

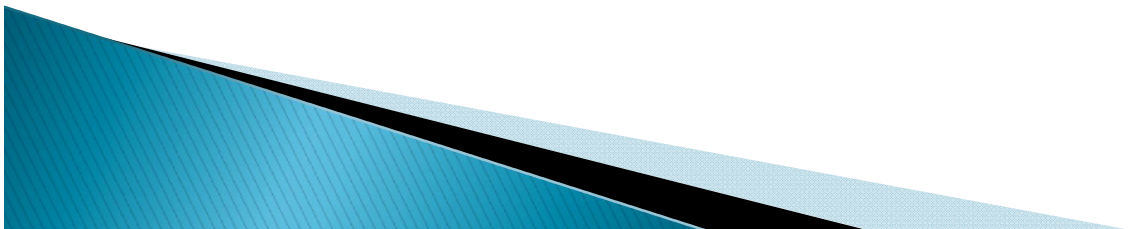
**PROGRAM:CONSTRUCTION TECHNOLOGY AND
MANAGEMENT**

**PRINCIPLES OF CONSTRUCTION
MANAGEMENT(COTM 2171)**

**CHAPTER-1
INTRODUCTION**

March,2015

Minweyelt.E



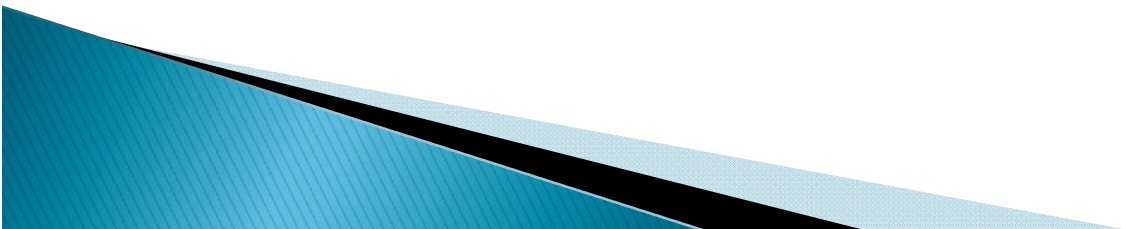
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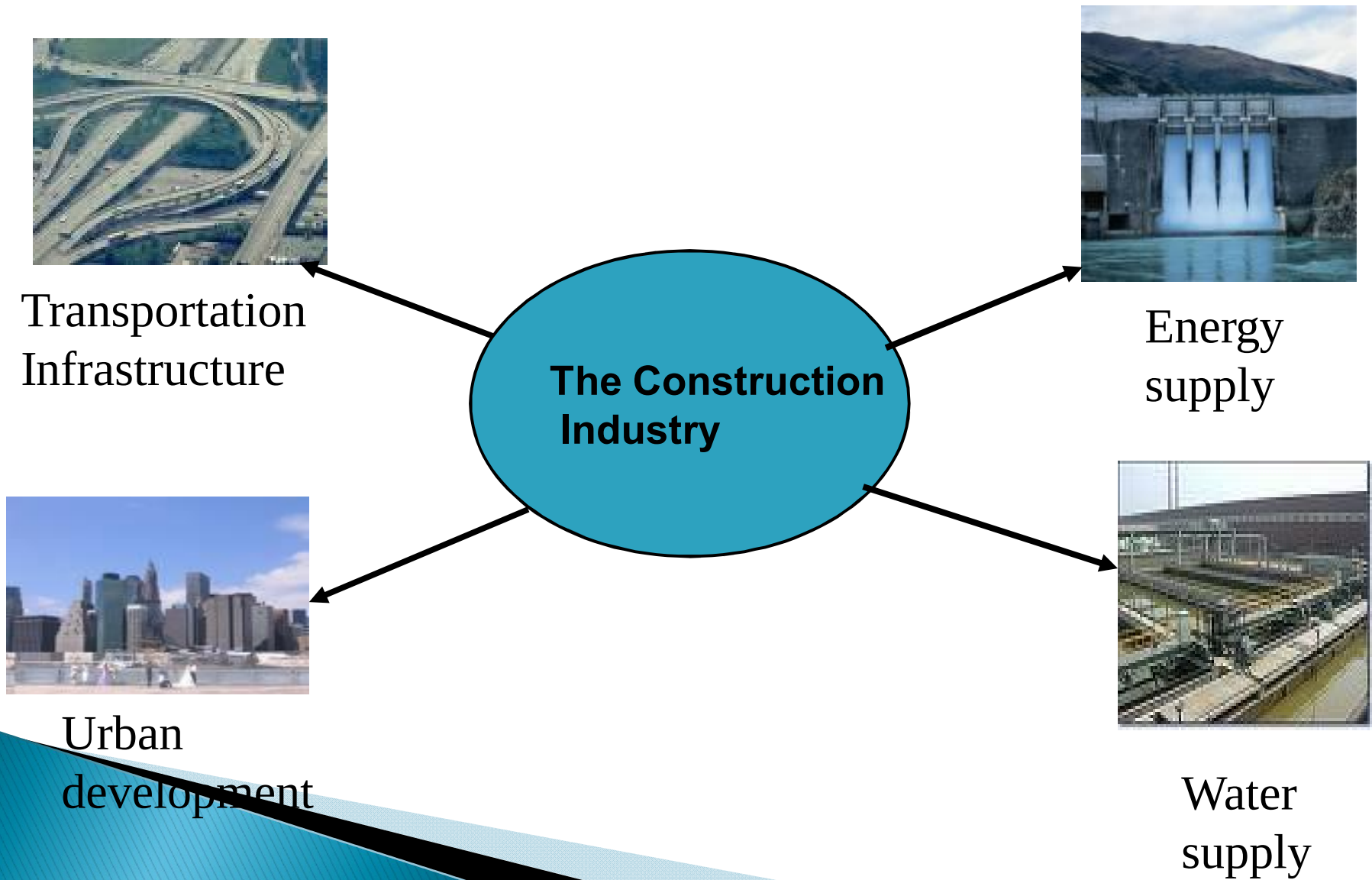
INTRODUCTION

1. Construction Industry

- ✚ **All civil works** such as buildings, roads, water works, hydro- power works, etc., can be grouped under the industry termed as **construction industry**.
- ✚ Construction Industry can be categorized into three major sectors:
 - i. **Transport and Communication Sector** - Road, Railway, Airway, and Telecommunication related physical works.
 - ii. **Water and Energy Works** i Hydropower development, transmission lines, wind power, irrigation projects and
 - iii. **Buildings and Other Physical Infrastructures**.
- ✚ CI is among the leading industry in producing employment and contribute to the over all national development.
- ✚ CI i is the most important enabler for *social*, *economic* and *political* development of countries.

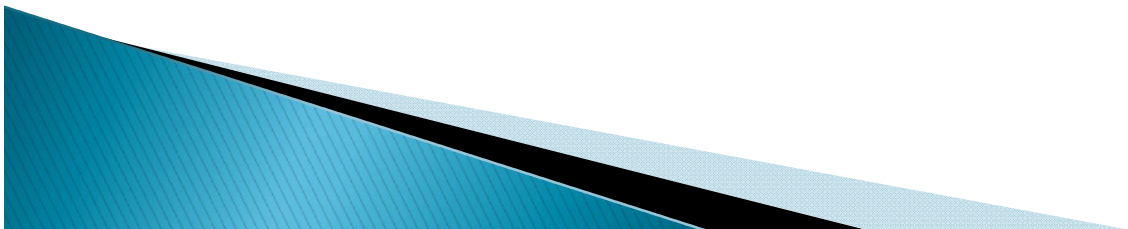


Construction Industry



2. Why Construction ?

- ✚ Construction is an enormously important industry by which societies create most **new values**;
- ✚ **Creates**, defines and **maintains** the **built environment** within which most other social and economic activities take place;
- ✚ Most of **mankind's day-to-day** activities are dependent on the infrastructure delivered by the **CI**



3. The History of Construction

- ✦ Since ancient times, mankind has erected some huge structures



The 6, 550, 000 t and 137 m Pyramids of Khufu at Giza (Circa 2500BC)



The 6,400Km long China Wall (Around 668 BC)



The 24m and 180t Axum Obelisk (Before the 4th century)

4. Status of the global CI

- ✚ Compared to other industries, CI is labeled as ‘**conservative**’
 - ✚ Different arguments about the advantages and disadvantages of its conservatism.
- ✚ Some serious critics about ‘**inefficiencies**’ in the industry
 - ✚ **Fragmented** industry
 - ✚ **Sequential** project delivery system and **adversarial** supply-chain relationship
- ✚ Known for **late delivery**, **over budget**, **low profitability**, **poor returns** and **slow up take of new technology and management philosophies**

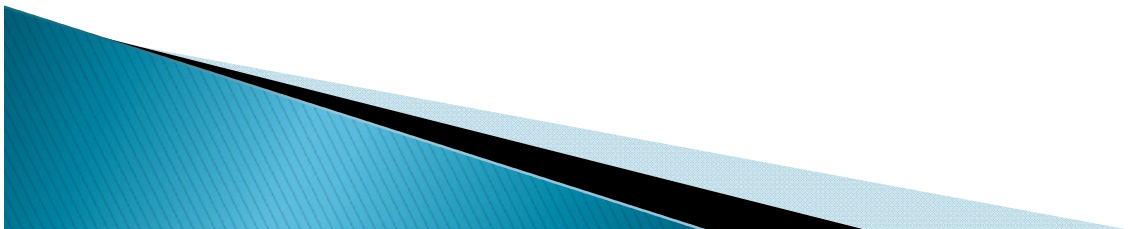
5. Characteristics of CI

+ Nature of production: [usually] on site

- Changing supply-chain relationship and production site
- Exposed to inclement weather condition
- Seasonal disruption
- Health and safety concerns
- and immobile

+ Nature of product:

- Large,
- heavy,
- durable,
- expensive,
- heterogeneous,



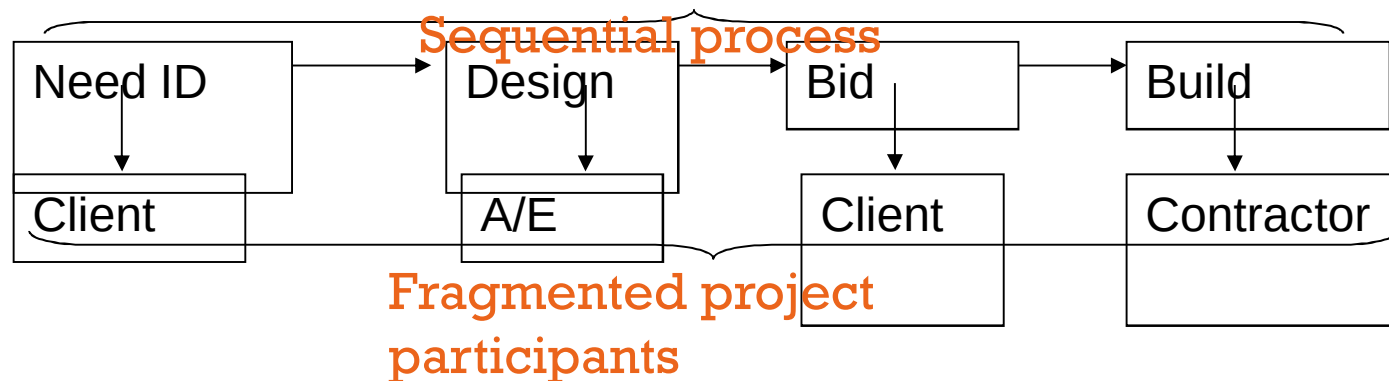
5. Characteristics of CI

+ Demand for the product

- Demand is usually driven by 'other' goods and services; not controlled by industry,
- In the majority of cases, clients define requirements before the industry provides it,
- Time lags b/n demand and supply is long.

+ Structure of industry:

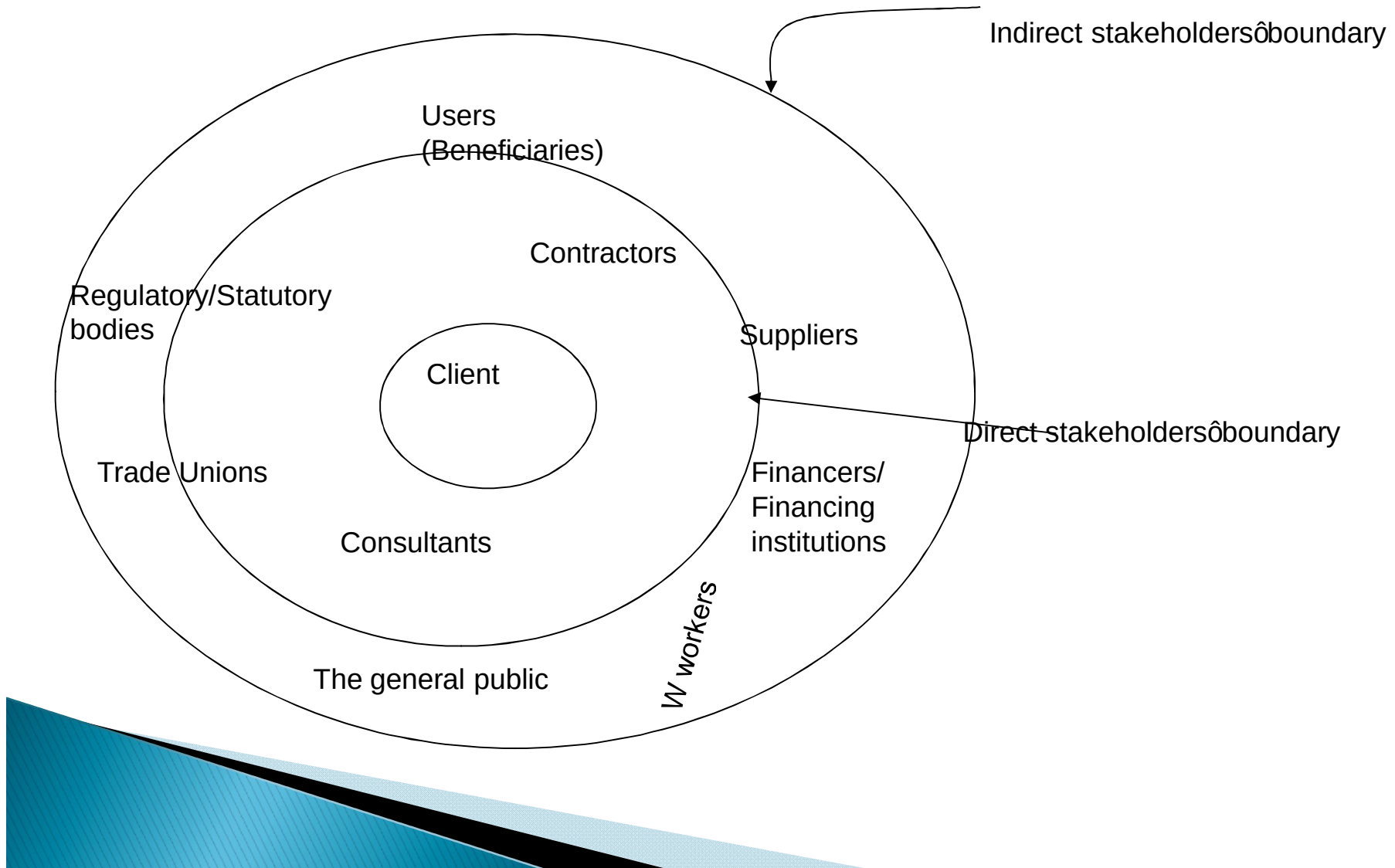
- **Fragmented** industry
- Large uncertainty



6. Stakeholders in CI

- ✚ The practice of **planning, designing, constructing,** and **operating** a facility is most usually a collective effort of different groups of professionals and trades.
- ✚ Are individuals or groups who has a vested interest in the project or its product.
- ✚ Are parties who could have a telling effect on the success or failure of the project.
- ✚ Classification
 - Positive Vs Negative
 - Direct Vs Indirect
 - Internal Vs External

6. Stakeholders in CI

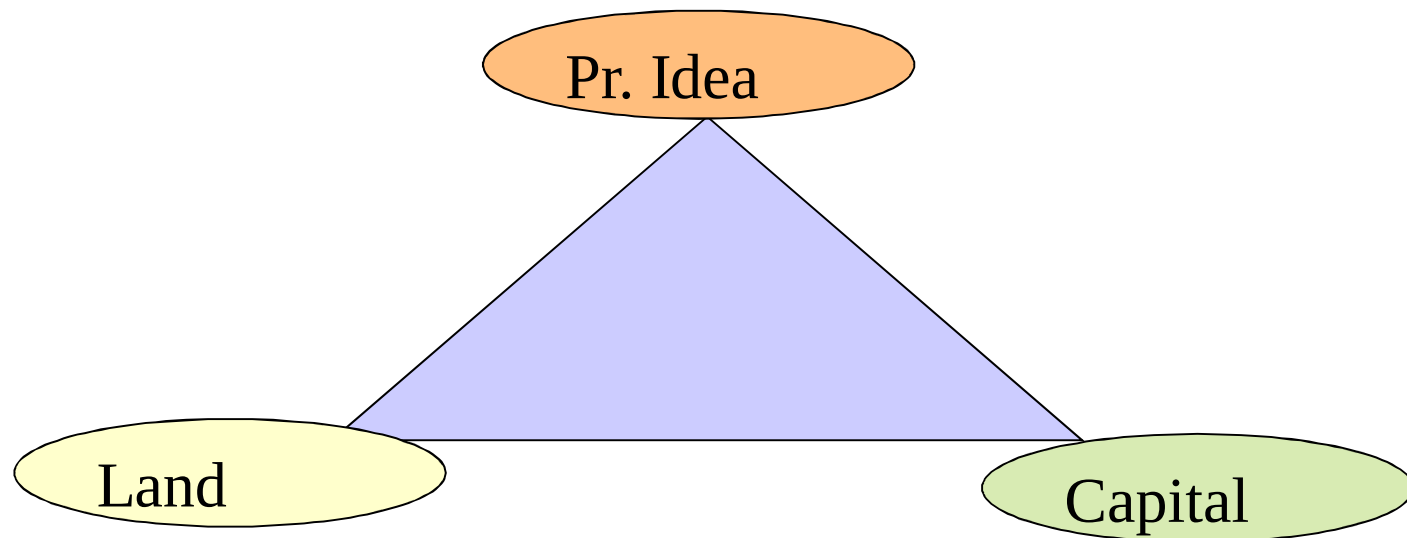


6.1 Main Parties in Construction Project



6.1 Main Parties in Construction Project

- ✚ **Client:** is the party (public or private) under whose tutelage the project is executed
 - Comes up with the investment need



6.1 Main Parties in Construction Project

- Usually] provides the infrastructure needed
- Takes care of some of the legal constraints & permits
- Pays for the project's execution
- ✚ Clients may be classified as ***Public sector clients*** and ***private sector clients***.

A. **Public sector clients**

- Central Government Offices (Ministries)
- Local Authorities (Regional or Town)
- Public Corporations

B. **Private sector clients**

- These are private individuals & private companies.

6.1 Main Parties in Construction Project

Consultant

- ❑ The main role of the consultant is to interpret the client's project requirement into a specific design.
- ❑ The consultants's team shall:
 - Ascertain, interpret and formulate the client's requirement into an understandable project.
 - Design the project to much requirements and constraints (imposed by statutory obligations, technical feasibility, environmental factors, site conditions, cost, etc)
 - Assess client's cost limit to decide on materials & the like.
 - Prepare **contract documents**.
 - Supervise the project and constantly inform the client on the progress
 - Approve payments
 - Resolve contractual disputes
 - Issue provisional and final acceptance certification

6.1 Main Parties in Construction Project

Contractor

- ✓ These are groups established mainly as commercial companies, that contract to construct development projects.
- ✓ Responsibility of contractors:
 - Carry out a full site investigation prior to submission of tender,
 - Submit tender,
 - Plan, Program, Control the construction process.
 - Notify the consultant about delays, discrepancies,
 - Effect all payments to his employees, suppliers, subcontractors,
 - Rectify all defects on completion of works, etc
 - Provide post occupancy repair & maintenance if required.

6.1 Main Parties in Construction Project

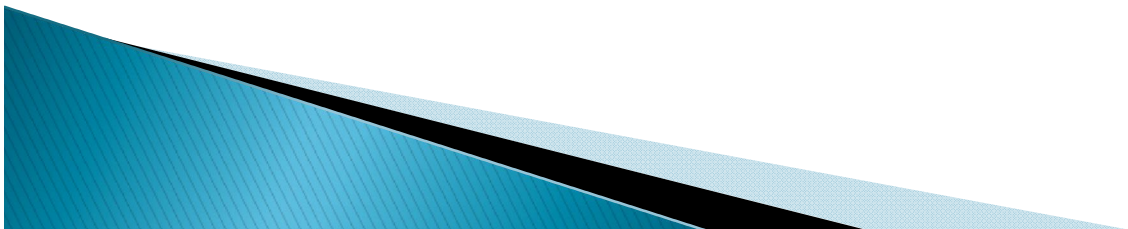
III. Public Sector Agencies

A. Statutory Authorities

- These bodies offer technical advice during design and construction in their respective areas.
- E.g. EEPCO, AAWSA, Fire Authority - requires meeting their specific requirements. Thus early information to these authorities is required.

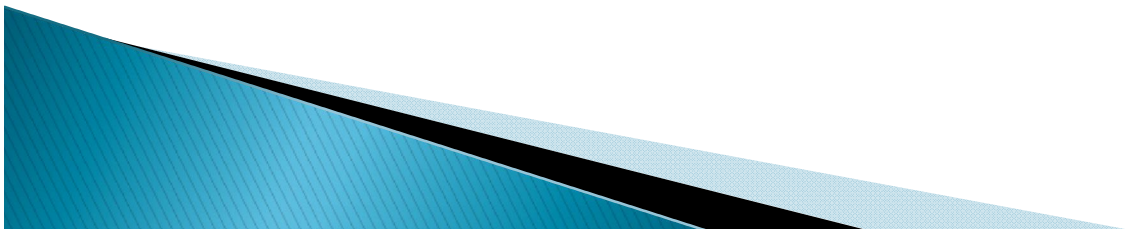
B. Municipalities and Government Authorities

- These bodies offer the basic Land permit and building permit.



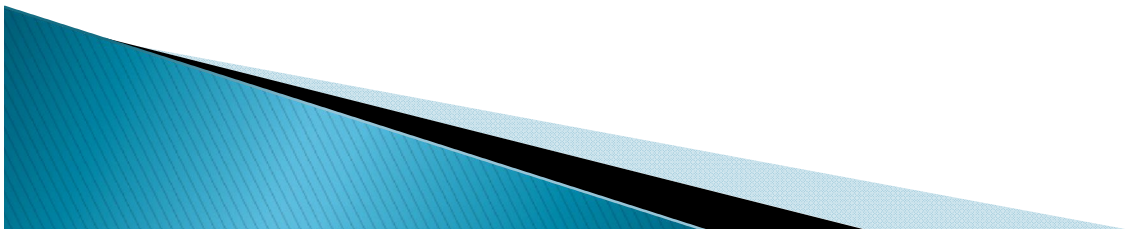
6.1 Main Parties in Construction Project

- ✦ **Suppliers:** are parties that supply the various materials, equipments and services needed for the project
- ✦ **Financers/Financial institutions:** are institutions like banks, insurances, pension agencies etc who could provide loan services for the project
- ✦ **Workers in the industry:** are professionals, occupationals or unskilled laborers who earn their living from working in the industry or its supply chain.
- ✦ **Trade (labor) unions:** are unions of the working class that look after unfair treatment of workers (like payment issues, firing issues) as well as issues related to occupational health and safety



6.1 Main Parties in Construction Project

- ✚ **Project product users:** are parties who may be using the end product of the project
- ✚ **The general public:** are communities of the locality, the general society of a country or even the globe who may have a vested interest in the project
- ✚ **Other sectors:** are sectors which could have interest in the process or product on the construction project



7. Resource for the construction Industry

- ❑ The following resources are vital for construction industry:
 - Human Resources (Labor or Workmen)
 - Financial Resources (Fund)
 - Information Resources
 - Physical Resources (Materials, Equipment and Other Assets)
 - Services and Management
- A. **Human resource (Labour or Workmen)**
 - ❑ These include professional, skilled, semi skilled and unskilled laborers.
 - ❑ Human resources can be understood in two values: **Capacity** and **Capability**.
 - **Capacity** - refers to the *quantity* of labor for the scope defined.
 - **Capability** - refers to *knowledge, technology know-how* and *skill* as per the demands of the scopes ability.

7. Resource for the construction Industry

A. Human resource (Labour or Workmen)

- ❑ Construction Managers need to be capable of:
 - Communication- Inter-personal, group interaction-skills
 - Problem solving / Conflict resolution / Negotiation Skills
 - Facilitating / Decision- making Skills
 - Writing skills for Proposals / Reports / ToRs / MoUs; and
 - Hard Skills- Planning, Implementing, Leading and Monitoring tools.

➤ Financial Resources (Fund)

- ❑ Usually funds are available from among Governmental institution, Private institutions and Donors in the form of loan or assistance.

C. Information Resources

- ❑ Information can be understood in two terms: **data** whether processed or not; and its **technology**.

7. Resource for the construction Industry

D. Physical Resources

i. Materials

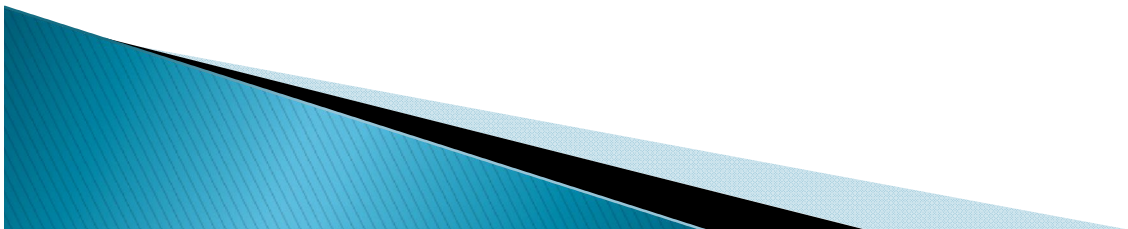
- ❑ Material covers 55-70% of the total construction cost.

ii. Equipments

- ❑ Though their initial cost is high using equipments are far more better than using labor.

iii. Other assets

- ❑ Physical Infrastructures and Owned Land are assets which can be collaterals for capital base enhancement and credit facilities and are useful to develop the scarce financial resources and getting into business access.



7. Resource for the construction Industry

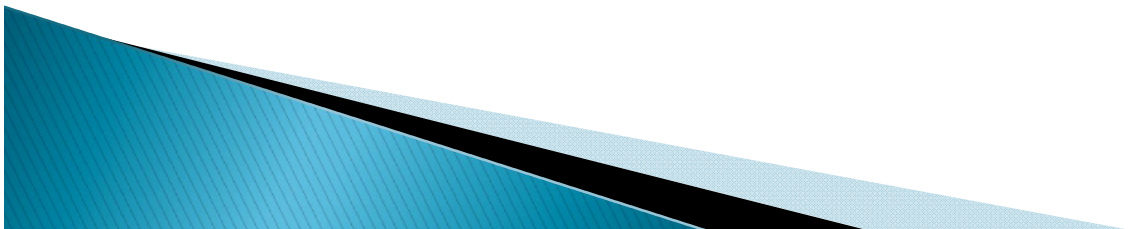
E. Service and Management

i. Service

- ❑ Services such as acquisition of land, provisions of water supply, electric power, communication systems, etc., are very much necessary in the construction industry.

ii. Management

- ❑ Management has come to employ a disciplined approach to the use of available resources.



8. The Ethiopian Construction Industry

8.1 Historical Aspect: The Construction Development

- ❑ Previous monarchies had contributed to the development of constructions in Ethiopia.
- ❑ Historic chronicles of the 17th and 18th centuries showed that there were a number of **small roads, palaces and river improvement works**.
- ❑ Among the Emperors Atse Fasil, Atse Theodros and Atse Menilik were noted for their major contributions.
- ❑ Modern construction however had started during the reign of Emperor Menilik II (The road from Asmara to Addis Ababa).
- ❑ Italy during its invasion (1936-1941) had also contributed to the development of the construction industry. It had constructed about 6000km of roads.
- ❑ After Italian invasion, the first Ministry called **Ministry of Communication and Public Works** was established during the Imperial regime.

8. The Ethiopian Construction Industry

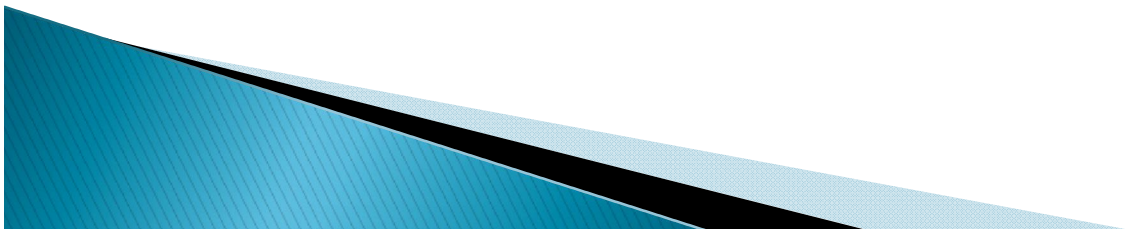
8.2 Current status of the construction sector

- Current status of the construction industry is distinguished by:
 - i. Lack of clear developmental objectives for the industry;
 - ii. Inadequate co-ordination of planning between the industry and infrastructure programs in the various sectors of the economy;
 - iii. Heavy dependence on foreign resources such as materials, equipment and expertise, which continue to be supplied to a major extent by foreign consultants and contractors;
 - iv. Transport bottlenecks to the distribution of construction materials and equipment;
 - v. Control of the construction sector by small-to-medium sized firms and parastatal construction enterprises operating at low levels of capacity and with inadequate working capital;
 - vi. inadequate and ineffective organizations representing the interests of contractors, consultants and engineers;

8. The Ethiopian Construction Industry

8.2 Current status of the construction sector

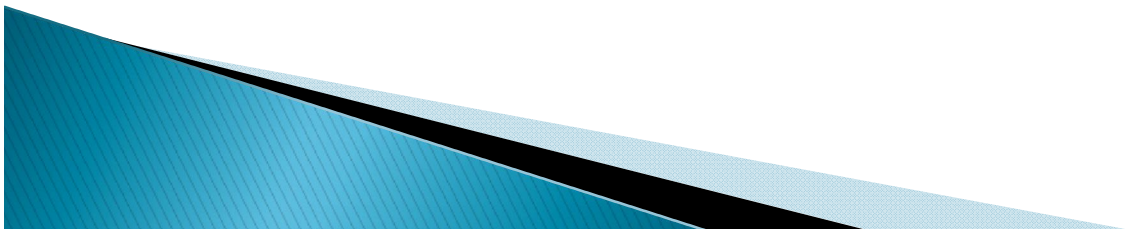
- vii. inadequate numbers of suitably qualified and experienced personnel, at all levels: engineers, technicians, mechanics, operators and foremen etc.;
- viii. inadequate relevant local construction regulations and standards
- ix. inadequate consideration given to the use of local resources (including community participation in labor-based works); and
- x. little consideration given to the concept or cost of maintenance as a component of investment costs.



8. The Ethiopian Construction Industry

8.2 Current status of the construction sector

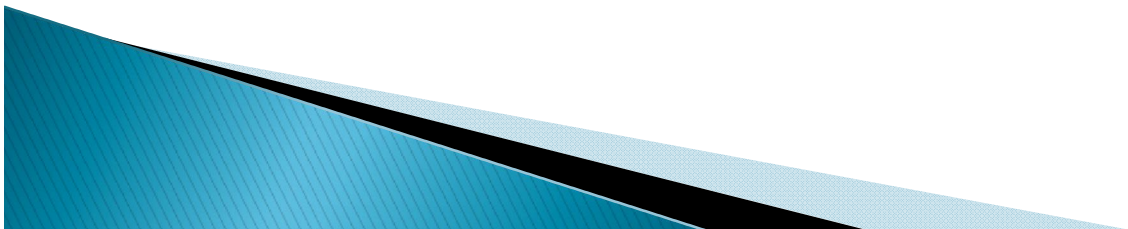
- The general state of the domestic construction industry in Ethiopia is characterized by the following five major deficiencies:
 - I. An inadequate capital base;
 - II. Old and limited numbers of equipment;
 - III. Low levels of equipment availability and utilization;
 - IV. Deficiencies in technical, managerial, financial and entrepreneurial skills; and
 - V. Insufficient and ineffective use of labor-based construction and maintenance technology.



8. The Ethiopian Construction Industry

8.4 Challenges in the construction sector

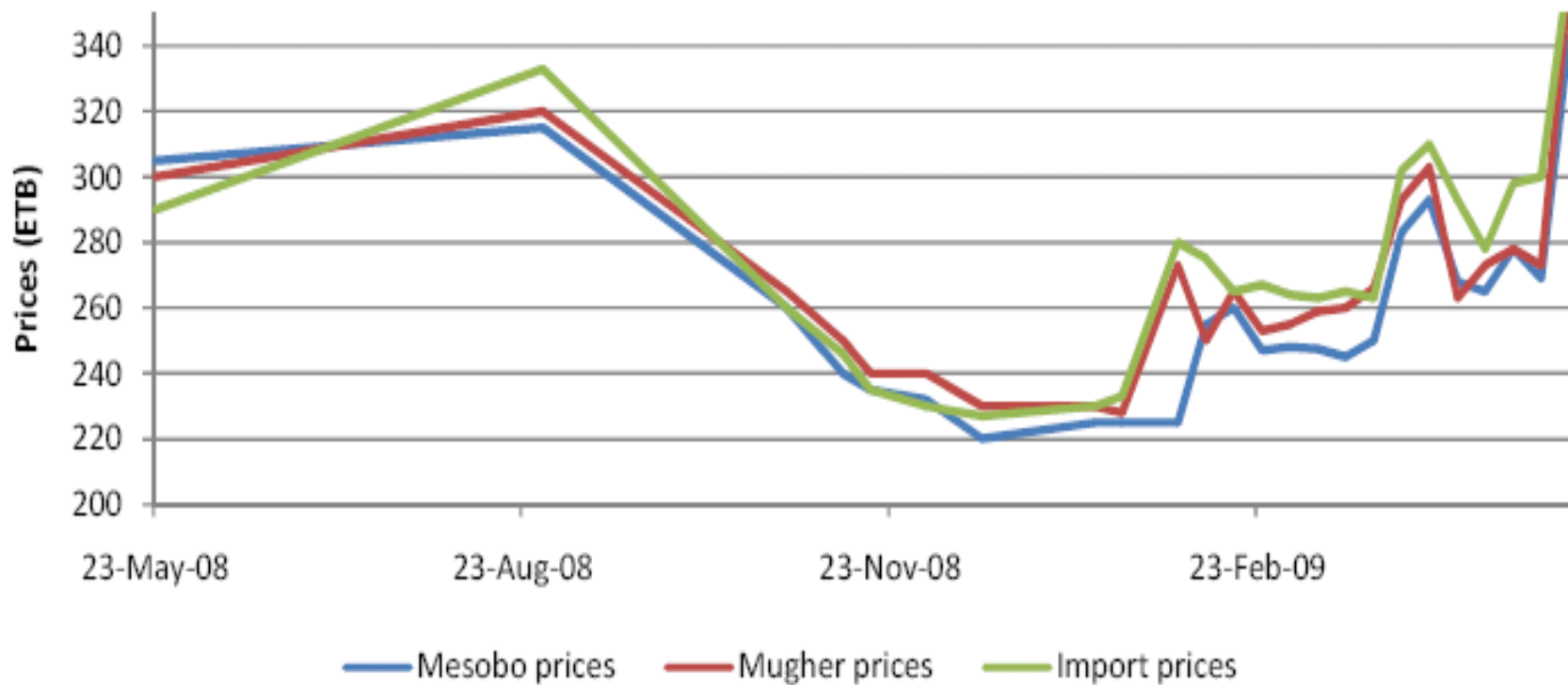
- Some of the major challenges faced in the Ethiopian construction industry are:
 - ✚ Lack of equipment and material
 - ✚ Scarcity of finance
 - ✚ Inefficient custom and clearance
 - ✚ Lack of skilled labor
 - ✚ Construction project delays: Delays are endemic to construction projects in Ethiopia.



8. The Ethiopian Construction Industry

8.3 Challenges in the construction sector

□ Cement Crisis:



Retail prices of cement from Mugher, Messebo and Imports (May 2008 - May 2009)

8. The Ethiopian Construction Industry

8.4 Recent Trends and Future Prospects

I. Road Construction

- The **Road Sector Development Plan (RSDP)** has been implemented over a period of thirteen years and in three separate phases, as follows:
 - RSDP I i Period from July 1997 to June 2002 (5 year plan)
 - RSDP II i Period July 2002 to June 2007 (5 year plan)
 - RSDP III i Period July 2007 to June 2010 (3 year plan)

Phases of the Program	Financial (in Million ETB)		%	Physical (in km)		%
	Budget	Disb.		Plan	Acco.	
RSDP I (Five Years)	9812.9	7284.5	74	8908	8709	98
RSDP II (Five Years)	15985.8	18112.8	113	8486	12006	142
RSDP III (Three Years)	34643.9	34957.8	101	20686	19250	93
Total RSDP (Thirteen Years)	60442.6	60355.1	100	38080	39965	105

8. The Ethiopian Construction Industry

8.4 Recent Trends and Future Prospects

I. Road Construction

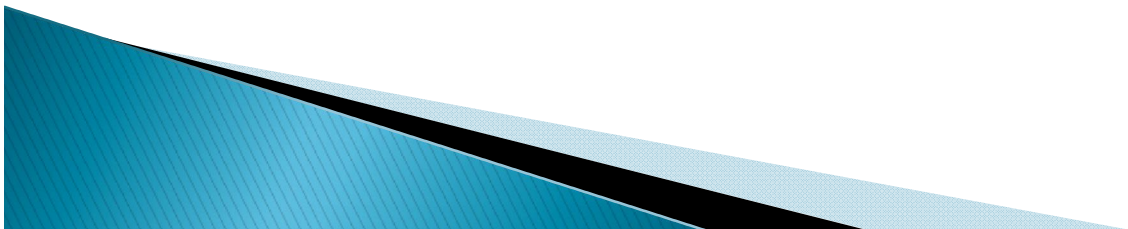
- ❑ **RSDP IV** is prepared as part of Governments' overall **Growth and Transformation Plan**.
- ❑ Implementation of **RSDP IV** is major strategic pillar of the Growth and Transformation Plan.
- ❑ RSDP IV consists of:
 - **Rehabilitation** of **728 kilometers** of trunk roads,
 - **Upgrading** of **5,023 kilometers** of trunk and link roads,
 - **Construction** of **4,331 kilometers** of new link roads
 - **Heavy maintenance** of **4,700 kilometers** of paved and gravel roads and
 - **Routine maintenance** of **84,649 kilometers** of road network

8. The Ethiopian Construction Industry

8.4 Recent Trends and Future Prospects

I. Road Construction

- The program also consists of the following regional and Wereda road components
 - Construction of **11,212 kilometers** of **new rural roads** through the RRAs; and
 - Construction of **71,523 kilometers** of **Wereda roads** through the Wereda road offices



8. The Ethiopian Construction Industry

8.4 Recent Trends and Future Prospects

II. Railway Construction

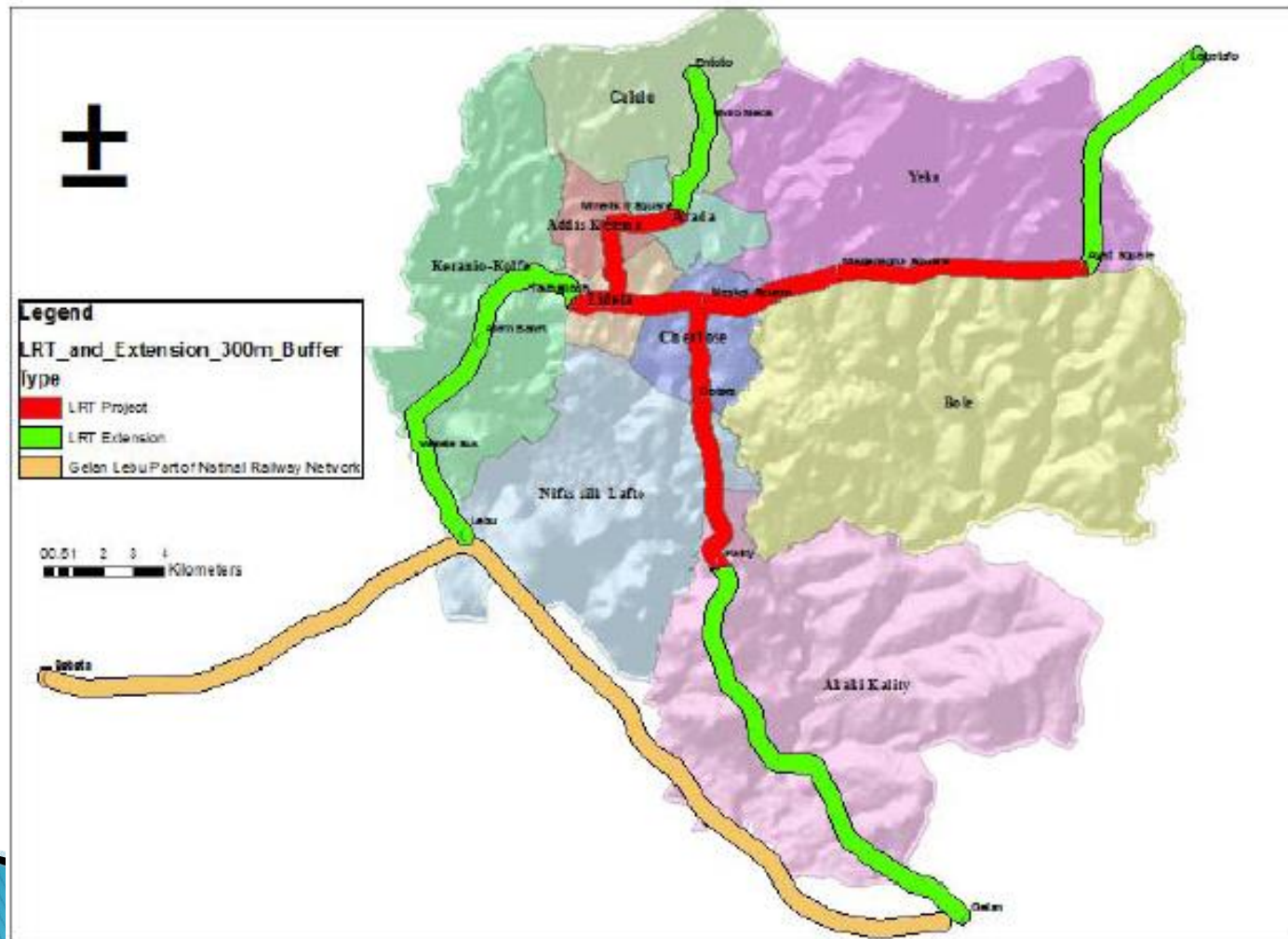
- ❑ Officially several Railroad projects have been launched by Ethiopian Railway Corporation (ERC).
- ❑ ERC is presently managing a 5,000 km proposed national railway network study and the Addis Ababa Light Rail Transit (AALRT) Project.

A. Addis Ababa Light Rail transit Project (AA LRT):

- The 1st Phase of the LRT project comprises an *East-West* line from *Ayat* to *Torhailoch* (*17.35Km*) and a *North-South* line from *Menelik II Sq.* to *Kality* (*16.90 Km*).
- The Total Length of *Phase I* will be *34.25 Km*.
- Cost: *3 million USD* per Kilometre

8.4 Recent Trends and Future Prospects

II. Railway Construction



8. The Ethiopian Construction Industry

8.4 Recent Trends and Future Prospects

II. Railway Construction

B. Federal Railway Projects

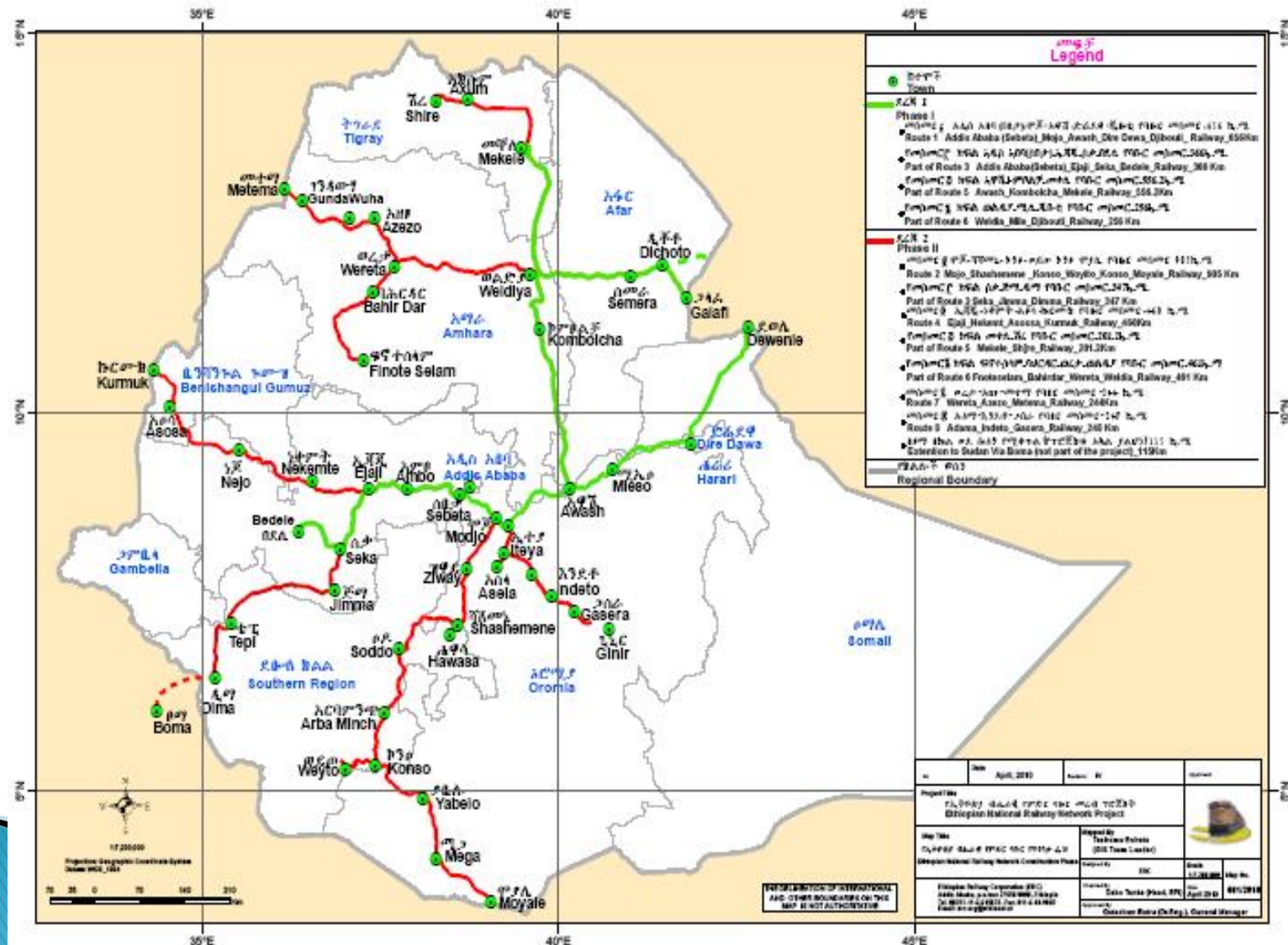
- ❑ Ethiopia has launched the construction of a **5,000 Km** railway complex which aims to link the capital, Addis Ababa, to various regions of the country.
- ❑ According to the GTP **2,000 Km** of the total will be constructed in the **next five years**.
- ❑ The first phase of construction will be the construction of **five railway tracks**, which will create job opportunities for over **300,000 citizens** nationwide, and will cost the nation an estimated **6 billion Birr (US\$336 million) annually**.

8. The Ethiopian Construction Industry

II. Railway Construction

Project Phase	Route	Via	Distance (Km)
Phase I	Route 1	Addis Ababa (Sebeta)_Mojo_Awash_Dire Dewa_ Djibouti	656
	Part of Route 3	Addis Ababa(Sebeta)_Ejaji_Seka_Bedele	366
	Part of Route 6	Weldia_Mile_Djibouti_Railway	256
	Part of Route 5	Awash_Kombolcha_Mekele	556.2
Phase II	Route 4	Ejaji_Nekemt_Asossa_Kurmuk	460
	Route 2	Mojo_Shashemene_Konso_Woyito_ Konso_ Moyale	905
	Route 7	Wereta_Azezo_Metema	244
	Part of Route 5	Mekele_Shire	201.2
	Part of Route 6	Fnoteselam_Bahirdar_Wereta_Weldia	461
	Route 8	Adama_Indeto_Gasera	248
	Extension	Extension to Sudan Via Boma (not part of the project)	115

II. Railway Construction



8. The Ethiopian Construction Industry

8.5 Recent Trends and Future Prospects

III. Hydropower Development

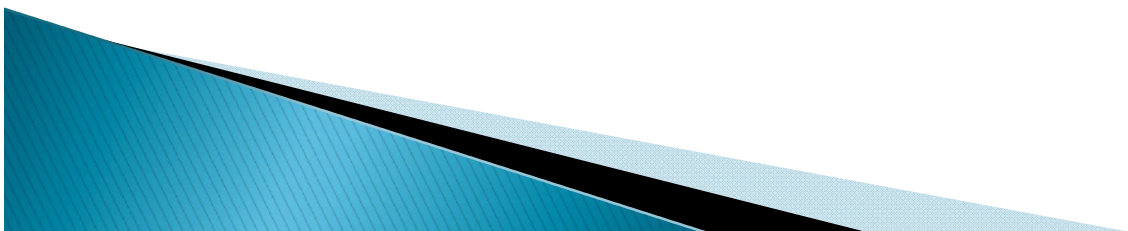
- ❑ The Ethiopian government has for long recognized that economic progress will depend principally on the development of the hydropower resources of the country.
- ❑ Ethiopia has a *vast hydropower potential*, which is estimated to be about *45,000 MW*.
- ❑ Even though Ethiopia considers itself the *Powerhouse of Africa*, so far very little percentage (*less than 5%*) of the vast potential has been harnessed.
- ❑ In 2009 *less than 10%* of Ethiopians had access to electricity and the country was plagued by power outages.
- ❑ In order to overcome this situation, the government has embarked on an ambitious dam construction program.

8. The Ethiopian Construction Industry

8.5 Recent Trends and Future Prospects

III. Hydropower Development

- ❑ *Three hydropower plants* with a combined capacity of **1.18 GW** were commissioned in 2009 and 2010 alone, more than doubling the previous installed capacity of the country.
- ❑ The financial costs of large dams that have been completed since 2009 and are scheduled to be completed until 2014 is estimated at about **US\$ 6 billion**, or about **20% of annual GDP**.
- ❑ The construction of even more large dams is foreseen in a Master Plan that aims to bring the capacity to **15 GW**.



III. Hydropower Development

Name	Installed Capacity	Commissioning	Basin	Contractor	Financing	Cost
Fincha	134 MW	1973	Fincha (Blue Nile)			
Gilgel Gibe I	180 MW	2004	Omo river	Salini (bid)	World Bank	\$331m
Tekeze	300 MW	2009	Tekeze (Atbara)	Sinohydro Corporation (bid)	Chinese	\$365m
Beles	460 MW	2010	Lake Tana (Blue Nile)	Salini (no bid)	Ethiopian government	
Gilgel Gibe II	420 MW	2010	Omo River (no dam, fed by GG I)	Salini (no bid)	Italy and EIB	Euro 370m
Gilgel Gibe III	1870 MW	2012-13	Omo river	Salini (no bid)	Italy	Euro 1.55bn
Fincha Amerti Nesse (FAN)	100 MW	2013	Fincha (Blue Nile)	China (CGGC)	Exim Bank of China	\$276m
Halele Worabese	440 MW	2014	Omo river	Sinohydro Corporation	FairFund?	Euro 470m
Gilgel Gibe IV	2000 MW	2014	Tributary of the Omo River	Sinohydro Corporation	Chinese	\$1.9bn
Chemoga Yeda	278 MW	2013	tributary of the Blue Nile, near Debre Markos	Sinohydro Corporation	Chinese	\$555m
Genale Dawa III	256 MW	Awarded in 2009	between Oromo and Somali state	Chinese (CGGC)	Chinese	\$408m

8. The Ethiopian Construction Industry

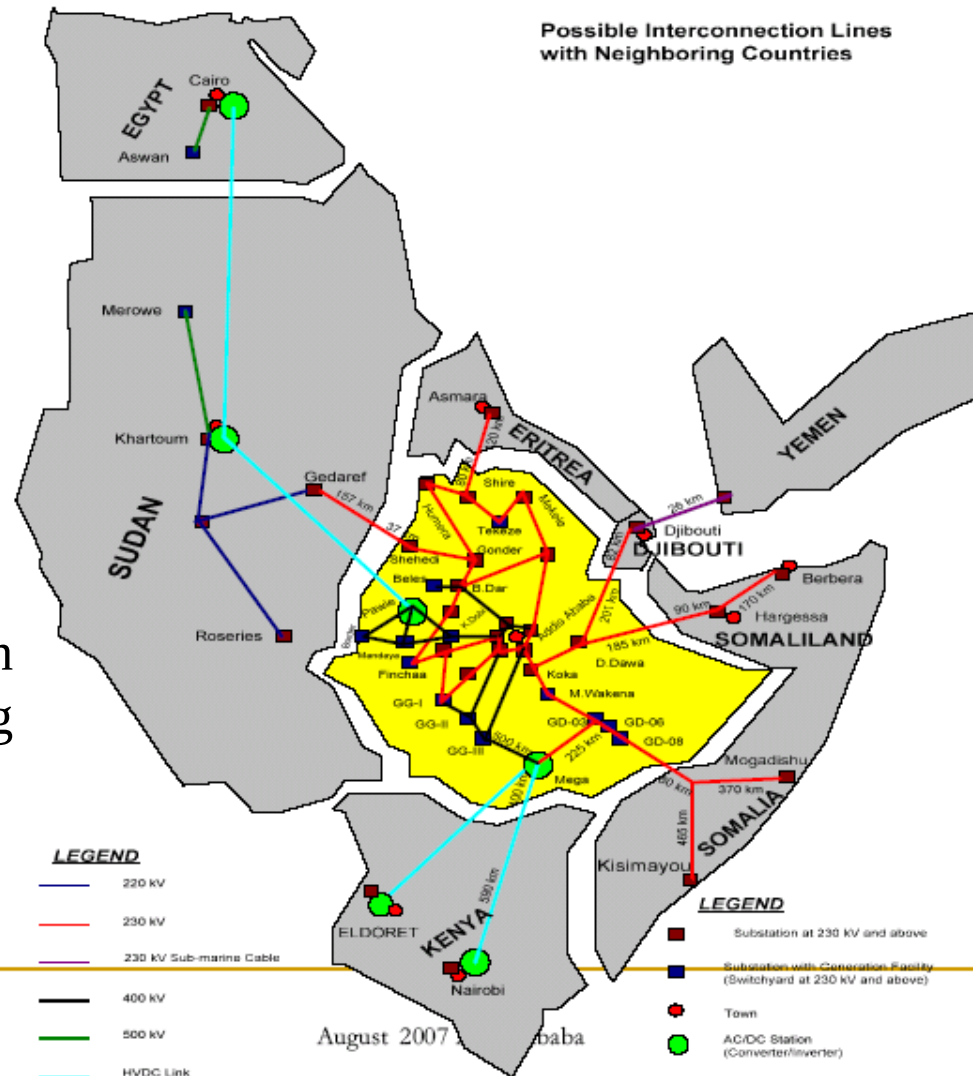
III. Hydropower Development

- Other projects included in the 25-year Master Plan of the national power utility EEPCO are:
 - ***Genale IV Project***, with 256 MW electric power generation capacity; to be completed before 2015, project cost 296 million Euro.
 - ***Geba I and II projects***, with 366 MW electric power generation capacity; to be completed in 2015, project cost 384 million Euro.
 - ***Gojeb Project***, with 150 MW electric power generation capacity; to be completed in 2015
 - ***Karadobi 1600 MW***; prefeasibility study by Norconsult-Lahmeyer financed by a grant from Norway is complete; the dam will be located on the Blue Nile and it is expected to export power to Sudan and possibly to Egypt , project cost 1548 million Euro.
 - ***Mandaya 2400-2800 MW***, located on the Blue Nile, project cost 1920 million Euro.

8. The Ethiopian Construction Industry

III. Hydropower Development

Possible interconnection lines with neighboring countries



8. The Ethiopian Construction Industry

8.4 Recent Trends and Future Prospects

IV. Wind power Development

- ❑ EEPCo has been planning the implementation of wind parks since 2005 in several areas, which are estimated to comprise of up to **200 MW** to the year 2012.
- ❑ EEPCo has decided to use wind power for the several advantages that it posses:
 - Being renewable,
 - Being reliable and affordable,
 - Being complementary to hydropower plants: rainy season i low wind; dry season i high wind potential, and
 - combining wind and hydro adds value to the hydro plant, i.e. longer operation time, also at the end of dry season (water saving through wind).

8. The Ethiopian Construction Industry

8.4 Recent Trends and Future Prospects

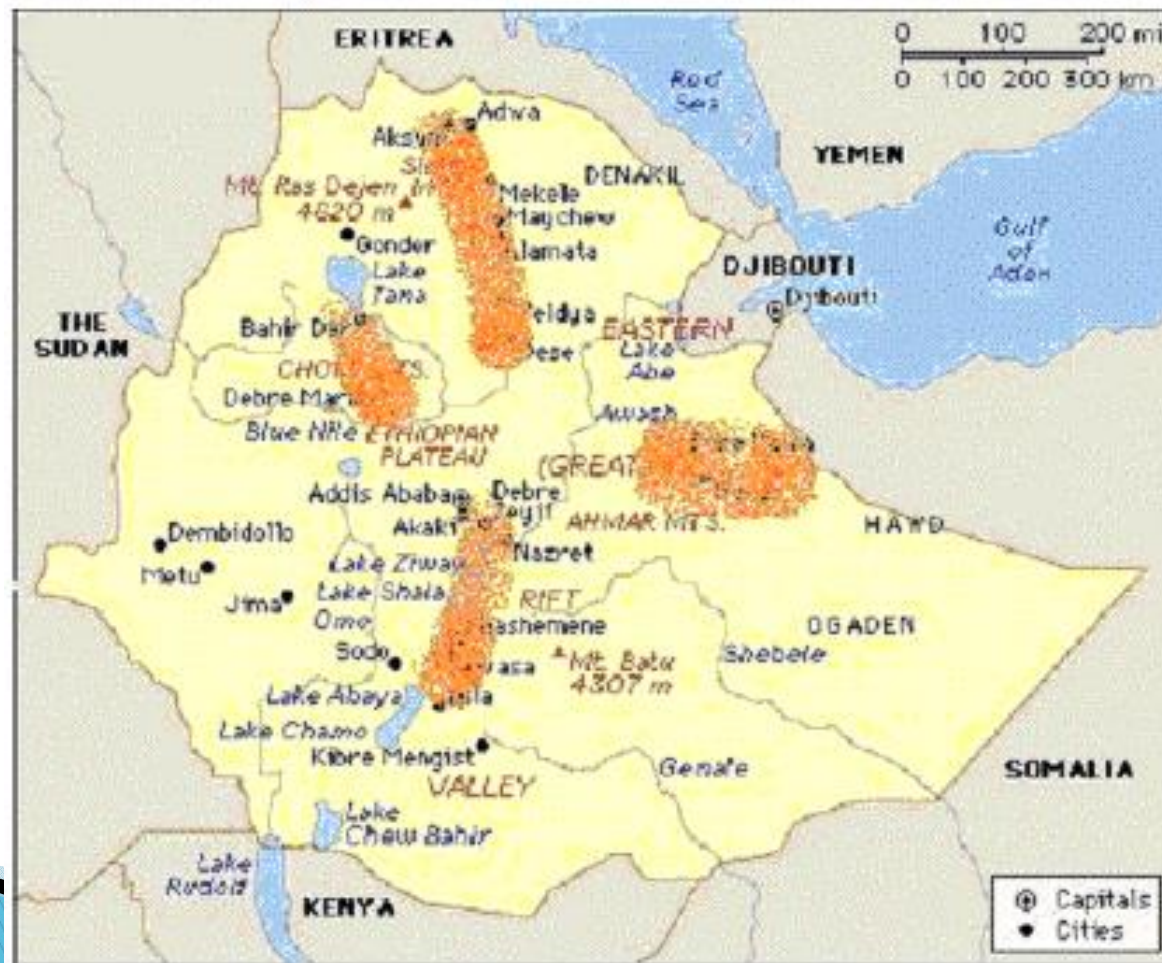
IV. Wind power Development

S. No.	Name of the project	Electric power generation capacity in MW	Year of completion
1	Ashengoda Wind Power Project	120 (€210 million)	2012
2	Adama Wind Power Project	51 (\$117 million)	2011
3	Adama II Wind Power Project	51	2013
4	Assela Wind Power Project	100	2013
5	Ayisha Wind Power Project	300	2012
6	Debre Birhan Wind Power Project	400	2013
7	Messobo Wind Power Project	42	2012

8. The Ethiopian Construction Industry

8.4 Recent Trends and Future Prospects

IV. Wind power Development



The four major search areas for wind power

8. The Ethiopian Construction Industry

8.4 Recent Trends and Future Prospects

VI. Irrigation Projects

- Based upon the various river basin master plans and land and water resources surveys, the aggregate *irrigation potentials* of Ethiopia have been estimated to be **2,523,000 million hectares**, net.
- The total area irrigated till 1991 was 176,015 ha, this figure had increased to 197,250 ha in 1998.

Description	Small-scale schemes	Large- and medium-scale schemes	Total area
Short-term 1 st 5 years: (2002-2006):	40,319	13,044	53,363
Medium-term 2 nd 5 years: (2007- 2012):	40,348	39,701	80,049
Long-term 3 rd 5 years: (2012-2016):	46,471	94,729	141,200
Total area to be developed during 2002-2016:	127,138	147,474	274,612
Currently developed (approximate):	98,625	98,625	197,250
Grand total irrigated area by 2016:	225,763	246,099	471,862

8. The Ethiopian Construction Industry

8.4 Recent Trends and Future Prospects

VI. Irrigation Projects

- The Federal investment plan for the short, medium and long terms would require a total investment of **US\$ 1,114.3 million** over 15 years.

Project Type	ST (US\$)	MT (US\$)	LT (US\$)	Total
1. Federal Projects	114.7	268.1	700.9	1,083.7
1.1 Implementation	90.6	223.0	686.7	1,003.0
1.2 Studies & designs				
a) Program Scheme	8.0	16.3	4.3	28.6
b) Nile Initiative Schemes (w/o Tana Shore Schemes)	16.1	28.8	-	44.9
c) Multi-purpose Schems	-	-	9.9	9.9
2. Regional Projects	193.2	188.8	217.4	599.4
2.1 Implementation	188.3	184.0	211.9	584.2
2.2 Studies & Designs	4.9	4.8	5.5	15.2
Total	307.9	456.9	918.3	1,683.1

8. The Ethiopian Construction Industry

8.4 Recent Trends and Future Prospects

VII. Housing Developments

- ❑ Currently nearly 11.7 million people, which are 16% of the total population, live in urban area.
- ❑ The annual urban population growth rate is estimated to be 4.3%.
- ❑ When the housing development was first launched there were shortages of 900,000 houses.
- ❑ In order to alleviate the acute shortage of housing the Federal government in its *Hosing Development Projects* (2006/07-2009/10) had set a target to construct **400,000 houses** in five major regions, Dire Dawa and Addis Ababa with a total budget of **15.8 billion birr** within **4 years time**.
- ❑ The government has *achieved* to construct only **151,043 houses**, which is **half of what has been set** in the target.

8. The Ethiopian Construction Industry

8.4 Recent Trends and Future Prospects

VII. Housing Developments

- ❑ Number of blocks to be constructed for housing in the next five years

Project Year	No. of Blocks to be constructed	No. of Consulting office required	No. of contractors required	No. of Small Scale Enterprises
2010/11	30,000	32	1,922	4.306
2011/12	30,000	32	850	1,455
2012/13	35,000	32	850	1.455
2013/14	35,000	32	850	1,455
2014/15	40,000	32	1,000	2,243

8. The Ethiopian Construction Industry

8.4 Recent Trends and Future Prospects

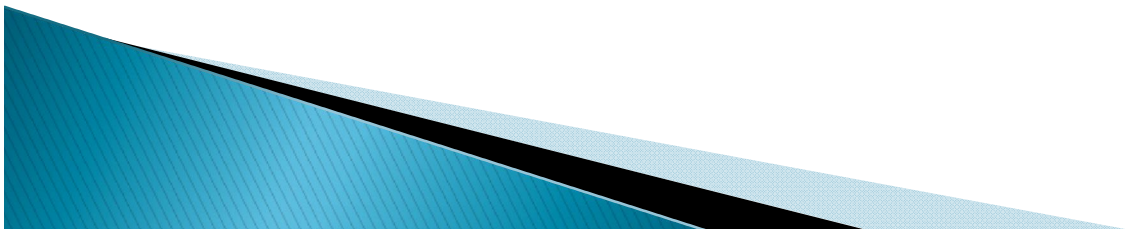
VIII. University Capacity Building Projects

- ❑ The Ministry of Education (MoE) slotted a staggering *eight billion birr* for the construction of *ten new universities* in the country.
- ❑ This addition will raise the number of universities in the country to 32 from the current 22.
- ❑ Number of blocks to be constructed in the new universities

Project Year	No. of Blocks to be constructed	No. of Consulting office required	No. of contractors required	No. of Small Scale Enterprises
2010/11	676	7	666	420
2011/12	325	7	370	280
2012/13	150	7	415	280
2013/14	110	7	415	280
2014/15	-	-	-	-

9. Why Construction Management?

- ✦ **Management** is defined as the art of arranging and/or organizing various activities, operating equipment and group of people in a suitable manner to create systematic operation with continuity to achieve a common goal.
- ✦ **As construction** is also one of the industries which need the proper systematic **coordination of activities, materials, labor and operating equipment**, therefore managing such industry is necessary.



9. Why Construction Management?

- ✦ Construction management is necessary to insure:
- ✦ Proper planning and organization of the works,
- ✦ The effective use of resources,
- ✦ The completion of works within estimated budget and specified time,
- ✦ In time delivery and utilization of materials,
- ✦ The necessary quality of the work,
- ✦ Proper usage of equipment and latest methods of construction and technology,
- ✦ Evolving a reputation for high quality of workmanship,
- ✦ Controlling over the contract agreed upon and specification

9. Why Construction Management?

- ✦ Motivating people to work to their best and creating an organization that works as a team,
- ✦ In taking sound decisions at the lowest practical management level through delegation of authorities,
- ✦ Proper communication and reporting of the works executed,
- ✦ The provisions of safe and satisfactory working conditions for all workers,
- ✦ Monitoring of the works to be executed against planning,
- ✦ Proper sequence of flow of construction, and
- ✦ Proper coordination of the resources to create an organization that works as wholesome to fulfill the objectives.

THANK YOU!

