European Commission Infrastructure Seminar, Addis-Ababa, October 2013

Axle Load Control:
Case Studies, Lessons Learned, Guidelines

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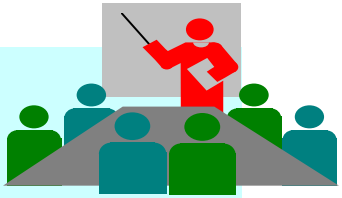
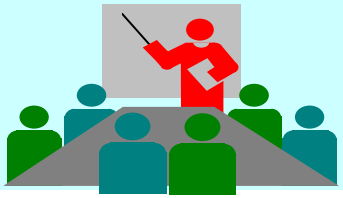
Purpose of Presentation



- To summarize outputs of SSATP supported study on axle load control in Eastern and Southern Africa: *Case studies, lessons learned, guidelines.*
- To highlight progress achieved in overload control in COMESA-EAC-SADC countries
- To indicate the way forward from vision to practice

Outline of Presentation



- General background
- Lessons learned
- Case studies and guidelines
- Achievements and Way Forward
- Summary

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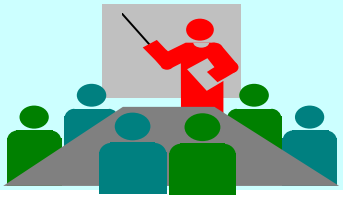

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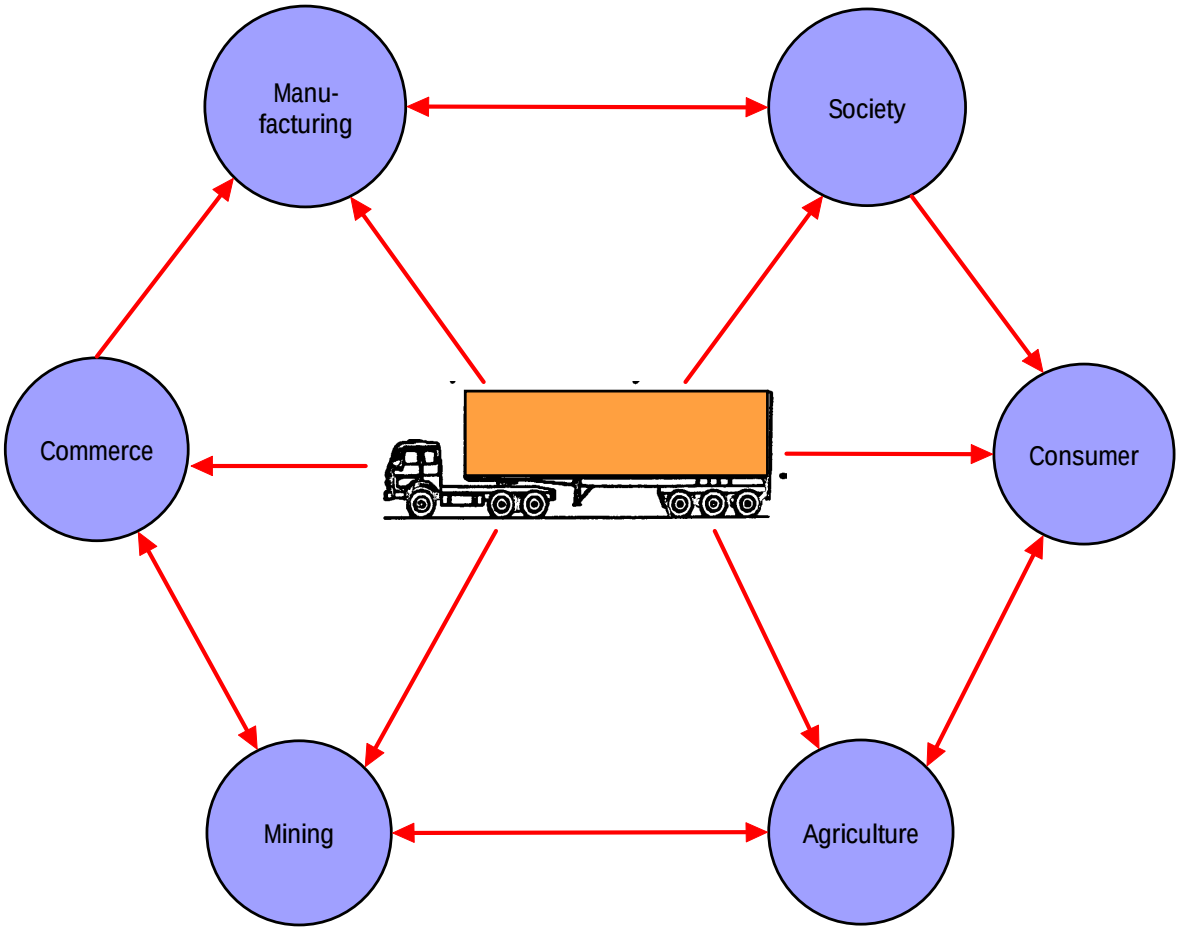
Road Transport – Heartbeat of SSA Economy



The Road Transport Web

- Dominant mode of transport (>80%)
- Essential to the growth of economy
- Impact on road infrastructure
- Need to optimise operations

Trucks–An Essential Link in the Transport Chain

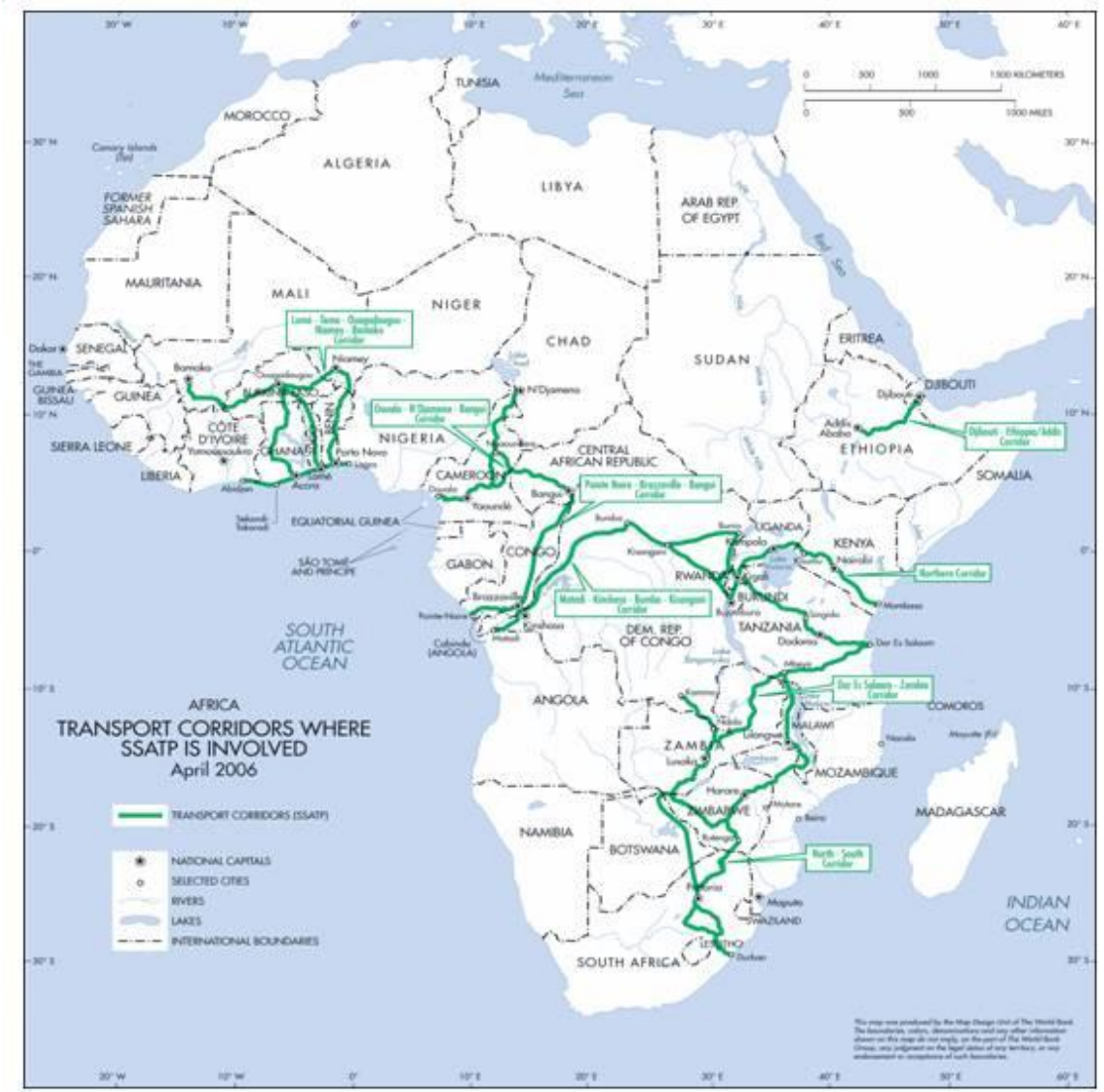
Road transport holds the key to economic growth because without the means and capacity to move goods efficiently, the economies of the region will stagnate and economic growth will be stifled

Corridors and Economic Development

- Economic competitiveness of SSA region depends largely on existence and efficiency of trade corridors
  - Development agencies (EU, WB, AfDB) increasingly funding corridor interventions

- Need to ensure corridors fulfill their potential in facilitating efficient inter/intra movement of goods and services across SSA region

Corridors for Intra/Inter-SSA Trade



Factors Affecting Corridor Performance

- Quality of physical infrastructure
  - Pavement and geometric standards
- Regulations affecting use of infrastructure
  - Overload control
  - Road safety
- Effectiveness of procedures for enforcing regs
  - Weighbridge infrastructure
  - Operations and procedures

Overloaded Vehicles!!

Overloading – Road Safety Problem

Overloading-Deterioration of Pavements

Northern Corridor – Kenya (near border with Uganda)

Accelerated deterioration of roads, increased VOC and very high transport costs.

Regional Transport Costs Uncompetitive

- Region's businesses face highest transportation costs of most countries in the world.
  - 3 - 5 times higher than in Asia and Latin America
  - Can be as high as 40% of value of products compared with worldwide average of 5%

- Reasons for high transport costs?
  - Poor road conditions
    - Inadequate funding for maintenance
    - Accelerated deterioration of pavements due to overloading
  - Long transport times (delays, e.g. many weighbridges)
  - Long delays at border posts

Inescapable Conclusions

- Investments in road infrastructure have been eroded due to overloading by some unscrupulous operators coupled with inadequacies in overload control systems including weak legislation, lack of standardized load limits, lack of harmonized overload control systems, inadequate/ inappropriate equipment, corruption, etc. etc.

- Need to regulate use of road infrastructure through adoption of standardized load limits that minimize total transport costs and harmonized overload control systems that effectively regulate road transport operations.

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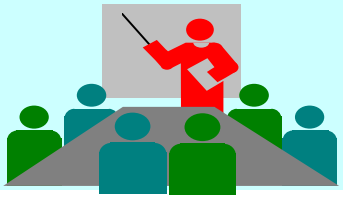

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Previous Approaches to Overload Control

- Provided a criminal response to overloading.
  - Low conviction rates due to legal technicalities
  - Courts bogged down with “non-serious” cases
- Operated in-house with lowly paid staff who were conducive to bribery and corruption.
- Outdated, unreliable weighbridge infrastructure which was discredited by transporters.
- Inadequate legislation and regulations with many loopholes allowing offenders to escape law.

Previous Approaches to Overload Control

- No "price" for overloading. Fines often arbitrary & non-economic and of little deterrent.
- Roads Authorities have primary responsibility for road preservation but limited role in regulation.
- Lack of adequate training of appropriate calibre staff to operate modern-day, relatively sophisticated weighbridge equipment.

Previous Approaches to Overload Control

- Previous approaches generally fail to achieve primary responsibility for preserving road infrastructure.
  - Characterised by inefficiencies, inequities and laxity in enforcement process.
- SSATP support to ESA region to provide blue print for improved management of OC

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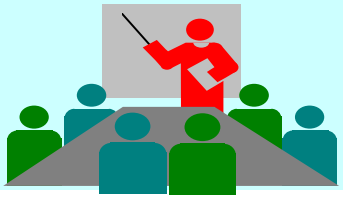

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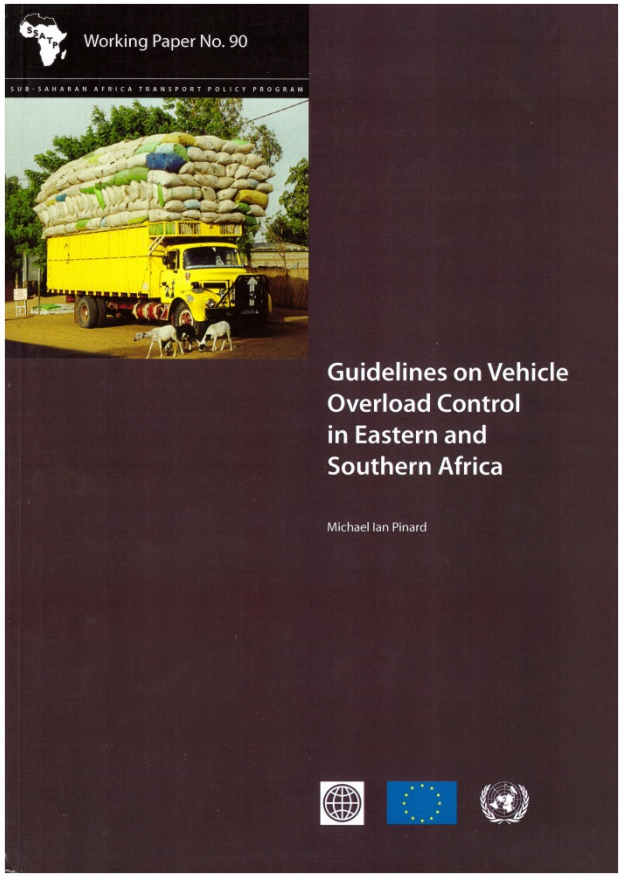
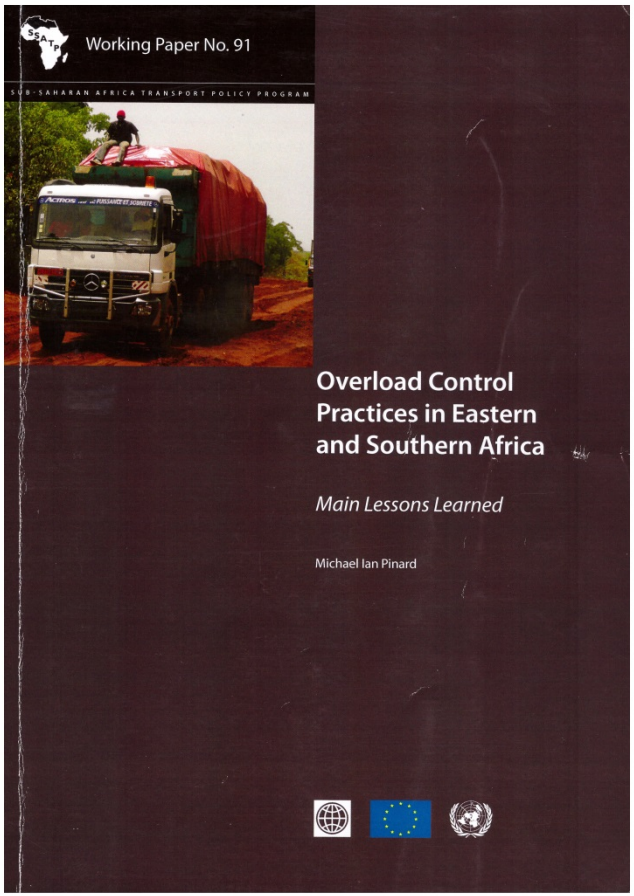
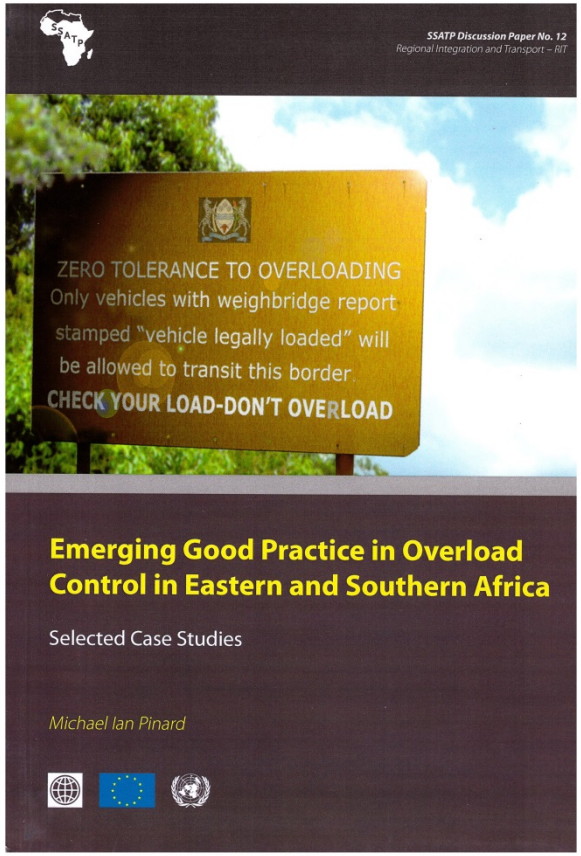
SSATP Guideline Reports







Case Studies – Good Practice

- Decriminalization of overloading offences by handling them administratively and imposing an economic fee on offenders (Zimbabwe, Malawi Tanzania).

- Adoption of progressive legislation and regulations on overload (EAC/SADC/COMESA)

- Outsourcing of weighbridge operations to private sector, i.e. embarking on commercialized public/private sector approach to overload control.

Case Studies – Good Practice

- Operation of a self-regulatory system which places emphasis on transport operators and freight forwarders to complement law enforcement efforts.

- Adoption of cross-border overload control system involving facilitative role of Customs authorities as a link in the chain of enforcement of overload control.)

- Outsourcing of weighbridge operations to private sector, i.e. embarking on commercialized public/private sector approach to overload control.

SSATP Guidelines

- The SSATP guidelines on overload control have provided influential inputs into:
  - Study for the harmonisation of vehicle overload control in the EAC
  - Transport Facilitation Strategy for the EAC
  - Draft EAC Vehicle Load Control Bill – 2012
  - Road Transport Market Liberalisation in the ESA Region: Lot 1 – Vehicle Overload Controls

SSATP Guidelines

- Overload control to be undertaken in a more holistic and integrated manner within a regionally agreed strategy in which there is greater cooperation and partnership rather than confrontation between public agencies and transporters.

Recommendations for Achieving Effective Enforcement

. VEHICLE LOAD CONTROL, including aspects such as:

- Mandatory weighing of vehicles
- Liability for overloading
- Detention of overloaded vehicle
- Decriminalization of overloading offences
- Payment of overloading fine
- Bypassing weighing stations
- Frequent overloaders

Recommendations for Achieving Effective OC

- Rationalization of number and location of regional overload control stations
- Electronic linking of control stations on the major transport corridors
- Mutual recognition of weighbridge certificates including a regional register of offenders
- Institutional framework for implementation of vehicle overload management on each corridor involving existing national institutions (e.g. corridor management committees) and facilitative role of SROs (e.g. ASANRA and FESARTA).

Recommendations for Improved Weighbridges Ops

- Data storage, analysis and sharing between weighbridge stations along corridors
- Internet connection at each weighbridge station and a Local Area Network (LAN) within the station
- Each station to be part of the networked computers of other stations within the region forming a Wide Area network (WAN)
- Weighbridges to be linked to Customs at border posts for electronic viewing as basis for processing.

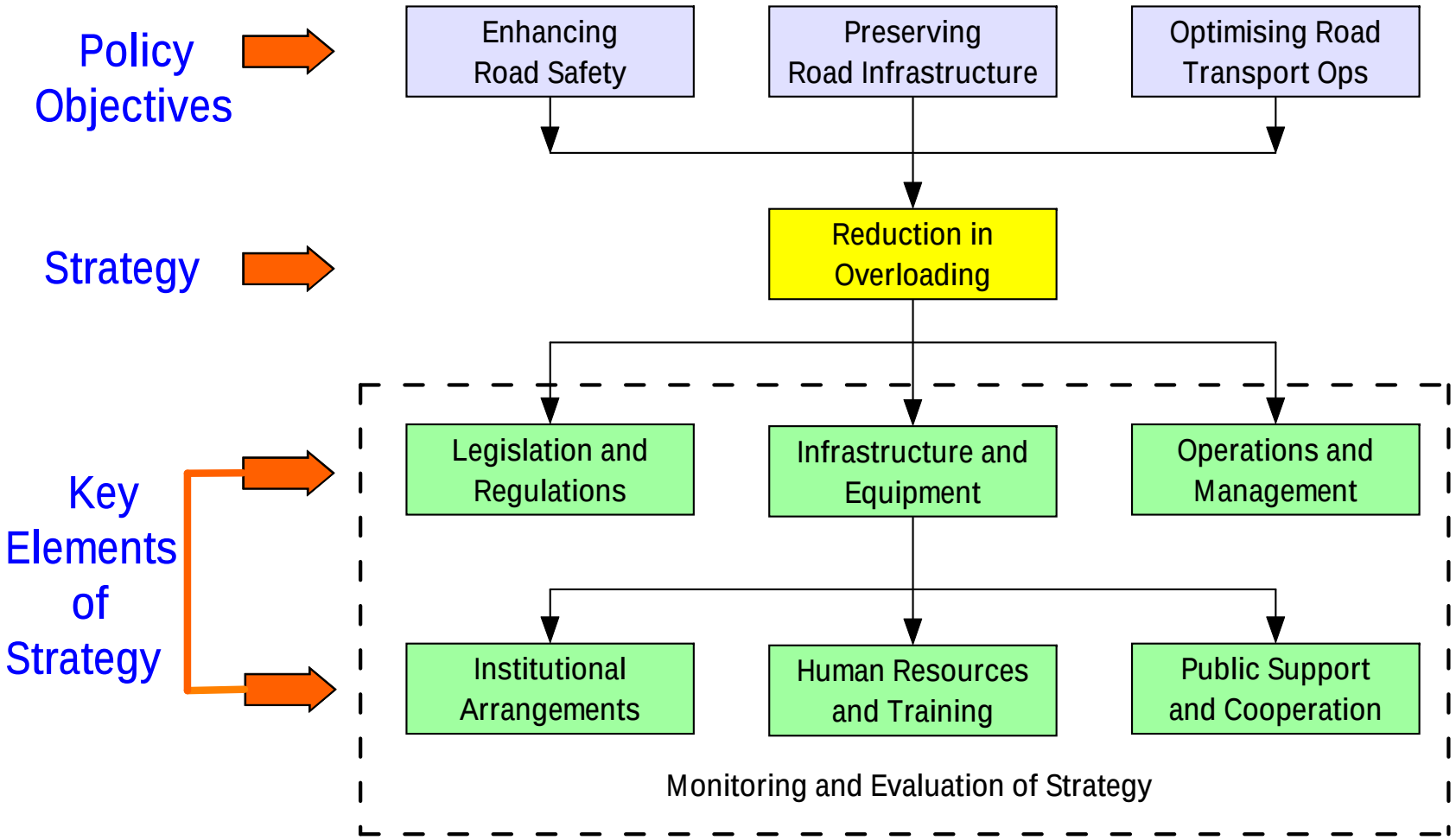
Legal Instrument for Implementing OC

- Preferred modality (EAC): EAC Act + EAC Regulations
  - Entails passage through EAC Parliament of supranational Act to define broad principles to be followed by partner states in controlling vehicle loading
  - Mandates EAC Council to promulgate Regulations covering detailed operational and administrative procedures
  - Provides for integrated approach to OC with legal effect in Partner States
  - Overrides or preempts contrary national laws and regs

Legal Instrument for Implementing OC

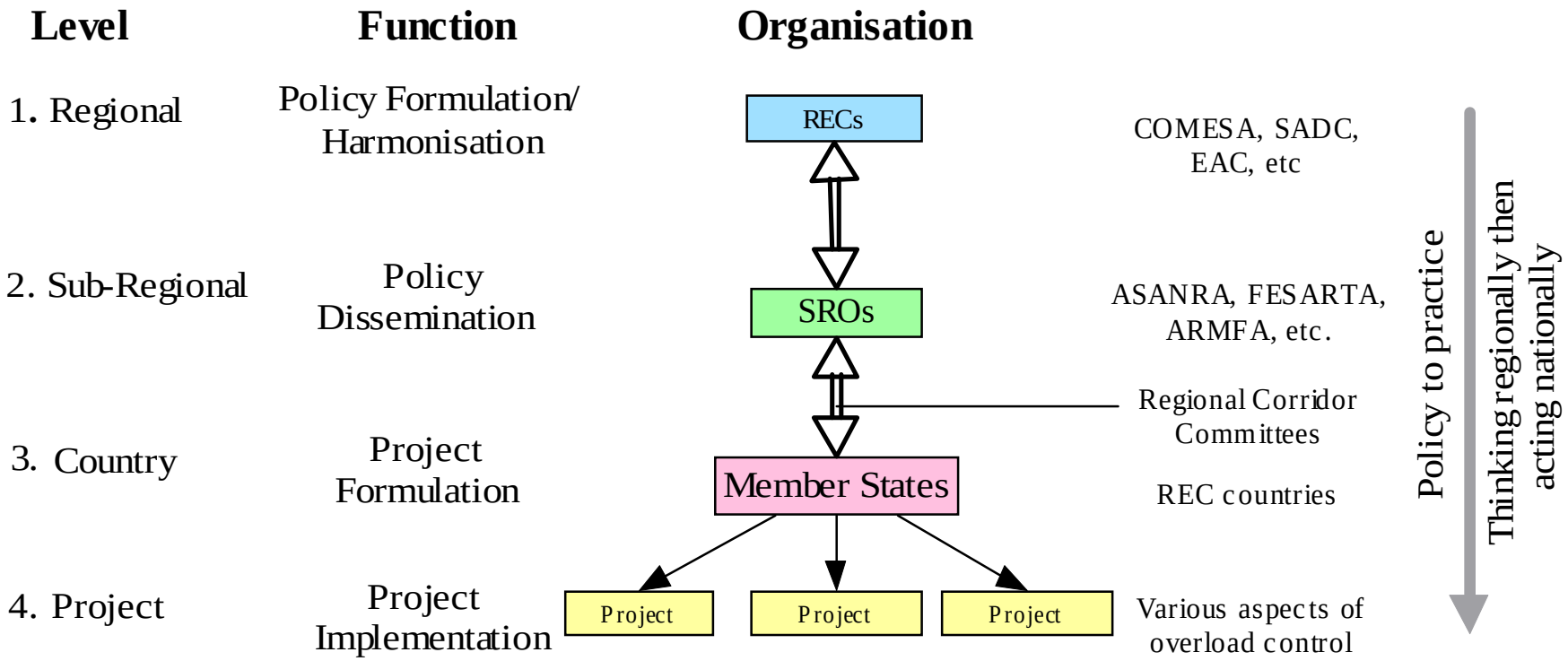
- Less preferred modality (SADC): Protocol + national Laws and Regulations
  - Ensures uniformity of approach
  - Does not over-ride national laws and regulations
  - Does not bind member states to a time-bound implementation time table
  - Results in fragmented approach

Key elements of Regional OC Strategy



SSATP Guidelines

- Establish a clearly demarcated control framework with defined roles, functions and responsibilities of the stakeholder organisations involved in overload – *Think regionally, act nationally*



SSATP Guidelines

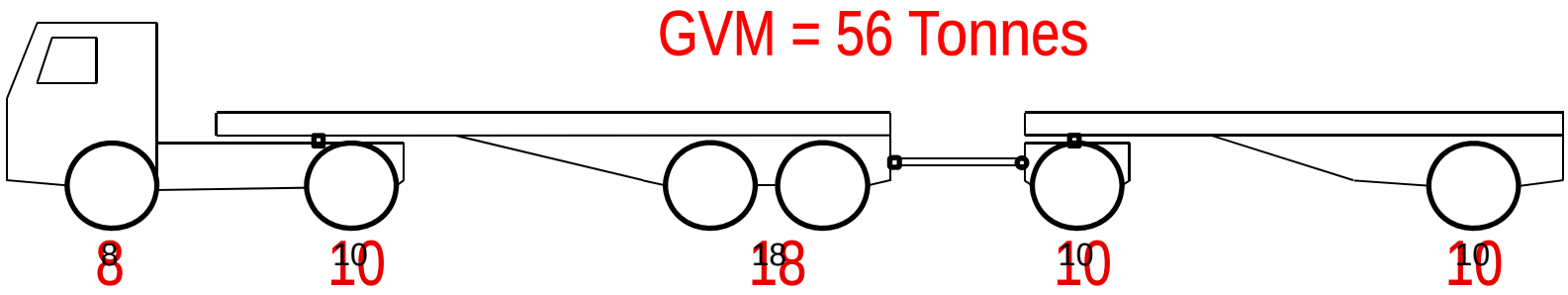
- Effective overload control to be dealt with as a regional issue with a commonly agreed regional strategy and corresponding Action Plan to be implemented by SROs and national bodies rather than as a national issue that is implemented at national level in isolation of the broader inter-regional nature of transport movements.
- Harmonisation of measures, procedures and regulations regarding axle load and vehicle mass control.
- Standardisation of equipment; and coordinated network of standardised weighbridges strategically and equitably spread over the region's main corridors.

EAC Axle Load and GCM Limits

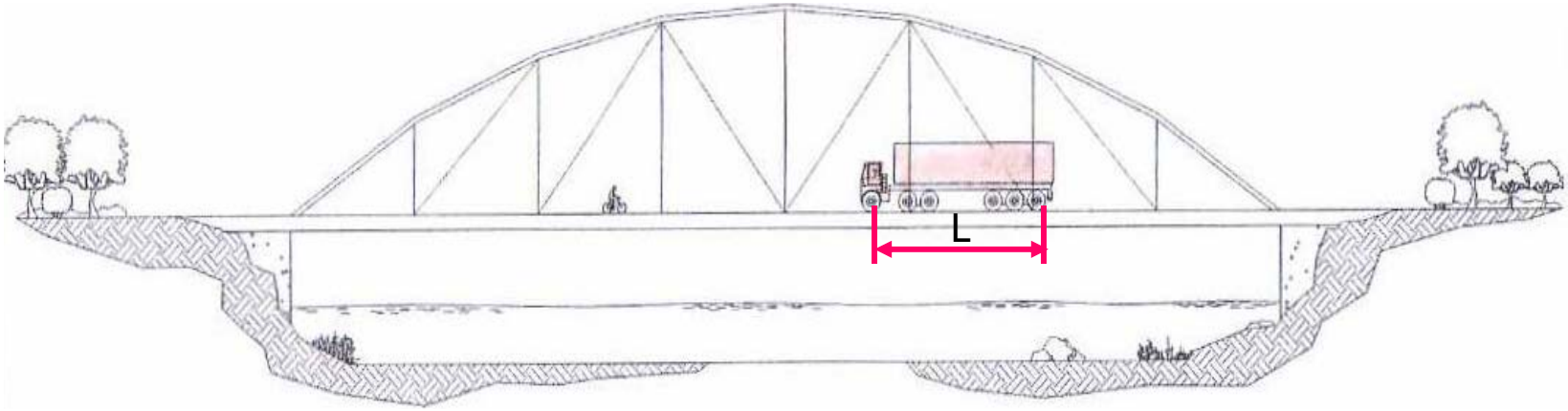
Agreed EAC Limits

- Single (four tyres) = 10.0 tonnes
- Tandem = 18.0 tonnes
- Tridem = 24 tonnes
- GVM/GCM = 56 tonnes
- Weighing tolerance: 5% on axles

Inclusive for GCM of 56 tonnes



Bridge Formula – Protection of Bridges



- Bridge Formula: P = 2100 x L + 1800

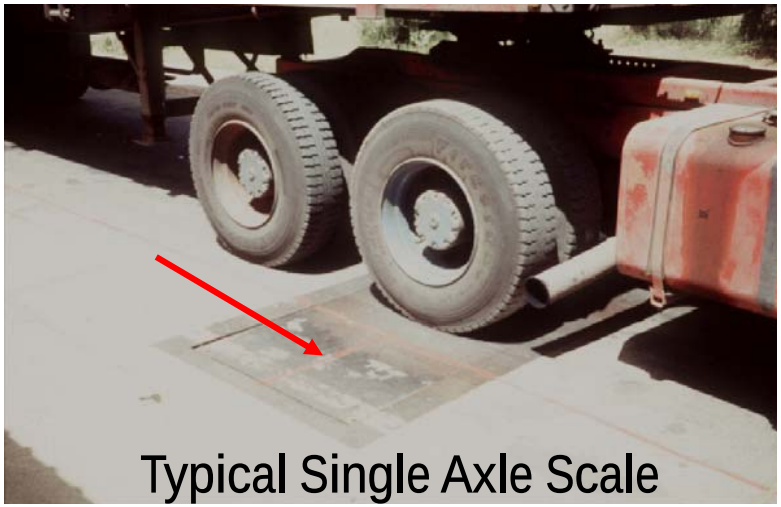
  P = Permissible mass (kg)

  L = Distance between centres of outer axles

Typical Types of Weighbridges Used Regionally

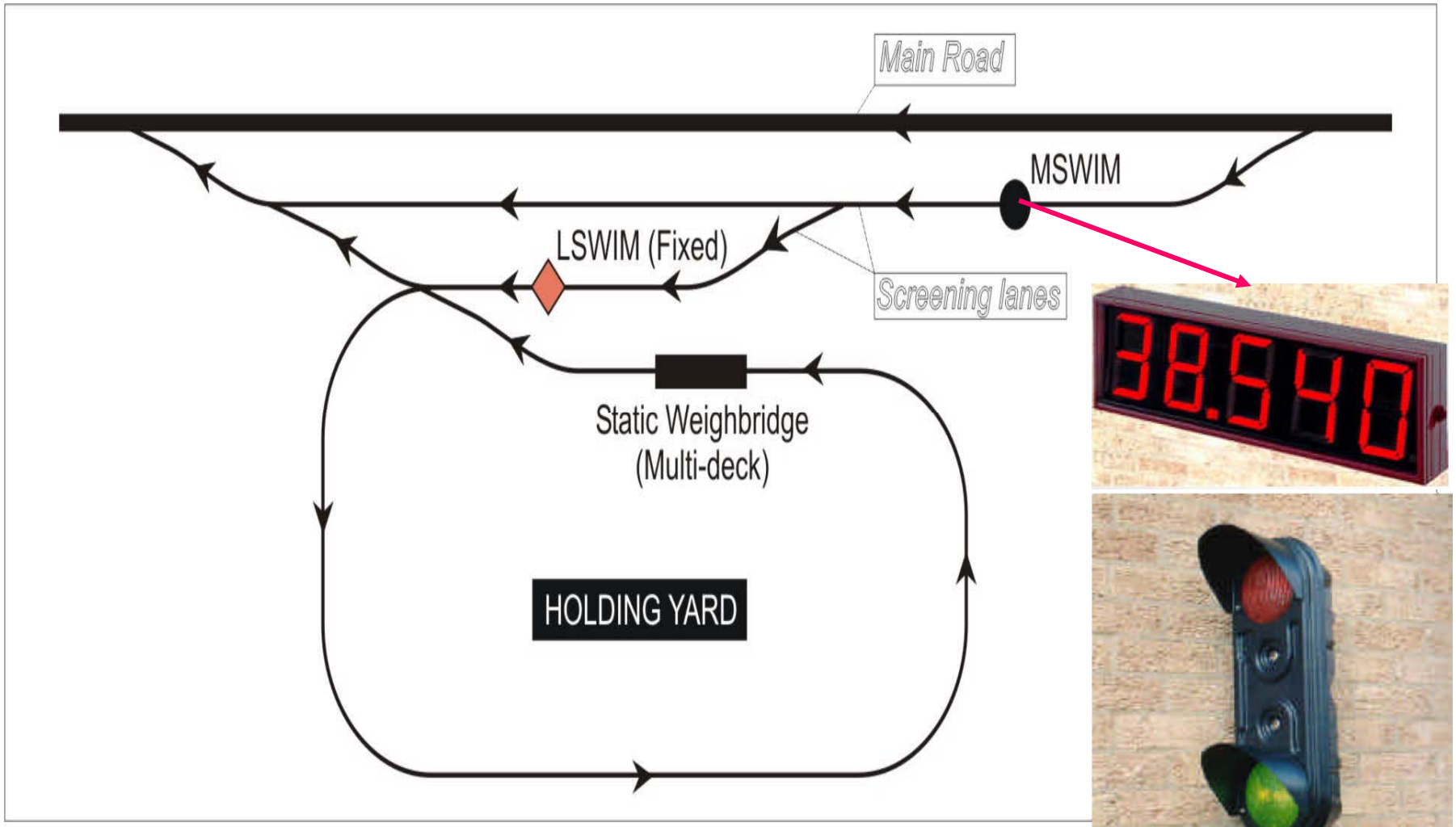

Typical 3.2 m × 22 m Multi-deck


Typical Axle Unit Scale


Typical Single Axle Scale


Typical High Speed WIM (Bending Plate)

Weighbridge Layout: Type 1



Human Resources and Training

- Increasingly sophisticated equipment being used for overload control
- Knowledge of legal aspects of overload control required
- Need for training to cover all aspects of overload control for involved in various aspects of overload control including:

  - Transport environment
  - Legislation and regulations
  - Weighbridge equipment
  - Weighing operations
  - Software operation
  - Data management
  - Management reporting
  - Staff management
  - Operations management
  - Maintenance management
  - Safety

Categories of staff to be trained

- Law enforcement
- Operational
- Administrative
- Maintenance
- Management

Public Support and Cooperation

Example of weighbridge billboards used to create awareness of overloading

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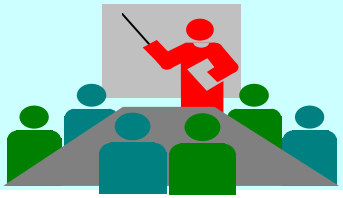

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Current Situation

- Some progress:
  - GVM/GCM increased to 56 Tonnes in Mozambique
  - Optimum location of weighbridges being followed
    - Between Dar es salaam and Rusomo: Plans for 4 instead of 8
    - Between Mombasa and Gatuna: Plans for 3 instead of 8
  - Modern weighbridges being installed, e.g:
    - Along Northern Corridor at Vigwasa
    - At Athi River in Kenya
    - HS WIMs being introduced

Way Forward – COMESA/SADC

TMSA Study on Road Transport Market Liberalisation in the COMESA-EAC-SADC Tripartite Region: Lot 1: Vehicle Overload Controls

Objectives of TMSA Study

- Essentially to:
  - Update SADC MLP in line with EAC Bill
  - Formulation of SADC/COMESA Legal Instrument

Way Forward – Vision to Practice

- Solicit donor support for the establishment of a regional training centre on overload control employing a harmonised syllabus and catering for the needs of all RECs.
- Solicit support for provision of weighbridge infrastructure at strategic locations on corridors; linking of weighbridges; production of standardized weighbridge operations manuals; installation of weighbridge data management systems, etc., etc.
- Make effective overload control a donor conditionality for any financial assistance for new road projects.

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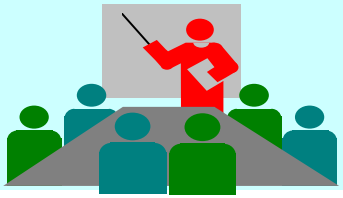

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Summary

- Introduction of a regional strategy on overload control which focuses first on regional corridors to ensure a coordinated approach within region
- Development of regionally harmonised overload control regulations which address shortcomings of traditional approaches including:
  - Standardised regional agreed axle load and GVM/GCM limits and Bridge Formula to protect bridges
  - Decriminalisation of offenses for overloading by handling them administratively
  - Linking level of imposed fees for overloading with actual cost of road damage, i.e. by imposing economic fees
  - Outsourcing weighbridge management and/or operations to the private sector and embarking on a commercialsied public/private sector approach to overload control
  - Strategic deployment of weighbridges along regional corridors using appropriate weighbridge equipment

Thank you