



TANT² CENTRE NEWSLETTER

Issue No. 3 June, 2020



High-Tech System for Road Network Diagnosis



STUDY ON NEW TECHNOLOGIES, SAFETY AND BEST PRACTICES IN ROADS AND TRANSPORTATION SECTOR STARTS WITH US “TOGETHER, WE CAN SAVE THE COMMUNITY”

Welcome to Tanzania Transportation, Technology Transfer (TanT2) Centre

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The Permanent Secretary in the Ministry of works, Transport and Communication (Works sector) Arch. Elius Mwakalinga (first L) cuts a ribbon as a sign to launch and handover learning equipment to Morogoro Works Training Institute (MWTI).

LETTER FROM THE PERMANENT SECRETARY MINISTRY OF WORKS, TRANSPORT AND COMMUNICATION (WORKS)

Dear stakeholders,

I am honoured to present to you the third issue of the TanT2 Centre Newsletter in 2020 which started being published in 2018.

This is a platform where we can share information on best practices, innovations, appropriate technologies and new technologies on road and other infrastructure in the works and transport sectors.

Among others, one major role of the TanT2 Centre is to inform, disseminate and share information with stakeholders in the industry. This is done through newsletter which is published on a quarterly basis in hard and electronic copies.

I urge institutions under the Ministry of Works, Transport and Communication from all the three (3) sectors of works, transport and communication to share the highway transportation and communication information on best practices, new technologies and innovations through this publication.

For this to be realised and be sustainable, engineers and other experts from various institutions under the Ministry of Works, Transport and Communication attending training, seminars, conferences or workshops on best practice or technology in highway and transportation are humbly requested to share the valuable knowledge with others.

Articles with high quality and educative on highway and transportation technology information will positively influence and contribute towards improvement of transport infrastructure in the country.

Lastly, I wish to urge all stakeholders to continue supporting us as we work towards the next level in development of transport infrastructure in our country.

Arch. Elius A. Mwakalinga
PERMANENT SECRETARY (WORKS)



Arch. Elius A. Mwakalinga

Chairman's Note

Dear Reader,

On behalf of the Editorial Team, I am pleased once again to welcome you to this Third Edition of TanT2 Newsletter, which is published by the Ministry of Works, Transport and Communication (Works) through Tanzania Technology Transfer (TanT2) Centre.

As the Newsletter covers its third publication, before looking ahead, however, I would like to offer a word of thanks to our readers, contributors and the Editorial Team for supporting the Newsletter and its mission.

This newsletter aims to convey important information and reports on technology transfer and related activities that are being carried out in the country.

In this third edition, the reader will be able to find information on the use of newly introduced technologies in the implementation of construction tasks to improve efficiency.

The reader will also understand how the uses of the high-tech systems are deployed to enhance assessment of construction and maintenance tasks to ascertain quality assurance and value for money.

Such systems have been introduced on road works and vehicle weighing stations. Establishment of Institute of Construction Technology (ICoT) and Training of Labour Based Technology have also been taken on board.

Once again, on behalf of the Editorial Team, I welcome you to this Newsletter hoping that together we would work towards making the Newsletter a truly influential publication. Comments, suggestions and special issue or proposals are always welcome.



*Eng. Martin Ntemo
Chairman*

Eng. Martin Ntemo
Chairman

Published by Tanzania Transportation,
Technology Transfer (TanT2) Centre

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The overview of T2 Centre

1. Background

THE Tanzania Technology Transfer Centre (T2) was established in mid-1997 by the Ministry of Works in collaboration with the Faculty of Engineering of the University of Dar es salaam by then and support from the US Federal Highway Administration (FHWA).

The Centre is located at the Ministry for Works, Transport and Communication headquarters, Moshi Avenue Dodoma.

The establishment of TANT² Centre is an initiative that aims at improving transportation infrastructure in the country at all levels through technology transfer.

In short the Tanzania Transportation Technology Transfer (TANT²) Centre is a clearing-house for highway and transport information where technological information from different parts of the World is collected, sorted and tailored to suit local conditions and then disseminated across the whole transport industry from the national to local level.

The T² Centre is charged with the duty of enabling users and providers of road transport in the country to keep pace with the fast changing highway and Transportation Technology.

2. Vision

To be renowned nationally and internationally as the paramount resource in developing and transferring innovative and appropriate technologies, proven solutions and reliable services to successfully resolve the challenges facing the transportation community in Tanzania.

3. Mission

To foster safe, efficient and environmentally sustainable transportation systems in

Tanzania by improving skills and knowledge of transportation providers and users through training, technical assistance and technology transfer

4. Objective

The general objective of the Tanzania T2 Centre is to carry out activities aimed at improving road transport in the country through dissemination of relevant technological information and training

The specific objectives of the T2 Centre are to:-

- (i) Promote and enhance sharing of technology, managerial and policy related information on road transport system in Tanzania
- (ii) Provide local transportation and highway agencies and road users and access to international, regional and national state – of-the-art technology advancement
- (iii) Enhance science education with special emphasis on Transportation and highway related subjects in Tanzania, and
- (iv) Foster regional and international co-operation in implementation of highway and transportation related technologies and programmes.

5. Functions

- Promoting and Transfer of Technology for the Transportation Industry (highway; aviation; maritime; and railways);
- Conducting Demand Driven Training Programmes for Transport Sector Professionals;
- Providing Transport Information and Documentation Services;

- Conducting Applied Research and Development Activities to Address the Challenges facing the Transport Sector in Tanzania;
- Providing Online Transportation Library Services;
- Promoting Community Transportation Programmes;
- Promoting Development of Future Workforce for the Transportation Industry;
- Conducting Scanning of Transportation Technologies;
- Serve as the Secretariat of the National Committee(s) to the International Associations Promoting Transportation Technology.

6. Accomplishment since its establishment

The Centre carries out various activities and programmes to facilitate knowledge and information sharing, and technology transfer to the transportation community inside and outside Tanzania. The means/facilities utilised for sharing and exchange of transportation technology and related information include; running of electronic transportation lending library, conducting professional training courses, seminars, workshops and conferences. Other forms include the TanT² Newsletter, a website (www.tant2centre.or.tz), promotion of transportation community programmes, responding to requests for information by stakeholders, as well as linking stakeholders who have specific transportation related questions with experts.

In general the activities of the TanT²Centre are focusing on major four roles which include:-

i) Clearing house: Collecting and disseminating of transportation technological information. This promotes

technology transfer in Tanzania and in Africa region. In addition, it contributes towards development of social and economic infrastructure in the country.

ii) Workforce development: Conducting training and technical assistance programmes to professionals in the transportation industry. The Centre runs the Transportation and Civil Engineering Community (TRAC) programme at six pilot Secondary Schools and one pilot Primary School in Tanzania. The programme enhances delivery of physics, maths, technology and applied science subjects. TRAC encourages students to consider careers in science, transportation, civil engineering and applied technology. The Centre plans to expand the programme to more schools in Dodoma region.

iii) Networking, collaboration and cooperation: The Centre is networking nationally, regionally and internationally with stakeholders in the transportation industry. For instance, the Centre is part of a network of about 200 T² Centres worldwide. The Centre is also, a founder member of the Association of Southern African National Roads Agencies (ASANRA)'s Technical Committee on Regional Technology Transfer and Capacity Building.

Other Collaborating Partners includes: -

FHWA, ASANRA, ARMFA, IRF Geneva, NHI of USA, US DOT FHWA, US FAA, CATTs, TRB, ITE, IFRTD, PIARC and its member countries, TRL, gTKP, ILO ASIST, IFG, etc.)

iv) Business and sustainability : *The Centre operates using business principles, whilst delivering quality services to its customers. In addition, the Centre evaluates all of its programmes (internally and externally), in terms of performance and effectiveness.*

Ministry take initiative to implement on job training

By special Writer

THE Ministry of Works, Transport and Communication (Works Sector) organised and is facilitating a programme aimed at providing on-the-job training to professional employees within the ministry.

The training will be on various aspects such as conceptual design, details design, project management, construction management and project supervision for 37 professional employees from the Ministry of Works, Transportation and Communication (Works).

It will also involve the ministry agencies such as the Tanzania Buildings Agency (TBA), Tanzania Electrical, Mechanical and Electronics Services Agency (TEMESA), Architects and Quantity Surveyors Registration Board (AQRB), Engineers Registration Board (ERB), Contractors Registration Board (CRB) and National Construction Council (NCC) which have been attached to work together with Consultants/ Contractors undertaking various strategic projects countrywide.

The training aims at building capacity to ministry's professional employees to acquire skills, competence and knowledge to implement on-going construction projects including roads, bridges, airports, hydropower plants and buildings.

The first phase of the programme attached trainees to various ongoing

strategic construction projects in the country for six months.

This was followed by a follow-up visit by officials from the ministry to supervise, inspect, monitor and evaluate the progress of the programme.

Such monitoring and evaluation intended to measure satisfaction of trainees in carrying out their duties in terms of program goals, content, training materials, trainers' skills, and training logistics.

The training enabled trainees to participate in various stages of the strategic construction projects while at the same time acquiring new technologies and best practices in construction.



Director of Roads from the Ministry of Works, Transport and Communication (Works Sector) Eng. Rogatus Mativila (third left) and Assistant Director for Regional Roads Eng. John Ngowi (fourth left) in a group photo with on-job-trainees during the Monitoring and Evaluation visit.

Gained expertise

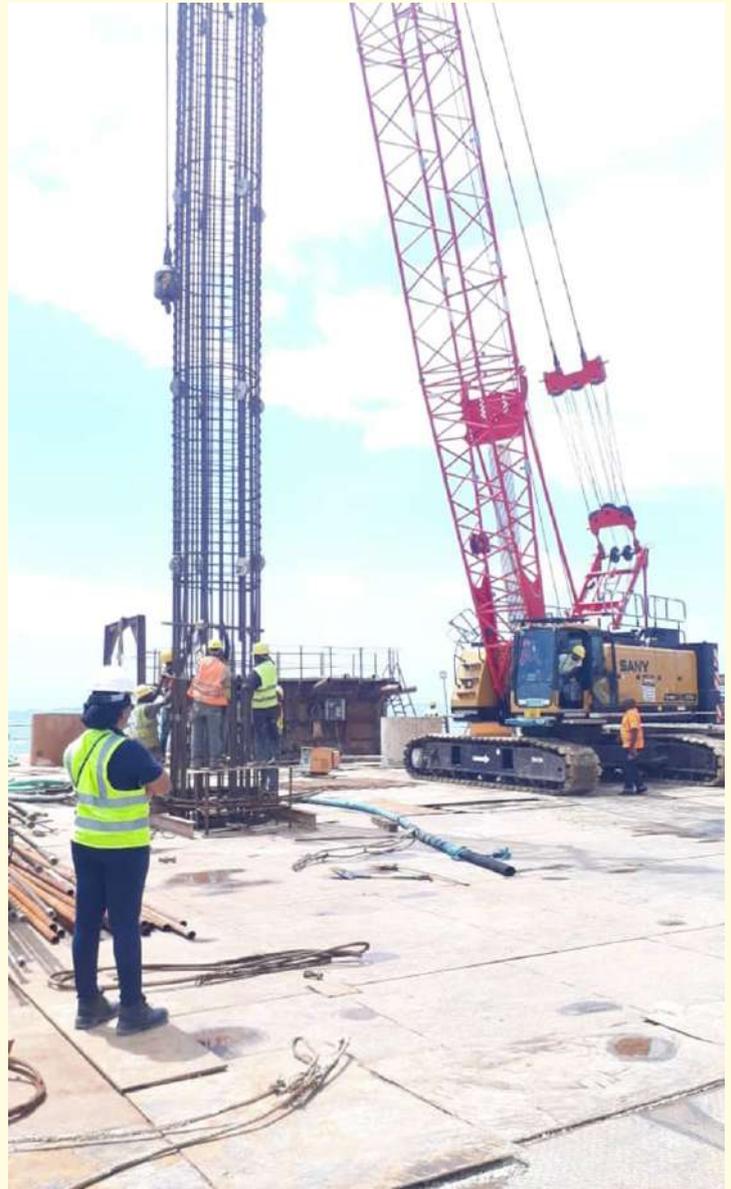
Trainees gained professional skills which includes but not limited to; orientation and familiarization with consultants and contractors site teams operations, review of contract documents and familiarization with the site.

Other gained expertise include, studying horizontal alignment and vertical profiles including cross sections drawings of the roads under construction, survey works, centerline setting out for roads, culverts and bridges, control levels for pavement layers including invert levels for structures.

Also in the list of gained expertise include; studying earthworks and pavement layers (setting out, clearing and grubbing, removal of top soil, roadbed, G3, G7 & G15 layers, sub base (C1) layer, base (CRR) layer, cutback bitumen for priming, studying bridges, drainage, culvert works and ancillary roadwork, preparation of progress report, interim payment certificates (IPC) together with studying materials and works quality control.

Through these training, trainees also gained in general supervision tasks depending on contractor's approved program of works, setting out, clearing and grubbing, various types of pavements, bridge construction, drainage and culvert works.

These trainings have helped the ministry to improve capacity on monitoring and management of roads infrastructure from the feasibility study, planning, construction supervision, operation and maintenance.



Trainees following up installation of piles at Tanzanite (Selander Bridge) construction



On-job-trainees for Mtwara Mnivata road project

Dar - Moro SGR project reaches 70 per cent.

By Special Correspondent

THE multibillion dollar Standard Gauge Railway (SGR) project from Dar es Salaam to Mwanza has reached over 70% of its implementation.

Tanzania Railways Corporation (TRC) Director General, Masanja Kadogosa said recently while addressing Permanent Secretaries who visited the construction site to know the status of the project.

He said the design and build contract for LOT 1: Dar es Salaam - Morogoro (300 km) which is being undertaken by M/s Yapi Merkezi is progressing well and already 70 per cent of the project has been completed.

The DG said despite challenges encountered during execution of various works that led to slight slippage to the program, the Contractor is striving to maintain the agreed implementation time schedule.

“Prolonged rains in particular have caused significant delays affecting mostly earthworks activities and construction of bridges,” the DG said.

The Permanent Secretary for Transport Sector, Dr. Leonard Chamuriho emphasized on timely release of funds to ensure the project is completed on time.



The inside part of the Standard Gauge Railway Tunnel in Kilosa, Morogoro.



The outside part of the Standard Gauge Railway Tunnel in Kilosa, Morogoro.

Ground works for the 1st Phase of SGR project that has been completed includes electrification, culverts, earthworks, bridges and tunnels by over 80 per cent.



The Standard Gauge Railway Station at Soga.

The first phase consists of six stations at Dar es Salaam, Pugu, Soga, Ruvu, Ngerengere and Morogoro. The Dar es Salaam and Morogoro stations will be main stations.

New Standard Gauge Railway line from Dar es Salaam to Mwanza (1,219 km) will be implemented in five (5) lots as follows; Dar es Salaam - Morogoro (300 km), Morogoro - Makutupora (422 km), Makutupora - Tabora (294 km), Tabora - Isaka (133 km) and Isaka - Mwanza (250 km).

For integration and connectivity of modes of transport, construction of SGR is going simultaneously with expansion of Dar es Salaam Port.



Construction of New Berth at Dar es Salaam Port.



International Road Federation
Fédération Routière Internationale
Federación Internacional de Carreteras

PRESS RELEASE

www.irfnet.ch

Geneva, 20 January 2020

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Improving Road Safety Outcomes: Senior Executives from the private sector lay out the way

Top level executives from Total, Michelin, 3M, Volvo and United Parcel Services (UPS) were part of the panel “Improving Road Safety Outcomes: Private Sector Commitments” hosted on 15 January 2020 in the framework of the annual SuM4All Consortium Meeting held at the World Bank Headquarters in Washington DC. Coordinated by International Road Federation (IRF), the panel aimed at illustrating areas of opportunity where companies can make meaningful contributions to road safety outcomes and inspire further action and commitment in the sector.



(L - R) Benoît Luc, Joanna Cornell, Dan Chen, Bill M. Halkias

“We need to learn to better harness the power of corporate resources and their presence in our communities” said **IRF President Mr. Bill M. Halkias** in his introductory remarks. The Decade of Action has taught us that saving five million lives and avoiding 50 million serious injuries will require more significant commitments and greater action from everyone. “If effectively engaged, the private sector is

well placed to have a profound and positive impact on road safety” Mr Halkias stressed. “It is important to understand how private companies integrate road safety into their overall sustainability efforts and which are the most effective strategies they apply to do so”.

Mr. Dan Chen, Vice President and General Manager of 3M’s Transportation Safety Division, mentioned that 3M’s road safety efforts are structured around the four familiar E’s: Education, Engineering, Enforcement and Emergency responses. “We spend quite a bit of effort on improvement of our drivers of fleet vehicles globally. Many of our 90,000 employees are in field operations. Importantly, we link driver behaviour to the 3M Code of Conduct and our safety culture”. 3M places significant focus on safety internally but also as a technology company, equally develops solutions for roadway users that reduce fatalities.

For many private sector actors road safety is far more than just a risk that can severely impact business but instead a value and a key pillar of a vision that sees companies fully engaged in this activity with their employees and with the communities to actively contribute to the common good. “Safety is a core value at UPS” said **Mrs. Joanna Cornell, Vice President Health and Safety**. UPS places a strong emphasis on community safety and acts upon this by providing extensive trainings to its drivers, as well as delivering life-sustaining relief and recovery supplies to communities.



Bill M. Halkias, IRF President, delivering his introductory remarks

Contributing to the panel discussion, **Mr. Peter Kronberg, Safety Director, Volvo**, further stated that “traffic safety for us is not a Cooperate Social Responsibility (CSR) issue. It is core business” and importantly highlighted the varying contextual needs with regard to safer mobility: “Towards Zero” in mature countries and “Bending the Curve” in Low and Medium Income Countries (LMIC). Whilst mentioning how the private sector’s innovation and leadership can be instrumental for facilitating transformational change, he still mentioned that the importance of the regulatory side should not be underestimated.

This session demonstrated that by harnessing the power of corporate resources and presence in our communities, the improvements in road safety driven by the private sector can extend well beyond CSR initiatives and company fleet operations. Exemplifying this, **Mr. Benoît Luc, Senior Vice President Europe of Marketing and Services, Total**, illustrated how SafeWay RightWay, born of a partnership

with the World Bank, made it possible to deliver partnerships between private companies to carry out joint actions which come under the sharing of best practice, pooling resources for activities such as trainings, whilst also raising awareness of vulnerable road users etc. Some of these activities thus easily deliver not only on road safety, but on a number of other Sustainable Development Goals (SDG) targets.



With several of the companies citing partnerships as key for creating meaningful, sustainable impact, **Mr. Nicolas Beaumont, Senior Vice President Sustainable Development and Mobility, Michelin**, provided guidance on how to build these partnerships and ensuring long-term sustainability and impact. “Safe Mobility, rather than being a competitive subject, should see collaborative efforts among all stakeholders” he stressed. “Investing time to identify suitable partners is key because a strong partnership always translates to greater positive change and impact on the ground”.

Moderating the panel discussion, **IRF Director General, Mrs. Susanna Zammataro** stated “We could not think of a better place to have this discussion today, since [Sustainable Mobility for All \(SuM4All\)](#) – and its work on the [Global Roadmap of Action](#) - is a wonderful testimony of the importance and the value of working together and in synergy”.

The panel was an official pre-event to the [3rd Global Ministerial Conference on Road Safety](#), taking place in Stockholm, Sweden, 19-20th February 2020.

For any questions, please contact info@irfnet.ch or +41 22 306 0260.



International Road Federation
Fédération Routière Internationale
Federación Internacional de Carreteras

Established in 1948, IRF is a membership-based organisation, representing leading corporate and institutional players drawn from the road and mobility sectors worldwide. Its mission is to promote the development of roads and road networks that enable access and sustainable mobility for all. Its approach is centred on key strategic components of knowledge transfer & information sharing, connecting people, businesses and organisations and policy & advocacy. Through its Expert Groups and Committees that address key economic, environmental and social issues, IRF is qualified and able to make a decisive global contribution to the transport sector. As a not-for-profit organisation, based in Switzerland, IRF provides a neutral and global platform for the road and mobility sectors. www.irfnet.ch

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Institute of Construction Technology in the offing

THE Ministry of Works, Transport and Communication (Works) plans to commence an Institute of Construction Technology (ICoT) soon to enable the country have high quality, cost effective and self-sustaining construction industry by 2025.

By Special Writer

This intervention aims at addressing the challenge of adequacy of comprehensive skills development (training) institution, which is supposed to develop and sustain the professional workforce to meet the demand and technological advancement in the construction industry.

Such a move is in line with the ministry's construction policy of 2003 and its reforms since 2000 which envisages strengthening the construction industry policies and legislations, creation of an enabling environment for provisions and upgrading of appropriate technical training and technological applied research.



The Permanent Secretary in the Ministry of works, Transport and Communication (Works sector) Arch. Elius Mwakalinga (first L) cuts a ribbon as a sign to launch and handover learning equipment to Morogoro Works Training Institute (MWTI).

This intervention aims at addressing the challenge of adequacy of comprehensive skills development (training) institution, which is supposed to develop and sustain the professional workforce to meet the demand and technological advancement in the construction industry.

Tanzania's long term National Development Vision, envisages the country to attain a middle income status and hence eliminate poverty by the year 2025 as outlined in the National Strategy for Growth and Poverty Reduction (NSGPR).

The aspiration of becoming middle income country has received an additional impetus from the Fifth Phase Government by its commitment to make Tanzania an industrial

country by 2025.

The modern training institute will be capable of addressing developmental challenges facing Tanzania in general and the construction and transport sectors in particular with respect to the availability of quality and "hands on skills personnel".

The envisaged Institute of Construction Technology (ICoT) is expected to deliver appropriate training programmes and hence produce high quality graduates capable of being employed in the public and private sectors or self-employed and hence address the skills gap and youth unemployment problems facing the country.

The Ministry of Works is aware that the expectations and aspirations of Tanzania



The Principal of Morogoro Works Training Institute (MWTI) Melkizedeki Mlyapatali makes a statement on the institute's progress to the Permanent Secretary in the Ministry of Works, Transport and Communication (Works sector) Arch. Elius Mwakalinga (L) when he toured the institute to hand over learning equipment, a Grader and 20 computers

towards implementation of the Construction Industry Policy of 2003 and the prospects of technical education are high as expressed in the National Technical Education and Training Policy of 1996, the National Higher Education Policy of 1999, National Research and Development Policy of 2010 among other policies.

Furthermore, current Phase Five Government's focus of creating an industrial led growth has given more attention to the need of producing quality workforce for implementing these national policies and strategies.

It is through this understanding that MoWTC is putting emphasis on introducing training programmes that will contribute to the national effort to develop local human potential to spearhead various interventions towards poverty reduction and socio-economic development of the nation.

The Works Sector owns two training institutions, namely the Morogoro Works Training Institute (MWTI) and the Appropriate Technology Training Institute (ATTI) Mbeya. While MWTI was established in 1974 with the aim of training civil servants who were working with the Public Works Department (PWD), ATTI Mbeya was established in 1993 with the objective of training professionals engaged in road construction and maintenance through application of the labour-based technology (LBT).

Over the years, both institutions have been operating under the Roads Division of the Ministry. Although both the MWTI and ATTI Mbeya have basic infrastructure and training facilities, they have various limitations that do not encourage the provision of the

intended training with the changing needs of the construction industry.

The trend is causing the depletion of skills, and the qualifications of the graduates from these institutions do not have wide recognition. In addition, the qualifications attained do not provide an opportunity for the graduates from these institutions to proceed with further training in other accredited Institutions.

Thus, in line with Tanzania's development aspirations the Ministry of Works, Transport and Communication intends to establish an Institute of Construction Technology (ICoT) by modernizing/merging the MWTI and the ATTI into the Institute of Construction Technology (ICoT) in order to improve quality of the training provided, ensure that the institute is accredited by the National Council for Technical Education (NACTE) and thus expand its services within the country and across the borders.

Vision, Mission and Functions of ICoT

Vision:

Construction and transport sectors provided with sufficient, competent and hand-on skills using the state-of-the-art technologies for sustainable and socio-economic needs of Tanzania.

Mission:

To provide a conducive training and learning environment that readily and effectively imparts competence-based knowledge, skills and abilities for carrying out the construction functions necessary for rapid socio-economic progress of Tanzania.

Functions



Morogoro Works Training Institute (MWTI) students pay attention to the Permanent Secretary in the Ministry of Works, Transport and Communication (Works sector) Arch. Elius Mwakalinga (not pictured) at a handover ceremony of the Institute's Learning equipment.

The core functions of ICoT will be Training, Research and Consultancy. ICoT will also be conducting professional courses.

The following are the Core Function of ICoT;

Training

ICoT will offer long term and short term courses. Short term courses will be tailor made that will also include practical training. Long term courses will be for a period of up to 18 months to include taught programmes (30 percent) and practical programmes (70percent).

Research activities

ICoT will conduct research activities mainly in the area of the construction industry. Both academic staff and students will be involved

in the research activities. Outstanding research activities will form a basis for publications to the institute.

Consultancy activities

ICoT will undertake consultancy activities in collaboration with public and private sector. Income generated from consultancy activities will be used to enhance financial sustainability of the institute.

Rationale for Establishing ICoT

The rationale for establishing ICoT is hinged in the Ministry's Strategic Plan 216/2017 – 2020/2021 which aims at strengthening institutions under its jurisdiction, including restructuring its training institutions so as to match with its Construction Industry Policy of 2003 whose mission was to create an enabling environment for the development

of a vibrant, efficient and sustainable local industry that meets the demand for the services to support sustainable economic and social objectives.

Key Stakeholders of ICoT

The purpose of ICoT is not to replace the existing Government Technical colleges, but to strengthen and improve production of workforce for the better of construction industry in Tanzania. ICoT is a government organization and will collaborate with other like-minded public and private institutions within and outside Tanzania including but not limited to;

- (i) Dar es Salaam Institute of Technology
- (ii) National Institute of Transport
- (iii) Arusha Technical College
- (iv) Mbeya University of Science and Technology

Proposed Programmes and Rationale

It is proposed that the broad categories of programmes starting with NTA Level IV be offered by ICoT include:

- (i) Civil Engineering;
- (ii) Mechanical Engineering;
- (iii) Electrical Engineering; and
- (iv) Building Technology

The soft skills will include Engineering Mathematics, Computer applications, Communication skills and Entrepreneurial skills.

Programmes Philosophy

The underlying philosophy of the four main programmes is to inculcate competence to students to perform assigned tasks. At the end of their training at the ICoT, graduates are expected to have hands on skills that will enable them to competently perform the work. Guided by this philosophy, the ICoT will design the programmes in such a way that only 30 percent of the contents will be theoretical while the rest 70 percent, will be practical work.

Programmes Rationale

The rationale for designing ICoT programmes is to have 30 percent theoretical and 70 percent practical work curriculum which will ensure that the Institute produces hands-on-skills graduate who are able to perform assigned tasks instead of graduates with paper qualifications. Graduates from the ICoT who have the hands-on skills will be able to fill the skills gap at artisans and technicians' levels, which currently exists and being experienced in the country.



Institutions Eye Road Safety Engineering, Audits

@Tant² Reporter

THE Tanzania Transportation Technology Transfer (TanT2) Centre in collaboration with, Tanzania Roads Association (TARA), International Road Federation (IRF) Geneva and other local institution has conducted a regional seminar and course on Road Safety Engineering and Audits (RSA) for decision makers.

RSA is one of the tools for checking the road schemes by independent auditors at different stages of planning, design, construction and operation.

It is a new phenomenon in Africa in general, and Tanzanian Road Act 2007 demands all road authorities to ensure the roads are designed, built, maintained and operated with proper safety in all aspects.

Tanzania National Roads Agency (TANROADS) has already been using methods for crash reduction and crash prevention to improve safety in the network. Likewise engineers in Government departments need to undergo training to understand the need and actual method of adopting audits for implementation of the recommendations.

The RSA workshop was attended by the Tanzania Traffic Police which presented a paper on the state of road accidents in the region.

Also in attendance were 34 participants from different countries including Uganda, Malawi, South Africa, India and the United Kingdom.

The workshop came at a time when World Health Organisation (WHO) 2017 Report showed that the worst road safety performance is in Africa as compared to other continents.

The report demanded a significant and continuous drive in terms of sensitisation and capacity building for management of road safety.

“Being a multi-sectoral problem, road safety needs training and capacity building in all concerned government and private organisations with sustained efforts,” said part of the report.

According to the report, the IRF Geneva Programme Centre (GPC) and UNECA have been working to change the dubious distinction of Africa in road crashes and fatalities. More serious aspect of the African road safety problem is related to the high proportion of vulnerable road users, especially pedestrians in the total number of fatalities and serious injuries on African roads.

As such, there is enormous spending on road infrastructure development in all developing countries. National and regional highway agencies including road developers and local consultants lack expertise in road safety engineering as well as for conducting quality road safety auditing concluded part of the report.

It added further that, the conduct of road safety auditing has not been mandatory in

the road development process in most of the developing countries and especially in Low- and Middle-Income Countries (LMICs).

Accordingly, if it is taken up with real seriousness for enhancing road safety in the network, developing countries would need a few hundred / thousands auditors just to conduct audit for the primary road network alone in a reasonable time frame.

Most developing countries and LMICs seriously lack in the inbuilt-safety in their infrastructure (due to absence of careful audit of the design and during implementation), and therefore, while developed country's claim that 95% of the road crashes has link to road users' fault, this statement is not valid in case of such LMICs.

With deficient infrastructure in design, roadside hazards and extremely poor road safety culture with risk taking behaviours of the population, road safety is deteriorating fast in many countries.

In addition, economic growth of many of these countries has fuelled increase in motor vehicle ownership with a skewed and fast growth of motorised two-wheelers and their indiscriminate use, which have created serious impact on the road safety scenario in African countries.

African region has fatality rate of 26.6 per 100,000 population, which is the highest globally. While majority of the African nations have requisite laws on key behavioural risk factors, very few have been able to effectively enforce those in a sustainable way.

Moreover the road traffic fatality data is highly under-reported in African region and actual figures could be even four times, while nearly

half of all reported road traffic deaths in the region are among the vulnerable road users (pedestrians, bicyclists and motorcyclists).

It is well known that in LMICs the loss due to road accidents is about 5 per cent of the GDP and it is the leading cause of death among young people aged between 15 and 29 years.

The UN Decade of Action for Road Safety (2011-2020) has been adopted in most African countries with five pillars of road safety actions and African Road Safety Action Plan has also adopted them.

It is well known that the accidents are preventable and the results of the action plan need monitoring. Road Safety has now been taken into 2030 Agenda of UN called the Sustainable Development Goal (SDG) 3, where the ambitious target is to reduce the global number of death and injuries from road traffic crashes to half by 2020.

In addition, the SDG 11 aims to provide access to sustainable transport systems for all by improving road safety and expanding the public transport.

The seminar therefore recommended that there should be a review of existing Road Traffic Act to bring in the best practices and update to reflect the road safety challenges faced by the country.

It also tasked to amend the existing Road Safety Policy to reflect the global best practices matching the road safety challenges faced by Tanzania while also amending penalties and fines for traffic violations proportional to the seriousness of the offences or violations.

Local, Foreign Institutions Partner to Train on Road Asset Management

LOCAL and foreign institutions met to discuss on Road Asset Management aimed at building on case examples and demonstrations from practice to horn on key learning objectives.

@Tant² Reporter



Eng. Ephatar Mlavi, Team Leader, Roads Management Systems Unit, Tanzania National Roads Agency (TANROADS) making a presentation at the Course on Road Asset Management for Senior Executives.

The course that was held at the Arusha International Conference Centre (AICC) from 5 - 9 August 2019, targeted senior executives and decision makers, CEOs, executive directors, managers and senior technical staffs in engineering practices and other road sector institutions.

The five day workshop was organised by the Tanzania Roads Association (TARA)

in collaboration with the International Road Federation (IRF) Geneva Programme Centre, the Tanzania Transportation Technology Transfer (TanT²) Centre, TANROADS and the Roads Fund Board under the Ministry of Works, Transport and Communication and other local and international institutions.

The course also relayed more on class presentations, case

studies, discussions, and real “hands on problems” to disseminate the key concepts in this new area of learning.

Prof. Donath Mrawira, a renowned international expert in road asset management systems from Canitan Engineering Group (T) limited and 4M Global Inc. of Canada said the seminar and course provides participants with information and knowledge on how to develop road-asset-management goals and objectives for their Road Agency.

He said it will also help them to visualise how the framework and principles of road asset management fit into the business processes of a road agency hence develop a basic understanding of related technical concepts such as long-term plan.



The Lead Instructor, Prof. Donath Mrawira assisting participants during practical group work exercises.

The training was also attended by Eng. Sophia Belete-Tekie and Mr. Fergusson Paulse from Road Management Systems (RMS) Division of the Roads Authority of Namibia, and Eng. Ephatar Mlavi, a team leader of the Roads Management Systems Unit at Tanzania National Roads Agency (TANROADS).

The training comprised of a wide range of presentations, lectures, workshops and an intensive practical hands-on training.

“This training include case studies and worked examples to introduce new techniques such as performance-based trade-off analyses vs. benefit cost and net present value analysis,” Prof Mrawira said.

Among others, the course used computer

simulation and internet research to introduce complex concepts like mathematical optimisation and multicriterial decision making.

At the training, a recent standard Infrastructure Management Maturity Model (IM3) was introduced and used by participants in benchmarking current asset management practices

in their agencies and to identify potential areas for further enhancement.

Instructors Prof. Donath Mrawira and Sofie Tekie from Namibia said the asset management system is vital for strategic planning on optimization of funding requirements for maintaining the national road network at an acceptable condition level while minimizing the total transportation cost.

They said it helps on evaluating the impacts of funding constraints, both in terms of the change in fund distribution to different activities and the impact on the road network and determines a set of cost-effective maintenance, rehabilitation and improvement standards,



Eng. Sophia Belete - Tekie, Divisional Manager, Road Management System, Roads Authority of Namibia making a presentation at the Regional Seminar on Road Asset Management for Decision Makers.

applicable to different groups of road sections.

The training recommended among others that the Ministry responsible for roads or implementing agencies must have department or unit special for asset management in order to optimise maintenance budgets.

Participants also proposed that the fund for maintenance has to be highly considered including increasing funding level to cover the minimum requirement while ensuring that the responsible ministry for roads (Ministry of Works, Transport and Communication) establishes an annual event to be called “Tanzania roads day or Tanzania Annual Transport Infrastructures day,” to act as platform to discuss challenges, success, plan

and way forwards on different aspects of roads and other transport infrastructure development.

It is hoped that upon the completion of the course, participants will be able to understand the fundamentals of road transportation asset management and appreciate why using transportation asset management is important to agencies.

Participants will also be able to visualise how the framework and principles of transportation asset management fit into their agencies’ or Ministry business processes while at the same time use a self-assessment guide to benchmark an agency’ maturity in asset-management.

It is also hoped that participants will be able to develop transportation-asset-management goals and objectives for a given agency and have a basic understanding of related technical concepts such as long-term planning and performance based planning among others.

Participants also proposed that the fund for maintenance has to be highly considered including increasing funding level to cover the minimum requirement while ensuring that the responsible ministry for roads (Ministry of Works, Transport and Communications) establishes an annual event to be called “Tanzania roads day or Tanzania Annual Transport Infrastructures day,” to act as platform to discuss challenges, success, plan and way forwards on different aspects of roads and other transport infrastructure development.



The Chairman of Roads Fund Board Tanzania, Mr. Joseph Oddo Haule who was also the Guest of Honour in a Group Photo with Seminar and Course Participants, at the Opening of the Regional Seminar and Course on Road Asset Management for Senior Executives and Decision Makers in Arusha this year.

High-tech system for road diagnosis

By special Reporter

AS one way of transport infrastructure assets preservation, the Ministry of Works, Transport and Communication (MoWTC) has decided to deploy a High-Tech System of which roadways and runways will be properly diagnosed.

Diagnosis results will enable timely and cost-effective investment and intervention and hence lengthen the life span of the transport infrastructure especially roads and runways.

Currently most of the inspection is being done through visual assessment and hence less effective to yield substantial alerts and counterproductive measures becomes insignificant.

Different cases have been witnessed such as collapse of bridges, distresses of the pavement structures, cracks, rutting and bleeding which have cost implications on the investment on roads maintenance and upgrading.

In order to maintain the value for money, the MoWTC decided to deploy a High-Tech System that will not only aide the approval of design scheduling, but also justify the compliance to the standards and guidelines

and hence maintain the quality and quantity aspects of the road works.

During the PIARC-World Road Congress held in Abu Dhabi in October, 2019, the Tanzania delegation, had the opportunity to learn new technologies that can enhance management of the assets. Eventually they came across different systems with equipment for road asset management.

Further to the fact-finding process on various options and conclusions made thereafter, it was decided to opt for most economical system (vehicle-based) that comprises the following facilities: -

Camera/video Link: this equipment is mounted on the vehicle to record all the visual inputs upon moving the asset (roadway or runway)

Laser scanner: this is the equipment for capturing the spatial data on the surface of pavement related to the potholes, cracks, ruts, etc

G r o u n d penetrating

radar: this is the equipment to give an X- ray-like view of the thickness of the pavement, so as to show what is the size of thickness and hence what is beneath the layers of the pavement

Falling weight defectometer - this is the equipment to be used for assessing the strength of the pavement by measuring deflection with respect to the modulus attained.

With these 4 units mounted together to a vehicle, it will be easier to assess the quality of the pavement structure and compare with the cost of investment.

In so doing, the Road Doctor survey van from Finland was one among the options that were assessed and it proved to be economical and best option



*Vehicle with Equipment for roads networks
(Technique for Road Network Diagnosis)*

Government to empower more women contractors

By Shukuru Senkondo

THE concept of empowering women contractorstoLabour Based Technology (LBT), and the development of infrastructure in the country is of great importance due to evidence of the abilities shown by women on several projects.

The Ministry of Works, Transport and Communication (Works sector) is trying the best to ensure women of all levels successfully participate in competing, winning and

performing various road projects especially those of appropriate labour based technology nature.

Having Women Contractors capable to accomplish construction or maintenance projects with successful outcome is no longer a theory or a meteorological model but a reality and the government is committed to support such efforts to make sure that the achievements are translated into meaningful economic benefit for women.

It has been proven that women empowerment plays a great role on poverty reduction.

There is more recognition that women development is not only a family development matter but the community as a whole.

Therefore, women empowerment not only leads to a decrease of unemployment rate in a country but reduces poverty as well while at the same time enhancing human life standard.



Participants for the training to empower women in road construction work using Labour Based Technology (LBT) takes part in road construction in Morogoro.

The Ministry (Works Sector) through its dedicated Women Participation Unit (WPU) has been conducting several trainings aimed at empowering women to capacitate them on labour based technology so that they are deployed when undertaking such projects mostly carried out within their localities.

Speaking to Women Contractors in February 2020 during Women Contractors empowering training at the Morogoro Works Training Institute (MWTI), the Director of Administration and Human Resource from the

“The training aims at capacitating Women Contractors’ to enable them register with the Contractors Registration Board (CRB), and other regulatory bodies and develop independent construction firms that conduct their work legally and with professionalism.”

Ministry Mrs. Ziana Mlawa reaffirmed the Ministry’s desire to capacitate Women Contractors at various levels to enable them compete in tender processes being advertised in the country.

The Director said “The training aims at capacitating Women Contractors’ to enable them register with the Contractors Registration Board (CRB), and other regulatory bodies and develop independent construction firms that conduct their work legally and with professionalism.”

At least 50 women contractor from Dodoma, Kilimanjaro, Manyara, Ruvuma, Shinyanga, Singida, Songwe and Tanga regions attended the training which also involved field work on road construction.

The training aimed at capacitating Women Contractors on; competing tenders, contract management, construction project, pricing, filling tender documents, tender analysis and the history of labour based technology.

Other courses also included; understanding of construction tools, rehabilitation and roads construction activities, drainage works and culverts, registration of construction company/firm, HIV prevention, gender awareness and

mainstreaming at work places.

The government aims at empowering women and enhancing their participation in various economic activities to better implement the Government’s Sustainable Development Goals (SDGs) for a middle-income country by 2025.

The training instructors from the Ministry of Works, Transport and Communication (Works Sector), Appropriate Technology Training Institute of Mbeya (ATTI-Mbeya), Public Procurement Regulatory Authority (PPRA), Tanzania Roads Agency (TANROADS), and the Contractors registration Board (CRB), shared experience on various issues from firm registration to projects management.

Speaking on behalf of trainees Mrs. Rosemary Migire, acknowledged the ministry’s support saying such trainings need to be sustainable to build the capacity to Women Contractors and enable them to compete effectively in construction projects.

“These training will equip us with the required knowledge and skills and ensure that we are patriotic to our country so implemented projects can have value for money,” she said.

TANT2 CENTRE PARTICIPANTS GAIN MORE FROM ASANRA MEETING



Participants of the 35th session of ASANRA committee and board meeting held on 18th - 22nd November, 2019 at the Atintercontinental Hotel in Lusaka, Zambia.

By Special Writer

The Association of Southern Africa National Road Agencies (ASANRA) Board and Committees held their biannual meetings in Lusaka Zambia from 18-22 November 2019.

The Ministry of Works, Transport and Communication (Works) through TanT2 centre was represented by Eng. Silvester Haonga, a member of the Regional Technology Transfer and Capacity building Committee.

Other delegates from Tanzania included Eng. Musa Mataka, Eng. Ephata Mlavi (member of the Road Network Management and Financing Committee) and Eng George Daffa, (member of the Road Safety Committee).

These meetings are held biannually,

normally before the end of financial year in May and after the financial year in August every year. ASANRA runs its programmes using 6 technical committees.

The committee meetings were followed by the ASANRA board meeting that was held on 21st November, 2019 which involved all Chief Executive Officers from the ASANRA member countries.

The committee's recommendations derived from the meeting includes;-

Implementation of recommendation on training needs analysis pertaining to capacity building in transportation industry.

Implementation is in process and involves T2 centers of Tanzania and Botswana to coordinate the collaboration on developing guidelines and training needs analysis

system through PhD and Masters Research programs to the UDSM and University of Botswana. The idea was basically accepted by the two universities and an MoU for collaboration between the ASANRA and UDSM has been signed while that with UB is at final stages.

Transport sector leadership development programme.

ASANRA also is working on Leadership Development in Transport Sector program. The aim of this initiatives is to build the capacity in Transport Sector through short and long-term training of the staffs from road Agencies.

Phase I of the project performed by a consultant Mott MacDonald and University of Cape Town was completed in Sept. 2017. Contract for Phase II of the project was signed in February 2019. Phase II of this project focuses on among others identifying and establishing a center of excellency in Sub Saharan Africa.

The University of University of Nkwame Nkurumah in Ghana has been identified as center of Excellency for training.

Recruitment of students (Master's degree) shall be advertised soon. Interested staffs from the road Agencies, Ministries dealing with Roads and Transport can apply for consideration. Programs are full funded by ASANRA through AFCAP Support.

Road Network and Financing Committee:

ASANRA is also endeavour on the development of the GIS Based Regional Map for SADC Network, where members will be able to upload data remotely. This program is on-going and is being championed by

SANRAL, who will add the ASANRA portal in their transport information system to be able to view the SADC/ASANRA regional network in a web-based GIS map.

The first data to be populated will be roughness data (IRI). During this meeting it was indicated that Tanzania is one of the member state which is doing well on the GIS Regional Mapping for roads. ASANRA portal for the SADC network was already been created. Uploading of other data is on-going.

Site Visits

Participants to the meeting were offered by the host a site visit in Lusaka city and Road Development Agency (RDA) sites. The following major issues were learnt: -

Katuba Toll Plaza. The participants had an opportunity to visit the Katuba Toll plaza. This is among the 21 toll plazas that are operational within the Zambia core network.

The plaza is located along the Lusaka-Tunduma road (Great North). It has the capacity of about 12,000 vehicles per day but currently is operating at 6,500 vehicles per day. It consists of 4 lanes in each direction. The plaza is powered by the National power grid with solar garden as primary power backup and generator as secondary power backup.

RDA Works workshop: The Government of Zambia through RDA is implementing a project for supply and installation of about 131 units of bailey bridges. The supplier for the units is ACRO company based in America.

The programme is intended for emergency

installation of bridges and installation on critical locations where bridges are urgently needed, especially on the rural areas. Through this project local contractors and force account units will be trained on the installation of same.

According to RDA the cost of supply of 131 units is US\$ 56 million, were about another 1 billion Kwacha will be required for

installation and construction of abutments and intermediate piers where needed.

Out of the supplied units some are for single lane and some are for two lanes with maximum carrying capacity of 60 tones but can be designed to carry any load depending on client requirements. It was learnt from this visit that similar workshop is highly needed by TANROADS for emergency preparedness.



Photos showing various events conducted during the meeting, which also included site visitations.

9th Africa Transportation Technology Transfer Conference 2020

Theme: “Building Resilient Transport Infrastructure for Social and Economic Development”

Maputo, Mozambique (date to be communicated)

BACKGROUND

The Association of Southern African National Road Agencies (ASANRA) was established in March, 2001 in line with The Southern African Development Community (SADC) Protocol on Transport, Communication and Meteorology. It was established with the aim of enhancing regional policy coordination and transport integration in order to improve intraregional road transport efficiency and lower transport costs. Membership of ASANRA is composed of representatives of National Road Agencies, Educational Institutions, the private sector and other interested parties.

ASANRA organises regular African Transportation Technology Transfer (T2) Conferences which provide excellent platforms for sharing, exchanging and debating experiences, new technologies and best practices in the provision, maintenance and management of all modes of transport.

Since inception, ASANRA has organised eight (8) conferences in Tanzania (2), South

Africa (1), Malawi (1), Namibia (1), Botswana (1), Zimbabwe (1) and most recently Zambia.

The 9th conference will be hosted by Mozambique, at AFECC GLORIA HOTEL in Maputo this year under the theme: “**Building Resilient Transport Infrastructure for Social and Economic Development.**”

CALL FOR PAPERS

For the 9th Conference the National Roads Administration (ANE) of Mozambique on behalf of the Ministry of Public Works, Housing and Water Resources of the Government of Mozambique is calling for papers from individuals and/or firms on the below selected topics.

Papers will be reviewed by a Technical Committee, with respect to overall quality of content, expected impact of the paper on the transportation sector in the region, presentation and relevance to the Conference and the delegates.

Papers that are accepted will be published in the Conference proceedings and will provide input into the Conference sessions. All authors of accepted papers will be required to present their work.

INFORMATION FOR AUTHORS

CONTENT - All papers must be original work available to be released for publication, and should not have been published previously or be under consideration for publication while being evaluated for this Conference.

Material that has been previously published will not be accepted. Any reference of political, commercial or advertising nature must be excluded from the papers. The indication of a brand name should be excluded in the title and in the abstract.

LANGUAGE – Abstracts must be submitted in English.

SUBMISSION – Abstracts should be submitted using the online facility from the dedicated email of the Conference Organising Committee (t2mozambique2019@gmail.com or t2mozambique2019@ane.gov.mz)

ABSTRACT FORMAT – As below:

TITLE OF WORK (TIMES NEW ROMAN - 14 BOLD CAPITAL LETTERS - STYLE: HEADER 1 OR HEADING 1)

-Author¹ (Times New Roman - 11 Regular - Style: Header 2 or Heading 2); Author²; Author³

SUBJECT: Xxxxx Xxxxx (Times New Roman - 12 Bold - Style 3: Header or Heading 3)

Key words: Xxxxx / Xxxx / Xxxx / Xxxxxx (Times New Roman - 12 Regular - Style: Header 4 or Heading 4)

ABSTRACT:

Text summary (Times New Roman - 12 Regular - Style: Normal).

The papers submitted should not exceed 500 words in length inclusive of illustrations. The papers must be in MSWord, produced on A4 paper size in 12 Point Times New Roman font, single line spacing, and in a single column format. The margins should be 35mm on the left and 25mm on the other three sides of the page. The text must be fully justified and paragraphed must be separated by single line spaces, with all the information included (such as: Job title, Author, Theme, Keywords and Affiliation).

¹Author's affiliation (Times New Roman - 10 Italic - Style: Header 5 or Heading 5) (example: mail@mail.mz, entity, locality);

²Affiliation; ³Affiliation

TIMELINE:

Authors are advised to take note of these dates:

Deadline for submission of abstracts	20 th December, 2019
Notification of acceptance of abstracts	1 st February, 2020
Deadline for submission of final papers	26 th March, 2020
Notification of acceptance of final papers	30 th April, 2020
Conference, Maputo, Mozambique 2019	Date to be communicated

ADDRESS FOR COMMUNICATION

The 9th Transportation Technology Transfer Conference

C/O Director of Planning
Att. Mr. Miguel Coanai
National Roads Administration
P. O. Box 403, Av. Mocambique, Nr 1225,
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Email: t2mozambique2019@gmail.com or
t2mozambique2019@ane.gov.mz

CALL FOR PAPERS - TOPICS

Papers are called for the following topics exclusively.

Papers that fall outside this scope will not be considered.

1: Resilient Transport Infrastructures

Transport infrastructure represents the most important asset worldwide and mainly in the developing countries. Asset management is, therefore, a well-established discipline which must be successfully implemented for highways as well as other physical assets.

Traditional methods of managing assets must progress to meet the requirements and constraints of the 21st century.

Papers shall deal with the following topics:

- Innovative Solutions for Design and Upgrade of Low Volume Roads
- Geotechnical Engineering projects (Problems/Solutions/Risks/Best Practices)
- Quality assurance in Infrastructures Projects
- Risk factors in design, implementation, evaluation and mitigation in infrastructures Projects
- Road asset management systems
- Integrated road asset management

systems – Case studies

- Innovative Bridges Inspection Methods
- Natural disasters prevention systems
- Addressing climate change into infrastructure projects
- Nano technologies
- Innovative techniques in recycling of natural Gravel in roads construction
- Case studies on construction and maintenance of resilient infrastructures
- Innovative approaches to utilization of materials
- Innovative and Sustainable Geo-materials and Geo-systems
- Condition assessment and monitoring of transport infrastructure

2: Financing Systems of transport infrastructure: Public Private Partnership

- Roads fund raising systems
- Best Practice for Financial Models of PPP Projects
- Innovative arrangements of financing for transport infrastructure
- Mechanism for sustainable financing of road infrastructures
- Contractor Financed Initiatives
- Road Tolling
- Innovative financing models for transport infrastructure projects

3 Integrated transport systems

- Urban transport
- Utilization of IT in roads management
- Rural Mobility and Transport Services
- Smart, green and Integrated Transport
- Intermediate modes of transport (oxcarts, motor cycles, bicycles and donkeys)
- Road Safety
- Railroad transport
- Road transport
- Water transport
- Air transport
- Transport Infrastructure Project Management and Information Communication Technology (ICT)
- Mining and transport infrastructure
- Energy and transport infrastructure
- Tourism and Agriculture
- Land and Infrastructure Development, Socio-Political and Environmental Considerations

4 Appropriate procurement, contracting and contract management

- Innovative procurement, and contracting

- Output and Performance Based Contracts (Case studies and best practices)
- Incorporating Environmental, Social and Management Framework into Contract Documents

5 Transport Infrastructure – A Catalyst for Social -Economic Development

- The impact of Infrastructure project on other industries
- Enhancing small contractors/consultants utilization and development
- Training and development of communities through infrastructure projects
- Integrated access and mobility to enhance social-economic development
- Overloading on Road Infrastructures Projects – Problems/Solutions/Best Practices
- Procedures to address the Environmental, Social and Management Framework (ESMF) Issues
- Impact, Assessment and Mitigation Measures on ESMF-Case Studies.
- Best Practices on ESMF Issues



Effects of Climate change to the infrastructure (Climate resilient)

TRAC Program in Primary, Secondary Schools



TanT² Centre staff during a visit to Msasani primary school in Dar es Salaam which is among the schools earmarked for the program.

By Special Writer

Transportation and Civil Engineering Community (TRAC) Program, is an educational outreach program designed for use in Science, Technology, Engineering, and Mathematics (STEM) classes.

The program is a hands-on activity which introduces students in primary and secondary schools to the working world of transportation and civil engineering.

It inspire them to consider careers in those fields and in these programs which are done through practicals and applications on the real life of sciences.

Objectives of the program includes.

1. To help Secondary school students to use Science and Mathematics to solve Transportation Engineering problems.
2. To increase awareness of Transportation

and Civil Engineering as potential career in future.

3. To contribute to schools capacity and prepare students in Science, Engineering and Transportation Technology.
4. To enhance existing Science and Mathematics syllabus
5. To sensitise school children about Science subjects in general and build interest in it and their future from tertiary school stages.

The Ministry of Works, Transport and Communication (Works) is planing to extend the program to more schools in Dodoma.

Other schools are in Dar es Salaam and the Costal Region. The ministry encourages more schools to apply for the program to better shape students careers at their early stages of their education.



New hope for Aviation Sector in Tanzania





TANT2 CENTRE CATALYST FOR TRANSPORTATION TECHNOLOGY TRANSFER AND BEST PRACTICES

