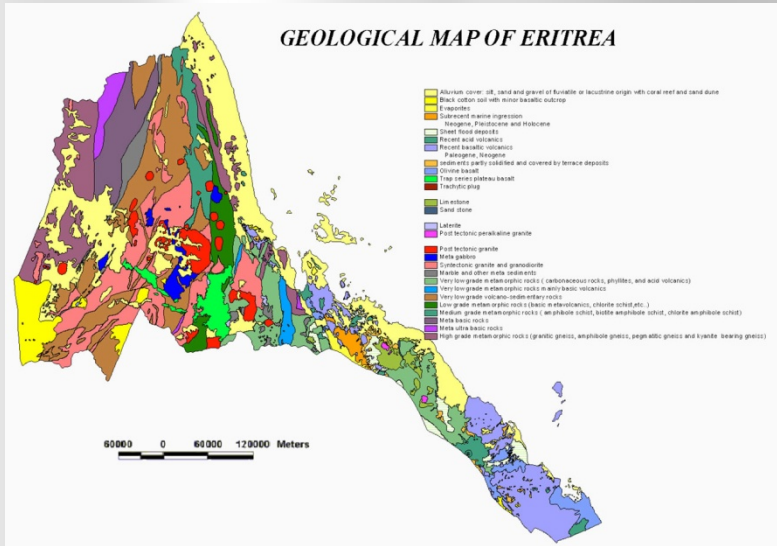
- Constitutional republic, 1993.
- Strategic location with free zones for export oriented goods.
- Abundant natural resources such as fisheries, minerals, precious metals etc
- Tourism hotspot with 350 Islands and heritage sites that depict the birth of humanity.
- Self reliance culture with hardworking people proud of their history and religious harmony.

Eritrea's resources & transportation network

transportation Network



Resources map



Promotion of Science & Technology

The Eritrean Science and Technology Development Agency, was established by decree on 1st July 2002 as follows:

- The National Science & Technology Council (NSTC) as the supreme government body responsible for Science & Technology Policy;
- The Eritrean Science and Technology Development Agency (ESTDA), as an autonomous corporate body, responsible for promoting and coordinating national science and technology efforts and building capacity for research and development in science and technology;
- The National Science and Technology Advisory Board (NSTAB) as an independent advisory body to ESTDA.

Eritrea's macro-policy on science and technology (1994)

The national development objective of Eritrea is to create a modern, technologically advanced and internationally competitive economy.

Therefore, ICT Education is currently being expanded in the country with especial emphasis on the provision of technology enhanced quality education.

Eritrea's emphasis on science and technology education

- Since our independence, the total number of students has tripled to more than 700,000. By 2011, the enrollment at the 12th grade level and tertiary education will reach 36,400. This is a daunting challenge facing the Government and people of Eritrea today.
- As a follow-up of TICAD IV and in response to the call, made to GoJ by the GoE, for the provision of assistance to the development of its tertiary education, the dispatch of several missions by JICA to Eritrea indicates positive signal of the commitment of Japan to the development of Africa in general and Eritrea in particular in 2009-2012.
- Government of Eritrea is committed to the development and its successful outcome as a pathway towards a shared future, especially in the changing roles of higher education in the globalized world.

Status of ICT in education

- Council of ICT in education is setup with the mandate of identifying approaches for harnessing ICT to increase the reach and quality of education.
- The initiative to provide training to teachers and administrators in digital literacy is being implemented.
- Digital educational resources are made available to several elementary, middle and high schools.

Current Challenges 1 (Secondary education)

Secondary Education case study made by ICT council (11/2008) identified the following.

- Big class sizes working on 2 Shifts.
- Need for additional computers & IT Training.
- Lack of Qualified Teachers and Administration personnel.
- Lack of a library with sufficient resources.



Current challenges 2

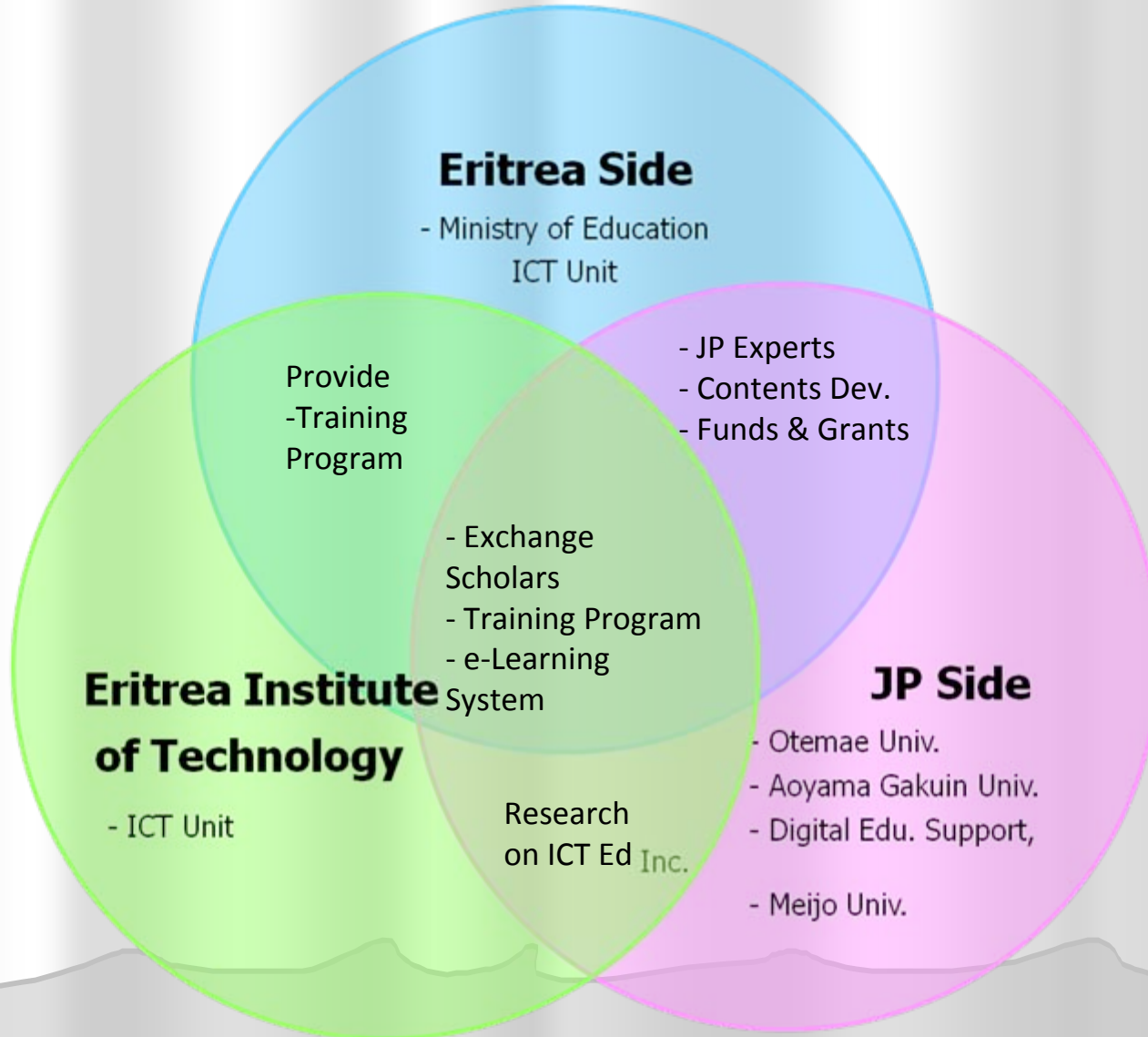
(Eritrea Institute of Technology)

Eritrea Institute of Technology case study made by ICT council (11/2008) identified the following.

- Insufficient resources such as computers, software, peripheral devices and digitalized library.
- Research environment including laboratory equipment.
- Additional foreign and local faculty members.
- Need for leadership and management skills.



Collaboration of Eritrea and Japan on ICT in Education



Current Challenges 3 (Free zone)

Case study made by ICT council (11/2008) identified the following.

- Delay of produce shipment due to insufficient transportation.
- Lack of sufficient processing facilities and
- Lack of qualified sales and marketing personnel.



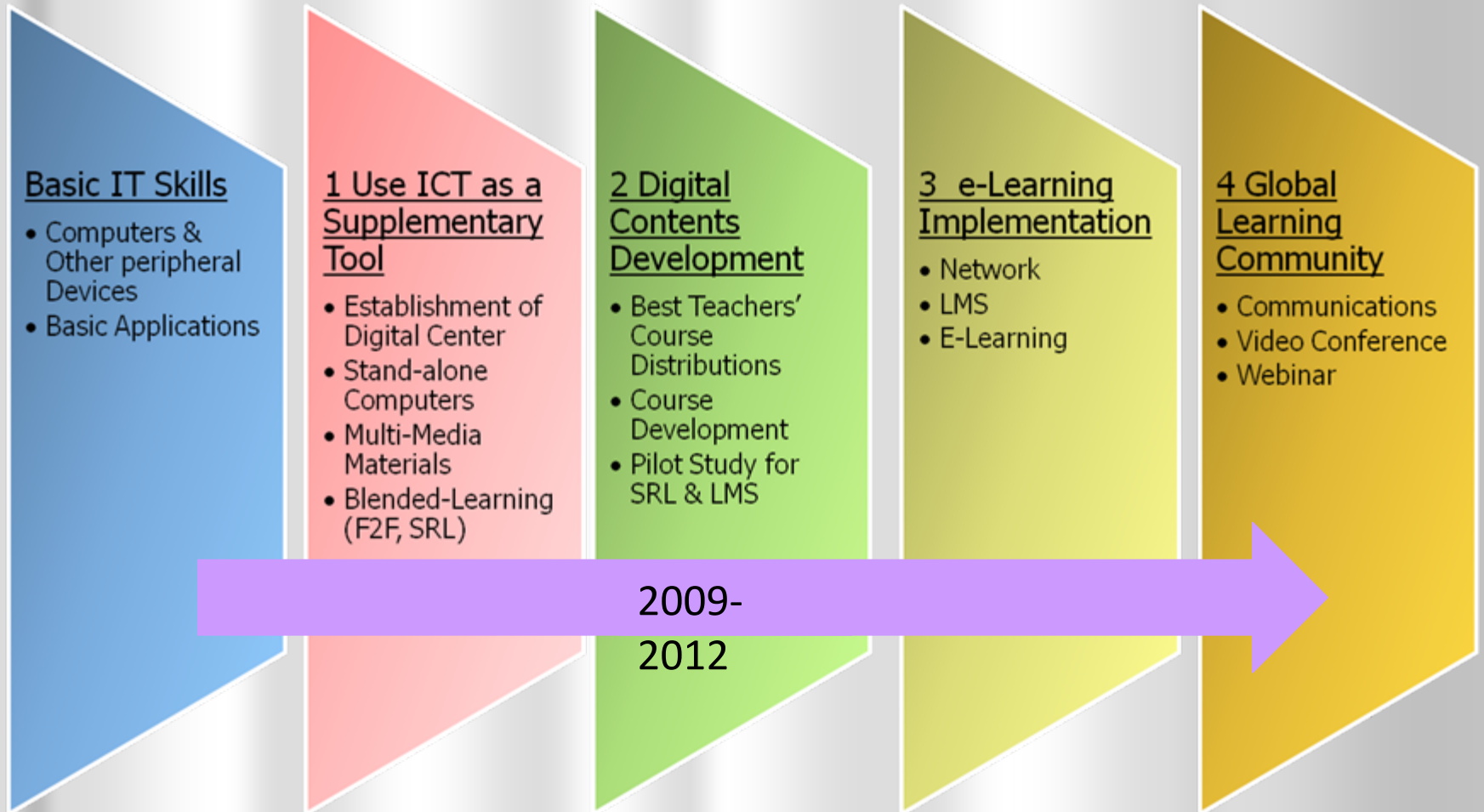
Current Challenges 4 (Fishing Community)

Fish community case study made by ICT council (11/2008) identified the following.

- Not met requirements of European Committee
- Need Management of a whole system
- Maintenance of Quality and Supply
- Lack of a library with sufficient resources.



Development Stages of ICT in Education



Schedule of cooperation between Eritrea and Japan

	Stage	Action	ER Side	JP Side	EIT
~2009	0	IT Foundation	ICT Lab at Secondary Education		
2009~ 2011	1	Establishment of Digital Center	Members		
			Select Multimedia Contents for Pilot Study	List of Available Materials, Seek Funds	List of Available Materials
			Make Guidelines for Pilot Study	Experts' Advice	Support
			Make Implementation & Evaluation Plan for Pilot Study	Experts' Advice	Support
			Develop Teacher Training	Support, Seek Funds	Support
		Dissemination of Good Practices	Academic Dissemination at Intl. Conferences		
		Pilot Study (Stage 1)	Implementaion of Teacher Trainging Provide Stand-Alone Multimedia Contents	Experts' Advice	Provide Teacher Training
2010~ 2012	2	Pilot Study of Best Teachers' Course Distributions	Select Best Teachers' Courses	Experts' Advice	Support
			Instructional Design for the Courses	Participation and Collaboration	Participation and Collaboration
			Development of Courses & Teacher Training	Participation and Collaboration	Participation and Collaboration
			Implementation Plan for Model School	Experts' Advice	
		Pilot Study (Stage 2)	Make Guidelines and Training for Pilot Study	Experts' Advice	
			Implementation of Pilot Study	Experts' Advice	Support
		e-Learning System Selection & Preparation for Stage 3	Needs Analysis	Find Partners and Seek Funds	Research on Exsiting LMS
			Evaluate and Select LMS and/or other systems	Experts' Advice	Support
			Make Manual for e-Learning System at Digital Center	Experts' Advice	Support
			HRD for e-Learning Specialists	Training and Workshop at JP and ER	Send Researchers to JP
			Develop Teacher Training	Experts' Advice	Support
			Infrastructure	Seek Funds, List of Needed Equipments	Support
			Make Implementation & Evaluation Plan for Pilot Study (Stage 3)	Experts' Advice	Support
~2012	3	Pilot Study (Stage 3) Dissemination	Implementation & Evaluation Local & Intl. Dissemination	Evaluation (ex. eMM) for QA JP & Intl. Decimination	Support Local & Intl. Dissemination

Conclusion

May I cease this opportunity to ask esteemed participants of the Science and Technology in Society (STS) forum (Kyoto-2009) to give continued support to the ICT Education and Higher Education Programs of Eritrea (2009- 2012) as a pathway and a bridge towards a shared future in the globalized world!

Thank you!

Brief profile of Eritrea

- **CONSTITUTIONAL REPUBLIC:** Eritrea is the newest nation in Africa, a constitutional republic, which gained independence 1993. It is bordered by Sudan in the north and west, Ethiopia in the south, Djibouti in the south-east and the Red Sea in the east;
- **TRADE CORRIDOR:** between Africa and the commercial centers of the Red Sea, the Mediterranean and the Indian Ocean (starting from the 3rd millennium BC Phoronic and Hellenistic period). Easy access of land, sea and air link at present;
- **STRATEGIC LOCATION:** straddles a coastline of 1200km in the Red Sea which is the most heavily trafficked maritime coast ideal for transiting maritime traffic and settling free zones for export oriented goods;
- **ABUNDANT NATURAL RESOURCES:** Platinum, Nickel, Chromium, Asbestos, Uranium, Lead, Beryllium, Feldspars, Mica, Iron, Barite, Copper, Gold, Silver, Zinc, Cobalt, Graphite, Pyrite, Coal, Magnesite, Silica, Clay, Marble, Salt (rock salt, continental salt and marine salt), potash, petroleum, natural gas, water, agricultural products, fisheries etc;
- **TOURISM HOTSPOT:** Endowed with 350 Islands with rich and pristine biodiversity ideal for eco-tourism including heritage sites which date back to the birth of humanity; and
- **SELF RELIANCE CULTURE:** presently populated by open, honest and hardworking people proud of their history, heritage, religious harmony and self-effort.

Eritrea in numbers



Country coastline: 3300 km

Mainland coastline: 1350 km

Islands coastline: 1950 km

Islands and islets: 354

Country area: 124,000 km²

Territorial waters area: 55,000 km²

Exclusive Economic Zone (EEZ): 120,000 km²

Watersheds linked with the coast: 44,000 km²

Source ECMIB GIS Unit 2007