UNITED REPUBLIC OF TANZANIA

ENGINEERS REGISTRATION BOARD

12TH ANNUAL ENGINEERS DAY

Mlimani City Conference Centre

September 4th – 5th, 2014

CONFERENCE PROCEEDINGS

THEME: THE ROLE OF ENGINEERS IN THE IMPLEMENTATION OF BIG RESULTS NOW (BRN) IN TANZANIA

Preface

The engineers registration board has since 2003, been organizing an annual event namely the annual Engineers Day (AED). The main purpose of AED is to give opportunity to engineers to exchange experiences through discussion in a learned discourse, exhibit engineering related products and services to the public, as well as awards to best final year engineering students from various institutions in the country. The latter is intended to encourage Tanzanian engineering students to excel in their studies.

Each year, a theme is selected to guide the AED conference and in particular the learned discourse, depending on the major engineering challenges facing the nation in realizing its development agenda. The theme for AED 2014 is "The Role of Engineers in the Implementation of the big results now (BRN) in Tanzania".

This document provides a compilation of the papers presented in the Learned Discourse on the selected theme. These papers cover some of the priority areas of the BRN and identify its implementation status, challenges and opportunities for Tanzanian professionals including engineers.

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DAY 1

1. Learned discourse

The Event Manager, Eng. Rizwan Qadri, welcomed participants to the 12th Annual Engineers Day and went through the Programme. He then welcomed the Chairman of ERB, Eng. Prof. Ninatubu Lema, to deliver his opening remarks.

1.1 Opening Remarks: Eng. Prof. Ninatubu Lema, Chairman ERB

On behalf of the Engineers Registration Board and the engineering community, the Chairman, Eng. Prof. Ninatubu Lema, thanked the invited guests and other participants for accepting the invitation to participate in this annual event. He said that initially ERB planned for 2000 participants but up to 3rd September the registration has been more than that. He mentioned that the success had resulted into constraints, but thanked participants for the response. The chairman also informed participants that the way the conference was opened was informal, as the Guest of Honour, Hon. John Pombe Magufuli, MP, was unable to attend on Day One of the Conference. He added that the official session would be held on the second day of the Conference.

On behalf of the Board, he appreciated that participants had left their important assignments and thanked them earnestly. He added that ERB was pleased to note that participants valued the meeting. Eng. Prof. Lema told participants that paper presenters had spent time preparing their papers to inform the audience on what BRN was all about and how engineers could participate. He expressed his very sincere thanks to those who took time to prepare the papers and present them. In particular, he singled out Mr Peniel Lyimo, whom he said was a man of distinguished performance in the civil service. He mentioned that although Mr. Peniel Lyimo was not an engineer, in his various capacities as permanent secretary he interacted with engineers. Participants were informed that on Day 2 of the Conference there would be a ceremonial session where a number of things would be carried out; amongst these would be the Oath taking exercise for Engineers. Participants, who were yet to take the Oath, were accordingly urged to do so during this important event.

Eng. Prof. Lema thereafter invited Eng. Steven Mlote, the Registrar, to recognise the presence of some of the distinguished guests. Eng. Mlote introduced the foreign delegates who included, Eng. Paul Kulemeka and Eng. David Mzandu from the Republic of Malawi, Eng. Nestor Barasokoroza from the Republic of Burundi, Eng. Wesley Tendaupenyu and Eng. Thomas Lungu from the Republic of South Africa and Eng. Livingstone Kangere from the Republic of Uganda. He also introduced delegates from Zanzibar; Eng. Raphael Mabagala, Board member of AEQSRB and Eng. Juma Khalid, Assistant Registrar. Other distinguished guests who were mentioned by the Registrar included Hon. Eng. Ramo Makani, (MP), Eng. Prof. Patrick Makungu, Eng. Emanuel Kalobelo, Eng. Dr. John Nduguru, Mrs. Georgina Mulebya, Eng. Baruany Luhanga, Eng. Prof. Idrissa Mshoro, Eng. Prof. Cuthbert Kimambo, Eng. Masudi Senziya, Eng. Exaud Mushi, Eng. D.L Chamulesile, Eng. Nanyaro, Eng. Ray Seng'enge, Eng. Dr. Malima Bundara and Eng. Isaac Chanji.

Eng. Prof. Lema then introduced Hon. Eng. Ramo Makani (MP) and member of the Parliamentary Standing Committee for Infrastructure, the Chair of the Plenary Session. He mentioned that Hon. Makani had recently presented an outstanding paper on the

Infrastructure Programme in Tanzania during the GAMA Conference in Maputo, Mozambique. He added that the Session Chair was previously an Assistant Registrar with ERB before becoming a Member of Parliament.

1.2 SESSION 1: PLENARY

The Session was chaired by Hon. Eng. Ramo Makani (MP)

Eng. Makani introduced the paper presenter, Mr. Peniel Moses Lyimo, to the audience by citing his brief biodata. He added that Mr. Peniel Lyimo, who had more than 35 years in public service, was currently the Deputy CEO at the Presidents Delivery Bureau (PDB).

1.2.1 Keynote Address: The BRN Programme, Implementation Status, Challenges and Opportunities for Professionals Including Engineers by Mr. Peniel M. Lyimo (Deputy CEO – President's Delivery Bureau).

Mr. Peniel Lyimo thanked the chair for inviting him to the AED, a gathering that provides a platform for engineers to discuss their issues. He was delighted to participate at the event and share with participants on the BRN programme. He recognized and congratulated engineers for the good work they were doing in building the country and stressed that the role of engineers could not be overemphasized. Mr. Lyimo pointed out that the huge attendance reflected the interest and trust members had in ERB. He thanked the leadership of ERB for being able to build such a remarkable Institution.

He thanked ERB for the theme of the conference which reflected that the Institution and profession had a very strong commitment to ensure that the objectives and milestones of BRN were realized. "In society, the work of engineers becomes a source of attraction and beautification of the environment. At BRN, they felt impressed and shared time to spend with us so that we can propose areas where we can collaborate", he mentioned.

Mr. Lyimo told participants that the BRN initiative was adopted from the Government of Malaysia in August 2012. He emphasised and clarified that BRN was not another plan, project or programme, but a methodology that would ensure delivery of the priorities set out in the Five Year Development Plan. He gave a brief history of how BRN was embraced by the Tanzanian Government of which six National Key Result Areas (NKRAs) were decided. On inquiring if there were any members who had participated in the Lab process, only a few hands were raised. "A Lab is a place where you bring all the key stakeholders and give them a problem to analyse and solve; based on an intensive and iterative process", he defined. He added that one was only allowed to leave the room when a solution to the problem was found. He explained that the Lab process produced detailed implementation plans for each of the prioritized sectors which were then presented to the public on an Open Day that was held on 24th May 2013. He mentioned that all the leadership, from top to down, took part in the Labs and Open Day.

Mr. Lyimo informed the audience that to date new structures have been introduced to facilitate implementation of the BRN aspirations. First, the Transformation and Delivery Council (TDC), which meets on a monthly basis under the Chairmanship of H.E. the President of URT to facilitate problem solving at the highest level. Second is the President's Delivery Bureau (PBD), an independent department in the President's office that oversees implementation on daily basis supported by Ministerial Delivery Units (MDUs). At the

Ministerial level also there is a Steering Committee chaired by the Minister that meets on a monthly basis for problem solving sessions. Plans are underway to establish Regional and District Delivery Units.

Mr. Lyimo told participants that it was a very intensive and close process which involved monitoring and evaluation of the BRN process. However, he reported that within one year, the discipline of priority setting and timely implementation was commendable. He reported on major milestones achieved in the six priority sectors which are Agriculture, Education, Water, Energy, Transport and Resource Mobilization.

Participants were informed that during the implementation of the BRN initiative there was lot of demand to engage the business environment. "A Lab has been conducted and implementation is expected to begin towards the end of 2014", he added. Furthermore, he told the gathering that a Lab on Health Sector was also in the pipeline.

Mr. Lyimo said that Ministries that were not in the programme were showing interest and have been able to apply the basic principles and discipline of the BRN initiative. He congratulated the Judiciary who had applied these basic principles with success. "What is required is discipline and close follow-up", he added.

He informed participants that there have also been some challenges such as bureaucracy and "business as usual" culture. "It is a matter of mind-set and people need to know that they can perform better and they can do it", he said.

"By choosing the theme of BRN, this will trigger a process that will see to it the BRN principles are implemented in your sector", he added.

Mr. Lyimo mentioned that the private sector invests, implements projects and trades. "Its role is to serve as the engine of growth of the economy", he told the gathering. He noted that infrastructure projects of the government were being implemented by the private sector. He mentioned that there were quite a number of projects like port and rail sectors as well as in the social services, water and agriculture that could be implemented under PPP.

Participants were informed that all projects under BRN required professional input from engineers from design to the execution stage. "We can reduce costs and execution time of projects. There is a big challenge of high cost for construction projects. In PDB, we believe that the solution lies in this room," he said. However, he added that Engineers should be ethical and knowledgeable in order to meet this challenge, and that ERB was expected to play its proper role.

He suggested that ERB should seriously consider running a special Lab on how to reduce construction costs for infrastructural projects. He remarked that lot of public money could be saved if implementation of construction projects was done under the pressure of efficiency and strict accountability. He concluded by saying that BRN would always be a partner to engineers in development and thanked all participants for their kind attention.

1.2.2 Presentation by ERB: Eng. Steven Mlote, Registrar, ERB

Eng. Mlote presented the status of implementation of AED 2013 resolutions as follows:

Resolution 1:

The Board strongly supported formation of joint ventures. Two JVs have been registered to-date. Another giant JV, Umoja Consult, will be registered in the near future.

The Board had consulted PPRA on preferential treatment for local Consultants and Contractors and this had already been provided in regulations 33, 34, 36, 37, 38 and 39. The Minister for Works had also repeatedly directed TANROADS and Local Government Authorities that tenders using local funds should be awarded to local Tanzanian firms.

Resolution 2:

ERB had conducted sensitisation seminars at higher learning institutions to final year engineering students to encourage them to undergo professional training (SEAP) soon after graduation. Graduate Engineers with over three years have been asked to register as Professional Engineers. Engineers from LGAs have been attached to TANROADS for practical training. ERB have conducted visits and zonal workshops and held discussions with employers to allow engineers to undergo training. A Consultant has been engaged to prepare a concept paper to study the gap analysis in order to raise capacity of graduate engineers.

Resolution 3:

On honesty and integrity, about 46% of all professional engineers have already taken the Oath. The remaining registered professional engineers will be required to take the Oath on Day 2 of the AED 2014.

The Chairperson, Hon. Eng. Ramo Makani, gave a brief summary of the two presentations. He reiterated that BRN is not a new programme or plan but rather a delivery tool to support the implementation of existing programmes. He reminded participants that the objective of BRN was to realize the Tanzania Development Vision 2025. However, he stressed that local funded projects should be provided to local firms as a priority and as mentioned in the Resolution 1 of AED 2013.

Mr. Lyimo responded that it was important to get the background on the BRN initiative which was a tool towards performance management culture. An elaborate evaluation of vision 2025 was done in 2013, but what came out is that we need to be more strategic in identifying priorities, monitoring and evaluation. We cannot start with all sectors. As we gain experience, the momentum will take up in all the other sectors.

1.2.3 General Discussion

Participant 1 mentioned that Big Results Now required Tanzanians to take a leap. He suggested the involvement of local players to build capacity so that the results would be sustainable over time.

Mr. Lyimo agreed that capacity building was a continuous and permanent process. He congratulated ERB on its initiative to create joint ventures and emphasized on the need to have a critical mass of human resources.

Participant 2 enquired that from the six ministries prioritized he failed to understand the inter-linkage between them in order to successfully carry out implementation.

Mr. Peniel Lyimo said that one of the basic principles of BRN was to encourage people to work without boxes and remove hindrances. All key stake holders were involved from the

inception stage of projects. The issue of linkage is given high priority. Ministries and departments have to work with other ministries and institutions. If implementation was successful, it wouldl give us a basis for the sustainability of the projects which would be implemented.

Participant 3 mentioned that there were lot of opportunities for engineers and queried whether the initiative was planned in a way that the required resource utilization could be identified. He felt that we do not have adequate resources to make the initiative successful. He suggested that the upstream sustainability of the BRN initiative should be tied to the current situation.

On availability of resources Mr. Lyimo said that they can never be enough, so efficient utilization of present resources was required. What was important was to be strategic and strict in setting priorities and overseeing implementation of projects.

Participant 4 called upon the government to see how local firms could be awarded projects so that they could maintain the flow of money internally and retain tax payers' money in the country.

Participant 5 suggested that there was a need of publicising BRN initiative and sharing the outcome.

Participant 6 proposed that engineers should go through the BRN document, analyse and synthesize it so that they could contribute positively. *In response to participants 5 and 6, Mr. Peniel Lyimo said that Engineers participated during the Transportation Lab. However, there was still room to bring in resource persons to increase awareness on the BRN initiative.*

Chairperson Hon. Makani mentioned that life cycle of any project and its sustainability needs to be considered. Once we know who the implementers are, the maintenance periods will be well protected and the projects will remain sustainable.

Mr. Peniel Lyimo mentioned that the process of strategic capacity building can result from JVs with foreign firms. The recommendation from last year of forming joint ventures and making sure projects that are fully funded through local resources are given to be executed by local companies was very important. We need to get more engineers from our colleges.

Participant 7 mentioned that in order to excel, Tanzanians need to change attitude and perform beyond what Malaysians have achieved.

Participant 8 said that BRN was very identical to result based management which is based on achieving much specified objectives. He pleaded that we now need to have our local systems seriously improved and skills updated to global status in order to take a quantum leap.

Participant 9 enquired whether there was any type of risk assessment undertaken. He further asked if the BRN initiative considered training as a crucial part of sustainability.

Mr. Lyimo responded that capacity building and training were part and parcel of each NKRA. The execution and training was carried out by the NKRA Ministry. On risk management, he said that one has to see how best to mitigate that risk.

Mr. Lyimo advised that change can only come from within and not from outside. "We really have to change from the way we execute our works, ensure strict supervision and recognise those who have excelled, however, penalties should be exercised as well", he said.

1.3 SESSION 2: ENERGY AND NATURAL GAS

The Session was chaired by Eng. Prof. Cuthbert Kimambo (Principal CoET)

Eng. Prof. Kimambo introduced the presenter for the first paper, Eng. Juma Mkobya, Acting Assistant Commissioner for Energy responsible for Energy Development, who was a registered Professional Engineer.

1.3.1 Paper 1: Implementation of BRN in Energy and Gas (by Eng. Juma Mkobya)

Eng. Mkobya informed participants that 29 projects and five initiatives were identified and recommended to be implemented under BRN initiative for Energy NKRAs. He mentioned that budget required for implementation of Energy BRN projects in the 2013/14 was TZS 2.4 trillion but the allocated amount was TZS 1.36 trillion (56.7%). Participants were informed that the big results expected in the energy sector over 3 years (2013/14 to 2015/16) are:

1) Increase annual electricity consumption from 97 to 236 kWh/capita
2) Increase electricity installed capacity from 1438 to 2780 MW
3) Install over 3,000 km of high voltage power lines
4) Provide access to electricity for nearly 5 million more Tanzanians
5) Complete 29 major projects
6) Demand side management and energy efficiency to reduce peak load of 140 MW
7) Increase TANESCO revenue by 50% from existing assets
8) Eliminate reliance on the Emergency Power Producers (EPP)

Eng. Mkobya presented the progress on Natural Gas Infrastructure Project whereby 100% of way leave was cleared; welding had attained 97% (387 km) and soil backfilling 75% (380km) by end of August, 2014. On the progress of Generation Projects, he informed participants that:

1) A 60 MW Heavy Fuel Oil (HFO Mwanza) Plant was inaugurated by H. E. President Jakaya Kikwete in September 2013.
2) Construction of Kinyerezi I (150 MW) Dual Fuel Open Cycle Power Plant had started
3) Negotiation for financing agreement for the Construction of Kinyerezi II (250 MW) gas fired combined cycle power plant have been concluded
4) MoU between TANESCO and investment partners from China was signed for development of Kinyerezi III (300 MW) and Kinyerezi IV (330 MW)
5) At advanced stages of project implementation are:
    - Somanga Fungu (320 MW)
    - Singida GeoWind (50 MW)

He mentioned that the progress of transmission line projects was as follows:

1) Two Projects are progressing well: 400 kV Iringa – Shinyanga Transmission Line (Backbone Transmission Line) and 220kV Makambako – Songea Transmission Line.

2) Backbone Transmission Line has four lots (3 for transmission lines and 1 for substations). All lots are contractually in force and at different stages of implementation.
3) Makambako – Songea Transmission Line Project involved Rural Electrification of Njombe and Ruvuma Regions. Contracts for distribution projects had been signed. Due to change of design from 132 kV to 220 kV, transmission components awaited SIDA's no objection.
4) The rest of transmission line projects are in different pre-contract stages such as feasibility study and financial closing.
5) The transmission line projects are: Dar – Arusha 400 kV; Dar – Dodoma 400 kV; North – West Grid phase I 400 kV; and Somanga Fungu - Kinyerezi 220 kV.
6) These projects upon completion will increase power transmission capacity, reliability of power supply to the national grid and will facilitate regional interconnections / power trade.

Eng. Mkobya further mentioned progress on Distribution Projects as follows:

1) Total of 187,188 new customers were connected equivalent to 125% of the BRN set annual target of 150,000 customers by June 2014.
2) This achievement was made possible through electrification project such as Turnkey Phase II which includes electrification of 13 new District Headquarters; Electricity Package III Project; and Underline distribution transformers to electrify villages along the transmission lines.

Eng. Mkobya mentioned that for the purpose of making effective follow-up and monitoring implementation projects, NKRA established Ministerial Delivery Units (MDU). He added that the MDU reports on weekly and monthly basis to the PDB and MEM. Furthermore, he said that the MDU meets with project managers weekly to discuss the status of the projects, identify challenges, and propose workable solutions to PDB and MEM. Eng. Mkobya pointed out that the MDU, MEM and PDB undertake physical follow-up at project sites for evaluation and verification. He added that the NKRA steering committee chaired by the Minister meets monthly to review implementation status and resolve outstanding issues. Lastly, he said that the Transformational and Delivery Council (TDC) chaired by the President of URT meets monthly to oversee performance of overall BRN programme and conclude on issues that cannot be resolved at NKRA steering committee level.

Eng. Mkobya said that the Ministry of Finance (MoF) was responsible to mobilize BRN projects' funds approved by President's Office – Planning Commission (POPC). He added that the financing options included: Government budget; Grants from Development Partners; Soft Loans from Banks; Private Sector participation (PPP modal) and Private Sector (IPP, BOO, BOT). He mentioned that the total financing requirement for all NKRAs was TZS15.7 trillion (labs) for 3 years, for 2013/14 TZS 4.5 trillion; for 2014/15 TZS 5.3 trillion; and for 2015/16 TZS 5.9 trillion.

On the role of engineers, Eng. Mkobya mentioned that all energy BRN Projects require Engineers, Technicians, Artisans at all implementation levels, e.g. feasibility studies, ESIA, consultancies, construction works, installations, O&M contracts and employment. He pointed out that energy projects required diverse engineering disciplines and added that engineers need to prepare and utilize opportunities that arise.

Eng. Mkobya stated that several workshops and seminars had been conducted to create awareness to the public on implementation of BRN projects. He said that various groups (including engineering community) were invited to visit BRN project sites.

Eng. Mkobya informed the gathering that the Ministry of Energy and Minerals had a Marshall capacity building programme known as "Human Capital Development Programme in the Oil and Natural Gas Sub-sector" for sponsoring 50 Tanzanians (engineers and other disciplines) at first degree, masters and PhD levels in the oil and gas sectors by 2016. On petroleum and gas at artisan level, he said that the Ministry and TPDC in collaboration with oil and gas exploration companies had a programme of specialised training at Vocational Education Training Authority (VETA) centres in Lindi and Mtwara.

He concluded by mentioning that the ministry was committed to ensure that energy projects under the BRN initiative were completed on time.

1.3.2 Paper 2: Tanzania's Quest for Prosperity: Review and Reform of National Science, Technology and Innovation System (by Eng. Prof. Patrick Makungu).

The Chairperson gave a brief introduction on Eng. Prof. Makungu's professional career and mentioned that he was involved in the implementation of the science technology and innovation reforms in Tanzania. He said that currently, Eng. Prof. Makungu is the Permanent Secretary in the Ministry of Communications, Science and Technology.

Eng. Prof. Makungu presented that to attain prosperity of a country, and indeed of any country, it required that the two environments – the Doing Innovation Environment (DIE) and Doing Business Environment (DBE) be given due attention. He stated that the purpose of his presentation was to introduce the STI Reform to the engineering community, instil a sense of urgency, generate a shared vision and get the engineering community to play their part within the reform endeavour.

He mentioned that the STI reform, as many of the big "reforms" that the country has undergone since independence and within the four phases of government can be viewed as "big innovations" – requiring an attitude or culture of risk taking. He proposed that in order to create a shared vision the following approaches could be used:

1) The BRN Lab approach for constituted Consortiums;
2) The Smart Partnership Dialogue approach under TNBC to engage communities and groups at different levels;
3) Conducting special training programs on innovation management at workplaces in which visioning will be given due emphasis.

Eng. Prof. Makungu mentioned that his Excellency Dr Jakaya Mrisho Kikwete the President of United Republic of Tanzania asked the Director General of UNESCO in 2007 to partner with the Government to do a review of the STI system in the country. The President of the

URT subsequently directed the Ministry of Communication, Science and Technology to undertake the activity. He mentioned that the approach used was OECD STI Review Process which was being used in several countries.

Eng. Prof. Makungu presented the proposed STI reform roadmap and mentioned that the actual roadmap would be generated through a highly participative environment using the BRN lab approach where engineers will be invited to participate. He also presented a structure of the proposed overreaching framework of the STI System. Eng. Prof. Makungu suggested that COSTECH should have a strong regulatory and promotional component, and delivery vehicles to facilitate other innovation systems. He observed that Minister responsible for science and technology should have the ability within the Act to allow public money to go to the private sector for research.

Eng. Prof. Makungu concluded by suggesting that engineers, apart from doing their core businesses, should be innovative. He cited an example of Katani Ltd. which is utilising by-products from Sisal to generate electricity.

1.3.3 General Discussion

Discussions on Paper 1 and 2

Participant 1 commented that there was a need to emphasize on willingness to oversee changes before rushing towards implementation of projects in order to achieve big results. However, he commended efforts of the Ministry of Energy and Minerals to be able to provide constant power in his village which previously saw rationing.

Participant 2 enquired as to why coal mining was not touched during the presentation. He advised that coal being a good energy source, should have been given due prominence.

Eng. Mkobya responded that fast track quick win projects were based on oil and gas only. He further mentioned that coal could be looked at during the 2nd Phase of BRN.

Participant 3 mentioned that Tanzanian engineers have been challenged to form joint ventures but pointed out that some of the tenders do not allow JVs. He wanted to know how the Ministry of Energy and Minerals was handling this.

Eng. Mkobya responded that he was not aware of this issue.

Participant 4 wanted to know the role of MEM engineers in the implementation of BRN.

Eng. Mkobya responded citing that engineers from TANESCO were fully engaged with local firms from feasibility to EIA. However, the local firms and TANESCO engineers worked together with the foreign firms during implementation as well.

Participant 5 wondered if the Government had any plans to lay optic fibre cables throughout the country. He also asked if there was any plan to standardize the communications infrastructure system in the country.

Eng. Prof. Makungu responded that the national optic fibre cables were classified on trunk basis and stakeholders were allowed to chip in. He further stated that the communications sector was highly regulated by ITU and TCRA.

Participant 6 noted that the presentation dwelt on level 3 and 4 of the proposed overarching framework of the STI system, while innovation happens at level 1 and 2. He expressed his reservations that we may build huge infrastructure at the top and have less resources going for implementation.

Eng. Prof. Makungu responded that due to time constraint, level 3 and 4 only could be covered and added that from the point of view of the ministry we had not reached level 1 and 2.

Participant 7 speculated on the time the planned reform would be completed. He wanted to know what plans were in place for engineers to participate before being instituted.

Eng. Prof. Makungu responded that time was of essence and information related to participation of engineers would be conveyed. He also mentioned that the presentation was made to a working session of permanent secretaries and it was urged that the road map would be ready soon.

1.5 SESSION 3: WATER DEVELOPMENT

The Session was chaired by Eng. Prof. Felix Mtalo.

The Chairperson gave a brief introduction of Eng. Amani Mafuru, currently the Assistant Director responsible for Service Delivery, Monitoring of the Urban Water Supply and Sanitation Utilities and Head of the Ministerial Delivery Bureau in the Ministry of Water.

1.4.1 Paper 3: **Implementation of BRN in the Water Sector** (by Eng. Amani Mafuru)

The Chairperson introduced Eng. Amani Mafuru as Assistant Director responsible for Service Delivery Monitoring of the Urban Water Supply and Sanitation Utilities and Head of the Ministerial Delivery Bureau.

Eng. Mafuru said that the water NKRA sought to achieve sustained rural water coverage of 67% by 2015 through effective project execution, operations and maintenance. He added that the targets for 2015 are:

- Restoring water to 5.3 million people who had degraded infrastructure through Rehabilitation Projects
- Sustaining supply to existing **15.2 million** people through good **Operations & Maintenance**
- Supplying water to 7 million new water users through New & Extension Projects

Eng. Mafuru mentioned that to achieve these targets two major work streams had been deployed as part of the Programme, with a set of enablers to facilitate their execution. He stated that, in total 15.4 m rural Tanzanians could gain access to water by 2015, surpassing the lab target and reaching 74% coverage.

He revealed that in three years, through BRN a total of 1,810 sub-projects will be implemented, where the total budget required for the 3-years NKRA Water Lab is 1.45 trillion shillings, of which a majority of the funds will need to be covered by both Government & Community Revenues; 15.4 million people will benefit from this initiative and get access to water supply services;

Eng. Mafuru mentioned that the budget had included the increase in community contribution over the next 5 years, with Government only covering 18% of total Rural Energy in 2017/18. However, he said that some quick-wins were noted within the first year, with major milestones achieved throughout the financial year 2013/14. He added that all the initiatives were linked to KPIs of the Ministry of Water.

He presented the key achievements of the water NKRA as of June 2014 which included:

1) 11,336 New Water Points constructed which has impacted 2.85 million rural population received clean water through BRN water projects
2) A total of 18,054,534 people receiving clean water, equivalent to 50.7% of rural population by June, 2014
3) 253 projects have been constructed to serve 280 villages in 98 LGAs.

4) 75,745 total functioning water points
5) 11, 336 new water points completed
6) 87 water points rehabilitated
7) 373 Community Owned Water Supply Organizations (COWSO) established

Eng. Mafuru presented the current status of works in progress in 10 villages as follows:

1) By June 2014, 766 projects in 830 villages were under implementation, 228 projects in 248 villages had been completed.
2) 538 projects in 583 villages with 9,630 water-points to serve 2.4 million people were under construction.
3) Contracts for 707 projects in 725 villages which shall have 13,050 water-points to serve 3.3 million people signed.

He said that through BRN initiative, other strategic quick-win projects were being implemented to improve the service delivery out of the 10 village projects. Some of these projects included:

1) An expansion project to serve 100 villages along the Kahama - Shinyanga Main Pipeline where implementation was going on in 40 villages.
2) 101 rehabilitation and expansion of quick-wins projects were currently in progress in 142 villages in 65 Local Government Authorities.

Eng. Mafuru mentioned the challenges faced by his Ministry in implementing the BRN projects were as follows:

1) Funding Issues – Progress of NKRA Water targets highly affected by lack of funding.
2) BRN Credibility threatened – Overdue payments of completed projects and potential lawsuit.
3) Data validity – Sometimes Data being reported are inaccurate due to limited capacity and resources and inconsistent reporting format. Requires frequent follow-up.
4) Silos between initiative owners – Information not shared causing duplication of multiple similar activities (reports, budget) of similar objective, producing different outputs.
5) Resource gap – Capable and knowledgeable Officers and Engineers are often overloaded with other non BRN tasks hence unable to commit fully to BRN agenda.

He concluded by saying that they received very little funds from the Treasury but managed to pursue their targets. He added that engineers in various disciplines need to link their valuable knowledge with engineering practice and were required to demonstrate the highest degree of integrity to the community.

He concluded that in order to achieve the target set through BRN initiative, engineers in various disciplines play an important role as they were expected to link their valuable knowledge with the engineering practice, so that the desired goal was met. He added that from the planning stage, project implementation, commissioning, operation and maintenance engineers were required to demonstrate the highest degree of integrity to communities throughout. Furthermore, they were also needed to demonstrate their ability on sound judgement when challenges occurred to avoid any kind of misconducts.

1.4.2 General Discussion

Participant 1 enquired on the meaning of sustainability and whether it was quantity or quality based. He noted that the achievement of 67% was still far from being 100%. For successful projects, results are to be expeditiously and fully obtained.
Eng. Mafuru explained that there was a need to assess performance and award the best in order to realize targets. Instituting performance management system would yield greater achievements.

Eng. Mafuru further mentioned that people were surveyed on a turnaround system such that time used in any activity could be studied.

Participant 2 commented it was clear that BRN was a tool and not a programme. He pointed out that we have been told that the Minister was to be assessed by the President and queried whether this had trickled down. He asked whether people had signed performance agreements.

Eng. Mafuru responded that the Minister was evaluated by the President. There was one set of enablers which was on improving local service delivery where the local government authorities were ranked.

Participant 3 queried on zero income obtainable from villagers and wondered how the Ministry would sustain the water supply schemes in their areas.

Eng. Mafuru responded that he did not agree that villagers and rural population had zero income.

Participant 4 discussed on the need of conserving the environment; as of prime concern was the depletion of water sources.

Eng. Mafuru responded that EIA was in place for every project considered. In actual sense, 60m spacing had been allowed for at every site so that conservation retains prime importance.

Participant 5 mentioned that the Local Government Authority involvement had been appreciable in BRN. However, he lamented that some criteria necessary towards optimized design were missing.

Eng. Mafuru responded that all design specifications were taken into consideration in order to result in an extended design life of a project. However, he noted that all supplies were under the flawless PPRA procedures.

Participant 6 mentioned that rapid BRN results appeared good, however there was a need to understand human resources simply because with such achievement, demand for more human resources would surface and make the Initiative struggle for resources.

Eng. Mafuru responded that the Government had permitted utilization of retired professionals in order to ensure that human resources are satisfactorily taken care of at any given time.

DAY 2

2.1 SESSION 5: ENTREPRENEURSHIP

The Session was chaired by Eng. Joyce Kisamo; the Acting Director - Oil and Gas Downstream Operations with Tanzania Petroleum Development Corporation (TPDC).

2.1.1 Presentation from Upcoming Engineers

The Chairperson Eng. Joyce Kisamo welcomed Eng. Athuman Ikungu and briefly introduced him as an upcoming Entrepreneur in the engineering field.

Eng. Athuman Ikungu presented on his experiences as an Electrical Engineer employed as a Director with ML Engineering Consultancy since 2005. He mentioned that his firm was a partnership that carried out both mechanical and electrical consulting services. Prior to joining ML, he had worked with several contractors and consultants in order to gain experience in the buildings and industrial sector.

Eng. Ikungu mentioned that his outlook was to become innovative, concentrate in designing green buildings and maintain his integrity. With this outlook, his firm has managed to grow steadily from a turnover of TShs. 40 million in 2005 to over TShs. 500 million in 2013.

He attributed his success to the exposure obtained while working with several firms such that now he was able to carry out enormous assignments in his discipline. He mentioned several projects which his firm had successfully carried out and some of which were ongoing.

The challenges he explained were unfair treatment during tendering, lack of experience when negotiating contracts, retaining trained staff, PPRA issues and technology.

Discussions

The Chairperson, Eng. Joyce Kisamo, mentioned that upcoming professional engineers were a result of being properly groomed by senior engineers and as devised by ERB through SEAP. The product can benefit the society and the outcome be continued as development of skills.

Chairperson Eng. Kisamo observed that ML started from TShs 40 million to 500 million; this implied a very good growth that other firms and individuals should emulate.

Participant 1 observed that firms should have a succession plan so that they can survive after the founders are gone.

Participant 2 enquired what Eng. Ikungu's focus in the industry was, as his major concentration was in the building sector. He advised that engineers should also get involved in factories and the mining industry.

Eng Ikungu responded that he had an all-round experience of building and industrial design.

Participant 3 asked on what was the relationship between culture and entrepreneurship. He mentioned that graduates were finding difficulty to get employment and sharing experience to assist the graduating engineers find employment would be useful.

Eng. Ikungu responded that cultural influence depends on what is happening around a person. "Parental influence is an issue that develops resourcefulness and makes a son follow his father's footsteps, thus a person has to actually follow his desires to excel," he said.

Eng. Ikungu further responded that engineers tend to start consultancy once they get registered as consultants. He cautioned that feasible businesses should only commence if there are opportunities and business plans in place. "In order to excel, an engineer should obtain adequate grooming; ensure commitment; and meet timely delivery," said Eng. Ikungu.

2.2 SESSION 6: RESOLUTIONS AND RECOMMENDATIONS

The Session was chaired by Eng. Prof. Bakari Mwinyiwiwa.

The Chairperson of the Organising Committee, Eng. Prof. Bakari Mwinyiwiwa, summed up the deliberations and appreciated the involvement of engineers in discussing the papers presented. He mentioned that opinions from the floor were necessary to wrap up the resolutions made. He then invited the Chief Rapporteur, Eng. Dr. Arnold Towo, to present the resolutions made for further discussions.

2.2.1 Summary Presentation of Resolutions and Recommendations

The session was fruitful and engineers had the opportunity to air their views. Comments on the presented resolutions were aired by participants and incorporated. The chairperson gave the participants an opportunity to provide written comments due to time constraint.

2.2.2 *AED 2014 Resolutions*

The resolutions which include comments from the participants are as presented below.

1) ERB should consider running a special Lab on how Engineers could implement projects through economical considerations, efficiency and strict accountability.
2) Involve committed and dedicated local Tanzanian key players in strategic areas to carry out capacity building so that BRN results can be implemented and be sustainable over time.
3) Engineers should be appraised at all stages of BRN development through ERB and formal seminars should be held regularly to keep Engineers abreast of pertinent information.
4) The Government should plan and enhance local empowerment by requiring foreign engineering firms that want to implement projects in Tanzania to engage Tanzanian local engineers in execution of the projects.
5) Government institutions should involve the Tanzanian Private Sector in either Public Private Partnership (PPP) or Joint Venture (JV) basis so as to act as a catalyst for BRN initiatives.
6) Provide BRN tools to monitor progress, performance management and validate data throughout the life cycle of a project to Engineers so that they apply them in other projects in order to bring rapid change.
7) Recommended that implementation of projects is promoted through project management training and skills to build entrepreneurism at all levels.

2.3 OFFICIAL SESSION

Eng. Mpembe welcomed the Guest of Honour Dr. John Magufuli by informing him that more than 2,000 engineers had attended the meeting.

He invited Eng. Steven Mlote, the Registrar, to give introductory remarks.

2.3.1 Introduction: by Eng. Steven Mlote, Registrar

Eng. Mlote, Registrar ERB, started by thanking God, and praised the Minister's desire to participate at AED 2014 after his upcountry visits. He also told the Minister that the AED 2014 has been attended by more than 2,000 participants including foreign delegates from Burundi, Malawi, Uganda and South Africa.

Eng. Mlote mentioned that the Board regulates the engineering profession in order to create sustainability. Presently, 44% of the membership was Civil Engineers, 18% Mechanical Engineers, 17% Electrical Engineers and the remaining come from other noble professions. However, he cautioned that ERB had cancelled membership of engineers who went against the engineers' Code of Ethics. Engineers in Tanzania represent 0.02% of the entire Tanzanian population. Therefore there is a need to train more engineers in order to create a conducive environment.

Eng. Mlote, said that ERB had recently reviewed the engineers at LGAs and found there was an increase in registered professionals. It was now apparent that it would result in proper workmanship. SEAP has also resulted in ten consulting engineers and 850 professional engineers' registration. Eng. Mlote further mentioned that CPD had created a venue for further professional development of engineers. He proudly mentioned that 448 engineers secured employment through ERB. At the same time, various companies were assisted to locate employees. Eng. Mlote thanked the ministry for providing 500 million shillings for carrying out the SEAP programme. He however, mentioned that placement of engineers after graduation remained a challenge. This was mostly due to low salaries and remunerations offered.

Eng. Mlote mentioned that tenders related to infrastructure were still being given to foreign companies. This made the capacity building exercise lacking. He further said that Oath taking had been progressive. To date 1,063 engineers had already taken Oath, while during AED 2014, 250 engineers were to take Oath.

Eng. Mlote mentioned that the theme for AED 2014 had been chosen because of the importance of the engineers in the building of the nation and its required infrastructure. He however said that ERB would continue to strategize and stressed on quality workmanship.

Eng. Mlote said that in order to successfully carry out AED 2014, the Organising Committee carried out enormous work. He appreciated the role of all who were involved as well as sponsors and exhibitors.

2.3.2 Welcoming Remarks by Prof. Lema, Chairman of ERB

Eng. Prof. Lema introduced the dignitaries at the high table and earnestly thanked the Minister for attending this august assembly despite his busy schedule. He took the

opportunity to remember fellow engineers who had passed away by allowing a minute of silence.

Eng. Prof. Lema mentioned that during the two days of AED 2014, very good deliberations took place as most of the engineers before the previous day were not aware of the BRN initiative. He explained that the engineers had learnt on BRN planning, priorities, execution and monitoring. "Engineering philosophy is based on analysis, prioritizing, implementing and reviewing", said Eng. Prof. Lema. He revealed that BRN in Malaysia was very successful and accordingly tightening of certain areas like internal cooperation was necessary as 30% of the projects carried out in Malaysia were by locals themselves.

Eng. Prof. Lema mentioned that Hon. Minister Magufuli was at the forefront to execute road projects through local firms. He said that we were strong enough to shoulder such responsibilities and this example set by Minister Magufuli could be emulated by other Ministers. Eng. Prof. Lema said that we need to build our capacity in order to carry out our own projects. Accordingly, he mentioned that engineers can now also create employment.

Eng. Prof. Lema appreciated the good attendance of young engineers and proposed that a similar meeting should be carried out for engineers who were under the age of 40. He then welcomed the Guest of Honour, Hon. John Magufuli (MP) to officiate the awarding ceremony for Best Graduating Engineering Students and later to address the audience.

2.3.3 Awards presentations to Best Graduating Engineering Students

Eng. Mlote mentioned the names of 31 Best Graduating Students in each Engineering discipline. He said that all will be awarded a cash award of Tshs. 200,000/= each. He further said that apart from cash awards, 10 Best Graduating Students would be awarded a Laptop each, donated by some organizations and individuals.

2.3.4 Oath taking of Professional Engineers

The Principal Magistrate, Isaya Arufani (Principal Resident Magistrate) and Warialwande Lema (Kisutu Resident Magistrate) officiated the Oath Taking whereby a total of 249 engineers took oath.

2.3.5 Opening Speech, Hon. Dr. John Magufuli (MP), Minister for Works

Hon. Dr. John Pombe Magufuli, Minister for Works, recognized the high table, all engineers in attendance including foreign delegates, paper presenters and exhibitors for attending AED 2014. He mentioned that the President of the United Republic of Tanzania was very keen to have been at the meeting, but unfortunately could not do so, and as such was conveying his best wishes. He further revealed that Past President Hon. Benjamin Mkapa was also conveying his sincere greetings to all engineers.

Hon. Dr. Magufuli expressed that engineering was very special indeed and engineers were to be proud of their profession. "All political parties have their own slogan. It is thus imperative to coin one for the Engineers," he said. He thus moved the assembly by saying Wahandisi to be responded with Maendeleo and vice versa.

The Minister contemplated the fact that at independence there were only 2 Tanzanian engineers in the country. At present, he said that higher learning institutions were producing over 2,000 engineers annually. This he said was a great achievement.

“Engineering being a respected profession, an Engineer who takes oath remains trusted by the public,” he stated. The Minister explained that engineers were carrying out huge assignments and it was difficult not to meet them in every sphere of responsibility be it BRN. “All the developed countries have advanced through engineers,” he said.

Minister Magufuli pointed out that the Government was trying to address various challenges facing engineers in the following ways:

1) Engineers could not obtain employment because they had no experience, thus the Government commenced SEAP. In order to sustain training needs through SEAP, the Government has provided TShs. 500 million in 2014. “In the next fiscal year more funding will be made available”, he asserted. Minister Magufuli insisted that if there were engineers at any place looking for employment; it was necessary to assist and engage them for the development of the country.
2) The government has through the Road Fund Board decided that projects be given to local engineering firms that will abide to perform diligently and produce quality work.

Hon. Magufuli advised engineers to keep away from issues like corruption and remain professionally ethical. He requested Institutions like ACET and IET to regulate consulting firms and engineers respectively.

Hon. Magufuli also took the opportunity to congratulate best graduating engineering students from various universities. He stressed that such recognition will pave way for better performances in the colleges, and accordingly directed that all best graduating engineering students should be admitted to the SEAP programme.

He further mentioned that the big attendance of engineers for 2 days at the conference was a good gesture and the government respected it. “I assure you that the resolutions made during the AED will be presented as they are to the higher levels for decision making,” he said.

Hon. Dr. Magufuli acknowledged the good work being done by the engineers. He said that there were 4,880 bridges all over the country of which 2,046 were spanning over 40m while there were 7,547 culverts; all these structures were well designed by engineers and they are still safe despite the recent heavy floods in the country.

He further cited that most of the villages are now electrified; water wells have been drilled in many villages etc. and all these were done by engineers. Minister Magufuli mentioned that engineers having carried out commendable work nationally, globalization will enhance engineering skills through interactions.

Hon. Magufuli reiterated that the government will continue to cooperate and resolve to the best of its ability challenges faced by engineers. He thanked all exhibitors and paper presenters and mentioned that the President of the URT appreciated the good work being done by engineers. He urged all engineers to work diligently so that our country develops at a faster pace.

2.3.6 Vote of Thanks, by Eng. Gemma Modu

Eng. Gemma Modu, on behalf of participants, thanked Hon. Dr. Magufuli for agreeing to attend the conference. She thanked him for conveying greetings from the President of the

URT, and the Past President, Mr. Mkapa. Eng. Modu thanked the Minister for providing support to graduate engineers under SEAP. She added that the support by the Minister will advance the profession further. She thanked the Minister for the decision to offer local firms projects which are locally funded; however, she reminded participants that the Minister had urged all the engineers to remove internal jealousy and work together to carry out bigger projects. Eng. Modu further mentioned that the Oath taken by engineers will enable them to fight corruption.

She thanked the minister for his promise to forward the AED resolutions to the higher authorities. Eng. Modu thanked all foreign delegates for attending the conference and wished them a safe journey back. Last but not the least, she thanked all paper presenters, session chairs, those who contributed during the discussions, sponsors, exhibitors and all those who had in one way or another contributed towards the success of the Conference.

2.3.7 Remarks from Foreign Delegates and Distinguished Invitees

Eng. Nestory Barasokoroza thanked the organisers for inviting him to AED 2014. He also took the opportunity to inform participants that the Burundi Government was in the process of preparing a regulatory framework and looked forward to invite ERB to assist them.

Hon. Aliko Nikusuma Kibona, member of the Parliamentary Committee responsible for infrastructure, thanked the Board for their invitation and for choosing the theme on BRN. He said that such gatherings provided opportunity for engineers to assess themselves. He thanked the Minister for emphasizing that engineers should execute their projects diligently and efficiently to reflect the value for money. He promised that they would look into the possibility of tabling a bill in parliament that will assist engineers to achieve their goals.

Eng. Livingstone Kangere, Vice Chairman of ERB Uganda, thanked the Board for inviting him to AED 2014 and said that he had attended the event for the second time. He added that, unlike the situation in Uganda, the Government in Tanzania was working closely with engineers. Eng. Kangere took the opportunity to invite the Board to their function which will be held on 19th September 2014. Furthermore, he informed participants that there were plans to bring together engineers from East Africa. He mentioned that engineers in East Africa can marshal the knowledge and capacity they have and do any type of project since they were well educated.

Eng. Paul Kulemeka, thanked the Board for the invitation extended to the National Construction Industry Council (NCIC) of Malawi. He said that Malawi was represented by 2 engineers, himself and Eng. David Mzandu. He mentioned that in Malawi the number of engineers was very low and added that less than 200 were active. He also commented that to experience such a magnitude of people was a good experience. Eng. Kulemeka said that the papers presented were very good and that he would pass on the message that he had learnt through attending the conference. He also mentioned that the current Minister of Transport in Malawi was an engineer and was getting closer to engineers.

APPENDICES

APPENDIX I: CONFERENCE PROGRAMME

UNITED REPUBLIC OF TANZANIA
ENGINEERS REGISTRATION BOARD

PROGRAMME

DAY 1: Thursday, September 4, 2014
Mlimani City Conference Centre

THE ROLE OF ENGINEERS IN THE IMPLEMENTATION OF BIG RESULTS NOW (BRN) IN TANZANIA

(a) LEARNED DISCOURSE

Event Manager: ***Eng. Rizwan Qadri***

Rapporteurs : ***Eng. Dr. Arnold Towo; Eng. Rizwan Qadri & Eng. Benedict Mukama***

TIME	ACTIVITY	RESPONSIBLE
07:30 –08:45	**Registration**	**Secretariat/Organizing Committee**
08:45 – 09:00	**Opening Remarks**	**Eng. Prof. Ninatubu N. Lema** **Chairman, ERB**
09:00-10:40	**Session 1: PLENARY**	**Chairperson:** Hon. Eng. Ramo Makani (MP)
	Keynote Address (40 min) **Overview of BRN**	**Mr. Peniel M. Lyimo** (Deputy CEO- President's Delivery Bureau)
	Presentation by ERB (20 min)	**Eng. Steven Mlote** Registrar, ERB
	General Discussion (40 min)	**ALL**
10:40-11:10	**Health Break**	**ALL**
11:10-12:50	**Session 2:** **ENERGY AND NATURAL GAS**	**Chairperson:** Eng. Prof. Cuthbert Kimambo
	Paper 1: Implementation of BRN in Energy and Natural Gas (30 min)	**Eng. J.F. Mkobya, (**MEM)
	Paper 2: Tanzania's Quest for Prosperity: Review and Reform of National Science, Technology and Innovation System (20 min)	Eng. Prof. Patrick Makungu (PS – MCST)
	General Discussion (50 min)	**ALL**
12:50-14:00	**Lunch Break**	**ALL**
14:00-15:00	**PRESENTATIONS BY EXHIBITORS**	**ALL**
15:00-16:20	**Session 3**: **WATER DEVELOPMENT**	**Chairperson:** Eng. Prof. Felix Mtalo
	Paper 3: Implementation of BRN in the Water Sector (30 min)	**Eng. Amani Mafuru** (Ministry of Water)
	General Discussion (50 min)	**ALL**
TIME	**ACTIVITY**	**RESPONSIBLE**
16:20-17:40	**Session 4:** **TRANSPORT INFRASTRUCTURE**	**Chairperson:** Eng. Prof. Theophil Rwebangira
	Paper 4: Implementation of BRN in the Transport Sector (30min)	**Mr. Hassan Shabani** (BRN Coordinator – MoT)
	General Discussion (50 min)	**ALL**
17:40-19:00	**VISITING EXHIBITIONS**	**Event Manager**
19:00-21:00	**Cocktail with Live Band Entertainment**	**ALL**
END OF DAY 1		

DAY 2: Friday, September 5, 2014

Event Manager: *Eng. Ngwisa Mpembe*

TIME	ACTIVITY	RESPONSIBLE
07:30 - 08:00	**Registration**	**Secretariat/OC**
08:00 – 08:30	**Presentation by Exhibitors, continues**	**Event Manager**
ENTREPRENEURSHIP SESSION		
08:30-09:00	**Session 5: ENTREPRENEURSHIP**	**Chairperson:** Eng. Joyce Kisamo
	Presentations from 3 up-coming engineers (15 min)	
	General Discussion (15 min)	**ALL**
09:00 – 09:30	**Session 6: Resolutions & Recommendations**	**Chairperson:** Eng. Prof. Bakari Mwinyiwiwa
	Summary presentation of Resolutions/Recommendations	**Chief Rapporteur**
09:30-10:00	**Health Break**	**ALL**

OFFICIAL SESSION		
10:00	Arrival of the Guest of Honour	ERB Chairman/Board Members/Registrar
10.00 - 11:00	Tour of Exhibitions by the Guest of Honour	Guided by the Chairman/Registrar, ERB
11:15-11:25	Introduction	**Eng. Steven Mlote,** Registrar
11:25-11:40	Oath Taking Ceremony	Resident Magistrate
11:40-12:00	Presentation of Awards	GoH
12:00-12:20	Welcoming Remarks	**Eng. Prof. Ninatubu Lema,** Chairman ERB
12:20-13:00	**Speech by GoH**	**GoH**
13:00 – 13.10	Vote of Thanks	Eng. Gemma Modu, Board Member
13:10-13:25	Group Photo	**ALL**
13:25-14:30	**LUNCH BREAK**	**ALL**
14:30-18:00	**VISITING OF EXHIBITIONS**	
	END OF DAY 2	

APPENDIX II: LIST OF EXHIBITORS

ANNUAL ENGINEERS DAY 2014

COMMERCIAL AND TECHNICAL EXHIBITORS

INSIDE AREA

Booth No	Name of Exhibitor	Postal Address Telephone Email add	Type of Business	Products Exhibited
1 - 2	**ALAF LTD**	Box 2070 D'Salaam Plot 18 Nyerere Road 022 2860010/14 Sales@alaf-co-tz	Building material	Roofing sheets, Hollow sections & pipes, Z-Purlins, Roofing structures (trusses)
3 - 5	**NABAKI AFRIKA LTD**	Box 11747 D'Salaam 2/1 Sam Nujoma Rd 022 2775138 info@nabaki.com jeff@nabaki.com	Importation and Distribution of Building materials	Roof tiles, rain water system, plasters, water proofing, water treatment.
6	**C-NET TECHNOLOGIES (T) LTD**	Box 75726 D'Salaam Sykes House Ground floor 022 2137099 info@cnet.co.tz	Data & Telecommunication	DINTEK Local Area Networ Material (LAN)
7 – 8	**DAR CERAMICA CENTRE**	Box 7240 D'Salaam Kawe near JKT Mlalakuwa 0786 001619 projects@darceramica.co.tz	Supplier of building materials	Tiles and sanitary ware
9 - 10	**IMPORTS INTERNATIONAL (T) LTD**	Box 1545, D'Salaam 1290 Mwakalinga Road 022 2862903/4	Construction & building material	Construction & building material

		rej@imports-int.com		
11	**EAST AFRICAN ELEVATOR CO LTD**	Box 2153, D'Salaam Plot 2319/9 Makunganya St 022 2112288 / 2113362 Info.tz@eaecl.net Sa;es.tz@eaecl.net	Elevators	Elevator technology
12	**CHEMI & COTEX IND LTD**	Box 347, D'Salaam 022 2628014/17 sect@cciltz.com vijay@cciltz.com	Manufacturing of plastic and metal	Poly tank, pipes, fending products, wire nails, fabric mesh
13 - 14	**KASUMO DESIGNS (T) LTD**	Box 77228 D'Salaam 022 2667333 Hugo House, Kinondoni info@kasumo.co.tz	Computer aided design services and rapid prototyping	Design software technology and 3D printed prototypes
15	**SMILE COMMUNICATIONS (T) LTD**	Box 38372 D'Salaam 022 2199841 info@smile.co.tz	Telecommunications	SMILE 4G Internet
16 A	**TANZANIA BUREAU OF STANDARDS (TBS)**	Box 9524, D'Salaam Ubungo area 022 2450206 info@tbs.go.tz	Standardization and Quality Assurance	Engineering standards
16 - 17	**DAR ES SALAAM INSITUTE OF TECHNOLOGY (DIT)**	Box 2958, D'Salaam Morogoro/Bibi Titi Jctn 022 2151504 principal@dit.ac.tz	Training	Training and research products
18	**NATIONAL CONSTRUCTION COUNCIL (NCC)**	Box 70039 D'Salaam Azikiwe St, Offc accom Sch 022 2131321 0714 213157 ncc@ncc.or.tz	Government Institution (construction industry)	Publications, Posters, Fliers, brochures

19	**CONNECTT WIRE & CABLES**	Box 4417 D'Salaam Mlalakuwa Rd, 60 Mikochen 022 2774038 sales@kwacl.com	Manufacturing & Electric wires & cables	Electric wires & cables
19A	**TRANSAFRICA WATER SYSTEMS LTD**	Box 75309, D'Salaam 022 2152337/8 info@transafricawater.com	Supplier of engineering products	Pumps and related accessories
20	**MULTI CABLE LIMITED**	Box 24301, D'Salaam 022 2136543 Sales.mcl@hotmail.com	Cables, Pipes & Electrical items	Cables, Pipes & Electrical items
21	**DPI SIMBA LTD**	Box 46259, D'Salaam Chang'ombe Industrial area 022 2864555 dslsales@dpi.com	UVPC & HDPE Pipes	Pipes & accessories
22	**AQUA BAY MERCHANDISE LTD**	Box 10848, D'Salaam Plot 121 M'cheni Serv Trade 0716 536092 aquabaymerchandise@gmail.com	Supplier of plastic pipes and fittings and building materials	Pipes & fittings
22A	**CHINA LIANSU GROUP LTD**	Box 10848, D'Salaam Plot 121 M'cheni Serv Trade 0716 536092 aquabaymerchandise@gmail.com	Supplier of plastic pipes and fittings and building materials	Pipes & fittings
23	**INTER TRADE INNOVATIONS LTD**	Box 77135, D'Salaam Sam Nujoma Rd 113/114 pkazaura@yahoo.com	Supply of water meters and submersible pumps	Meters and pumps
24	**S.E.C. (EAST AFRICA) CO. LTD**	Box 8454 D'Salaam 022 2112002	Escalators and elevators	Escalators and elevators

		sales@mitsuelevator.com		
25	**PLASCO LTD**	Box 19956 D'Salaam Mbozi Rd, Chang'ombe area 022 2199820 Ali.osman@plasco .co.tz	Manufacturer of UDPE & UPVC pipes & fittings	Pipes, fittings and welding equipment
26	**NORPLAN TANZANIA LTD**	Box 2820, D'Salaam Plot 92, Warioba St, K'ndoni 022 2780182/742 admin@norplantz.org	Consulting Engineer	Range of consulting services provided by firms
27	**KAMAKA CO. LTD**	Box 78570 D'Salaam 0784 947626 Mubarak.kamaka@gmail.com	Building material	Building materials
28	**MAR-KIM CHEMICALS**	Box 75498 D'Salaam 0786 323584 Markim_timya@hotmail.com	Swimming Pools equipment	Swimming Pool equipment
29	**MAR-KIM UNI PLAST**	Box 75498 D'Salaam 0688 438853 markimgroup@gmail.com	PVC Profiles	PVC Profiles
30	**TURKTAN (T) LTD**	Box 75498 D'Salaam 0786 323584 markimgroup@gmail.com	Generators	Generators
31	**RECO ENGINEERING CO. LTD**	Box 873, D'Salaam 51 Chang'ombe road 022 2863465 info@reco.co.tz	Engineering workshop	Production of various mechanical spare parts
32	**NATIONAL INSTITUTE OF TRANSPORT (NIT)**	Box 705, D'Salaam 022 2400148 info@nit.ac.tz	Education and Training	Courses and training material

33	**TEMBO TILES LTD**	Box 19698, D'Salaam Plot 36, M'Cheni Indus Area 0774 242494 safia@tembo.co.tz	Supplier of construction, paving blocks and ready mix & aggregates	Paving blocks and aggregates
34	**TANZANIA PORTLAND CEMENT CO. LTD**	Box 1950 D'Salaam Wazo hill 0784 108600 info@twigacement.com	Manufacturing, selling and distribution of high quality cement	Cement and aggrigates
35	**NHBRA**	Box 1964, D'Salaam Plot 337 Sam Nujoma (022 2771871 dg@nhbra.go.tz	Research on building material	Research products and literature
36	**SOLOHAGA COMPANY**	Box 478, D'Salaam Hifadhi Hse 6th Floor Samora 022 2133666 consulting@holistic.co.tz	Security Systems	DVR, Cameras, time & attendance solutions, monitor, etc
OUTSIDE AREA				
1	**EAST AFRICAN CABLES (T) LTD**	Box 508, D'Salaam Plot Nyerere Rd 022 2866274 infotz@eacables.com	Manufacturing electrical cables	Electrical cables
2	**BUREAU FOR INDUSTRIAL COOPERATION (BICO)**	Box 35131 D'Salaam 022 2410113 bico@udsm.ac.tz	Consulting	Posters , banners, brochures, test equipment reports, etc
3	**TANELEC LTD**	Box 7156 Arusha Plot 31/32 Themi Indus	Electrical goods	Transformers and low voltage switchgear

		area 027 2507892 - 4 info@tanelec.co.tz		
4	**YASH INTERNATIONAL**	Box 21410 D'Salaam 0686 686303/0713 946508 info@yashinternational.com	Imports and export of bitumen	Bitumen products
5 - 6	**GF TRUCK & EQUIPMENT LTD**	Box 22692 D'Salaam 022 2861841 Plot 92, Nyerere Road info@gftruck.com	Motor vehicles dealers & *construction machineries*, sales, service & pads	Trucks & construction equipment
7 - 8	**ST. JOSEPH UNIVERSITY IN TANZANIA**	Box 11007 D'Salaam 0686 312807 / 9 dmi_dar@yahoo.com ar_admin@sjuit.ac.tz	University Education	Study material
9	**DELTA INDUSTRIAL EQUIPMENT**	Box 41058, D'Salaam Plot 28/29 V'nguti Ind area www.deltagroup.com.eg	Construction and Power System	Generators, soil compactors, engine, lighting tower
10	**QUALITY SOURCE LTD**	Box. 12001, D'Salaam Plot 410A, Uhuru St. B'runi sales@qsl.co.tz	Suppliers	Fire detection & alarm systems, light fittings
11	**HYUNDAI**	Box 19129 D'Salaam 0768 436007 Plot 62, Nyerere Road alen@hyundai.co.tz	Construction equipment & Industrial vehicles	Excavator, wheel louder, compactor, fork lift, etc
12	**MINING AND ENGINEERING EQUIPMENT LTD**	Box 9640, D'Salaam Amani Place, 7th Floor 0783 730586 Richard.liuxing@gmail.com	Construction equipment ,power generation , port equipment	Posters and brochures business cards

13 - 14	**CAR & GENERAL**	Box 1552, D'Salaam Azikiwe Street, next to NPO 022 2113016 sales@cargen.co.tz	Automotive and engineering products	Generators and air compressors
15	**GOLD STAR PAINTS TANZANIA LTD**	Box 909, D'Salaam 0767 223332 022 2865222 info@goldstarpaints.com	Paints manufacturing and suppliers	Emulsion/enamel and specialized paints
16	**UTT ASSET MANAGEMENT AND INVESTOR SERVICES PLC**	Box 14825 D'Salaam Sukari House, 2nd Floor 022 2122501 uwekezaji@utt-tz.org	Financial investment	Mutual funds
17	**TANGA CEMENT CO LTD**	Box 78478, D'Salaam 022 2602784 / 718 info@simbscement.co.tz	Manufacturing and selling of cement and clinker	Cement
18	**TANZANIA TELECOMMUNICATIONS CO. LTD**	Box 9070, D'Salaam 022 2142000 info@ttcl.co.tz	Telecommunications & ICT	Voice & Data
19	**ASAR LTD**	Box 674, D'Salaam 10 India Street 022 2115166 / 2121656 sales@asar.co.tz	Machinery and Power tools	Power tools
20	**HEGY ENGINEERING (T) LTD**	Box 54212 D'Salaam Hse 108 Kimara Baruti, 022 2421315 0784 519275 hegyltd@hotmail.com	Sales of transformers	Transformers
21	**ENSOL (T) LTD**	Box 42227, D'Salaam 2nd Floor Ubungo Plaza	Solar contractor	Solar water pump, solar street lights

		022 2460100 solartz@ensol.co.tz		
22	**TEREX (E.A.) LTD**	Box 31296, D'Salaam Plot 302 Mbezi beach 022 2618114 info@terex.co.tz	Supply of specialized construction chemicals	Construction chemicals
23	**ASSOCIATION OF CONSULTING ENGINEER S (ACET)**	Box 63, D'Salaam NIC Investment Hse, 8th Floor 022 2131137 info@acet.or.tz	Promotion of engineering consultancy	Projects photographs & FIDIC publications
24 - 25	**NILE MACHINERY CO. LTD**	Box 20752, D'Salaam C3B Ubungo Business Park 0654 910708 Zhangshujia40404@163.com	Construction and Building	Block machines, mixers
26	**WORLD MAP CONSULTANTS**	Box24748, D'Salaam Apex Towers 3rd Floor K'Koo 0767 675416 magezijulian@yahoo.co.uk	MAPPING	Mapping equipment
27	**GEOTAN MAPPING SERVICES CO LTD**	Box 195639, D'Salaam Kunduchi / Mtongani 0754 559110	Engineering survey, land survey	NAVCOM, GPS, COMNAV Marine application
28	**DANISH AGRI BUSINESS SOLUTIONS**	Box 31562, D'Salaam Muri Road Sinza 0717 593542 niels@danagrisol.com www.dan	Agriculture & road construction equipment	Towed motor grader
29 - 30	**TWIGA CEMENT**	**TANZANIA PORTLAND CEMENT CO. LTD**	Box 1950 D'Salaam Wazo hill	Manufacturing, selling and distribution of high quality cement and aggregates

			0784 108600 info@twigacement.com	
31	**NATIONAL HOUSING CORPORATION**		Estate developers	
32	**EXIM BANK**		Bankers	

APPENDIX III: PRESENTATION BY EXHIBITORS

There were presentations by 19 exhibitors from various companies and institutions related to the engineering discipline during the first day of the conference. Every company presented its services and/or products. These included:

1) **Tanzania Portland Cement Company Ltd. (Twiga Cement)** – Production of Cement and Aggregates
2) **Teknicon Ltd and Lidwala -** engineering project management environmental planning and scientific services, special management information systems (SMIS)
3) **Norplan -** consultancy projects and materials testing laboratory
4) **KILIMAN** - equipment for aerial work such as telescopic boom lifts
5) **Dar Ceramica –** supplier of building materials such as tiles and sanitary ware
6) **RECO Engineering** – production of various mechanical spare parts
7) **Spanish Tiles –** tiles, roofing systems, natural marble chip plaster, sanitary ware, kitchen cabinets
8) **Danish Agribusiness solutions** - second hand and new agricultural and road construction equipment.
9) **Plasco** – manufacturers of UDPE and UPVC pipes and fittings
10) **St. Joseph University** – engineering education
11) **UTT Asset Management** – financial investment
12) **Smile –** telecommunications and data provision
13) **Solohaga Company** – security systems e.g. CCTV, alarm systems, access control systems
14) **East African Elevator** – elevator technology
15) **Aqua Bay Merchandise Ltd.** – supplier of plastic pipes and fittings, and building materials
16) **Car and General** – automotive and engineering products such as generators and air compressors

17) **GeoTan Mapping Service Company Ltd. -** technology for surveying based on StarFire Global Differential System
18) **Kasumo Designs Ltd.** – Computer aided design services and rapid prototyping
19) **ENSOL (T)** – solar contractor (solar water pumps, solar street lights)