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The public perceptions, opportunities about roads

The current heavy rains, expected to last till December, are heavily pelting the road network causing mudslides, embankment washouts, pavement submergence, bridge/culvert failures and other damages.

Connectivity in many areas, most especially in the mountainous Elgon/Ruwenzori slopes is impaired adversely disrupting travel plans. It is also disrupting planned road maintenance works for which the Uganda Road Fund (URF) last month released sh75b to its maintenance implementing agencies to execute to December 2017.

The rains expose and exacerbate latent weakness in the network, especially those due to backlog of maintenance, which lately has depressed network performance indicators.

Exaggerated unit cost of infrastructure including roads causes a haemorrhage of about $300m per year through under-pricing of utilities and mismanagement of projects. The 2016 Commission of Inquiry into UNRA, reported value loss of up to sh4 trillion in seven years on account of abuse of resources. Not surprisingly, road user satisfaction survey (RUSS) result for 2016 released by Uganda Road Fund (URF) last July revealed a marked decline in satisfaction level, from 51.7% in 2015 to 45% in 2016, attributed to narrow, dusty, accident-prone, congested roads.

Lately up to $50m per year is being invested in urban roads

And yet massive investment of up to $4b in road infrastructure by the Government has occurred since 1986, in three distinct waves: $500m (approx.) invested in the period 1986-1996 to reclaim and render maintainable hither "lost roads"; $1.5b under first Road Sector Development Programme (RSDP) in the period 1996-2006 to upgrade major corridors and reform road management, financing and institutions; $2.28b RSDP2 from 2006 to date to operationalise new institutions notably UNRA and URF, increase paved roads to nearly 4,500km from 1,800km in 1992.

Lately up to $50m per year is being invested in urban roads including in KCCA, municipalities and town councils. Recent re-invigoration of force accounts approach to road maintenance to cut losses associated with tendered works in districts has seen procurement of $153m worth of road equipment.

Technological, economic and demographic factors are conspiring to dampen the impact of these interventions into the condition of the network hence need for a re-think of modernisation schemes to address capacity constraints of the network and restore public confidence in the asset. Wider roads, albeit costly due to expensive land acquisition, is needed to accommodate the 8,500 million veh-km annually plying the roads, particularly to segregate traffic, enhance safety and reduced journey times.

The urban population is increasing at 5.43% per annum and expected to grow from six million people in 2013 to over 20 million people in 2040.

This will require additional road space back to back with mass rapid transport system on pothole-free well-signalised urban networks to reduce congestion. The futuristic plan announced by UNRA recently to construct up to four expressways radiating from Kampala city (Jinja, Nakasero-Northern Bypass, Kampala Outer Beltway and Kampala-Busunju-Hoima) in addition to that to Entebbe (nearing completion) is a step in the right direction in this respect.

Dust and mud slurry in urban areas must be eliminated through purposeful paving of roads and open spaces.

A resilient network capable of withstanding elemental forces will require stronger pavements, long-span high capacity bridges, elevated roads and interchanges, underground road/rail network in Kampala and other aspects of modernisation.

The big seven bridges i.e. Karuma, Pakwach, Jinja, Awoja, Katonga, Katunguru and Manafa are so vital to national life that they must be upgraded to higher signature forms and parallel alternatives established (as is happening at Jinja) to minimise losses to the national economy from their sudden collapse.

From an engineering perspective, the Luzira-City Square-Wandegeya-Bwaise corridor in Kampala city is ripe for an underground tunnel transportation system. Recent advances in tunnelling technology is tumbling cost of tunnelling greatly making it a feasible option for Uganda at some point.

Road modernisation implies upgrading roads to suit new advances in motor vehicle technology as well, notably electrical and autonomous vehicles, which are now becoming reality in many countries. Technology is advancing to place roads as an important source of electricity from heat trapped in black tar surfacing material and from mechanical movement of vehicles. This could be an important energy source for creating smart junctions as well as charging electric car batteries, leave alone extra power to the national grid. Modernisation must prepare roads for these technologically driven functions.

Translated into road programmes and project, modernisation implies huge capital-heavy investments well beyond the current annual sh3 trillion per year that the national coffer is providing.

Worldwide, about $2.5 trillion is spent on infrastructure which, according to McKinsey Global Institute, still falls short of the $3.3tr annually required to 2030 to plug world infrastructure deficit. China, the world's biggest infrastructure spender invests almost 9% of its GDP on infrastructure while South Africa is at about 4.8%. India is spending about $30b per year on roads and rails and for this train speeds have increased from 50kph a decade ago to some 140kph today while its boast the world's tallest bridge at 359m above a gorge over the Brahmaputra River. Uganda is very much in this trend with its $11b infrastructure investment plan focusing on transportation and electricity generation expected to require well over 4.5% of its GDP for the next 10 years to 2027. There is already a reported infrastructure-financing gap of $0.4b per year.

Public Private Partnership (PPP) has great potential to plug this gap while offering benefits that include innovation and efficiency of private sector firms. Uganda passed a PPP law in 2015. Records show that to date a paltry $1.83b has so far been invested through PPP mostly in the energy sector with little trickling to roads. Obviously there is much yet to be done to attract private financing to roads to achieve some aspects of modernisation described herein.

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