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**FREIGHT TRANSPORT AS AN ENABLER OF
SUSTAINABLE DEVELOPMENT**

by

Mr. Kenneth Odera
PhD in Regional Planning

Freight Transport as an Enabler of Sustainable Development

The Heads of State and Government and High Representatives, meeting as the General Assembly of United Nations in New York from 25 to 27 September 2015, adopted 17 Sustainable Development Goals (SDGs) and 169 associated Targets* constituting the post-2015 Development Agenda to be implemented by 2030.¹ Whether air, rail, road or water, freight transport is central to “transforming our world” - the declared 2030 agenda for sustainable development. Because sustainable freight transport² is a strong enabler of transforming our world, it is a prerequisite for sustainable development.

For example, freight transport is critical in meeting targets for the goal to *end poverty in all its forms everywhere* (SDG 1). Investing in sustainable freight transport provides a clear pathway to eradicate extreme poverty. Equally important is the need to explicitly recognise the transport-poverty nexus in which inefficient, non-scalable, low-performing unsustainable freight transport is included as a dimension of poverty.

With respect to the second goal – *end hunger, achieve food security and improved nutrition and promote sustainable agriculture* (SDG 2) – sustainable freight transport has an indispensable and critical role in the fight against hunger and attaining food security. Eliminating transport barriers and bottlenecks has a direct effect on increasing access to markets, one of the surest ways to promote sustainable agriculture, which would in turn open up significant value in the food chain for improved nutrition. Efficient freight transport is critical to Africa’s regional market for food staples valued at US \$150 billion. The role of freight transport will be even more critical in meeting future demand, which is expected to double by 2020, as well as ensuring decent margins to hardworking producers.³

Whereas sustainable freight transport can make a big difference in increasing women’s productivity and promoting gender equality (SDG 5), this is often not recognised, much less promoted. Gender-sensitive freight transport projects and programme can play a meaningful role in achieving gender equality and empower women and girls. Ensuring women’s full and effective participation as well as providing equal gender opportunities for leadership at all levels of decision-making in freight transport businesses is perhaps an effective way to redress historical and enduring gender inequalities.

In addition to its potential contribution to *ensuring healthy lives and promoting well-being for all* (SDG 3), as well as *ensuring inclusive and equitable quality education and lifelong learning opportunities for all* (SDG 4): freight transport can play a useful and much more expanded role in *ensuring availability and sustainable management of water and sanitation for all* (SDG 6); *ensuring access to affordable, reliable, sustainable and modern energy for all* (SDG 7); and promoting *sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all* (SDG 8). Because of its cross-cutting and facilitating role, freight transport will invariably continue to play a key role of supporting equitable access to safe drinking water, adequate and equitable sanitation and hygiene, protection and restoration of water-related ecosystems, access to reliable and modern energy services, as well as the attainment of full and productive employment and decent work for women and men, including young people and persons with disabilities.

Competitive industrial sectors and strong industrial linkages are built with good transport infrastructure that ensures comparative production and transaction costs remain low. Given the facilitating role sustainable freight transport plays in driving economic development and regional integration, *reduction of inequality within and among countries* (SDG 10) presupposes the development of high quality, reliable, sustainable and resilient freight transport infrastructure and services.

* The new Goals and Targets come into effect on 1 January 2016

Key issues that undermine the sustainability of freight transport systems

Freight transport systems face many challenges. Some challenges are mode specific (rail, road, air or water) while others are context specific (national/international, rural/urban, advanced/emerging/frontier markets, et cetera). Broadly, the key issues concern governance (ie internal [freight management practices] and external [policy, regulation, enforcement and compliance]; economy [financing, fuel pricing, and tariff levels]; environment [emission, air pollution, noise]; health, safety and security; technology [innovation, safety]; infrastructure and services [quality, capacity]; legal questions; and labour markets/working conditions among others). Subsumed under these broad categories are the twin issues of trade and development on one hand, and efficiency and sustainability of the freight transport systems on the other.

The above issues (singularly or in multiple combinations) act to undermine the sustainability of freight transport system by lowering freight transport efficiency. The following 10 examples of inferior or undesirable practices suffice to emphasise the point.⁴

1. Shippers using modes with relatively high social costs, such as trucks rather than rail for long-distance freight. On average, trucking consumes much more energy per unit of transport.
2. Underinvesting in the development of rail transport infrastructure relative to road transport, as was the case in Africa during the last 50 years, leading (as a result of comparative transport costs and tariffs) to increasing road freight traffic volumes,⁵ energy consumption, emissions and other externalities.
3. Lack of coordination among distributors resulting in poor scheduling and routing, higher freight vehicle mileage and low load factors (increasing empty running).
4. Absence of regional delivery systems resulting in more vehicle trips for every tonne of goods distributed.
5. Failing to reduce product volumes and unnecessary packaging, relying on imported products, and non-strategic location of production plants far from consumer markets leading to higher total freight transport.
6. Failure or lack of capabilities to implement fleet management programmes that reduce vehicle mileage, use optimal sized vehicles for each trip, and insure that fleet vehicles are maintained and operated in ways that reduce external costs (eg congestion, pollution and accident risk).
7. Absence of programmes/incentives to encourage businesses to integrate shipping costs and externalities in product design, production and marketing by, for example minimising excessive packaging and unnecessary delivery frequency.
8. Failure to implement transport optimisation measures, such as changing freight delivery times to reduce congestion.
9. Pricing and tax policies (eg the notorious fuel subsidies) that encourage inefficient freight transport.
10. Lack of incentive, programmes of policies (eg R&D investments) geared to increasing freight vehicle fuel efficiency and reducing emissions through design improvements and new technologies.

Vehicle operating costs, vehicle maintenance costs, transport tariffs, inefficiencies in levels of national transport systems (eg the quality of trade and transport infrastructure), relative efficiency of customs and border clearance procedures, as well as relative competencies and quality of logistics services (eg trucking, forwarding, and customs brokerage) are additional barrier that directly and indirectly impinge on sustainability of freight transport systems. Similarly, poor quality of trade and transport of infrastructure resulting from poor design, low standards, bad construction methods, low quality of material, and non-existent as well as poor maintenance contribute to unsustainable fleet operating costs. These factors influence

vehicle speeds, fuel consumption and maintenance costs undermining overall profitability, competitiveness and sustainability of freight transport.

Relevant challenges, barriers and enabling factors

Africa is now the fastest growing continent. In 2013-2015, Africa recorded an average growth rate of 6.03% at constant prices (Asia 5.58%, Americas 3.54%, Oceania 2.89% and Europe 2.03%).⁶ Rapid urbanisation and economic development in Africa and Asia means that demand for freight transport is also rapidly increasing.⁷ The growing need to *build resilient infrastructure* (including for freight transport), *promote inclusive and sustainable industrialization and foster innovation* (SDG 9), as well as *make cities and human settlements inclusive, safe, resilient and sustainable* (SDG 11) is part of The New 2030 Agenda.⁸ This presents both a challenge and an opportunity.

Up till now, the main challenge has been how to transform the freight transport sector from being socially, economically and environmentally less efficient into an efficient and sustainable freight transport system. Several initiatives at national and regional levels have already begun to address this challenge. In 2014, the Africa Sustainable Transport Forum (ASTF) adopted a 13 point ASTF Action Framework outlining a harmonised roadmap for achieving sustainable transport in Africa. Three key priority areas (and related set of actions) were identified, namely: 1) road safety, 2) vehicle emissions and energy efficiency, and 3) accessibility and sustainable infrastructure. The Inaugural ASTF Ministerial and Expert Conference held in Nairobi acknowledged that a lack of sustainable transport infrastructure and services remains a major obstacle to African countries.⁹

This lack of much needed infrastructure implies that countries could design their future along a low-carbon trajectory since they are not “locked-in” by existing infrastructure. However, access to finance for transport projects remains a challenge in Africa, due in part to lack of supporting sustainable transport policies, institutional challenges and political by in. Additional challenges and barriers identified include (a) lack of information on best practice, (b) need for capacity building and support (technology, finance and knowledge), (c) institutional complexities, and (d) poor facilitation of public-private partnerships.¹⁰

Much of the demand for freight transport is currently accommodated by on-road movements with rail supplying only a small proportion of overall demand. This is partly attributed to relatively low investment in freight rail networks in Africa where geographic coverage can be limited and where infrastructure is not adequate for high volume, high speed operations.[†] High-level policy focus in Africa, as reflected in the traditional pipeline of transport projects, remains centred on improvements to connectivity through heavy infrastructure investment – improved and upgraded trunks, new rural roads, improved logistics from ports to inland markets, and infrastructure investments in and around cities.

In Asia, the Asian Environmentally Sustainable Transport (EST) Forum has since 2004 promoted initiatives to 1) create a new paradigm in the transport sector towards low carbon and sustainable transport and 2) create a common understanding across Asia on essential elements of EST and to create political consensus on the need for an integrated approach to deal with multi/cross-sectoral environment, health and transport issues, including climate change through interagency coordination.

Public acceptance of sustainable freight transport systems can and should be promoted through persuasion or demonstration effect. Local champions can facilitate adoption of sustainability interventions, actions and measures. Voluntary information programmes and education about the benefits of sustainable transport can also lead to acceptance and a shift from inefficient freight transport systems. Similarly, strong and consistent political will is

[†] Lack of efficient modal interchange facilities also make it difficult to integrate rail in time-sensitive shipments.

necessary to ensure sustainability of freight transport and needs to be underpinned by a strategy for implementation.¹¹ Implementation should aim to replicate and scale-up interventions and catalyze actions on a programmatic basis.¹²

Best practices and lessons learned

Namibia is a good example of a country in Africa that is laying a strong foundation for sustainable freight transport and logistics. According to the country’s Fourth National Development Plan, Namibia desires to become the preferred African West coast port and logistics hub for southern and central Africa logistics operations.¹³ In line with this long terms vision, in March 2015 Namibia unveiled the *Master Plan for the Development of an International Logistics Hub for SADC (Southern Africa Development Coordination) Countries*. The overall structure of the Master Plan is summarised in Table 1 below.

Table 1: Overall Structure of Namibia’s Logistics Hub Master Plan

Key Elements	Diagnoses	Strategies	Actions
(1) Market (demand based) (2) Strong and attractive operational base for international logistics (3) Efficient Transport Network (including urban infrastructure) (4) Integrated Border Infrastructure (5) Cross-cutting elements (Finance, Human Resources, Power Supply, Water Supply, ICT) (6) Environment and Social Considerations.	(1) Volume is too small (2) Cost (price) is higher than the other gateways (3) Transport network fails to reach international standards (4) Towns are not ready to accommodate increased volumes (5) Shortage in throughput capacity of border posts and need for Integrated Border Infrastructure (6) Lack of integrated ICT Systems to support logistics services (7) Immediate shortage of human resources (8) Financial mechanisms for developing and maintaining transport infrastructure are not sustainable (9) Stable electric power supply (10) Negative impacts of logistics development on environment and society found to be manageable. Pay attention to mitigate negative impacts and promote synergy effects with other sectors.	(1) Namibia as a newcomer should be “impressive at a glance” (2) Namibia must install “pull-factors” strategically and decisively (3) “Anchor tenants approach” is the best way to get the volume. Logistics Hub Centre must be a strategic centrepiece (4) Remove critical bottlenecks on the key corridors by expanding throughput capacity to enhance “speed and reliability” (5) Get up to international standards as quickly as possible (6) Re-introduce beneficiaries pay principles to stop cross-subsidisation in investment and operation of logistics related infrastructure in order to secure long-term sustainability (7) Install legal framework to give foundations for key stakeholders to implement Master Plan.	Develop all key elements.

Source: Government of the Republic of Namibia, 2015: *Master Plan for the Development of an International Logistics Hub for SADC Countries in the Republic of Namibia*, Table 3.1, p. 15

Namibia seems to have realised and seized the opportunity to leapfrog towards a sustainable, low carbon transport paradigm. In addition to the logistics hub project, in 2013 Namibia developed a Sustainable Public Transport Master Plan (SUTMP) for the City of Windhoek including Rehoboth, Okahandja and Hosea Kutako International Airport.¹⁴ Both the SUTMP

and the Logistics Hub projects are (1) backed by a strong vision and good governance; (2) public-private partnership driven; (3) participatory and collaborative; (4) integrated in terms of modes, land use, environment and social objectives/impact; and (5) anchored on sound institutional frameworks that include policy, legislative and organisational elements. In addition, financial resources have been mobilised from a wide range of sources (public, private, domestic and international) to kick-start implementation. The overall design and approach to institutionalising sustainable transport is demonstrated and firmly built on sound principles of Avoid-Shift-Improve.¹⁵

Underlying important systemic issues

Presentation by various stakeholders at the 7th Annual Logistics and Transport Workshop recently (29 September - 02 October 2015) held in Walvis Bay highlighted some of the underlying important systemic issues for sustainable freight transport in Africa, including finance, capacity-building and the need for partnerships and cooperation of both the private and public sectors. Held under the theme “Logistics Success Stories and Best Practices”, the seventh edition of the Namibian-German Centre for Logistics’ organised forum heard about logistics success stories, transport future in Africa, as well as logistics and transport training among other issues.

FP du Toit Transport Group is one example of logistics success. Presenting a paper on long haul transportation in the (SADC) region, the group’s business development manager, Mr Ryno Badenhorst outlined the business model employed by FP du Toit that has seen it grow from a small Northern Cape family business 47 years ago into one of Southern Africa’s major freight transport companies today. Seamless integration of complementary services using information management system; use of same track and trace platform for all divisional services; cost-effective utilisation of fleet; three-year fleet replacement policy to ensure reliability and optimize operational costs; continuous capacity building of staff that has seen company drivers among the first to be accredited under the Namibia Logistics Association’s Driver Development Programme; among other policies help to explain FP du Toit’s success.

Another example of a freight company offering world class logistics in Africa is MANICA Group (Namibia). Its successful performance is built on service excellence, efficiencies in internal control, outside accreditation and certifications against established standards, including (1) health and safety [ISO 18001 on policies and procedures, reporting of incidences and near misses, awareness, creating a safety culture and “doing no harm”]; (2) quality [ISO 9001 entailing customer centric approach, continuous improvement process, documented and structured processes, and internal and external audits; (3) environment [ISO 14001 – measure and manage the environmental footprint of operation, continuous improvement process and avoidance of wastage]; (4) IT integration of operations systems, communications systems, electronic data interchange and integration, reporting and evaluation tools, big data and cloud, and mobility] and (5) risk management [risk evaluation and mitigation, liability analysis, insurance evaluation and supplier due diligence].

Conclusion

The Namibian experience, in particular the stories of these two freight companies underscore the salient point that sustainable freight transport systems are as much about large and long-term capital intensive infrastructure investments as they are about soft options or “low hanging fruits” that can improve system efficiency and reduce emissions. The options are many, but include improving transport and traffic management, improving the linkage between transport modes, optimising scheduling, developing capacity and awareness.¹⁶ Other best practices include developing integrated freight transport networks that facilitate intermodal systems that use rail and marine for long distance links, and trucks and human powered delivery for shorter distance links; establishing specific objectives for freight transport activities that support sustainability, eg reducing energy consumption per

ton-mile and encouraging use of less polluting modes; prioritizing planning and investment decisions that support more sustainable freight modes; correcting market distortions that favour less sustainable modes over more sustainable modes; implementing the user pays principle; encouraging competition and entrepreneurial freedom in freight transport markets and minimizing barriers to competition; and encouraging policies that reduce total freight traffic volume, including more local production, reduced product weight and packaging, reduced empty backhauls, and reduced waste production.¹⁷

¹ UN Resolution: A/70/L.1 - Transforming our world: the 2030 Agenda for Sustainable Development. Available at <https://sustainabledevelopment.un.org/post2015/summit>

² As used in this paper, “sustainable freight transport” aims to balance the economic, social and environmental dimensions of the sector in an integrated manner to ensure synergies, complementarities and coherence. Sustainable freight systems entail, among other features, the ability to provide transportation that is safe, socially inclusive, accessible, reliable, affordable, fuel-efficient, environmentally friendly, low-carbon, and resilient to shocks and disruptions, including those caused by climate change and natural disasters. See Note by the UNCTAD Secretariat titled “Sustainable freight transport system: Opportunities for developing countries” of 5 August 2015.

³ <http://www.agra.org>

⁴ Adopted from TDM Encyclopedia – “Freight Transport Management: Increasing Commercial Vehicle Transport Efficiency”. Available at <http://www.vtpti.org/tdm/tdm16.htm>

⁵ A PWC report quoted in the AFKInsider suggests that in 2013, about 71 percent of the 734-million tons of freight moved in South Africa was moved by road, despite the fact that railways make up 80 percent of Africa’s infrastructure, according to a PWC report. Available at <http://afkinsider.com/96070/south-africa-shifts-freight-transportation-from-road-to-rail/>

⁶ AfDB, 2013 *Annual Development Effectiveness Review 2013*. Africa Development Bank Group

⁷ Urbanisation is expected to rise by 2050 with 86% of the population in more developed countries and 68% of those in less developed countries living in urban areas. This increase will take place particularly on Africa and Asia, which, to date, are among the least urbanised regions in the world. At the same time, economic development and transport are closely interlined. Development increases transport demand, while the availability of sustainable transport is a prerequisite for sustainable development. Hence, demand for freight transport in developing countries is expected to increase rapidly over the coming decades.

⁸ op. cit., Footnote 1

⁹ <http://www.unep.org/Transport/astf/index.asp>

¹⁰ ASTF Full Meeting Report, available at <http://www.unep.org/Transport/astf/index.asp>

¹¹ A strategy can combine elements of “Avoid, Shift and Improve” strategy and tailor them to local circumstance. The Avoid, Shift and Improve (ASI) approach to climate change mitigation, as introduced in Dalkmann and Brannigan (2007) and endorsed in the Common Policy Framework on Transport and Climate Change (Leather *et al*, 2009). See http://www.transport2012.org/bridging/ressources/fies/1/586.NAMASubmissions_080210_final.pdf

¹² WBI, 2014 Module 5 – “The Transport Sector”: Low Carbon Development. The World Bank Group

¹³ The Walvis Bay Corridor Group (WBCG) Website – www.wbcg.com.na – describes the “Logistics Hub” concept as an intervention process that strives to unleash the latent growth and development potential of specific geographical locations in Namibia through the identification, packaging, formulation and marketing of the Logistics Hub for the SADC region and beyond. To achieve this objective, the Logistics Hub Project was established under the umbrella of WBCG. The desired outcome is for Namibia to have laid the foundation for establishing itself as a regional leader in logistics and distribution and that by 2017 the cargo volumes handled should be doubled. The overall objective is to put in place sustainable institutional arrangements and mechanisms that would ensure the transformation of the Port of Walvis Bay and the Walvis Bay Corridors into economic corridors for the socio-economic growth and development of the country.

¹⁴ <http://www.movewindhoek.com.na> As the Windhoek Master Plan enters implementation stage with a Pre-Feasibility Study completed, Scoping Study for Sustainable Transport in the northern Regions of Ohangwena, Omusati, Oshana and Oshikoto is already underway.

¹⁵ op. cit. Footnote 12

¹⁶ ibid.

¹⁷ op. cit. Footnote 4