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PARLIAMENT OF KENYA



THE NATIONAL ASSEMBLY

THIRTEENTH PARLIAMENT – SECOND SESSION 2023

DEPARTMENTAL COMMITTEE ON EDUCATION

REPORT ON:

THE WORLD FEDERATION OF COLLEGES AND POLYTECHNICS STUDY TOUR

24TH APRIL TO 4TH MAY, 2023
MONTREAL, CANADA

Directorate of Departmental Committees
Clerk's Chambers
National Assembly
Parliament Buildings
Nairobi

THE NATIONAL ASSEMBLY PAPERS LAID	
DATE:	05 OCT 2023
TABLED BY:	Hon Julius Melly, M.P. Chairperson, Education Committee
CLERK AT THE TABLE:	A. Chubuku
October 2023	

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LIST OF ABBREVIATIONS AND ACRONYMS

CICan	Colleges and Institutes Canada
WFCP	World Federation of Colleges and Polytechnics World Congress
TVET	Technical and Vocational Education and Training
PIC	Public Investments Committee
OSSC	Offshore Safety and Survival Centre
CSAR	Centre for Sustainable Aquatic Resources
HUET	Helicopter Underwater Escape Trainer
CTec	Centre for Applied Ocean Technology

CHAIRPERSON'S FOREWORD

The Departmental Committee on Education received an invitation from the Colleges and Institutes Canada (CICan) to participate in the World Federation of Colleges and Polytechnics World Congress (WFCP) in Montreal, Canada and follow up visits to the Great Toronto area and Atlantic Canada

Over 1500 participants gathered to reflect, discuss, share and network all aiming to better advocate, build capacity and drive knowledge to address issues and explore innovative solutions to for the post-secondary professional and Technical and Vocational Education and Training (TVET) sector, in Canada and around the world.

Delegation

The delegation comprised of Committee Members from the Departmental Committee on Education and the Public Investments Committee (PIC) on Governance and Education as below:

1. Hon. Julius Kibiwott Melly, MP- Chairperson, Leader of the delegation
2. Hon. Dick Maungu, MP, Member, Departmental Committee on Education
3. Hon. Julius Taitumu, MP, Member, Departmental Committee on Education
4. Hon. Amb. Francis Sigei, MP, Member, PIC, Governance and Education
5. Hon. Mangale Munga Ndegwa, MP, PIC, Governance and Education
6. Ms. Grace Wahu - Delegation Secretary

The delegation had an interest in the Blue economy sector as it is one of the rapidly growing sectors both locally and globally. They, therefore, participated in a study tour in St. John's Newfoundland as part of a learning tour and to provide a knowledge exchange platform with the Canadian TVET system particularly in the areas of curriculum development, implementation, assessments and certification.

The study tour provided the delegation with the opportunity of visiting marine technology institutions such as Marine Institute's Offshore Safety and Survival Centre (OSSC), Marine Institute's Centre for Sustainable Aquatic Resources (CSAR), the Centre for Sustainable Aquatic Resources (CSAR) Flume Tank, Marine Institute's Centre for Sustainable Aquatic Resources (CSAR) - School of Fisheries, Marine Institute's Centre for Applied Ocean Technology (CTec), Memorial University and Kraken Robotics Factory.

The delegation was enlightened on the cutting-edge technologies in equipment and facilities provided in the in the Institutes and the connections that the they were enabling between industry and the students. In addition, the delegation was exposed to the financial opportunities that TVET institutions benefit from by developing excellent applied research departments.

Appreciation

The Committee is thankful to the Office of the Speaker and the Office of the Clerk of the National Assembly for the logistical and financial support accorded to the delegation during this important assignment. The Committee is also thankful to Members of the Committee for selecting them to attend the meeting.

On behalf of the Education Committee delegation to Canada and pursuant to provisions of Standing Order 199(6), I beg to table the Report of the Committee's Delegation to Montreal, Canada which was selected to attend the World Federation of Colleges and Polytechnics World Congress (WFCP) study tour.

A handwritten signature in blue ink, consisting of a large, stylized 'J' and 'M' followed by a horizontal line.

HON. JULIUS MELLY, MP
CHAIRPERSON, DEPARTMENTAL COMMITTEE ON EDUCATION

EXECUTIVE SUMMARY

Delegates from the National Assembly, Council of Governors, Ministry of Education and other TVET agencies from Kenya attended the World Federation of Colleges and Polytechnics (WFCP) and CICA Conference that took place in Montreal from April 23-25, 2023. The delegation also participated in a study tour in Toronto, Halifax, and St. John's Newfoundland as part of a learning tour and to provide a knowledge exchange platform with the Canadian TVET system particularly in the areas of curriculum development, implementation, assessments and certification.

The other areas of interest specifically from best practices perspective were on Recognition of Prior Learning (RPL), Applied Research, Competency-Based Education and Training, working with Industry, Gender Equality in TVET and providing pathways to education and employment for young women and marginalized communities.

The country is putting in a lot of investment into blue economy as that is a space that Kenya has not utilized to its full potential despite being accessible to the sea. The Human resource is the country's greatest asset in enabling the country utilize resources from blue economy.

The goal of the tour was therefore to not only fully explore the collaboration benefits between Kenyan TVET agencies and institutions with the Canadian partnerships, but also to learn and inform TVET approaches and practices in the Kenyan education and training ecosystem.

The recommendations of the visit are as follows:-

1. There is need for the Committee on Education to follow up on the scholarship opportunities with the Ministry of Education to ensure the right students are benefitting from them.
2. Study tours by Parliament should be encouraged as Members of Parliament are able to network and build partnerships in institutions that will help their communities. They also help in policy formulation in areas that will improve the economy and challenges in employment.
3. There is need for the Government to prioritize funding to marine institutes such as Bandari Maritime Academy and the Railways Training Institute-Marine School, Kisumu to provide them with equipment and facilities that will enable the institutions to implement industry-relevant training programmes. The Marine institute in Canada uses different simulators to expose the students to real-life challenges and enable them to develop innovative solutions. For example, the institutes visited in the tour were providing industry solutions to different organizations and governments, therefore, building the knowledge capacity of their research departments and students.
4. There is need to connect students with industry. TVET institutions should have excellent applied research departments that connect the students with new industry players and opportunities. Exposing students to industry early into their academic timetable improves their employability in the industries they are training for.
5. There is need to provide incentives to private sector to provide more placement opportunities for students in TVETs.

6. The Ministry of Education needs to strengthen and support applied research departments in national polytechnics and link them to funding opportunities from private sector and government departments and ministries. Applied research is research used to solve community problems.

1.0 PREFACE

1.1 Establishment and Mandate of the Committee

1. The Departmental Committee on Education is established under Standing Order (S.O.) No. 216. Its mandate is pursuant to S.O 216 (5) with the following terms of reference: -
 - a. *investigate, inquire into and report on all matters relating to the mandate, management, activities, administration, operations and estimates of the assigned Ministries and Departments;*
 - b. *study the programme and policy objectives of the Ministries and Departments and the effectiveness of the implementation;*
 - c. *study and review all legislation after First Reading subject to the exemptions under Standing Order 101 A (4);*
 - d. *study and review all legislation referred to it;*
 - e. *study, assess and analyse the relative success of the Ministries and Departments as measured by the results obtained as compared with its stated objectives;*
 - f. *investigate and inquire into all matters relating to the assigned Ministries and Departments as they may deem necessary, and as may be referred to them by the House or a Minister; and*
 - g. *make reports and recommendations to the House as often as possible, including recommendations of proposed legislation.*
2. The Committee is mandated to consider the following subjects: -
 - a. Education
 - b. Training
 - c. Research

1.2 Oversight

3. In executing its mandate, the Committee oversees the following government Ministries, Departments and or Agencies, namely:
 - a. The State Department for Basic Education
 - b. The State Department for TVET
 - c. The State Department for Higher Education & Research
 - d. The Teachers Service Commission

1.3 Committee Membership

4. The Committee comprises the following Members: -

1. **Hon. Julius Kibiwott Melly, MP**
Chairperson
Tinderet Constituency **UDA**
2. **Hon. Moses Malulu Injendi, MP**
Vice Chairperson
Malava Constituency
ANC
3. **Hon. Dr. Christine Oduor Ombaka, MP**
Siaya County
ODM
4. **Hon. Eve Akinyi Obara, MP**
Kabondo Kasipul Constituency
ODM
5. **Hon. Jerusha Mongina Momanyi, MP**
Nyamira County
JP
6. **Hon. Abdul Ebrahim Haro, MP**
Mandera South Constituency
UDM
7. **Hon. Anne Muratha, MP**
Kiambu County
UDA
8. **Hon. Clive Gisairo, MP**
Kitutu Masaba, Constituency
ODM
9. **Hon. Dick Oyugi Maungu, MP**
Luanda Constituency
DAP-K
10. **Hon. Julius Taitumu M'Anaiba, MP**
Igembe North Constituency
UDA
11. **Hon. Nabii Nabwera Daraja, MP**
Lugari Constituency
ODM
12. **Hon. Peter Ochieng Orero, MP**
Kibra Constituency
ODM
13. **Hon. (Prof.) Phylis Jepkemoi Bartoo**
Moiben Constituency
UDA
14. **Hon. Rebecca Noonaishi Tonkei, MP**
Narok County
UDA
15. **Hon. Timothy Toroitich, MP**
Marakwet West Constituency,
IND

1.4 Committee Secretariat

5. The Committee secretariat comprises: -

Ms. Grace Wahu
Clerk Assistant III
Lead Clerk

Ms. Natecho Kisiang'ani
Clerk Assistant III

Ms. Colletah Sigilai
Senior Legal Counsel

Mr. Eric Kanyi
Fiscal Analyst II

Ms. Winnie Kulei
Research Officer

Dr. Maina Mburu
Research Officer

Mr. Paul Kashane
Serjeant-at-Arms

Ms. Roselyn Ndeg
Serjeant-at-Arms

Mr. Nimrod Ochieng
Audio Recording Officer

Mr. Daniel Psirmoi
Media Relations Officer

Ms. Mary Kamande
Protocol Officer

Ms. Josephine Osiba
Hansard Reporter

2.0 OVERVIEW OF INSTITUTIONS VISITED ON THE WORLD FEDERATION OF COLLEGES AND POLYTECHNICS WORLD CONGRESS (WFCP) STUDY TOUR

The delegation had the opportunity of visiting the following institutions on the study tour: -

2.1 Visit to the Marine Institute's Offshore Safety and Survival Centre (OSSC)

6. The Offshore Safety and Survival Centre (OSSC) offers a comprehensive range of safety and emergency response training courses to the offshore petroleum, marine transportation, fishing and land-based industries. The OSSC is part of the Fisheries and Marine Institute of Memorial University.

a. Quality Assurance

7. Training courses developed by the OSSC are subject to rigorous academic scrutiny. The majority of courses delivered at the centre are also accredited or approved by national and international regulatory or other external approving agencies.
8. The quality of training delivery is assured by a staff of more than 40 highly qualified and experienced instructors. Additionally, the OSSC, as part of the Marine Institute, an ISO 9001 accredited training organization, is subject to regular audit.

b. Facilities and Equipment

9. The OSSC has an extensive array of facilities and equipment to support its training deliveries.

Facilities and equipment include:

1. Large survival tank complete with a state-of-the-art helicopter underwater escape trainer (HUET) and environmental theatre. The Centre also boasts various marine and offshore evacuation devices
2. Fire training ground outfitted with marine, offshore petroleum and helicopter fire simulators
3. Marine base outfitted with a variety of lifeboat and fast rescue craft launching devices
4. Variety of lifeboats and fast rescue craft
5. Seagoing marine training vessels
6. Large inventories of specialized training equipment
7. Virtual Marine S92 VR helicopter cabin simulators

Areas of Specialization

1. Offshore Petroleum
2. Marine Transportation
3. Fishing Industry
4. Industrial Safety and Firefighting

2.2 Visit to Marine Institute's Centre for Sustainable Aquatic Resources (CSAR)

10. The Centre for Sustainable Aquatic Resources (CSAR) is an applied research unit within the School of Fisheries at the Fisheries and Marine Institute, Memorial University. Recognized as Canada's experts in fish capture, the team has core strengths in fishing gear design and testing, conservation engineering, fisheries biology, fish capture behavior, and mechanical engineering.
11. The team uses a combination of numerical simulation, physical modelling in the flume tank, and at-sea comparative fishing experiments to improve sustainable fishing practices and profitability of commercial fishing enterprises. This involves maximizing the value of the catch while at the same time reducing ecological impacts of fishing, such as bycatch of non-targeted animals, seabed impacts, fuel consumption, discarding, and ghost fishing of lost gears.
12. The team is also recognized for its expertise in fisheries development, including resource assessments of underutilized species. Documenting the abundance, distribution, and life history characteristics of new species of interest ensures that Canada's emerging fisheries are established with excellent science advice.

1.3 Visit to the Centre for Sustainable Aquatic Resources (CSAR) Flume Tank

13. The Marine Institute is home to the world's largest flume tank. This facility is used to carry out performance evaluations, gear tests and other observations on newly developed or existing fishing gears and other related equipment in simulated underwater and near surface conditions.
14. Constructed at a cost of \$8.5 million CAD and first opened in 1988, the Marine Institute flume tank provides the physical environment required to:
 - a. Carry out performance evaluations, gear tests and other observations on newly developed or existing fishing gears and other related equipment in simulated underwater and near surface conditions.
 - b. Provide technical services for fishermen, fishing equipment manufacturers/suppliers, other fishing industry groups and public and private organizations.
 - c. Demonstrate the operations and behavior of fixed and mobile fishing gear in water to members of the fishing industry and the general public.

Tank Specifications

15. Dimensions: The test section is 8 metres wide x 4 metres deep x 22.25 metres long (the water level may be changed from 4m to 3m depth). These dimensions make the tank the largest flume tank of its type in the world. The flume tank has a viewing gallery that is able to accommodate approximately 150 people and faces a 20 metres x 3 metres observation window looking into the side of the flume tank's test section.

16. The flume tank contains 1.7 million litres of water when full. The Tank is divided horizontally into two sections. The lower section allows water to circulate. The upper test section holds the gear and allows observation from above and from one side.

17. Flume Tank functions include:

- a. Simulating seabed for bottom trawls
- b. Eliminating eddies caused by fluid friction against a stationary surface

2.2 Visit to Marine Institute's Centre for Sustainable Aquatic Resources (CSAR) - School of Fisheries

18. The School of Fisheries delivers education and training programs to students interested in entering the aquaculture, fishing, environmental and food industries. Academic programs offered by the School range from industry certifications to diplomas of technology, joint diploma/bachelor degrees, advanced diplomas, post-graduate certificates and master's degrees.

19. The School of Fisheries also has significant involvement in community-based training programs, where instructors teach short industry training programs in communities, primarily in Newfoundland and Labrador and Northern Canada. The School is moving toward offering more online courses and programs.

20. The School of Fisheries has four industrial research and training units:

- a. Centre for Aquaculture and Seafood Development (CASD)
- b. Centre for Fisheries Ecosystem Research (CFER)
- c. Centre for Sustainable Aquatic Resources (CSAR)
- d. Community Based Education Delivery (CBED)

2.5 Visit to Marine Institute's Centre for Applied Ocean Technology (CTec)

21. The Centre for Applied Ocean Technology (CTec) collaborates with industry and others on the development and application of technology for the practical benefit of all sectors of the maritime community.

22. CTec undertakes applied research and development in two key areas:

- a. Ocean Mapping
- b. Ocean Observing Systems

23. The guiding principles of CTec's applied research and development efforts are to:

- a. Respond to the evolving technology needs of key ocean industries such as fisheries, shipping, offshore oil and gas.
- b. Work collaboratively with the ocean technology industry in Canada, wherever possible and practical.
- c. Provide work experience and employment opportunities for students and graduates of programs.

24. CTec's goal is to enhance the safety, efficiency, sustainability and profitability of maritime pursuits through the application of technology. CTec's technologies and expertise are

helping to bridge the gap between 'knowing' and 'doing.'

2.6 Visit to Memorial University

25. In Memorial University more than 19,000 students from over 115 countries come together to discover. Learning from the classics to advanced technology, Memorial University offers certificate, diploma, undergraduate, graduate and postgraduate programs across five campuses and online. A global network of almost 100,000 accomplished alumni throughout the world strengthen Memorial University's capacity and reputation for leadership in research, teaching and public engagement.

Research

26. Over 40% of Memorial's research is ocean-related (in just the Faculty of Science it's 68%). In times of research happening in the North Atlantic, there is a high likelihood Memorial University is involved. In addition, Memorial is a partner with the Ocean Frontier Institute, a \$220 million collaborative research initiative aimed at harnessing the vast potential of the world's ocean. Memorial is also part of Canada's Ocean Supercluster, a private sector-led partnership using innovation and commercialization to drive increased sustainable economic growth from our oceans.
27. Memorial University, as one of the top twenty (20) research universities in Canada, has more than 30 research centres and has received more than \$130 million in research funding in 2019-2020. Memorial and its funding partners have long believed in investing in talented students and have more than 1,500 graduate fellowships and 854 PhD students. In 2020, 64 Memorial researchers were on the World's Top 2% Scientists list.

2.6 Visit to Kraken Robotics Factory

28. Kraken Robotics Inc. is a marine technology company dedicated to the production and sale of software-centric sensors, subsea batteries, and underwater robotic systems. The company is headquartered in Newfoundland with offices in Canada, U.S., Germany, Denmark, and Brazil. The company also specializes in high-resolution 3D acoustic imaging solutions for the sub-seabed used to mitigate risk in offshore installations. Kraken is ranked as a Top 100 marine technology company by Marine Technology Reporter.

3.0 COMMITTEE OBSERVATIONS

The Committee made the following observations: -

- a. There is need to expose Kenyan students to Marine engineering Technology. This involves developing new curricula to take advantage of the growing Blue economy sector locally and globally.
- b. There is need to expose Kenyan students to scholarship opportunities in the shipping and maritime sector. The delegation was appraised on scholarship opportunities at the Memorial University and they were open to offering the same to Kenyan students with the qualifications.

- c. There are numerous opportunities in blue economy to help the economy grow and offer employment. The delegation was exposed to various departments at the institutions where products were being created from marine life. For example, products such as fuel, medication among other products were being created out of marine life. The institutions were also studying the value addition of sea cucumbers.
- d. The delegation witnessed young students doing real-time practicals of operating a sea diving machine and toured facilities that expose students to real life situations.
- e. There is need for the diversification of TVET courses in order to capitalize on different areas for growth within the economy. Blue economy is one of the growing sectors in the world that provide opportunities for economy growth through value addition of marine products. For example, the Marine Institute discovered that fish is for food but its skin, the eyes and the head are more valuable than the food itself in the bio-medical sectors. Oceans also provide opportunities in wind energy. Therefore, there are traditional uses and new uses of the oceans that may create new career opportunities for TVET students in Kenya increasing their employability both locally and internationally.
- f. TVET institutions have the potential in sustaining their education and training programmes by earning revenue by carrying out research for the industry and government. This enables the institutions be up-to-date with the challenges being faced by the industry and also have the opportunity of coming up with first hand solutions.
- g. Kenya, as one of the epi-centres of Blue economy is a growing sector in Kenya, therefore the Marine Institute is interested collaborating with the country in the counties to be a part of the goals that are being set in Blue economy.
- h. The Marine Institute has developed a community-based education where they work with the community to generate solutions to community challenges in the marine economy.

4.0 COMMITTEE RECOMMENDATIONS

The Committee made the following recommendations: -

- a. There is need for the Committee on Education to follow up on the scholarship opportunities with the Ministry of Education to ensure the right students are benefitting from them.
- b. Study tours by Parliament should be encouraged as Members of Parliament are able to network and build partnerships in institutions that will help their communities. They also help in policy formulation in areas that will improve the economy and problems in employment.
- c. There is need for the Government to prioritize funding to marine institutes such as Bandari Maritime Academy and the Railways Training Institute-Marine School, Kisumu to provide them with equipment and facilities that will enable the institutions to implement industry-relevant training programmes. The Marine institute in Canada uses different simulators to expose the students to real-life challenges and enable them to develop innovative solutions. For example, the institutes visited in the tour were providing industry solutions to different

organizations and governments, therefore, building the knowledge capacity of their research departments and students.

- d. There is need to connect students with industry. TVET institutions should have excellent applied research departments that connect the students with new industry players and opportunities. Exposing students to industry early into their academic timetable improves their employability in the industries they are training for.
- e. There is need for the government to provide incentives to the private sector resulting to more placement opportunities for students in TVETs.
- f. The Ministry of Education needs to strengthen and support applied research departments in national polytechnics and link them to funding opportunities from private sector and government departments and ministries. Applied research is research used to solve community problems.

DATE.....5/10/2023.....SIGN.....[Signature].....

HON. JULIUS MELLY, MP
CHAIRPERSON, DEPARTMENTAL COMMITTEE ON EDUCATION

 THE NATIONAL ASSEMBLY PAPER NO. 1 AND	
DATE: 05 OCT 2023	
TABLED BY:	
CLERK OF THE ASSEMBLY	