

History of Engineering and Technology and the Status of Research in Ethiopia and the Way Forward

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Definitions

- **Engineering**
- **Technology**
- **Research**
- **Indigenous technology**

Historical Developments

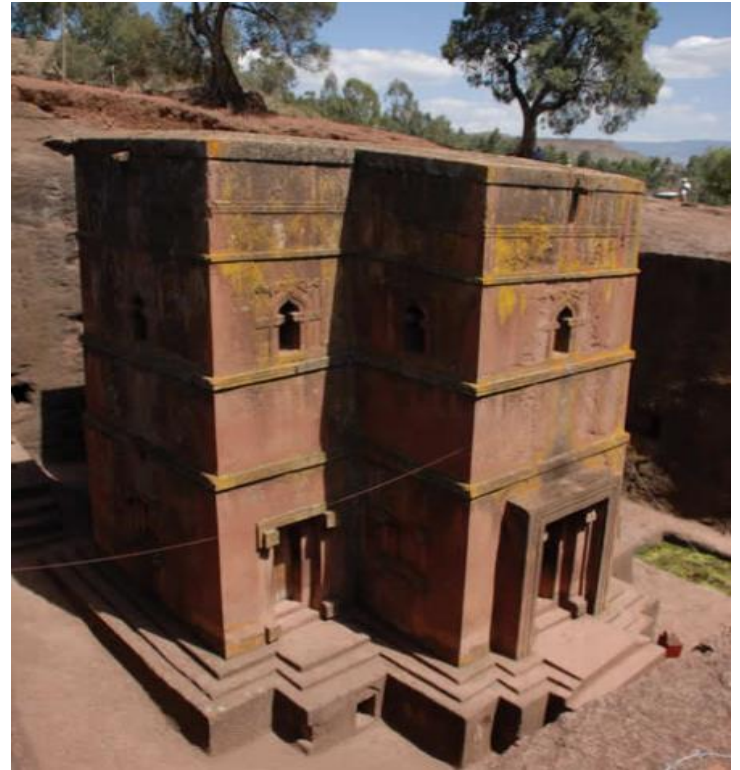
- From the Axumite kingdom to Emperor Tewodros II



Coins during the period of Ezana



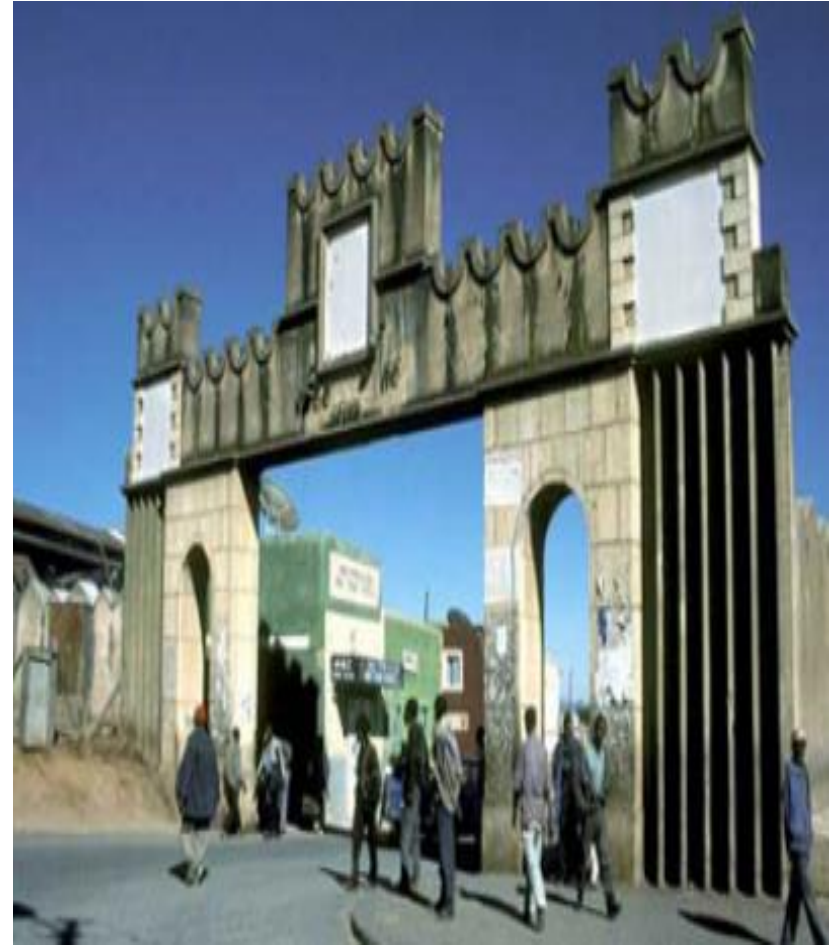
Stele of Axum



Churchs of Lalibela



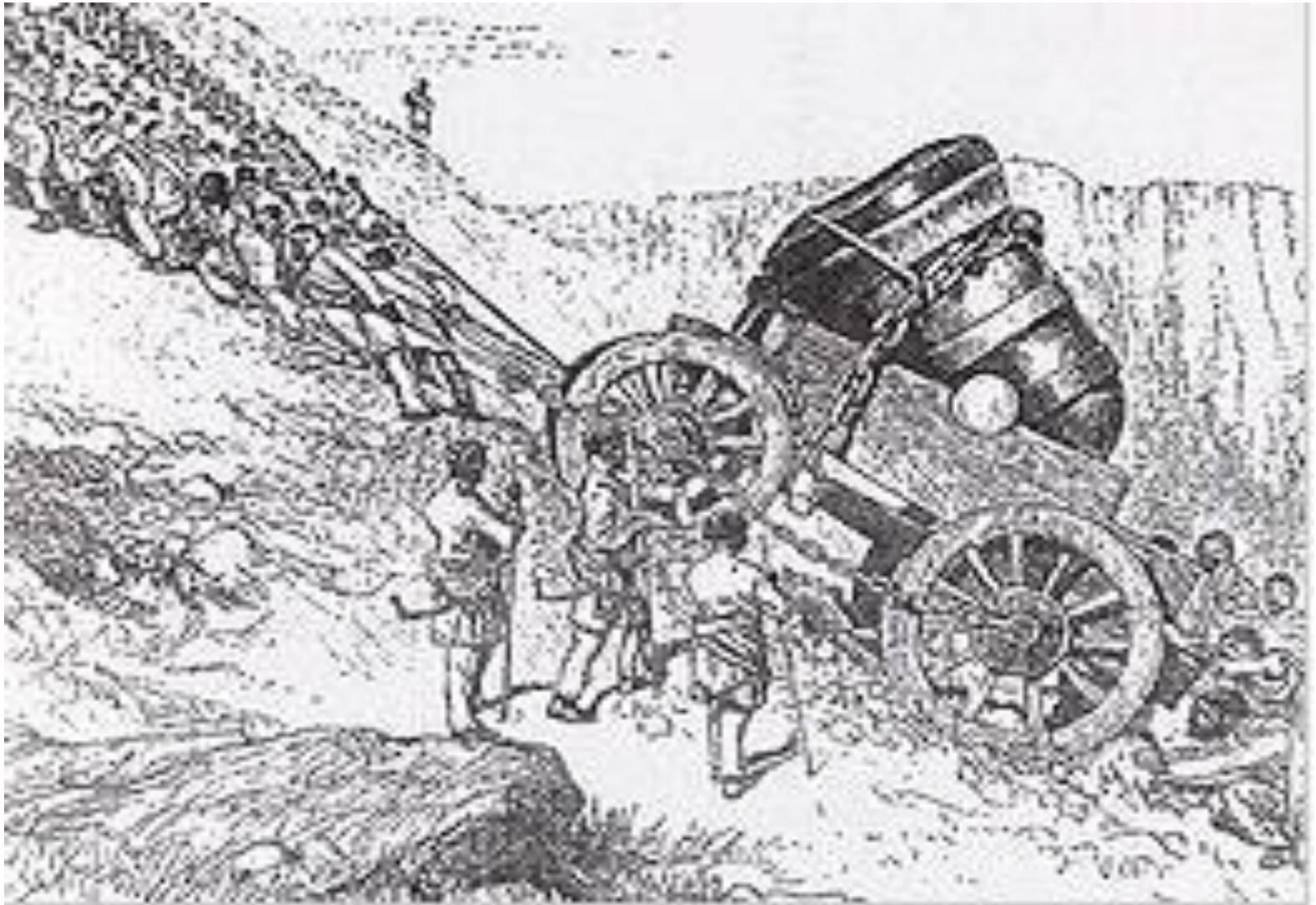
Fasil's Castle



Wall of Harar



Portuguese Bridge



Sebastopol

Continuation of Historical Development

- **Emperor Menilik II**
- **Emperor Haile Selassie**
- **Derg**
- **EPRDF**

Table 1: Number of admitted and graduated students for technical training

No.	Year	No. Admitted	No. Graduated
1	1983 - 1984	6543	5023
2	1984 - 1985	7804	4537
3	1985 - 1986	6593	3600
4	1986 - 1987	7013	6073

Table 2: Granted Researches by Ministry of Science and Technology (MoST)

No.	Year	No. Agr. Research	No. Health Research	No. Mine, Water and Energy Research	No. Ind. Research	Total
1	1995	6	7	4	9	26
2	1996	8	8	0	5	21
3	1997	18	12	0	1	31
4	1998	16	12	0	4	32
5	1999	11	11	6	7	35
6	2000	8	6	7	9	30
7	2001	10	8	3	5	26
8	2002	13	6	2	6	27
9	2003	7	3	4	3	17
10	2004	7	2	5	2	16
11	2005	8	3	6	3	20

Table 3: List of Granted Patents

Year	Invention			
	Number of Health Patents	Number of Industry Patents	Number of Agriculture Patents	Total
1997	1	2	0	3
1998	0	1	0	1
1999	1	4	0	5
2000	1	21	0	22
2001	1	28	6	35
2002	1	11	0	12
2003	0	29	6	35
2004	0	30	2	32
2005	0	14	2	16
2006	0	11	0	11
2007	0	2	1	3
2008	0	0	0	0
2009	0	26	2	28
Total	5	179	19	203

Table 4: Number of engineering graduates from 1999-2002 E.C

No.	Field of Study	Total Gradates (4yrs)	
		B.Sc	M.Sc
1	Architecture and Urban Planning	357	96
2	Chemical Engineering	440	231
3	Civil Engineering	2211	384
4	Construction Technology & Management	664	4
5	Electrical Engineering & Computer Engineering	2163	266
6	Mechanical Engineering	1084	306
7	Automotive Technology	258	30
8	Electric/Electronics Technology	109	38
9	Manufacturing Technology	183	0
10	Surveying Technology	229	0
11	Wood and Science Technology	166	0
12	Computer Science & IT	1138	26
13	Hydraulic & Water Resources Engineering	142	33
14	Irrigation & Water Resources Engineering	325	16
15	Water Supplies & Environmental Engineering	139	15

16	Water Engineering	197	0
17	Textile Engineering	244	0
18	Garment Education	98	0
19	Food and Biochemical Technology	90	0
20	Industrial Engineering	494	8
21	Agricultural Engineering and Mgt & Mech.	163	24
22	Soil & water Engineering mgt	93	0
23	Applied Geology	169	0
24	Urban Design and Development	76	0
25	Petroleum Engineering	80	0
26	Telecommunications and Information	0	67
		Total	12856
			1544

Table 5: Summary of Licensed Manufacturing Investment Projects from 1992- 2011

Year	Number of Projects	Capital in '000' Birr	Permanent Employee	Temporary Employee
1992	112	514,659	7,671	23
1993	225	2,136,186	13,706	96
1994	179	1,364,595	9,688	336
1995	289	1,824,628	10,290	777
1996	322	2,279,993	12,049	1,346
1997	396	1,965,835	13,196	7,664
1998	442	2,257,368	14,879	15,057
1999	233	1,604,208	8,805	2,604
2000	253	2,308,884	10,633	1,583
2001	197	2,920,279	11,661	711
2002	233	2,322,675	9,838	2,109

2003	402	4,047,593	24,028	9,052
2004	981	10,652,978	61,044	29,681
2005	930	10,072,591	38,865	40,461
2006	1,207	43,797,572	77,959	77,714
2007	1,424	22,013,040	76,285	70,018
2008	2,187	70,064,715	199,139	167,417
2009	1,557	69,823,300	82,841	68,826
2010	1,487	37,165,966	78,033	90,447
Grand Total	13,334	304,616,702	779,601	604,834

Table 6: List of completed researches in AAiT

Academic Year	Architecture & urban planning	Chemical Engineering	Civil Engineering	Electrical & Computer Engineering	Mechanical Engineering	Total
2003	-	-	25	6	3	34
2004	-	-	12	8	19	39
2005	4	7	33	13	22	79
2006	5	2	25	13	20	65
2007	1	14	38	27	45	125
2008	16	25	38	44	30	153
2009	6	20	33	25	21	105
2010	13	17	36	15	36	117
2011	26	49	39	79	33	226

Gap Analysis

- **Employability and Competency of Engineering Graduates**
- **Indigenous Technology**
- **University- industry Linkage/partnership**
- **Research and Development(R&D)**

Way Forward

Thank you!