SCIENCE, TECHNOLOGY AND INNOVATION & NIGERIA’S NATIONAL ROAD SAFETY STRATEGY: CHALLENGES AND PROSPECTS

Senior Executive Course No. 39

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30 August 2017
INTRODUCTION

Human mobility needs have increased significantly worldwide with associated positive and negative developments especially in the road transportation sector.
Many countries, especially the developed ones, have evolved measures to decentralize and de-emphasize a preferred transport mode through effective inter-modal transportation and new technologies such as *Straddle bus* and *Hyperloop*.

These developments are focused on addressing emerging negative challenges in the transportation needs.
In developing countries the over dependence on road transport mode and the absence of an integrated transport system results in congestion and other road traffic problems such as crashes and the attendant injuries.
GLOBAL ROAD TRAFFIC PANDEMIC

Annually, road traffic crashes account for:

- Over 50 million injuries
- 1.4 million Deaths
From a minor concern perspective, Road traffic injuries have emerged as a global concern in the millennium.

Road Traffic Injury was not visible in the list of the causes of deaths globally.

Road Traffic Injury visible as the 10th leading cause of deaths globally in 2015 and would be 3rd if nothing is done.

Source: http://www.who.int/mediacentre/factsheets/fs310/en/
Africa has the highest road fatality per 100,000 population. This is contributed disproportionately by member States and the situation is of serious concern in Sub-Saharan region of the continent.

*Source: Global Status Report on Road Safety 2013*
Road Traffic Injuries (RTIs) affect the country in a variety of ways especially its productive manpower.
RTIs significantly shrink the National Gross Domestic Product (GDP) by 3% per annum. This impedes growth and development generally.

As the economy is expanding, more is lost to the menace.
There are many more technological innovations targeted at enhancing vehicle occupants’ safety in the world today.
Intelligent Speed Adaptation (ISA)

Some of the include:

Higher Speeds are less forgiving while Lower Speeds are more forgiving

To avoid consequences arising from higher speeds, ISAs have been developed and deployed to autonomously restrict vehicles to posted speed using satellite communication technologies such as GPS control and other smart onboard systems.
Collision Avoidance System

Intersection, blind spot and obstacle collisions occur frequently.

Early warnings through autonomous notification and safe distance measures are now onboard modern vehicles to avoid such collisions.
Anti-Distractive Driving Systems

The technology uses simple Sound navigation ranging sonar-based system to cancel a driver's phone features using a car's existing speakers.

Source: http://driving.ca/auto-news/news/is-this-the-solution-to-distracted-driving
Once a smartphone is in the vicinity of the driver’s seat, a simple software manipulates to disable the most distracting of cell phone interactions in the car.

Please note that in Nigeria, there is total ban on the use of phone while driving. The law does not permit any form of usage while driving.

Source: http://driving.ca/auto-news/news/is-this-the-solution-to-distracted-driving
Anti-Sleep Driving Systems

Anti sleep alarm device timely detects the driver if they are falling asleep or distracted and gives alert to avoid an accident.

Some are outfitted with a seat cushion that vibrate to alert drivers of impending collisions.

Source: http://www.care-drive.com
Air Taxis are fast evolving to provide alternatives at relieving the roads of congestion and discomfort.
Automated Toll system

These are embedded with Radio Frequency Identification (RFID) technology to automatically control access to certain services.

The emergence of such technology has enhanced productivity with massive cost reduction for organizations.
Speed Cameras

Designed primarily to enhance law enforcement agencies curtail speed related crashes

In Nigeria however, compulsory installation of speed limiting devices in commercial vehicles have commenced.
Automated Weigh Bridges

The system assist relevant government agency in enforcing axle load regulations
Safe Systems Approach and Road Safety Strategies at Global, Regional and National Levels seek to effectively manage the innovations and human safety
The goal of the safe systems approach is to ensure that when crashes occur, they do not result in serious human injury or death.
It is an inclusive approach that caters for all groups using the road system, including drivers, motorcyclists, passengers, pedestrians, cyclists, and commercial/heavy vehicle drivers.
Holistic framework for implementing Safe Systems Approach on road safety is based on the entire five Pillars of the United Nations Decade of Action on Road Safety (2011-2020)
Implementing safe systems approach requires a strategy which lays the foundation for strategic implementation and evaluation.

Thus, many nations of the world including Nigeria have developed their respective National Road Safety Strategy, inline with the requirement of the UN Decade of Action for Road Safety (2011-2020)
It is proven that countries with Road Safety Strategy have better road safety records than those without a strategy.
# National Road Safety Strategies and targets of selected countries

<table>
<thead>
<tr>
<th>Country/Strategy/timeframe</th>
<th>Vision</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Argentina</strong> National road safety strategy</td>
<td>Based on the UN Road Safety Plan for the Decade of Action for Road Safety</td>
<td>-50% fatalities by 2014 Base year 2009 Specific targets for</td>
</tr>
<tr>
<td><strong>Australia</strong> National road safety strategy 2011-2020</td>
<td>Safe System No-one should be killed or seriously injured on Australia’s roads</td>
<td>-30% (at least) fatalities by 2020 -30% (at least) severely injured by 2020 Base year 2008-2010</td>
</tr>
<tr>
<td><strong>Austria</strong> Austrian road safety programme 2011-2020</td>
<td>Safe system “Become one of the five safest countries in Europe”</td>
<td>-50% fatalities by 2020, based on the average for the years 2008-10 (Interim target: -25% by 2015) -40% serious injuries by 2020, based on the average for the years 2008-10 (Interim target: -20% by 2015) -20% injury accidents by 2020, based on the average for the years 2008-2010 (Interim targets: -10% by 2015)</td>
</tr>
<tr>
<td><strong>Czech Republic</strong> Strategic Road Safety Plan 2011-2020</td>
<td>Vision Zero</td>
<td>Reduce fatality rate to EU 27 average. No more than 360 fatalities in 2020 (-60%) No more than 2 100 seriously injured in 2020 (-40%)</td>
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| **Japan** 9th Traffic Safety Programme 2011-2015 | Make Japan the safest country for road traffic | Less than 3 000 deaths by 2015  
Less than 700 000 casualties by 2015 |
| **Korea** 7th National transport safety plan 2012-2016 | Reach the average safety level of OECD countries | Less than 1.3 fatalities/10 000 vehicles by 2016  
(This represents a 40% reduction in fatalities compared to 2010 level (2010: 5 505 -> 2016: 3 000 fatalities))  
Less than 0.5 fatalities/10 000 vehicles by 2020 |
| **Sweden** Management by Objectives for Road Safety Work, Towards the 2020 Interim targets | Vision Zero | -50% fatalities between 2007 and 2020 (the average for 2006-2008 is used as the base figure), i.e. max. 220 deaths by 2020. -25% severely injured between 2007 and 2020. |
| **Norway** Road Safety Strategy 2014-2024 | Vision Zero | Reduction by 50% of the number of fatalities by 2024. No more than 500 fatalities and serious injuries by 2024. |

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</tr>
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<tr>
<td><strong>Netherlands</strong> Road safety strategic plan 2008–2020</td>
<td>Sustainable safety</td>
<td>No more than 500 fatalities by 2020 No more than 10 600 serious road injuries (MAIS2+) by 2020</td>
</tr>
<tr>
<td>Greece National strategic road safety plan 2011 – 2020</td>
<td>Developing a road safety culture</td>
<td>-50 % fatalities by 2020 (based on EU Road Safety target); base year: 2010 interim targets: reduction by 90 road fatalities per year between 2010-2014 and 50 road fatalities per year between 2014-2020</td>
</tr>
<tr>
<td><strong>United Kingdom</strong> (Great Britain) Strategic framework for road safety A 5 year road safety strategy for 2011-2015</td>
<td>To ensure that Britain remains a world leader on road safety.</td>
<td>• Action plan has not set quantitative targets as such, but a modelling exercise has been conducted to assess the expected casualty reduction • outcomes framework to monitor progress on road safety, including six key, and a range of other, indicators</td>
</tr>
<tr>
<td><strong>United States</strong></td>
<td></td>
<td>Performance targets set through Less than 1.02 fatalities per 100 million vehicle miles travelled in 2014</td>
</tr>
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</table>

A number of countries in Africa have funded national road safety strategy that set targets for reduction of deaths & injuries.

<table>
<thead>
<tr>
<th>Ghana</th>
<th>Burkina Faso</th>
<th>Central African Republic,</th>
<th>Côte d'Ivoire</th>
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</thead>
<tbody>
<tr>
<td>Guinea</td>
<td>Kenya</td>
<td>Lesotho</td>
<td>Mauritania</td>
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<td>Mauritius</td>
<td>Namibia</td>
<td>Rwanda</td>
<td>Zambia</td>
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& Nigeria........
The Nigeria Road Safety Strategy (NRSS) 2014-2018 is a medium-term plan on Road Safety Management in Nigeria.
The NRSS was developed as a response to the recommendations of:

1. The UN Decade of Action Declaration for Road Safety (2011-2020) which demands that member countries should develop a strategy to provide a direction towards achieving the vision for road safety using the Safe System’s Approach.

2. The Country Capacity Review (CCR) conducted by the World Bank in 2010 to measure Nigeria’s capacity to deliver on road safety.
OBJECTIVES OF NRSS

1. To engender higher road safety standard

2. To harmonize the different road safety efforts by emphasising the vision, goal, purpose, output, outcomes as well as the initiatives for road safety in Nigeria

3. To provide a 5-year plan of action towards the achievement of established targets
DEVELOPMENT OF THE NRSS

The process adopted for the development of the NRSS was participatory and inclusive.

All relevant stakeholders at the Federal and State levels were actively involved in the process.

The “Safe Systems Approach” was adopted in developing the NRSS and is consistent with the UN Decade of Action for Road Safety.
KEY ELEMENTS OF THE NRSS IN RELATION TO THE 5 PILLARS OF THE DECADE OF ACTION ON ROAD SAFETY

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Safe Systems Pillars</th>
<th>Gaps</th>
<th>Strategic Initiatives</th>
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<tbody>
<tr>
<td>Wide adoption of Safe system approach to road safety management in Nigeria</td>
<td>Safe Roads and Mobility</td>
<td>Non-standardised road traffic data templates</td>
<td>Develop and utilize standard templates to capture and report relevant traffic data</td>
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<tr>
<td></td>
<td>Safe Roads and Mobility</td>
<td>Undefined Lead Traffic Agencies in some states</td>
<td>Legislate the establishment of Motor Vehicle Administration Agencies in states</td>
</tr>
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<td></td>
<td>Safe Vehicles</td>
<td>Construction of Roads without specific standards</td>
<td>Implement design standards for all road types</td>
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<td></td>
<td>Safe Road Users</td>
<td>Failure to perform safety audits on roads</td>
<td>Conduct road safety audit and safety impact assessments</td>
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<td></td>
<td>Post – Crash Response and Care</td>
<td>Limited coverage of the RTSSS</td>
<td>Encourage Public Private Partnership for establishment of VICs</td>
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<tr>
<td></td>
<td></td>
<td>Insufficient Vehicle Inspection Centres (VICs) operated by PPP</td>
<td>Develop and implement awareness campaigns on proper road use</td>
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<td></td>
<td></td>
<td>Expand RTSSS to cover all commercial vehicles that ply interstate roads</td>
<td>Develop and implement training programmes based on vehicle license category</td>
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<tr>
<td></td>
<td></td>
<td>Insufficient rescue ambulance and equipment</td>
<td>Implement road user insurance scheme to finance victim rehabilitation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inadequate monitoring of learners in driving schools</td>
<td>Insufficient rescue ambulance and equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Poor implementation of insurance scheme</td>
<td>Provide additional medical equipment and emergency rescue ambulances</td>
</tr>
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VISION
A country where Road Traffic Crash results in no death

GOAL
Reduction in road traffic crash fatality rate by 35% by 2018 (2012 as baseline)
Following approval of the NRSS by FEC in 2013 and endorsement by NEC on 21 April 2016 a National Road Safety Advisory Council (NaRSAC) was inaugurated (16 Feb 2017) to oversee the implementation of the NRSS under the Chairmanship of the Vice President of the Federal Republic of Nigeria.

Similarly, a Technical Working Group (TWG) which is the implementation arm of NaRSAC has been inaugurated (3 Aug 2017) as well.
## NaRSAC MEMBERSHIP

1. Vice President, Federal Republic of Nigeria – Council Chairman
2. One Governor each from the six geo-political zones – Members* (Lagos(SW), Anambra(SE), Delta(SS), Kaduna(NE), Gombe(NW), Kwara(NC)
3. Secretary to the Government of the Federation – Member
4. Honourable Minister of Transport – Member
5. Honourable Minister of Works – Member
6. Honourable Minister of Health – Member
7. Honourable Minister of Justice – Member
8. Honourable Minister of Education – Member
9. Honourable Minister of Finance – Member
10. Honourable Minister of Environment - Member
11. Honourable Minister of Labour and Productivity – Member
12. Honourable Minister of Police Affairs – Member
13. Honourable Minister of Interior – Member
14. Honourable Minister of National Planning Commission - Member
15. Honourable Minister of the Federal Capital Territory - Member
16. National Security Adviser – Member
17. President, Association of Local Governments of Nigeria (ALGON)- member
18. President – The Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture (NACCIMA) – Member
19. President, Nigerian Society of Engineers - Member
20. Chairman, Federal Road Safety Commission - Member
21. **Corps Marshal, Federal Road Safety Corps**– Member/Secretary
NaRSAC Key Responsibilities

1. Set National Road Safety Strategy target(s)
2. Ensure co-ordination between Federal, States and Local Governments in achieving Road Safety targets
3. Drive the implementation of the NRSS via:
   a. Requests for progress reports from relevant agencies
   b. Invitation of relevant agencies to defend proposed activities and road safety efforts on a quarterly basis
   c. Evaluation of outcomes of National road safety initiatives
   d. Development of a funding plan for strategic initiatives
   e. Fund sourcing for implementation of strategic initiatives
   f. Endorsement of disbursement of pre-approved funds for strategic initiatives
   g. Monitoring of funds disbursement for strategic initiatives
4. Review monitoring and evaluation reports (as submitted by FRSC) for effective coordination of road safety programmes
5. Report to the FEC on progress made on the NRSS
6. Perform annual review of the NRSS
7. Oversee aspects that relate to road safety enforcement of 10 per cent of the National Road Fund
8. Endorse subsequent NRSS prior to submission to the FEC
MEMBERSHIP OF TWG

The TWG shall comprise mainly of:

1. FRSC - NaRSAC Secretariat
2. Federal Ministry of Works
3. Federal Ministry of Health (Focal Point on the UN Decade of Action)
4. Ministry of Interior
5. Ministry of Transportation
6. National Planning Commission
7. National Security Adviser (NSA)*
9. National Environmental Standard Regulatory and Enforcement Agency (NESREA)
10. Nigeria Police Force

Associate members may be drawn from relevant professional institutions to include:

1. Nigerian Medical Association (NMA)
2. Nigeria Society of Engineers (NSE)
3. Nigeria Bar Association (NBA)
4. Guild of Editors
5. National Council of Women Societies (NCWS)
6. Standards Organisation of Nigeria (SON)
7. The Nigeria Institute of Town Planners (NITP)
8. Human Rights Organisations
9. Chartered Institute of Logistics and Transport (CILT)
10. The Nigeria Institute of Safety Professionals (NISP)
11. National Association of Road Transport Owners (NARTO)
TWG Key Responsibilities

1. Adopt for implementation, uniform standards on:
   a) Traffic enforcement
   b) Vehicle inspection
   c) Road signs and markings
   d) Personnel training
   e) Rescue administration

2. Make recommendations to FRSC on issues that require national regulation and standards

3. Prepare annual budget for the Nigeria Road Safety Fund

4. Submit proposals for specific intervention funding

5. Perform assigned strategic activities

6. Prepare and present progress reports on assigned strategic activities for NaRSAC’s consideration

7. Conduct annual review of the NRSS

8. Mainstream assigned strategic activities into operational processes and procedures

9. Review and adopt future NRSS documents
As a Strategy based on the Safe System Approach, there are specific and defined implementation roles for States and MDAs in the country.
State Governments are required to:

- Mobilise support for the successful implementation of the NRSS country-wide;
- Cascade the NRSS to the Local Government level, by institutionalising the process in their respective States;
- Make adequate budgetary provision for the NRSS as it concerns their implementing Agencies from 2014;
- Liaise with FRSC to organise workshops to validate the targets set for them in the NRSS document;
- Reposition their States Bureau of Statistics to facilitate the collation of all relevant data;
- Establish the state Motor Vehicle Administration Authority to carry out the administration of all motor vehicle activities in the State.
Ministries Departments and Agencies are required to:

- **Mobilise support for the successful implementation of the NRSS at the National level;**

- **Cascade the NRSS to the Directorate, Section and Unit level, by institutionalising the process in their respective MDAs;**

- **Make adequate budgetary provision for the NRSS as it concerns their implementing Directorates and sub Units from 2014;**

- **Liaise with FRSC to organise workshops to validate the targets set for them in the NRSS document;**

- **Reposition their Directorate of Policy, Research and Statistics to facilitate the collation of all relevant data**
To ensure successful implementation of the NRSS, the hybrid approach on *Planning, Implementation and Monitoring* is adopted.
The cost of financing the strategy will not be pooled together at the centre but the expected funding provisions at different levels

Total cost of implementing the road safety strategy for the 5 year period (2014 to 2018) is estimated at ~₦382 Billion (₦381,974,018,199)
Enhanced road safety environment that will attract Foreign Direct Investment

1. Attainment of UN Decade of Action goals
2. Road safety as a top priority of government
3. Increased citizens responsibility and ownership
4. Speedy realization of SDGs in Nigeria - Goals \{3, 6, 11\}
5. Nigeria being in the top 20 safest roads in the world by year 2020
6. Enhanced road safety environment that will attract Foreign Direct Investment
CHALLENGES

Data

- Multiplicity of data sources and significant variation in data generating agencies like the FRSC, Police, Hospitals, etc.

Funding

- Alternate funding sources are required to avoid putting additional pressure on available budgetary resources by Federal and State Governments.

Stakeholder

- Every individual has a role to play towards achieving road safety in Nigeria. Improvement is required in Responsibility, Accountability and Autonomy by all stakeholders.
CONCLUSION

The prevailing traffic and road safety needs in our country require diversification through innovative technologies in the transport sector as one of the best practices globally.

These innovations have brought about the visible difference in the transport system management and administration in many countries.

The effective implementation of the NRSS therefore, at the grass-root level will facilitate achievement of the national goal of having a country where road traffic crash results in zero deaths.
Muzzling the **Political will** at all levels to implement the NRSS and massive Stakeholders’ buy-in will go a long way at solving the road safety issues facing our country

Let all, including **YOU** join the efforts.
Safety starts with you
WHO Report on Road Traffic Injury Prevention 2004
WHO Global Status Report-2013
Road Safety In the WHO African Region-the Facts 2013
Nigeria Road Safety Strategy (2014-2018)
WHO Global Status Report-2015
Irtad Road Safety Annual Report-2015
FRSC Annual Report-2016