High-Level Dialogue on Energy 2021

Side Event on 'Closing the Energy Efficiency Knowledge Gap‘

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Closing the EE knowledge Gaps in Sri Lanka

Transport Sector

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OUTLINE

- Introduction
  - ✓ Transport Sector
  - ✓ Education Sector
- Methodology
- Key Findings
- Recommendations.

TRANSPORT SECTOR

- Overview of the Transport Sector in Sri Lanka

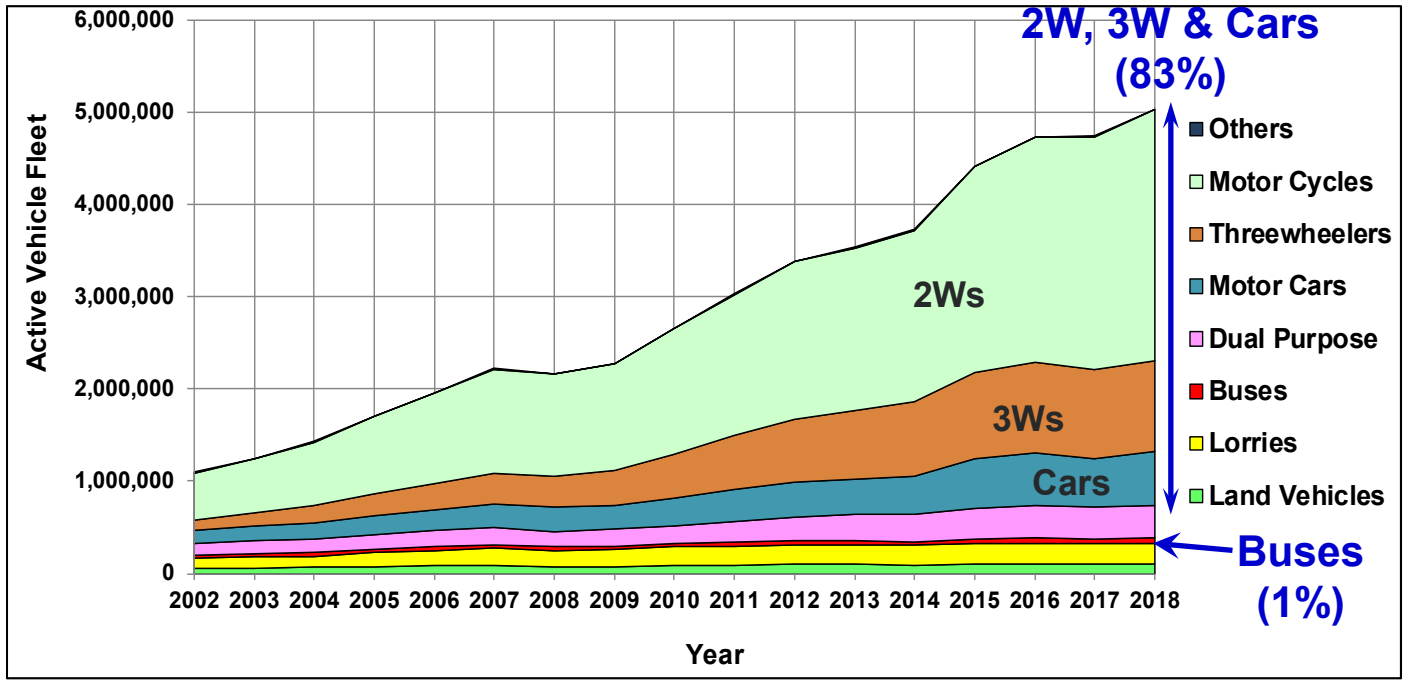
Active Vehicle Fleet

- Road vehicles: 6 million
- Railway: Locomotives – 75
- Inland water/air: Insignificant
- Bicycles: 3 million.

Mobility

- 200 billion passenger-km/yr
  - 94.0% road; 6.0% rail
- 15.0 billion freight ton-km/yr
  - 99% road; 1% rail.

Historical growth of the active vehicle fleet (Road)



→ Accelerated growth of private vehicles (2W, 3W & Cars).

→ Heavy dependence of imported petroleum fuels

→ Deterioration of energy efficiency.

Source: CBSL (2020); DMT (2019)

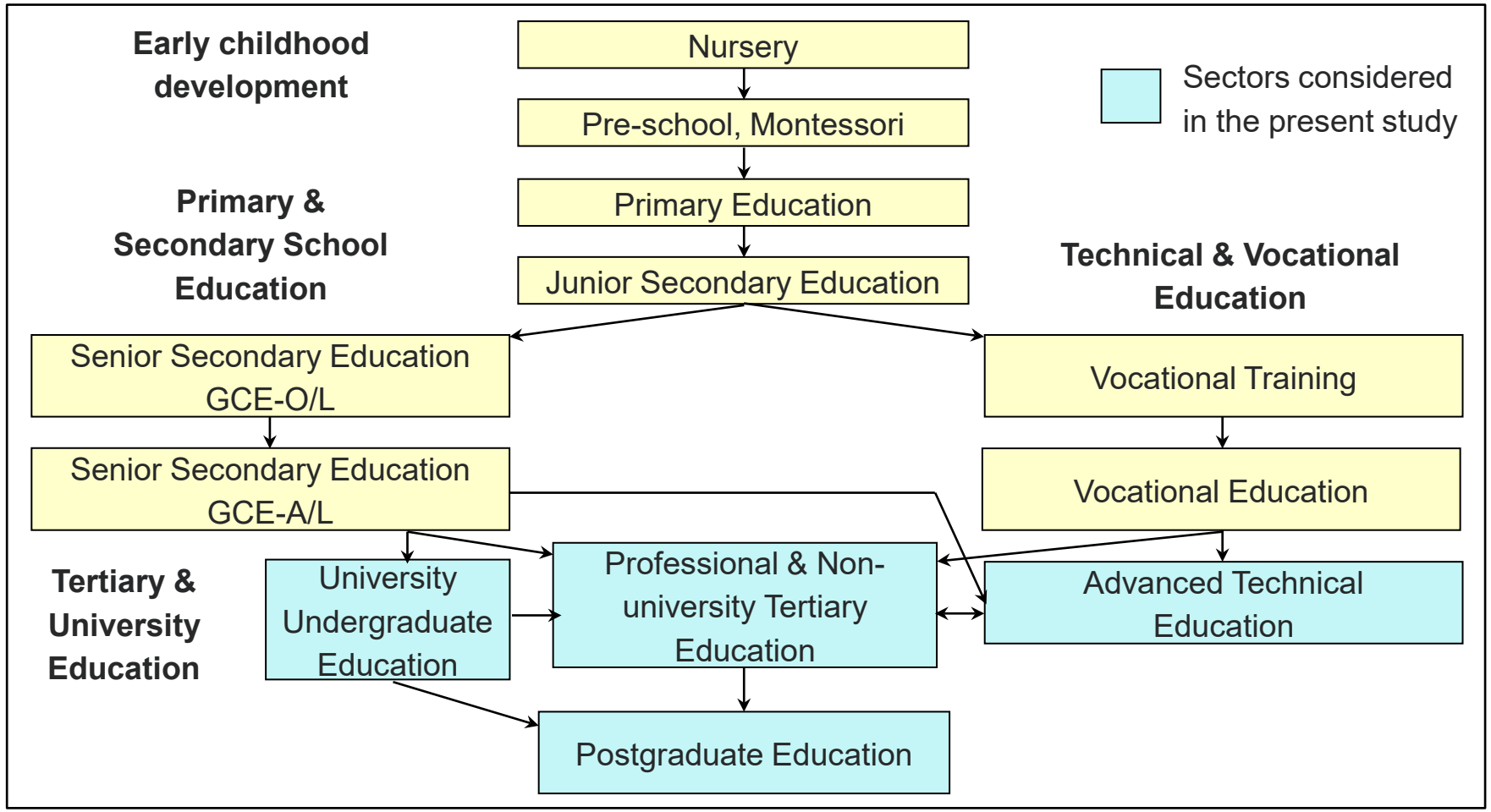
- Sector governance

→ Primarily, transport is a subject of national government.

→ Characterized by multiple agencies and stakeholders in transport, energy, environment, development, infrastructure, education & skill development.

EDUCATION SECTOR

- Overview of the Formal Education Sector in Sri Lanka



- Other modes of education

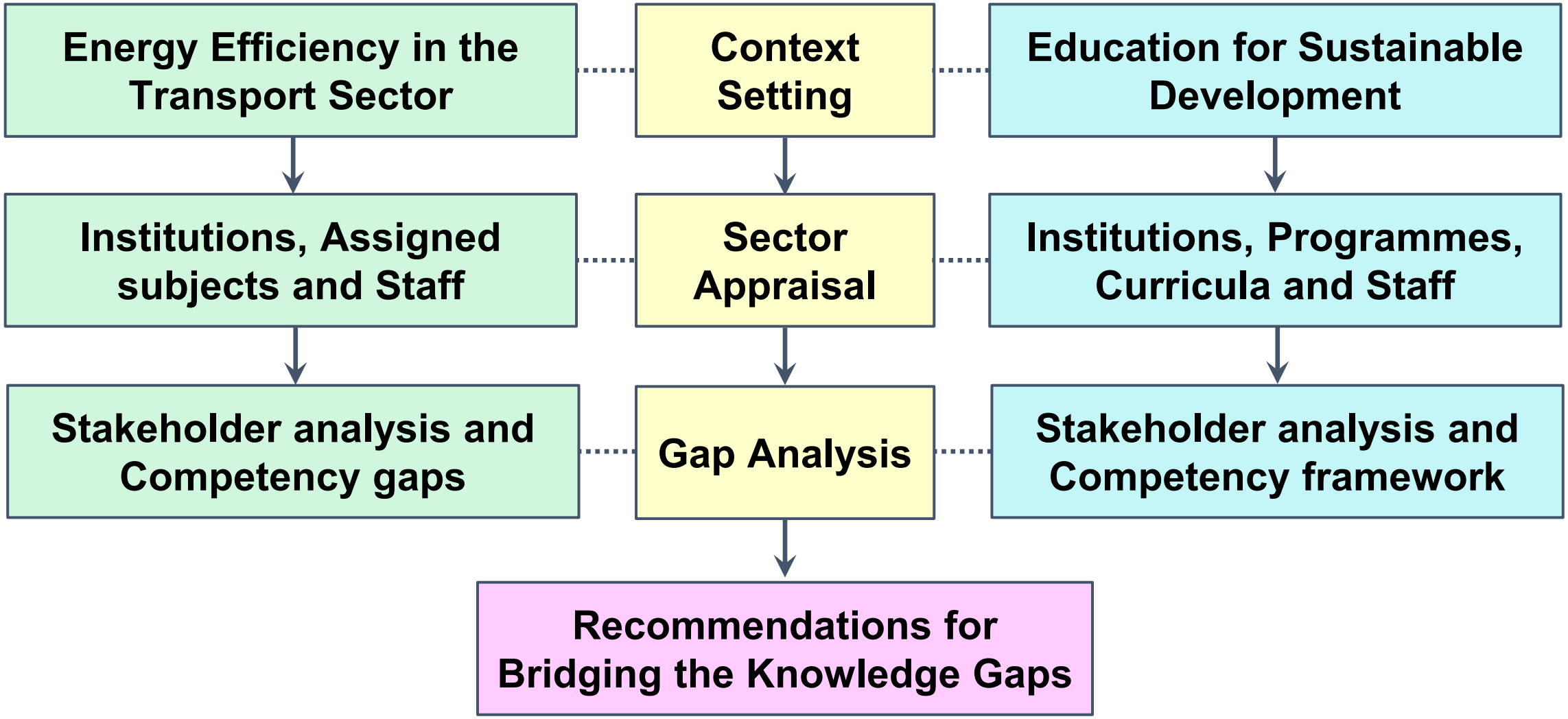
→ Professional education / CPD

→ Non-formal: Workplace-based “In-service” and “On-the-job” training.

→ Informal: Media, Self-learning.

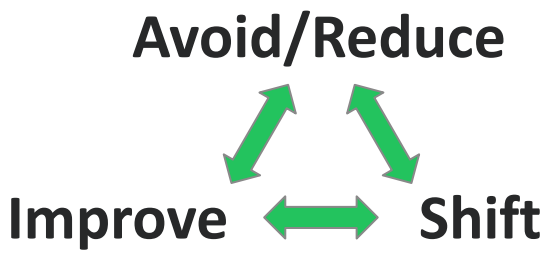
METHODOLOGY

- The Overall Approach



METHODOLOGY

- Energy Efficiency Framework
  - Within A-S-I Approach.



Energy Efficiency of Transport Systems

System Efficiency	Trip Efficiency	Vehicle Efficiency
Organize land use, social and economic activities in such a way that the need for transport and the use of fossil fuels is reduced	Make use of energy-efficient modes like public transport and non-motorized modes to reduce energy consumption per trip	Consuming as little energy as possible per vehicle-km by using advanced technologies & cleaner fuels and by optimizing vehicle operation
Reduce or avoid travel or the need to travel	Shift to more energy efficient modes	Improve the efficiency through vehicle technology
AVOID/REDUCE	**SHIFT**	**IMPROVE**

Source: GIZ (2012)

METHODOLOGY

- Competency Framework
  - Core-competencies.

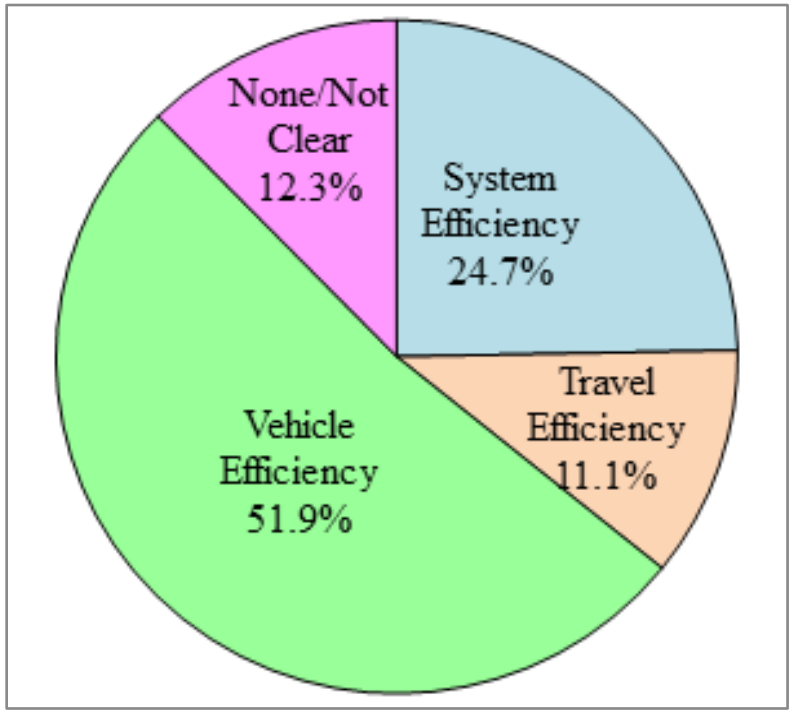
Cognitive Competencies (Knowledge) → Leaning to know
Methodological Competencies (Skills) → Leaning to do
Attitudinal Competencies (Behavioural) → Leaning to be

▪ Cognitive Competencies	▪ Functional Competencies	▪ Attitudinal Competencies
Information	***Anticipatory***	***Normative***
Systems thinking	***Strategic***	***Collaboration***
Critical thinking	***Integrated problem-solving***	***Self-awareness***

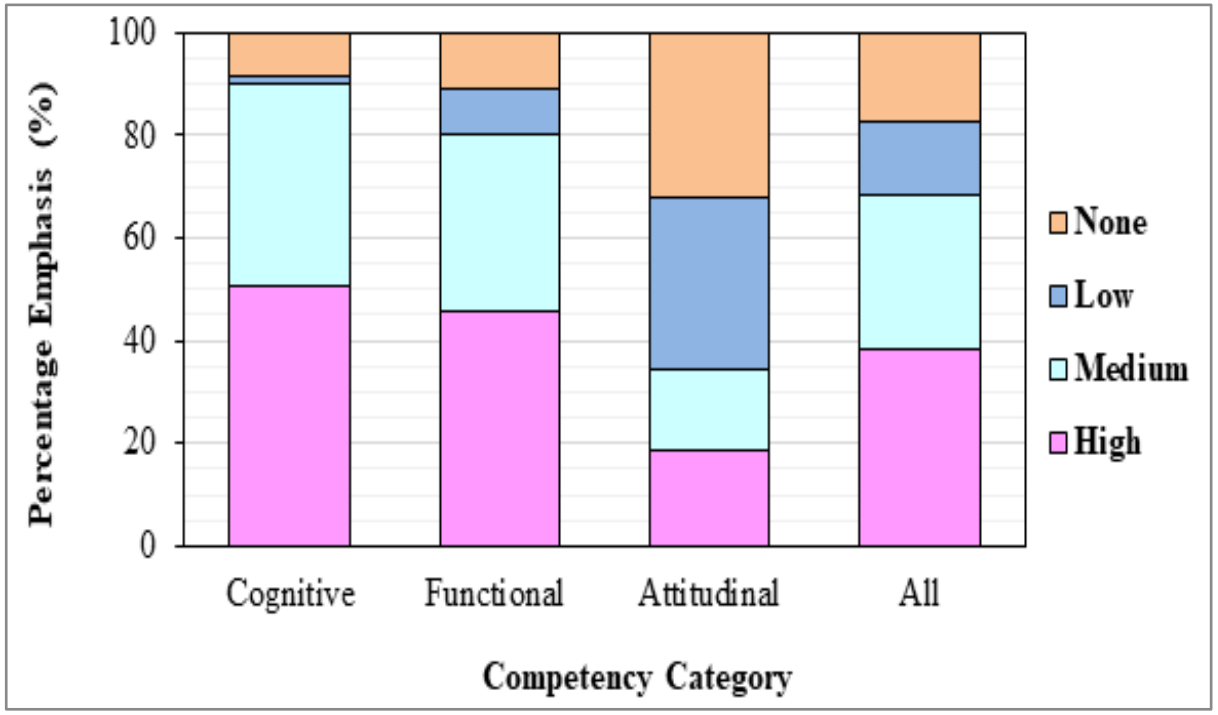
KEY FINDINGS

- Educational Programmes
  - Transport related educational & traning programmes.

Key EE areas covered



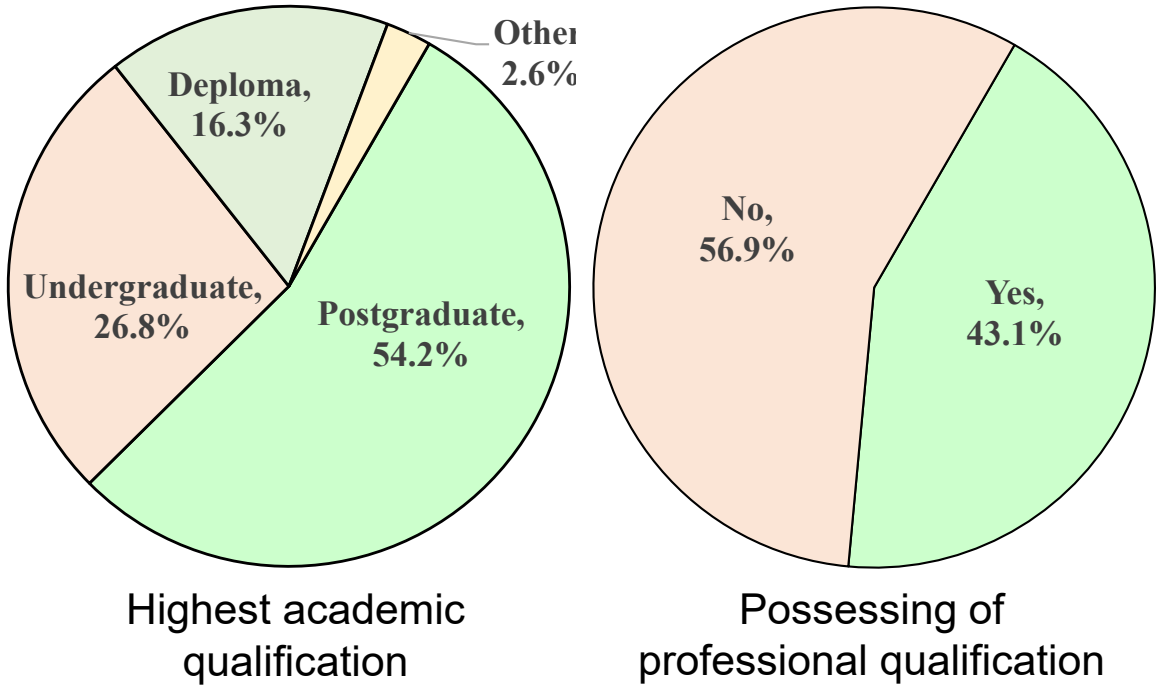
Emphasis given on competencies



KEY FINDINGS

- Transport Sector Actors
  - Competency gap analysis.

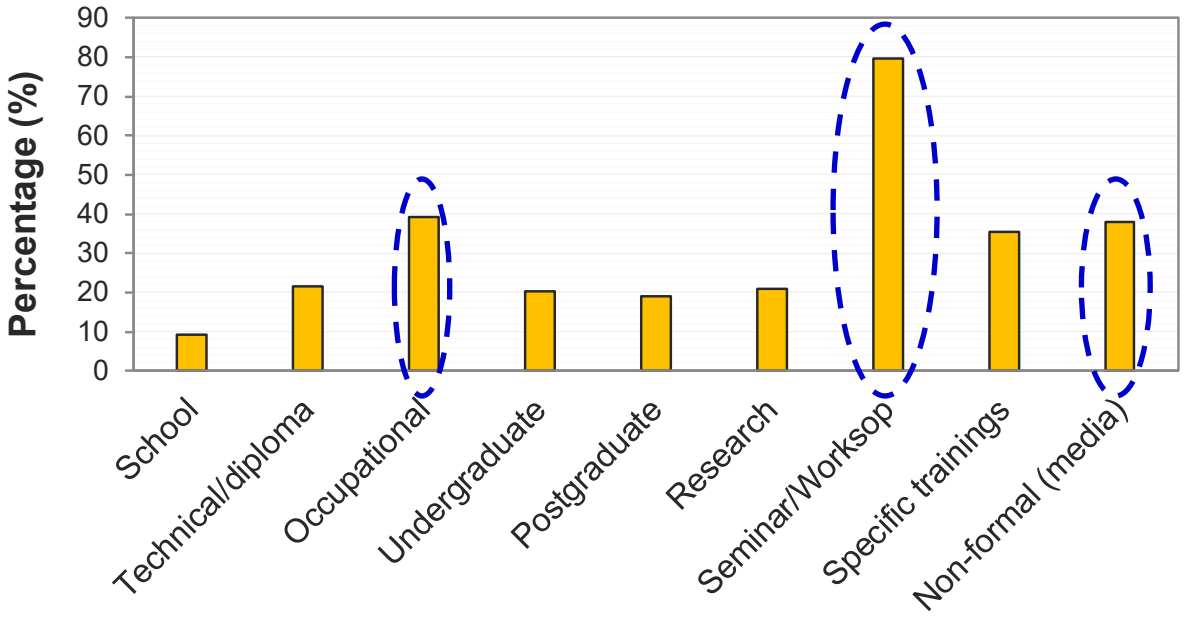
Academic and Professional Qualifications



Highest academic qualification

Possessing of professional qualification

Modes of awareness and education

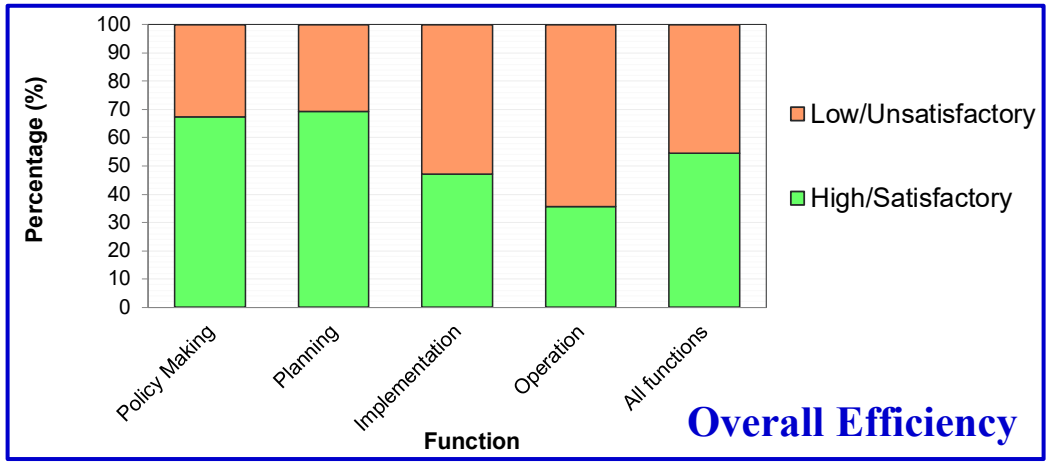


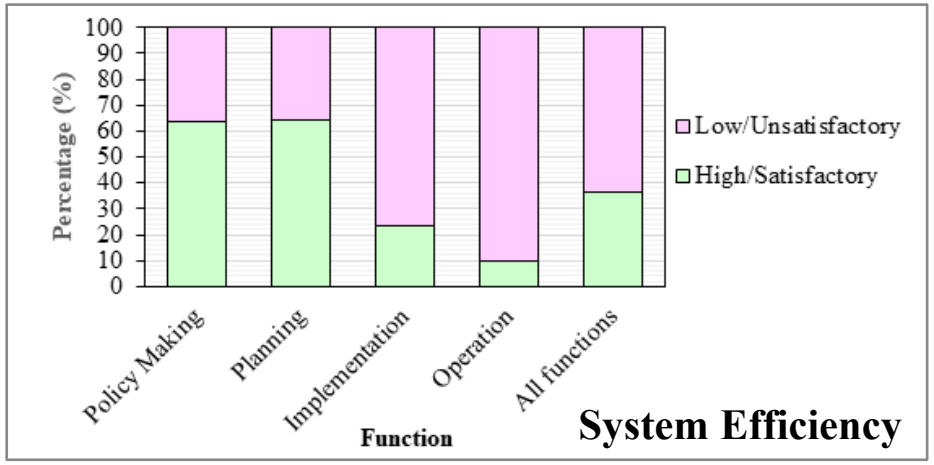
Role of Informal/Non-formal Education

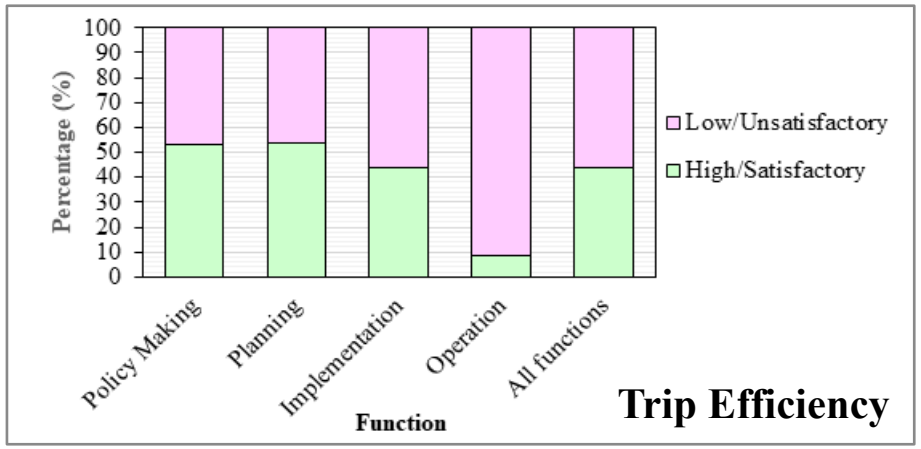
KEY FINDINGS

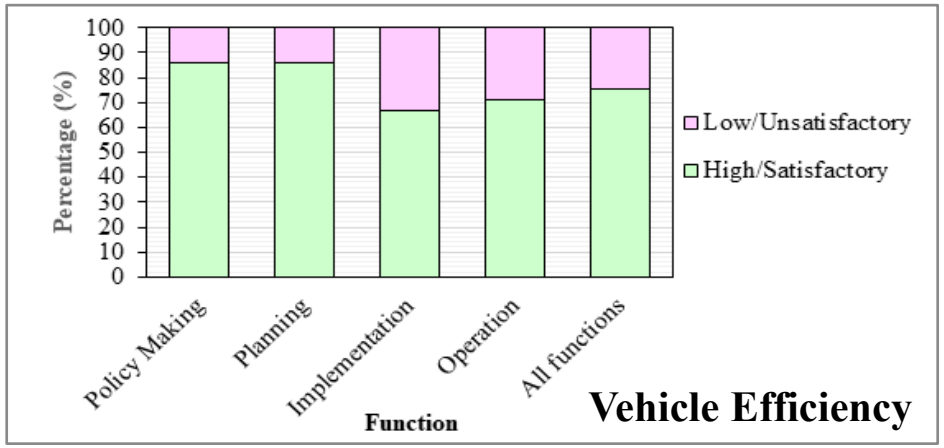
- Transport Sector Actors
  - Competency gap analysis.

Competency Levels of All Staff in Relevant Areas





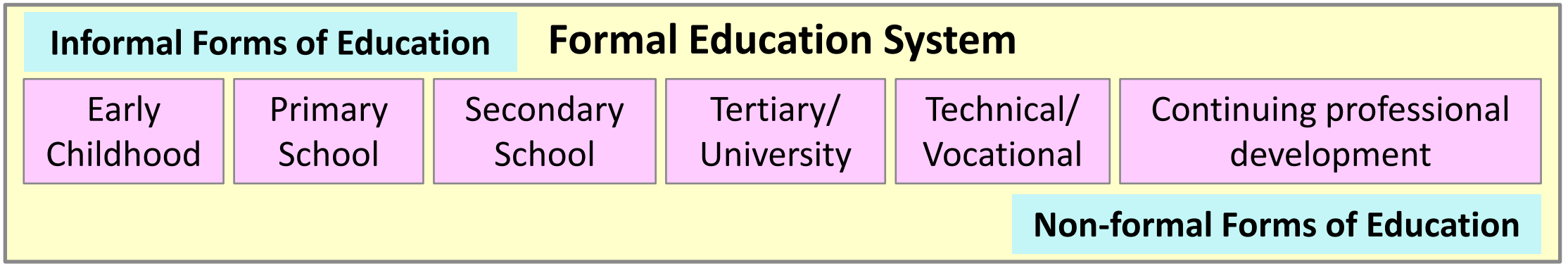




RECOMMENDATIONS

- Education Plan for Bridging the Knowledge Gaps:
  - In line with global initiatives on Education for SD
    - ✓ Across six broader stages within formal education system

Education Plan Programme for Sustainable Transport



- ✓ Non-formal and informal forms of education are treated as integral parts providing complementary learning tools for enhancing lifelong learning.
- ✓ Sustainable transport themes/topics in each level; irrespective of the field of study or the level of academic progression.

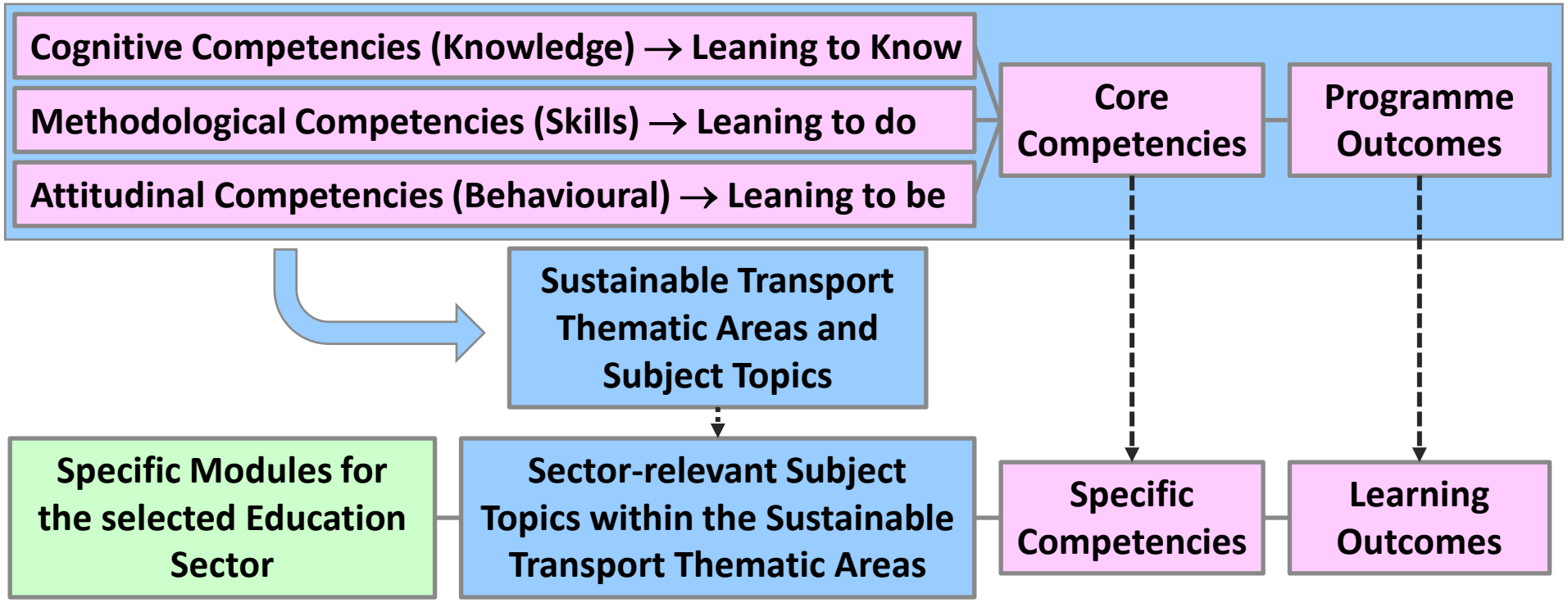
RECOMMENDATIONS

- Thematic Areas/Topics of Sustainable Transport

Theme 1: Development of mobility & transport	Theme 2: Historical change of mobility & traffic	Theme 3: Environment dimensions of transportation	Theme 4: Megacities – new urban challenges
Theme 5: Transport planning: Avoid-Shift-Improve principle	Theme 6: Transport sector & local air pollution	Theme 7: Transport sector & climate change	Theme 8: Transport safety
Theme 9: Sustainable transport infrastructures	Theme 10: Transport sector & land use change	Theme 11: Environmentally sustainable transportation	Theme 12: Transport demand management
Theme 13: Mass transit options & public transport	Theme 14: Non-motorized transportation	Theme 15: Intelligent transport systems (ITS)	Theme 16: Sustainable urbanization & mobility
Theme 17: Cleaner fuels and vehicles	Theme 18: Transport and SCP linkage	Theme 19: Intermodal Transport systems	Theme 20: Eco-driving	Theme 21: Sustainable freight transport
Theme 22: Aviation, ports and environment	Theme 23: Ships, ports and environment	Theme 24: Inland water transport & environment	Theme 25: Diversity and inclusion in transport
Theme 26: Street design, streetscape & traffic calming	Theme 27: Social Equity & Gender Perspectives	Theme 28: Consumer rights & responsibilities	Theme 29: Life-cycle assessment in transport

RECOMMENDATIONS

- Education Plan for Bridging the Knowledge Gaps:
  - Curriculum Framework
    - ✓ Should be formulated in an overarching framework covering all levels:



Acknowledgements

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Thank You