



MINISTRY OF WATER, SANITATION  
AND IRRIGATION



KENYA WATER INSTITUTE,  
(KEWI)

## Geographic Information System (GIS) and Earth Observation (EO) Symposium

### THEME:

Supporting Water Service Provision and Water Resources Management through  
Utilization of GIS and Earth Observation Technologies

#### Sub Themes:

1. Innovations and Technologies in GIS & EO
2. Water Utility and Infrastructure Mapping
3. GIS in Governance and Resource Management
4. Satellite Meteorology and Global Climate
5. Application of GIS &EO tools in supporting Water Resources Assessment
6. Capacity Development in GIS & EO
7. Use of cloud facilities and big data in the EO of water.



DATES: 24<sup>th</sup> and 25<sup>th</sup> June 2021

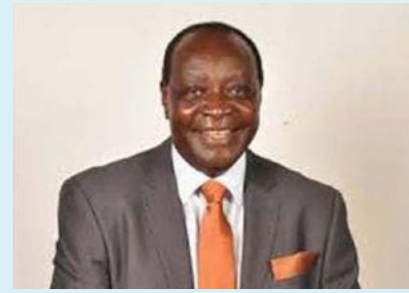
VENUE: KENYA WATER INSTITUTE (KEWI), Main Campus,  
Ole Shapara Avenue, South C, Nairobi



## GUESTS of HONOUR



Sicily K. Kariuki (Mrs.), EGH  
Cabinet Secretary Ministry of Water, Sanitation and Irrigation



H.E Dr. Wilber Ottichilo  
Governor Vihiga County

## KEWI MANAGEMENT



Brigadier (Rtd), Stephen Njung'e Kihu  
Chairperson KEWI Governing Council



Prof. Patrick O. Hayombe  
CEO/Director Kenya Water Institute

## KEYNOTE SPEAKERS



Prof. Japheth Onyando  
Egerton University



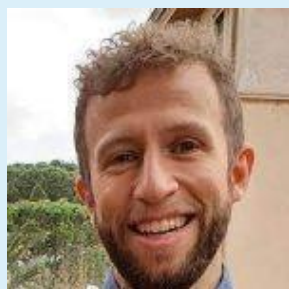
Prof Simon Onywere Kenyatta  
University



Ismail Fahmy M. Shaiye  
CEO Water Sector Trust  
Fund



Dr. Zoltan Vekerdy  
University of Twente ITC



Dr. Giuseppe Ottavianelli  
European Space Agency



Dr. Joel Botai  
Chief Scientist Weather and  
Climate Information  
Dissemination Systems  
South Africa Weather Service



Clifford Okembo  
ESRI Eastern Africa



Dr. Robinson Mugo  
Regional Centre for  
Mapping of Resources for  
Development



## OTHER KEYNOTE SPEAKERS

1. Major Andrew Nyawade
2. Dr. Patrick Chege Kariuki
3. Dr. Mark K Boit
4. Prof. Faith Njoki Karanja (MISK), LS(K)
5. Dr Betty Alosa Mulianga
6. Eric Nyadimo
7. Dr Joshua Cheboiwo

## SYMPOSIUM PROGRAMME

Day 1: Thursday, June 24 2021		Facilitator	Venue
8.30-9.00 am Arrival and Registration		Ms. Caroline Kibui	WRC Upper
9.00- 9.30am			
<b>Official Opening</b>	<b>Welcome Address:</b> Prof. Patrick O. Hayombe, PhD Director/CEO Kenya Water Institute  Brig (Rtd) Stephen Njung'eKihu, EBS, Chairperson, Kenya Water Institute Governing Council	Prof. Patrick O. Hayombe, PhD Director/CEO Kenya Water Institute	<b>WRC Upper</b>  <b>Rapporteurs:</b> 1. Wayne Mark 2. Ruphin Naya 3. Vivian Akoth
	<b>Opening Remarks:</b> Irrigation Secretary: <b>Aboud Moeva</b>		
	Water Secretary: <b>Eng. S.A.O. Alima</b>		
	Principal Secretary: <b>Mr. Joseph W. Irungu, CBS</b>		
	Chief Administrative Secretary: <b>Dr. Andrew K. Tuimur, CBS</b>		
	Governor, Vihiga County: <b>H.E Dr. Wilber Otichillo</b>		
	Cabinet Secretary: <b>Sicily K Kariuki (Mrs) EGH</b>		
9.30-10.30am			
<b>Panel discussion 1</b>	<ol style="list-style-type: none"> <li>1. <b>Dr. Giuseppe Ottavianelli</b> –Head of the Applications Section in the Science, Applications and Climate Department. <b>The ESA EO Africa initiative</b></li> <li>2. <b>Arno van Lieshout</b>- Course Coordinator WREM / Lecturer, Faculty of Geo-Information Science and Earth Observation, University of Twente <b>EO Africa Research and Development Facility: The way forward to strengthen the EO cooperation between Africa and Europe</b></li> <li>3. <b>Dr Joel Botai</b> - Chief Weather and Climate Information Dissemination Systems – South Africa Weather Service</li> </ol>	<b>Moderator:</b> Mr. Eric Wamiti	<b>WRC Upper</b>  <b>Rapporteurs:</b> 1. Wayne Mark 2. Ruphin Naya 3. Vivian Akoth
10.30-11.00 am Health Break			
11.00-12.00pm			
<b>Panel discussion 2</b>	<ol style="list-style-type: none"> <li>1. <b>H.E Dr. Wilber Otichillo</b> – Governor, Vihiga County</li> </ol>	<b>Moderator:</b>	<b>WRC Upper</b>  <b>Rapporteurs:</b>



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	<ol style="list-style-type: none"> <li>2. <b>Ismail Fahmy M. Shaiye</b>- Chief Executive Officer (CEO) Water Sector Trust Fund</li> <li>3. <b>Clifford Okembo</b> – Chief Executive, ESRI East Africa</li> <li>4. <b>Dr. Robinson Mugo</b> -Regional Centre for Mapping of Resources for Development</li> <li>5. <b>Prof. Patrick O. Hayombe</b>, PhD, Kenya Water Institute</li> </ol>	<b>Mr. Kennedy Riaga</b>	<ol style="list-style-type: none"> <li>1. <i>Wayne Mark</i></li> <li>2. <i>Ruphin Naya</i></li> <li>3. <i>Vivian Akoth</i></li> </ol>
<b>12.00-1.00pm</b>			
<b>Panel discussion 3</b>	<ol style="list-style-type: none"> <li>1. <b>Prof. Onywere, Simon Mang'erere</b> (PhD), Director, Capacity Development and Consultancy Services, Kenyatta University</li> <li>2. <b>Mr. Charles Mwangi/Major Andrew Nyawade</b> – Kenya Space Agency The use of GIS and Earth Observation technologies at KSA</li> <li>3. <b>Prof. Japheth O. Onyando</b>, PHD, PE, MIEK – Egerton University</li> <li>4. <b>Dr. Patrick Chege Kariuki</b> – Chairman Department of GIS South Eastern Kenya University (SEKU)</li> </ol>	<b>Moderator:</b> <b>Mr. Elkana Kaburi</b>	<b>WRC Upper</b>  <b>Rapporteurs:</b> <ol style="list-style-type: none"> <li>1. <i>Wayne Mark</i></li> <li>2. <i>Ruphin Naya</i></li> <li>3. <i>Vivian Akoth</i></li> </ol>
<b>1.00-2.00pm</b> <b>Lunch break</b>		<b>WRC Restaurant</b>	
<b>2.00-4.00pm</b>			
<b>Paper presentations</b>  <b>Subtheme 1:</b> Innovations and Technologies in GIS & EO	<b>Topics and Presenters</b> <ol style="list-style-type: none"> <li>1. Adopting new trends and approaches in the management of Non-Revenue Water - <b><i>Eric Nyadimo</i></b></li> <li>2. Reservoir suitability mapping using analytical hierarchy process and GIS in Kirehe District - <b><i>Sylian Muramira</i></b></li> <li>3. Near-Real-Time Bio-Optical Water Quality Assessment Using Landsat OLI and Sentinel MSI for Case II Waters - <b><i>Herbert Kipchumba</i></b></li> <li>4. Supporting water resources assessment - <b><i>David Mwangi</i></b></li> <li>5. Water Quality Monitoring and Reporting System - <b><i>Collins Oduor</i></b></li> <li>6. Topography and drainage - <b><i>Grace Gakenia</i></b></li> <li>7. Application of GIS and remote sensing in Oceans and water resource management - <b><i>Mill Bosire</i></b></li> <li>8. Supporting Water Service Provision and Water Resources Management through Utilization of GIS and EO technologies - <b><i>John Maina</i></b></li> <li>9. Flood assessment using EO technology Kenya – <b><i>Rose Waswa</i></b></li> <li>10. Upande Value Proposition Deck- <b><i>Shatora Sharon</i></b></li> </ol>	<b>Subtheme Chairs:</b> <ol style="list-style-type: none"> <li>1. Mr. Henry Kobia</li> <li>2. Mr. Peter Nawiri</li> </ol>	<b>WRC Upper</b>  <b>Rapporteurs:</b> <ol style="list-style-type: none"> <li>1. <i>Wayne Mark</i></li> <li>2. <i>Ruphin Naya</i></li> <li>3. <i>Vivian Akoth</i></li> </ol>



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<p><b>Paper Presentations</b></p> <p><b>Subtheme 6:</b> Capacity Development in GIS &amp; EO</p>	<p><b>Topics and Presenters</b></p> <ol style="list-style-type: none"> <li>1. GIS and Earth Observation Training: Existing and Emerging Challenges - <b>Okota Grace Lorna</b></li> <li>2. Competency-Based Training and Technical Capacity Development in GIS/EO- A case of Laikipia University, Kenya - <b>John Maina</b></li> <li>3. Approaches for Capacity Building in GIS and Remote Sensing Technologies in Kenya - <b>Auka Vincent</b></li> <li>4. Kobo Toolbox: An open-source Mobile GIS tool for water access points collection, mapping and planning or not - <b>Samuel Ouma</b></li> </ol>	<p><b>Subtheme Chairs:</b></p> <ol style="list-style-type: none"> <li>1. Mr. Leonard Makokha</li> </ol>	<p><b>WRC Upper</b></p> <p><b>Rappoteurs:</b></p> <ol style="list-style-type: none"> <li>1. Wayne Mark</li> <li>2. Ruphin Naya</li> <li>3. Vivian Akoth</li> </ol>
<p><b>Paper Presentations</b></p> <p><b>Subtheme 3:</b> GIS in Governance and Resource Management</p>	<p><b>Topics and Presenters</b></p> <ol style="list-style-type: none"> <li>1. A GIS-based approach to delineating the areas of a lake that are suitable for cage fish culture - <b>Aura Christopher</b></li> <li>2. Use of GIS technologies in data management and flood monitoring by the Water Resources Authority (WRA) - <b>Kennedy Ochieng</b></li> <li>3. GIS Based Flood Vulnerability and Flood Risk Mapping (Case Study of the Lower Nzoia River Basin) - <b>George Chilli</b></li> <li>4. GIS and Earth Observation Technologies for Water Resources Mapping in Kenyan Rangelands-The Critical Micro-Level - <b>Lapezoh O. Abisai</b></li> <li>5. Erosion Risk Mapping for Sub Basins in Nzoia Watershed, Kenya - <b>Ngessa Reuben</b></li> <li>6. Multi-Criteria based watershed prioritization for soil and water conservation planning in Gotu watershed, Awash River basin, Ethiopia - <b>Tesfaye Wasihun</b></li> <li>7. GIS based Multi criteria Analysis in Mapping potential for Irrigated Agriculture – <b>Muema Victor</b></li> <li>8. Mapping Small Water Bodies from the Landsat Image Collection Using Google Earth Engine- James <b>Wanjohi Nyaga</b></li> <li>9. Role of GIS in Planning, Management and Development of Water Resources- Chepng'etich Karen</li> <li>10. GIS Analysis of Solid Waste Management System and Design of an Engineered Sanitary Landfill for Nyeri Municipality? - <b>Esther</b></li> <li>11. GIS and Master Planning - <b>Peterson Kinywa</b></li> </ol>	<p><b>Subtheme Chairs:</b></p> <ol style="list-style-type: none"> <li>1. Mr. Jacob Gitonga</li> <li>2. Ms. Evelyn Nyakundi</li> </ol>	<p><b>WRC Lower</b></p> <p><b>Rappoteurs:</b></p> <ol style="list-style-type: none"> <li>1. Lilian Mutangili</li> <li>2. Emily Nanjala</li> <li>3. Morris Mathu</li> </ol>



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<b>Paper Presentations</b>  <b>Subtheme 7:</b> Use of cloud facilities and big data in the EO of water	<b>Topics and Presenters</b> <ol style="list-style-type: none"> <li>EO Africa Innovation Lab: Design principles and key features- <b>Dr. S Grigin</b></li> <li>NDWI change analysis of Likoni Ferry region of Mombasa as a step towards addressing the increasing accident occurrences in the area - <b>Hussein Adnan</b></li> <li>Remote sensing for near-real time monitoring of floods - <b>Pauline Wanjiku</b></li> <li>Water Observations from Space (WOFS) – <b>David Oongo</b></li> </ol>	<b>Subtheme Chair:</b> Ms. Margaret Kasuki	<b>WRC Lower</b>  <i>Rappoteurs:</i> <ol style="list-style-type: none"> <li>Lilian Mutangili</li> <li>Emily Nanjala</li> <li>Morris Mathu</li> </ol>
4.30pm	<b>Health Break and Departure</b>		
<b>Day 2: Friday, June 25 2021</b>			
8.30-9.00 am	<b>Arrival and registration</b>	Ms. Caroline Kibui	<b>WRC Upper</b>
	<b>9.00-10:00am</b>		
<b>Panel discussion 4</b>	<ol style="list-style-type: none"> <li><b>Dr. Mark K Boit</b> - (PhD, MISK, MEIK) – Dedan Kimathi University</li> <li><b>Prof. Faith Njoki Karanja (MISK), LS(K)</b>, University of Nairobi Building Capacity for Resource Mapping in Kenya: Case Study Kenyan Universities.</li> <li><b>Dr Betty Alosa Mulianga</b>-Kenya Agricultural and Livestock Research Organization (KALRO) – Director Sugar Research Institute</li> <li><b>Eric Nyadimo</b>, MISK, Licensed Surveyor(K), Managing Director, Oakar Services Ltd</li> <li><b>Dr Joshua Cheboiwo</b> – Director , Kenya Forestry Research Institute</li> </ol>	<b>Mr. Kennedy Riaga</b>	<b>WRC Upper</b>  <i>Rappoteurs:</i> <ol style="list-style-type: none"> <li>Wayne Mark</li> <li>Ruphin Naya</li> <li>Vivian Akeoth</li> </ol>
	<b>10.00-10.30 am</b> <b>Health Break</b>		
	<b>10.30-1.00 pm</b>		



<p><b>Paper Presentations</b></p> <p><b>Subtheme 4:</b> Satellite Meteorology and Global Climate</p>	<p><b>Topics and Presenters</b></p> <ol style="list-style-type: none"> <li>1. Causes and Social Economic impacts of the Rising Water Levels in Great Rift Valley Lakes, Turkwel Gorge Dam and Lake Victoria – <b>Prof Simon Onywere</b></li> <li>2. Climate change Influence on Protected Areas; A case study of Maasai Mara National Game Reserve (MMNR) Kenya - <b>Rotich Laban</b></li> <li>3. Runoff estimation for Nzoia basin using NASA’s geos-5 satellite data - <b>Stephen Mureithi</b></li> <li>4. An Analysis of the Resilience of the Voltherbeek to Flooding During Extreme Rain Events - <b>Simon Ndeweni</b></li> <li>5. Use of GIS in modelling the water balance dynamics using climatic, bio-physical and anthropogenic variables. A case study of Upper EwasoNgiro River Basin, Kenya –<b>Dancan Maina</b></li> <li>6. Hydroclimatic extremes in the Limpopo River Basin, South Africa- <b>Dr. Joel Botai</b></li> <li>7. A multi-sensor approach to water quality monitoring of In-land lakes of East and Southern Africa- <b>James WanjohiNyaga</b></li> <li>8. Role of GIS in Environmental Impact Assessment ( EIA) process- <b>Paul Rarieya</b></li> <li>9. Unprecedented rise in water levels in Kenyan lakes’-<b>Ann Gichuhi</b></li> </ol>	<p><b>Subtheme Chairs:</b></p> <ol style="list-style-type: none"> <li>1. Mr. Patrick Murunga</li> <li>2. Mr. Paul Rarieya</li> </ol>	<p><b>WRC Lower</b></p> <p><i>Rappoteurs:</i></p> <ol style="list-style-type: none"> <li>1. Lilian Mutangili</li> <li>2. Emily Nanjala</li> <li>3. Morris Mathu</li> </ol>
<p><b>Paper Presentations</b></p> <p><b>Subtheme 2:</b> Water Utility and Infrastructure Mapping</p>	<p><b>Topics and Presenters</b></p> <ol style="list-style-type: none"> <li>1. Using ArcGIS Field Maps with Trimble Catalyst for more accurate field data collection - <b>Willy Simons</b></li> <li>2. MajiData- The Database of Kenyan Water Sector - <b>Karanjah Daniel</b></li> <li>3. The urgency to address sanitation challenges in Kenya - <b>Leonard Sida</b></li> <li>4. Application of GIS in management of NRW (Non-Revenue Water) - <b>Salome Cherotich, Isaac Rono, Kiprono Boniface</b></li> <li>5. Embracing open-source packages in mapping out water &amp; sanitation infrastructure - <b>Erastus Maina</b></li> <li>6. Application of GIS Technology in Non-revenue water reduction a case study KEWASCO – <b>Kikwai Kiprono</b></li> <li>7. Utilizing Mobile Mapping for Improved data collection Process – <b>AfandiAsenath</b></li> <li>8. Waterfund Water Utility and Infrastructure Mapping Overview – <b>Mungai Ibrahim</b></li> <li>9. Ideal mapping workflows for spatial data preparation- <b>Eric K Wamiti</b></li> <li>10. GIS &amp; RS in Mapping Water Infrastructure- <b>Joel Karimi</b></li> </ol>	<p><b>Subtheme Chairs:</b></p> <ol style="list-style-type: none"> <li>1. Mr. Simon Ndeweni</li> <li>2. Ms. Beatrice Langat</li> </ol>	<p><b>WRC Lower</b></p> <p><i>Rappoteurs:</i></p> <ol style="list-style-type: none"> <li>1. Lilian Mutangili</li> <li>2. Emily Nanjala</li> <li>3. Morris Mathu</li> </ol>



11. Classification and Mapping of Water distribution network using an android based application-  
*Miriam Njoroge*





<p><b>Paper Presentations</b></p> <p><b>Subtheme 5:</b> Application of GIS &amp;EO tools in supporting Water Resources Assessment</p>	<p><b>Topics and Presenters</b></p> <ol style="list-style-type: none"> <li>Flash Flood Forecasting and Monitoring using open sources Earth Observation data with Regionalized EF5 Hydrological model for Eastern Africa. – <b>Calvince Wara</b></li> <li>Application of GIS &amp;EO tools in supporting Water Resources Assessment -<b>Mr. Charles Mwangi, Major Andrew Nyawade</b></li> <li>An Integrated Hydrodynamic Modeling with Spatio-Temporal Changes in Land Use/Cover and Socio-Economic Factors of a River Basin: Case Study of River Kuja Basin, Kenya - <b>Ogembo Vincent</b></li> <li>Application of EO and GIS in Borehole Site Location - <b>Odero Dan</b></li> <li>Synthetic Aperture Radar (SAR) for flooded vegetation detection along Lake Nakuru riparian - <b>Osio Anne</b></li> <li>Pollution Risk Assessment of Groundwater at Kamkuywa Market Center, Bungoma Using Geospatial Technology - <b>Wechuli Dinah</b></li> <li>Developing a Protocol for Suitability Assessment for Rainwater Harvesting - <b>Robert Chirchir</b></li> <li>Assessment of the vulnerability of Baricho aquifer to seawater intrusion in Bahari - <b>Morris Mathu</b></li> <li>Application Of GIS in Investigating Groundwater Quality; Case Study of Syokimau and Its Environs – <b>Nanjala Emily</b></li> <li>Determination of causes of reservoir sedimentation using GIS and remote sensing: a case study of Kalundu dam in Kitui county, Kenya - <b>Margaret Kasuki</b></li> <li>Modelling Reservoir Chlorophyll-a, TSS, and Turbidity Using Sentinel-2A MSI and Landsat-8 OLI Satellite Sensors with Empirical Multivariate Regression- <b>Noor Kimtai</b></li> <li>The use of GIS and EO for groundwater modeling: A case study of the Kenya Rift Valley Aquifer Systems- <b>Patrick Murunga Wakhungu</b></li> <li>Spatial Surface Water Flows Estimation Using Quantitative Geomorphology and SWAT in Amala River, Mara Basin- <b>Samuel M. Kinyanjui, Japheth O. Onyando and Raphael M. Wambua</b></li> <li>Application of Variable Infiltration Capacity (VIC) model to Support Water Resources Management in Rufiji Basin, Tanzania. - <b>Felix Kasiti</b></li> </ol>	<p><b>Subtheme Chairs:</b></p> <ol style="list-style-type: none"> <li>Mr. William Oduor</li> <li>Ms. Dorice Situma</li> </ol>	<p><b>WRC Upper</b></p> <p><b>Rapporteurs:</b></p> <ol style="list-style-type: none"> <li>Wayne Mark</li> <li>Ruphin Naya</li> <li>Vivian Akoth</li> </ol>
<p><b>1.00-2. 00pm</b> <b>Lunch break</b></p>		<p><b>WRC Restaurant</b></p>	
<p><b>2.00-4.00pm</b></p>			
<p><b>Official Closing Ceremony</b></p>	<p><b>Symposium Resolutions- Subtheme Chairs</b></p> <p><b>Closing Remarks:</b></p>	<p>Prof. Patrick O. Hayombe, PhD</p>	<p><b>WRC Upper</b></p>



	Brig (Rtd) Stephen Njung'eKihu, EBS, Chairperson, Kenya Water Institute Governing Council		<b>Rappoteurs:</b> 1. Wayne Mark 2. Ruphin Naya 3. Vivian Akoth
	Irrigation Secretary: <b>AboudMoeva</b>		
	Water Secretary: <b>Eng. S.A.O. Alima</b>		
	Principal Secretary: <b>Mr. Joseph W. Irungu, CBS</b>		
	Chief Administrative Secretary: <b>Dr. Andrew K. Tuimur, CBS</b>		
	<b>Vote of Thanks</b> Mr. Kennedy Riaga Deputy Director Corporate Services, Kenya Water Institute	<b>Moderator:</b> Mr. Kennedy Riaga	
<b>4.00pm</b> <b>Health Break and Departure</b>			

Symposium Committee Members	Symposium Planning and Organising Teams Organisation	Symposium Secretariat	Organisation
Eric Wamiti	Kenya Water Institute	Eric Wamiti	Kenya Water Institute
Patrick Murunga	Kenya Water Institute	Patrick Murunga	Kenya Water Institute
Beatrice Langat	Kenya Water Institute	Beatrice Langat	Kenya Water Institute
Leonard Makokha	Kenya Water Institute	Leonard Makokha	Kenya Water Institute
Stella Rotich	Kenya Water Institute	Stella Rotich	Kenya Water Institute
Edwin Wachira	Kenya Water Institute	Edwin Wachira	Kenya Water Institute
Lilian Mutangili	Kenya Water Institute	Lilian Mutangili	Kenya Water Institute
Simon Ndeweni	Kenya Water Institute	Simon Ndeweni	Kenya Water Institute
Catherine Mutwiwa	Kenya Water Institute	Catherine Mutwiwa	Kenya Water Institute
Samuel Kasuni	Kenya Water Institute	Samuel Kasuni	Kenya Water Institute
Paul Rarieya	Kenya Water Institute	Paul Rarieya	Kenya Water Institute
Naya Ruphin	Kenya Water Institute	Naya Ruphin	Kenya Water Institute
Elly Ochere	Water Sector Trust Fund	Wayne Mark	Kenya Water Institute
Calvince Wara	Regional Centre for Mapping of Resources for Development	Moses Kipsang	Kenya Water Institute
Lucy Chepkosgei	Regional Centre for Mapping of Resources for Development	Vivian Akoth	Kenya Water Institute
Asneth Afandi	Oloolaiser Water and Sewerage Company	Epha Ayoti	Kenya Water Institute
Walter Ng'eno	Thika Water and Sewerage Company Limited	Stella Karanja	Kenya Water Institute
Agatha Njuguna	Water Resources Authority	James Mutio	Kenya Water Institute
Joel Karani	Nyanyuki Water and Sanitation Company Limited	Jorum Muli	Kenya Water Institute
Eng. Victor Njeru	Ministry of Water, Sanitation and Irrigation	Damaris Ndanu	Kenya Water Institute
Rodgers Okoth	Kampozone Center for Information and Management	Morris Mathu	Kenya Water Institute
Emily Electine Mukoye	Kericho Water and Sanitation Company Ltd	Emily Nanjala	Kenya Water Institute
Rasto Chepkwony	Kericho Water and Sanitation Company Ltd	Doreen Moraa	Kenya Water Institute
		George Maina	Kenya Water Institute
		Henry Kobia	Kenya Water Institute



## SHORT COURSE PROGRAMS

### WATER GOVERNANCE TRAINING

The Kenya Water Institute (KEWI) in collaboration with the Ministry of Water, Sanitation and Irrigation has developed a **Water Governance Course**. The training will be facilitated by Water Experts from KEWI and the Water Sector.

**Target Group:** Senior Ministry Officials, Managing Directors, Technical and Commercial Managers, Senior Officers in Water Companies, Water Works Development Agencies, County Government Water Officers, Water Professionals and Senior Officers in Institutions under the Ministry of Water, Sanitation and Irrigation.

**Objectives:** increase insight in the legal, political and institutional frameworks affecting water governance in Kenya, enhance knowledge, skills and principles of integrated water governance, promote acquaintance with assessment tools and new approaches for dealing with the challenges of water governance and create a discussion on effective Water Governance in Kenya among others.

**Cost:** Thirty Thousand Kenya Shillings Only (Kshs. 30,000/=) which will cater for tuition including training materials and certification. Payment shall be made through:



### BASIC PLUMBING PROGRAM

KEWI is keen to promote the Government's Big Four Agenda by training, evaluating and certifying practicing professional plumbers that will allow them to register as plumbing contractors. A **Basic Plumbing Program** targeting interested youth in plumbing and those with plumbing knowhow in all



the 47 Counties to give them skills and certification necessary for the various forms of employability in the Plumbing Industry has been developed. Plumbers who have been practicing and providing the services without certification, will have an opportunity to be trained, assessed and evaluated thereafter issued with the necessary certification. As our valued stakeholder in the Water, Construction and Building Sectors and fellow colleagues in implementing the Big Four Agenda, we call upon your



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Institution to mobilize and/or sponsor interested youth groups for training by KEWI for the Basic Plumbing Course program.

## ENTREPRENEURSHIP TRAINING PROGRAM



KEWI in collaboration with KIPYA and DOSHI Water have developed and rolled out an entrepreneurship training program for Micro, Small and Medium Enterprise (MSME) investors in the pipe



business. This course is aimed at investing in world class piping solutions.





Chairperson, KEWI Governing Council with Management

