



## EDITORIAL

***It's in our best interest to ensure that mining activities become environmentally sustainable***

**B**ringing local miners to know and assume their role and responsibility in undertaking sound environmental management and rational use of natural resources is very crucial as far as achieving a sustainable development for our country is concerned.

This is due mainly to the fact that in spite of it being a source of invaluable wealth – minerals – for economic and industrial development, mining has potential effects on human and environmental well-being.

We need to hereby note that mining, unlike other industrial activities, involves for the better part excavation of the surface and subsurface. And, in so-doing the exploitation of these non-renewable mineral resources could, if not checked, result into severe and irreversible environmental impacts that hamper needs of present without sparing those of future generations.

It's in this regard that REMA has for the recent past months come out, once more, to emphasize the need to adhere to the guidelines on Strategic Environment Assessment (SEA) and Environmental Impact Assessment (EIA).

The former is a decision-making support tool for sector policies, plans and programmes to ensure appropriate consideration of the environment, while the latter provides for prevention and mitigation of adverse impacts, and the rational use of natural resources to sustainably maximize the benefit of socio-economic development.

To date, we recognize and commend quite impressive progress that the mining sector has made vis-à-vis compliance with environmental regulations and upgrading the way they conduct their work.

However, despite the creditable progress, majority of our miners, and specifically the section of individuals who are at the helm of day-to-day mining activities could still be found to lack thorough understanding of the two crucial instruments in the quest for Environment and Climate Change Mainstreaming; among other issues.

The situation could, as a result, create a gap which REMA filled by training mining inspection Officers and representatives of the Rwanda Mining Association at Provincial and District levels countrywide.

The two-day training concluded on March 27th, covered for the better part the guidelines for SEA and EIA; among other things.

Owing to this, we are proud our miners now understand why every citizen and the country has paramount interest in having their business comply with every requirement to become more environmentally sustainable.

And, of course, during our then training, they pledged the commitment to do much well than before, by minimizing potential impact on the surrounding environment.

There is no doubt that the outcome will be positive thanks to the training, now that they are aware that long-term profits can only be maximized by not compromising the environment.

But it remains a collective duty to make sure that our actions and businesses take into account environmental implications for a green and sustainable nation.

Enjoy reading our Newsletter issue 26.

**Dr. Rose MUKANKOMEJE**

**Director General, Rwanda Environment  
Management Authority (REMA)**



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**Rwanda Environment  
Management Authority  
(REMA)**

**Gasabo District  
Kigali City - Rwanda  
P.O. Box 7436 Kigali  
Tel: + 250 252 580 101  
<http://www.rema.gov.rw>**

# Residents urged to take protective measures amid worrying lightning strikes

By Johnson Kanamugire

**A**s the lightning hazard effects intensify due mainly to climate change, the general public has been urged to install lightning protection systems in their residences along with adopting mitigation measures to avoid loss of lives and property damages.

*Residents in highly lightning-vulnerable parts of the country are the most alerted, and advised to regularly take note and act on the weather forecasts delivered to them by the national meteorology agency.*

Anthony Twahirwa, the expert at Rwanda Meteorology Agency said that lightning strikes tend to take a worrying trend whereby most rains fall in storms and lightning with stronger destructive power, hence the need for protection.

Lightning hazards are for the better part inconsistent and less predictable, Twahirwa said. "Sometimes it is hard to know when and where it's likely to strike."

Statistics by the Ministry of Disaster Management and Refugee Affairs (MIDIMAR) show that 180 people have been killed and more than 250 injured from lightning strikes since 2011. More than 12 people have so far been killed as of January this year, without mentioning loss of properties, farm animals and infrastructures.

This makes lightning top among the worst weather hazards in Rwanda claiming more human lives and property damages; as compared to floods, violent winds and others.

Many occurrences are registered in the Western Rutsiro District and other parts of the Eastern Province.



*Lightning ranks top among the worst weather hazards in Rwanda, claiming more human lives and property damages.*

Data from the meteorology service indicate that utmost weather changes Rwanda experiences are as a result of winds convergence and cyclone movements in the Indian Ocean, although the risks of lightning are highly linked to the country's topography.

However, the map of the US-based National Aeronautics and Space Administration (NASA) places Rwanda in an area with the highest lightning activity in the continent.

Consequently, there are fears that without imperative protection measures more lightning strikes could take a toll on Rwandans and their hardly earned properties.

MIDIMAR officials explain that owing to this call for urgent response, the Government held a meeting with experts and companies that deal in lightning protection services which deliberated, among others, the possibility for installing lighting rods to stop this alarming weather hazard.

The last year's meeting resolved to go about the issue starting by, at least, the most vulnerable Districts, in a pilot phase prior to expanding the protection to the other parts of the country.

"We have planned a joint field visit to Rutsiro with interested companies that deal in lightning protection services.





*One of the houses destroyed in rainstorms in the past few months*

We shall examine the terrain and what it might take to protect as many homes and infrastructures as possible, so that the rest of the area and the country can go ahead and do the same in their respective areas,” said Jean Baptiste Nsengiyumva, MIDIMAR’s director of the Disaster Risk Reduction and Preparedness Unit.

“There could be possibility of putting up lightning conductors for variety of models namely for grouped settlements or for a single house depending on people’s options. Rwandans could then start putting up lightning rods in homes, schools, churches and other structures,” he added.

Concerns, however, could arise as to affordability of the lightning protection systems whose prices range between Frw1.5 to Frw2 million for a small home, and about Frw2 million for a large home or structure.

But MIDIMAR said that the Government is seeking to subsidize such materials in a proposed law that was sent to cabinet for approval.

Equally, Nsengiyumva underscored that the Ministry would mobilize logistics needed to help poor sections of the population to get lightning protection, while well-to-do individuals can go ahead and purchase the service in their respective homes.

Nevertheless, experts warn that in addition to installing lightning shielding systems, the public ought to avoid acts that expose them to lightning in case of rain, namely taking shelter under the trees, holding metallic tools and swimming.

Scientists predict that given the scarier potential impacts of warming temperature associated with climate change, weather patterns could come with more hazards than initially anticipated.

Worldwide, 16 million lightning storms are believed to occur every year, killing roughly 10 000 people.



# REMA, KVCS partnership to involve street vendors in the fight against banned polythene bags

By Peter Muyombano

**W**omen street vendors will take a lead role in the renewed fight against the use of banned polythene bags as per the recently launched joint partnership between Rwanda Environment Management Authority through the Poverty Environment Initiative (PEI) and Kigali Veterans Cooperative Society that seeks to bring alternative for packaging. Manufacturing, importation, use and sale of polythene bags were, since 2008, banned in Rwanda as part of the country's wider policy to maintain a clean, healthy and wealthy environment.



Street vendors, KVCS staff with REMA and Army officials at a joint partnership launch in Kigali

However, separate spot checks conducted in Kigali City and other business hubs across the country revealed that some retail businesspeople namely women street vendors illegally use polythene bags for packaging fruits, vegetables and other food related items for sale.

In response, Rwanda Environment Management Authority (REMA) signed a partnership with Kigali Veterans Cooperative Society (KVCS), a company that manages car public parkings, through which

street women vendors will be provided with environmentally-friendly alternatives for packaging.

The locally manufactured net-made material for packaging will be given free of charge at the start, but street vendors will later have to pay Frw230 for each, a price makers said was reached based on the material utility and durability.

REMA believes that giving street vendors alternative for packaging will significantly

make them desist from using banned polythene bags.

"We have been observing street women vendors in streets and car parkings selling fruits and vegetables packaged in polythene bags. This partnership seeks to put them in cooperatives to formalize their business as we give them these net-made materials for packaging," said REMA's Director General Dr. Rose Mukankomeje while officiating the launch of the use of net-made bags for packaging, on February 27th.





*Women street vendors pledge role in making the country free of polythene bags*

Dr. Mukankomeje also said that the fight against banned polythene bags had so far led to fruitful results, but insisted that united efforts are still needed to make Rwanda a free-polythene bags nation.

KVCS is normally known for charging car parking fees, where most street vendors come to meet potential buyers. Hence, it will be easy for the vendors to be provided with the net-bags since the two parties meet regularly.

KVCS pledged that they will do their best so that banned polythene bags are replaced with alternative net-made bags among street women vendors.

“Those people who still using polythene bags are also our

people. We think that we can do it better, by putting them in cooperatives which will help end that situation,” says Seka Steven, the Director General of KVCS.

As for street women vendors, the net-made package has come at a high time when most of them had failed to find alternatives, though they knew the threats of polythene bags on environment. “We are ready to use these nets. We don’t worry about the price. I hope our clients will understand and we also want to contribute to the cleanliness of our environment,” remarked Epiphane Niyigena, one of the Kigali street vendors who confessed she severally used banned polythene bags for packaging.

The newly launched net-made packages are believed to be environmental- friendly, contrary to polythene bags that are never biodegrade and toxic to the environment.

The provisions in the law n° 57/2008 of 10/09/2008 relating to the prohibition of manufacturing, importation, use and sale of polythene bags in Rwanda, provide for penalty in fine ranging from Frw5 000 to Frw100 000 to any unauthorized person who uses polythene bags.

Besides, his/her bags are confiscated, and the penalty is doubled in case of recidivism, reads the provisions.



# ESD: School learners empowered to boost environmental protection

By Deo Munyaneza

**S**chool learners countrywide are now empowered with skills to deal with environmental malpractices in respective communities thanks to the Education for Sustainable Development (ESD) initiative. The program seeks to instill environmentally-friendly best management and sustainable development practices among young generations through provision of required knowledge in the environment arena. Students, as a result, take part in community-based natural resources management activities, among other things that promote environmental conservation and sustainable livelihoods.



*Learners taking part in a greening and beautification activity*

According to Djuma Nsanzimana, Environmental Education Officer with Rwanda Environmental Management Authority (REMA), environmental and health values should be inculcated among young learners if Rwanda is to become a better place to live now and in future.

“There is a need to advance the knowledge of ESD and Green Village concept at early age for the benefit of future generations,” he underlined.

Education for Sustainable Development (ESD) program, alongside Green Village is implemented by REMA in partnership with the Ministry of Education (MINEDUC).

As a result, environment clubs were formed in schools and cells countrywide to impart greening skills and discuss key environmental concerns, as well as possible mitigation measures. Students are for the major part involved in greening activities that

minimize problems related to food insecurity, poor hygiene practice, water shortage, among others.

Rusumo Secondary School in Eastern Province, for instance, is a good example of a green and beautified school where rain water harvesting and storage systems are making the difference.

Owing to students’ ownership of the ESD Village program, the school equally embraced improved energy cooking stoves, waste





*Pupils posing at a newly-built hand washing facility, for hygiene and sanitation.*

management systems and hand-washing facilities for hygiene and sanitation.

“Environment clubs did a lot to transform this school into a good example as regards environment protection,” said Etienne Nginshuti, the school Headmaster thanking REMA for such cordial partnership.

Additionally, some students at Groupe Scolaire Sainte Marie went ahead to practice the acquired skills back in their families.

Delphine Uwase, for instance, built gardens and planted tomatoes,

fruit trees, green pepper and cabbages, among other crops that enabled her to make money out of the produce.

“With the trainings I got from school I’ve been able to do crop gardens at home. I can now buy clothes, school materials and go about small projects with the revenue,” she said adding that she is ready to share skills with neighboring families.

REMA aspires for making ESD concept replicated in as many Rwandan villages as possible to ensure efficient use of the country’s

resources to lead to productive livelihoods and improve quality of people’s lives.

To date, with the participation village members in Rubaya, Bwiza and Kigende respectively, noteworthy progress were made towards transforming these areas into ESD Village models.

Reached successes are as a result of rain water harvesting and storage system at every household; proper latrine and hand washing facilities; use of improved energy cooking stoves, and homestead greening and beautification among other best practices fully embraced by the villagers.

Residents affirm that their life remarkably changed after they embraced ESD practices “For so many years, our village (Kigende) experienced prolonged water shortage, our families always suffered from diseases due to poor hygiene and sanitation practices.

But now life has changed,” openly witnessed Annonciata Mukantwari a resident in Kigende who benefited a water tank for rainwater harvesting, among other in assistance and skills REMA provided in line with the program.

ESD and Green Village program are key priorities in line with the national Green Growth Strategy, Vision 2020 and Economic Development and Poverty Reduction Strategy (EDPRS II) to sustainably improve quality of life of the Rwandan population.

Emphasis is now put on making sure that the program ownership spirit among beneficiaries is sustained.

## Rwandan prisons target a 100% biogas use for environmental protection

By Peter Muyombano

**E**fforts to curb tree cutting for environmental protection could bear more fruits in the near future as Rwanda's prisons plan to adopt an environmentally-friendly cooking alternative that could end firewood consumption.

Rwanda Correctional Service (RCS) has committed to gradually replace firewood for cooking with biogas to comply with the Government's urge to institutions like schools and hotels among others that feed a big number of people to use renewable energy options in order to save available forest resources and environment.



*A biogas facility at the Rubavu Prison*

Biogas is currently used in 12 correctional facilities across the country, according to RCS officials, which has significantly reduced the quantity of previously needed firewood.

The shift has equally brought down the cost incurred while buying firewood, besides curbing related environmental hazards.

However, despite the notable gains from the shift, the use of biogas in prisons is yet to attain 100 per cent,

which RCS said it has undertaken as a next challenge.

"The target is that all prisons will soon use biogas 100 per cent," said Chief Inspector of Prisons Michael Kamugisha, the RCS spokesperson.

"Biogas are now installed in all prisons except for Nyarugenge Prison (commonly known as 1930), which is set to be relocated to Mageragere soon."

The Government of Rwanda considers biogas as an important

alternative renewable energy that could, if embraced fully amongst citizens, not only contribute to reducing the amount of Green House Gases released in the atmosphere but also mitigate effects of climate change arising from deforestation.

"The environmental gains of using biogas in prisons are many, and cutting firewood use saves a lot," observed Dr. Rose Mukankomeje, Director General of Rwanda Environment Management Authority (REMA) who also commended the Prisons' move, saying it would sustain forestation which contribute to producing proper air, retain the soil against erosion and attract a conducive climate.

"Using biogas in prisons will first of all reduce firewood bundles that were used; second it will cut emissions, and then reduce the risks like diseases subsequent to air pollution," Dr. Mukankomeje added.

As per the experience, officials at Rwanda Correctional Service said they have been able to save at least





*Experts call for proper and regular management of biogas plants*

Frw200, 000 daily with the biogas facility recently installed in the Rubavu Prison.

As of February 2015, the use of a four-digester 400 cubic meter biogas plant in Rubavu prison has reduced bundles of firewood from 16 to 7 bundles daily, a reduction of 60 percent.

Similarly, the Gasabo Prison in Kimironko currently using biogas at 99% level has reduced firewood consumption down from 45 bundles to one bundle daily. "It, therefore, made it easy to recover the money the prison management had earlier spent on installation activities," CIP Kamugisha said.

Yet, RCS officials have not given the time limit as to when the 100 percent biogas use will be achieved. Meanwhile, experts advise that it would require that the installed biogas plants be consistently and properly managed for users to get to desired outcome.

Eng. Martin Rurangirwa, a Tumba College of Technology staff and biogas facility machinist said that in the context of Rwanda's prisons, biogas facilities can be designed in accordance with the amount of waste produced.

For the time being, majority of Rwandans still rely on wood fuel namely charcoal and firewood

for cooking. The 2012 National Communication Report on Climate Change indicates that the consumption of energy from biomass is estimated at 0.48Kg per person per day for wood charcoal.

As a result, the situation exacerbates pollution and environmental related risks, thus calling for quick adoption of environmentally-friendly cooking options among possible curbing measures.



# Delayed rehabilitation of former industrial park raises environmental and health concerns

By Deo Munyaneza

**U**ntidly mix of toxic metal wastes, obsolete industrial materials and equipment is what is left at the former Gikondo industrial park after the relocation of some businesses to a designated Kigali Special Economic Zone (KSEZ); posing serious environmental and health concerns.

When reaching the area, one observes bunches of old machines, electrical equipment such as old fashioned cables and home residues, among others disorderly discarded along the streets and vacated plots.

As a result, residents in the neighborhood fear for their health.



*A mix of metal waste and industrial garbage scattered at the former Kigali Industrial Park*

“Mixed garbage on the ground constitutes a fatal health hazard for this neighborhood,” lamented Jacqueline Uwabyeyi, a mother of six whose child lost a finger when picking the rest of steel bales in the garbage last year. “People get injured while collecting the rest of residues for sale to local recycling factories,” she added.

Residents, furthermore, decry potentially-growing risk arising from the toxicity the poorly

disposed of liquid and metal waste cause to the area’s soil, ground and the surface water.

The highly populated Gikondo area has always been home to different types of light and heavy industries and factories beside petroleum warehouses and garages; among others. The Government took a decision to relocate them to the new Kigali Special Economic Zone due to environmental and health concerns since the businesses

were not only polluting but also causing harm to environment.

It was envisaged that the wetland could be restored to its natural state after the relocation, although the latter took too long time to be completed. The nearby residents, consequently, express concerns that the area could harbor criminals if nothing is done to at least enclose the vacated plots.

As for the business owners, dealing with the rest of mixed waste is hindered by lack of sufficient budget as the relocation exercise is done in hurry in order to meet the set deadline.

However, Kigali City planners said the first relocation phase expired on February 2014, whereby only fourteen of about a hundred businesses relocated, but insist all of them ought to vacate by next year.

John Mugabo, the City Waste Management Expert said it is after the relocation exercise that proper rehabilitation activities of the area will commence.





*Poorly disposed of obsolete metal waste at a vacated plot in Gikondo.*

According to Rwanda Environmental Management Authority (REMA) the Gikondo wetland will be restored to its natural state and assume water retention and purification functions. But, firstly, a study will be conducted to reveal the extent of toxicity and harm caused to the environment locally and regionally.

“Most of infrastructures in Gikondo lacked proper solid and liquid waste disposal which in turns polluted the atmosphere, soils, water, animal and human beings. The relocation of businesses in the park was the main concern,” said Remy Norbert Duhuze, REMA’s Director of Environmental Regulations and Pollution Control.

In the meantime, Mr. Duhuze warned people to avoid physical contact with the residues as there might be sharp metals and toxic or inflammable chemicals among others that could take away their life.

Nevertheless, given the relocation deadline which is

approaching, also given a big number of businesses that are yet to relocate, there is a need to set a systematic approach to make the relocation quick and complete by the due deadline and ensure the rehabilitation of the wetland for the wellbeing of environment.





# Green Growth Plan: Sectors on track to meet set objectives

By Johnson Kanamugire

**W**ith barely four years following the adoption of the National Green Growth and Climate Resilience Strategy, efforts in delivering on set objectives have started paying off, with players pledging to constantly play their part.

Initiated with a general objective of ascertaining achievement of sustainable economic development without degrading the environment, the National Green Growth and Climate Resilience Strategy comprises of vital requisites towards the end goal which is making Rwanda a developed climate-resilient and low-carbon economy by 2050.



Republic of Rwanda

## Green Growth and Climate Resilience

National Strategy for Climate Change and Low Carbon Development

Kigali

October 2011



Notable achievements thus have been realized with regard mainly to mainstreaming environment

implications in sectors' daily businesses, alongside addressing risks associated with climate

change, population growth and rising oil prices in lined-up action plans.

To start with, for instance, the agriculture sector, Rwanda's biggest source of Green House Gas (GHG) emissions along with the Energy and Transport Sectors, has done remarkably well in terms of sustainable land use and water resource management to minimize potential negative impact on environment.

In many parts of the country, land consolidation and crop intensification approaches have revolutionized agricultural practices by use of appropriate technologies that made easy both valley and hillside irrigation.

Plausible examples have since been noted in key Eastern breadbasket Districts namely Kayanza and Gatsibo among others, where farming on merged terraced land contributed to job creation in what made farmers' cooperatives get boosted rice and horticulture produce for both the local market and export.



With the awaited installation of solar-power generated irrigation, the agriculture Sector will also bring down the demand for imported non-renewable oils for fuel.

Likewise, Rwanda expects the demand of inorganic fertilizers responsible for a significant proportion of GHG Emissions to go down owing to the implementation of organic agriculture on the rise.

### ***Coping with oil spikes***

As regards the energy sector, top on the agenda has been making sure that the development with low carbon domestic energy resources and practices is achieved.

Positive developments were so far made in reducing dependence on imported oils for power generation in order to cut the burden it causes on climate change.

The country recently launched solar and hydropower plants while others are still in pipeline. They are, but not limited to the 28 megawatt capacity Nyabarongo hydropower plant which has lit 150 homes; the Gigawatt Global, a 8.5 megawatt solar power plant recently launched in Eastern Province, and Kivu Watt Methane gas project expected to contribute 25 megawatt to the national grid.

This could see the boost of other clean energy resources together with industries' endeavor to operate in a low carbon way so as to provide domestic energy security, reduction of greenhouse gas emissions while equally boosting the green economy.

For example, the use of improved cooking stoves, biogas and other renewable energy know-hows in prisons, schools, hotels, factories and others big consumers of energy is hailed among the things that has cut considerably on pollution while allowing reuse of some wastes and ensuring high returns.

Besides reducing GHG emissions, more has been done with regard to boosting green and ecosystem services to which the country's tourism sector -- and largest earner of foreign exchange -- depends.

Efforts were recently enhanced in recovering endangered grey crowned cranes, the rare bird species that were on the verge of extinction; over and above promoting birds watching tourism owing to prior wetlands and forests conservation efforts.

As we speak, there are developments in many sectors vis-à-vis achieving the four-year old National Strategy on Climate Change Resilience and Low Carbon Development.

The strategy emphasizes among other things the need to develop an efficiently resilient transport sector, which explains why the Government recently made vehicle emissions standard testing compulsory to all motorized vehicles.

Further positive developments are yet to come given the ownership of line-up actions by sectors and the general public.

The adoption of environment and health best practices through different green initiatives namely the Green village initiative, have so far led to sizable success, with residents embracing an environmentally-friendly lifestyle and other practices that minimizes risks on environment in both the rural and urban context.

To this point, the Government of Rwanda believes that the country's ability to steadfastly respond and adapt to changes in the climate and resulting impact is achievable through sustained commitment, cohesive efforts and ownership of the development pathway that put environment implications at the core.

## Training of Mining inspectors and Rwanda Mining Association members on Environmental Impact Assessment (EIA) and Strategic Environment Assessment (SEA) Guidelines, on March 26th-27th, 2015



## Ministry of Trade and Industry (MINICOM), Rwanda Environment Management Authority (REMA) and Rwanda Resource Efficiency and Cleaner Production Centre awarding best performing industries in Resource Efficiency and Cleaner Production techniques, on April 2, 2015.



## Street vendors and staffs from Rwanda Environment Management Authority and Kigali Veterans Cooperative Society at a launch of a joint partnership that seeks to enhance the fight against banned polythene bags. Street vendors were given eco-friendly alternative for packaging.

