

# Standardization Initiatives and Challenges in EDR.



Tilahun Sarka (Eng.)  
DG, EDR.

# CONTENT OF PRESENTATION



1

**Introduction**

2

**Standardization**

3

**Technical and Financial challenges**

4

**Conclusion**

# 1 Introduction



- EDR (Ethio-Djibouti railway share company)
  - Railway share company owned by Ethiopian and Djiboutian government
  - Established on December 2017 for operation and maintenance of railway line from Addis to Djibouti.
  - Currently under management contract with Chinese company for the operation and maintenance of the line.
  - Operation and maintenance is conducted by Chinese standard usually known as Chinese Class II Standard.

# 2

# STANDARDIZATION



- According to UIC guideline to standardization document, standards are defined as “document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rule, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context”.

# Standardization cont.



- Global practice



# Standardization cont.



- African railway standard
  - So far Africa doesn't have any significant union of railways, however some railway lines operate cross country like, Sitarail, Tazara and EDR.
  - African Union (AU) planned to construct railway line linking African's major countries with AHSRN Vision 2063.
  - ***For that plan to be realized Africa needs one regional railway design, construction and operation standard.***

# Standardization cont.

## Ethiopian railway standard



**Standard**



**Design**



**Construction**



**Operation and  
maintenance**

# Addis – Djibouti Overview from general Standards perspective.

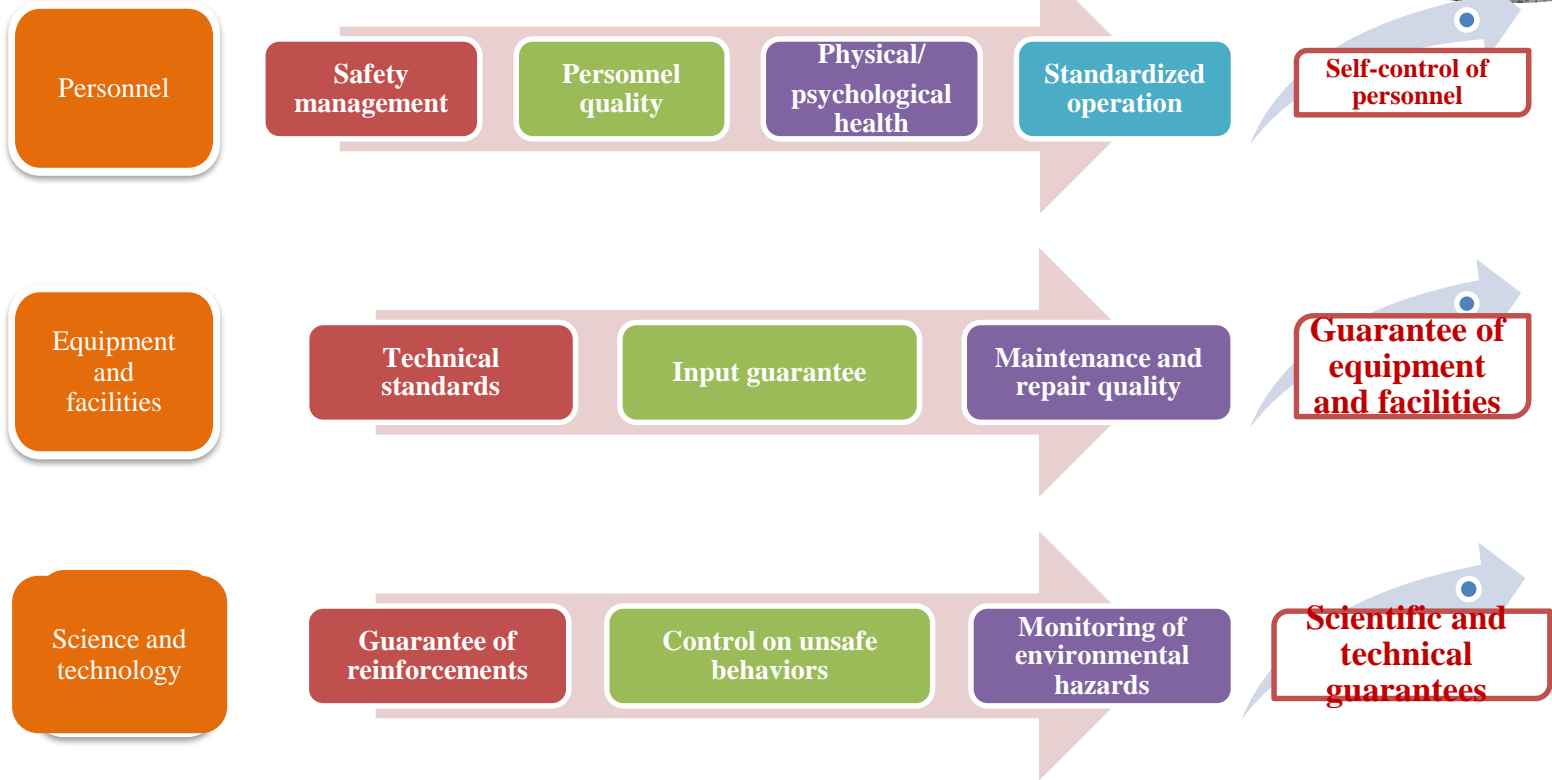


## Main technical standard

- Gauge: standard gauge 1435mm
- Railway class: national railway class II in China.
- Number of main line: double-track line from Sebeta-Adama; single-track line from Adama-Mieso- Djibouti
- Design speed: maximum travelling speed of 120km/h for passenger train; maximum travelling speed of 80km/h for freight train
- Minimum curve radius: 1200m in normal segment, and 800m in difficult segment
- Centerline spacing: 4m
- Limiting slope: 9‰, and 18.5‰ for dual-locomotive traction
- Type of traction: electric traction
- Type of locomotive: HXD1C locomotive as main line locomotive; diesel DF7G type as shunting locomotive
- Traction mass: 3500t
- Effective length of receiving-departure line: 850m for single-locomotive, and 880m for dual-locomotive
- Type of block: automatic block between stations
- Number and type of existing locomotives and rolling stocks: 35×six-axle 7200 kW HXD1C type electric main line locomotives; 6×six-axle 2200 kW DF7G type diesel shunting locomotives; 30×25G type passenger locomotives, including 20 hard-seat locomotives, 4 hard-berth locomotives, 4 soft-berth locomotives and 2 dining cars; 1100 freight locomotives.



# List of standards for all disciplines of the Addis Ababa-Djibouti Railway: safety



# Standardization cont.



- Generally Ethiopian government is developing national design, construction , operation and maintenance standard in collaboration with Ethiopian standardization agency (EQSA).
- During Construction period, some efforts have been made to develop Railway standardization in consultation with the Russian Saint Petersburg Transport University (PGUPS).
- EDR as a cross country railway operator is planning to develop regional standard for the maintenance and operation of its railway line.
- This can also be done in collaboration and with the support from UIC.



# Technical and financial challenges



The two major challenges in railway industry are:-

1. Technical human capital
2. Financial resource

# Technical challenge

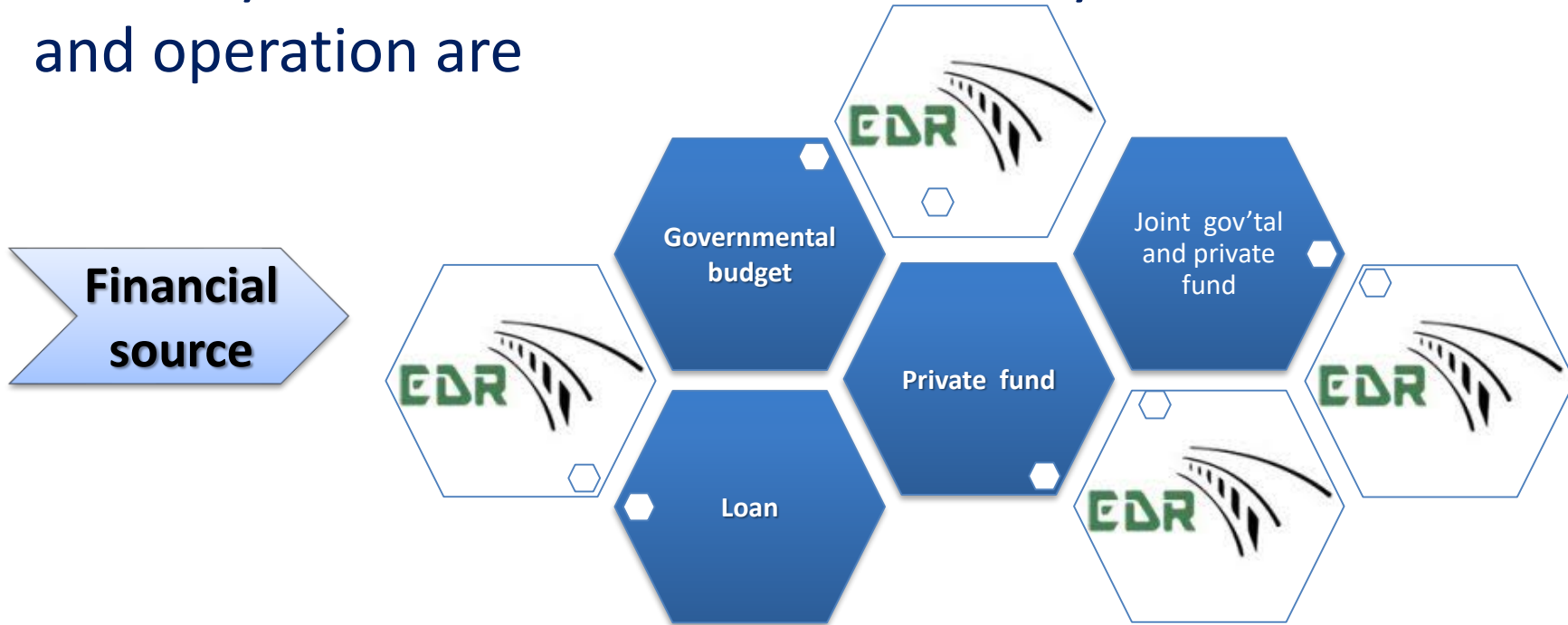


- To overcome the technical challenges EDR develops a capacity building model that will enable each key position in railway operation to be taken over with in the shortest possible time.
- The capacity building model is the key element of our management contract with the Chinese company

# Financial challenge



- Basically the financial source of railway construction and operation are



# Financial cont.



- Its known that railway line construction is highly capital intensive and for a continent like Africa it has been a major challenge for expanding railway infrastructure because of financial constraint.
- The major financial source for African railway line construction is loan based.
- Looking at Ethiopian scenario and EDR all the financial sources are from different global loans and Grants some times.

# 4

## Conclusion



- For the construction and operation of cross country railway line Africa should develop its own regional design, construction, operation and maintenance railway standards for a safe and effective implementation.
- Regarding technical human capital, all African countries should engage in capacity building programs specifically for railway sector.
- With an effort of Railway Digitization by UIC, applied standards of continental Europe can easily be customized and disseminated to African Railways.

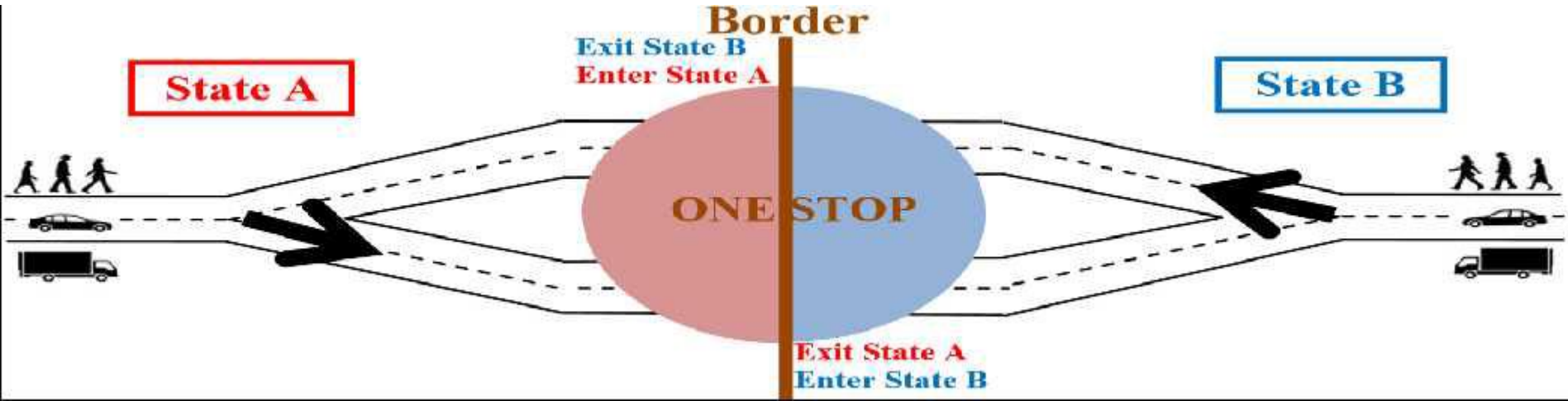
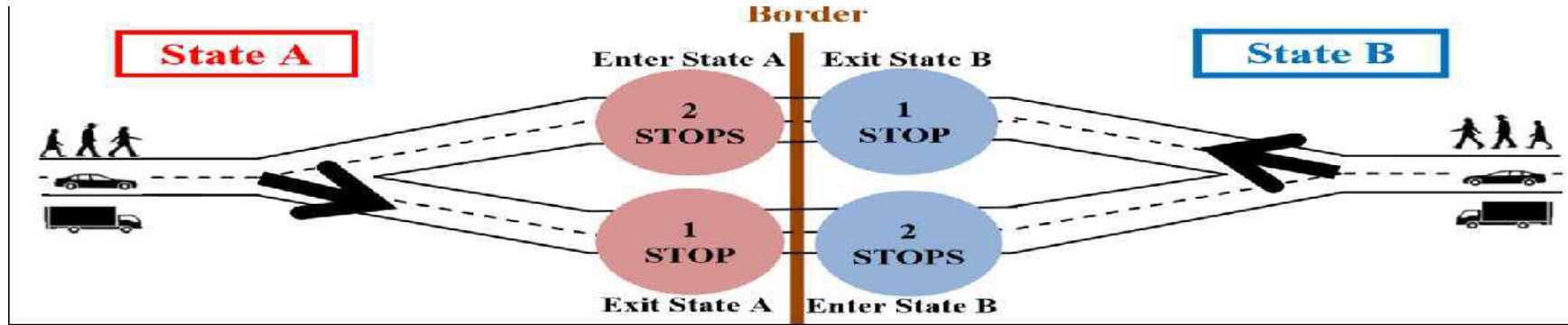
# Conclusion cont.



- And finally regarding financial issue African Development Bank (ADB) should invest in railway sector for the development of railway infrastructure across the continent.



# Let's Standardize and make Two in One!





**Many Thanks!!!**  
**Merci Beaucoup!!!**

