EDITORIAL

Environment protection should be at the core of all we do over years

This is for Rwanda Environment Management Authority (REMA) to wish you all the best in the New Year 2013. We are very thankful for the efforts and devotion each of you demonstrated by contributing to environment protection throughout 2012 and particularly for the entire duration of the recent concluded EDPRS I.

Over this period, we appreciate that all development sectors learnt and mainstreamed environment protection in their planning; increased community ownership and informed decision making in as far as environment management and protection is concerned at all levels.

Now that following reports namely the recent Atlas of Rwanda's changing Environment: implications for climate change resilience which is a comprehensive supervision of environmental management nationwide, Rwanda has illustrated noteworthy achievements with environmental protection and management thanks to the government's efforts vis-à-vis tackling environmental degradation and climate change namely degraded ecosystems' rehabilitation and restoration, reforestation, environmental policies and regulations among other endeavors.

Although praising our previous achievement - which is vital as we head to the 2013, we however need to remind you about disasters issues namely heavy rains, lightings and floods that usually made vulnerable some country's areas also causing damages for the last few months of 2012.

Identified as most associated to human activities usually carried out without caring about environment, the government has embarked on taking urgent and sustainable solutions including the relocation of people from high-risk zones prior to rehabilitation among other measures.

From the relocation of about 700 Muhanga district families from Rongi high risk zone alongside Nyabarongo; 1222 families from Rubavu Mountain and 2115 households relocated from the Northern Ruhondo lake shores, REMA kept assisting these residents with house constructions in less risky areas, domestic animals donations, income generating activities and other kinds of assistance.

This is to indicate to you that the government strongly considers environment sector among the main drivers towards the country's medium and long-term development achievements. In place are clear legal and regulatory frameworks though still needed collective ownership and enforcement.

Besides our efforts aimed at reducing human activities related environmental degradation, we collectively need to pay attention with banned polythene still present for the time being and illegal burning activities.

Let's all understand invest in environment protection and management if we are aimed at a lasting development, the development that benefits not only those of today but the next generations as well.

We, therefore, are proud to bring to your attention the 12th online newsletter.

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Content

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THE POTENTIAL OF ORGANIC AGRICULTURE IN THE RWANDAN CONTEXT

Analysis by Laetitia Kameya Umuhoza

Organically grown fruits renowned for top quality and flavor

There is a growing recognition among policy makers that Organic Agriculture has a significant role to play in addressing the pressing problems of food insecurity, poverty, land degradation and climate change in Africa. In January 2011 the Executive Council of the African Union passed a decision on organic farming at its Eighteenth Ordinary Session. In particular, the decision EX.CL/Dec.631 (XVIII) requests the African Union Commission (AUC) and its New Partnership for Africa's Development (NEPAD), the Planning and Coordinating Agency (NPCA), to initiate and provide guidance for an AU-led coalition of international partners on the establishment of an African organic farming platform based on the best available practices; and to provide guidance in support of the development of sustainable organic farming systems and improved seed quality.

Organic farming refers to a form of agriculture that relies on techniques such as crop rotation, green manure, compost and biological pest control. Organic farmers work with natural manure and pesticides, but strictly exclude the use of manufactured (synthetic) fertilizers, pesticides (which include herbicides, insecticides and fungicides), plant growth regulators such as hormones, livestock antibiotics, food additives and genetically modified organisms.

IFOAM (International Federation of Organic Agriculture Movements) is the only international umbrella organization of the organic world. IFOAM's goal is the worldwide adoption of ecologically, socially and economically sound systems that are based on the principles of Organic Agriculture. IFOAM unites some 870 Affiliates (Members, Associates, and Supporters) in more than 120 countries. This allows IFOAM to unite, lead and assist the organic movement – all IFOAM Affiliates – in its full diversity, while providing a common voice on relevant organic issues.

IFOAM defines organic agriculture as follows: "Organic Agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic Agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved."

In Africa, IFOAM is working with the African Union, the African organic sector and other agencies in the framework of its "Organic for Africa Initiative" to help coordinate activities, increase awareness of the multiple benefits of Organic Agriculture and facilitate the integration of organic agriculture solutions and opportunities into the core of African policies and development agenda.

In Rwanda, IFOAM mainly collaborates with the Rwanda Organic Agricultural Movement

(ROAM). ROAM is a national umbrella organization which brings together producers, farmers'organizations, processors, export and import companies, NGOs and organizations that are involved in the promotion and development of the organic sector in Rwanda. Created in 2007 to realize the vision of increased incomes and improved livelihoods in Rwanda through the adoption of Organic Agriculture, ROAM has invested in education, training, extension and research in Organic Agriculture, promoting local and export marketing of organic products, advocating for Organic Agriculture, as well as attract support for Organic Agriculture in Rwanda.

Since then, organic agriculture activities in Rwanda have attracted local farmers' attention and as a result the country is witnessing several emerging initiatives.
One of these is Gako Organic Farming Center based at KABUGA. This center contributes to building capacity of low scale farmers and works with the Rwandan government and private organizations in order to promote organic agriculture practices. About seventy farmers are trained on a quarterly basis in organic farming practices.

Apart from this renowned center, many other local farmers have managed a large-scale shift to organic production. In the Northern Province for example, COOPPF, a fruits grower's cooperative, has done so. In the western province many coffee growers' cooperatives provide the international market with clean and premium quality organic coffee. Furthermore, in the Eastern Province organic farming for banana and pineapples is becoming more and more successful while the Southern Province has achieved a record on its most productive banana preference.

Benefits of organic farming for Rwandan farmers

According to many farmers' experiences on the ground, Organic Agriculture is benefiting Rwandan smallscale farmers as it was found to be more affordable and profitable than chemical agriculture.

This improved agriculture has moreover provided economic and agricultural benefits such as easy use of inexpensive organic fertilizers; top quality and quantity of the harvest, as well as improving the capacity of resilience against the effects of Climate Change.

"I choose to promote purely organic methods because they retain the soil fertility. Previously, I applied synthetic fertilizers and noticed that production declined each year and during my many years of experience I have learned to appreciate the use of organic manure. I also noticed that they are good at fighting some plantation diseases, " said one of the farmers of the Southern Province, Cyarwa sector.

"When I use chicken manure that I produce from my poultry farming I am able to get 5 tons of Irish potatoes on one hectare while I use to get not more than 2 tons per hectare using chemical fertilizers. And my products are the most favored on the market and consumed before others.

Small scale farmers prefer organic to chemical agriculture

The price doesn't matter, people like high quality products," said Jean Marie Vianney Ngiruwonsanga, an organic farmer of Rulindo District, Muhondo Sector.

Many farmers look at organic farming as the best way to increase the ability of the farming system to continue functioning when faced with the adverse effects of climate change. Organic practices such as cover crops, crop residue retention, mulching, green manure and composting make farming more drought-resistant and more resilient to extreme events.

Organic fertilizers include organic residues of plants such as pyrethrum, fertilizers produced from earthworms, Famous Red California worms from barns combined with the carpentry residues and manure from cattle stables and other livestock. For plant disease management, many products are made from available plants such as tobacco, chilli, Mary Rose, the famous Tetradenia riparia and the soap that farmers use to control pests.

"We chose the use of organic fertilizers in order to protect ourselves from potentially adverse effects coming from the use of synthetic inputs. As farmers, we know that synthetic pesticides have killed colonies of bees. To protect plants we prepare pesticides from tobacco leaves, Umuravumba "Tetradenia riparia", Tephrosia, Mukuna and other organic herbs," states Emmanuel Majoro, COOPPF members' representative.

COOPPF (Cooperative for the Promotion of Organic Fruit Plants) based in the Kinigi Sector of MUSANZE District is one of the cooperatives mentioned above that have decided to practice purely Organic Agriculture. COOPPF was created in 2006 and has been given a legal status in 2009 by Rwanda Cooperative Agency. Currently, COOPPF has 200 members among who 117 are women. COOPPF has a property of 25-30 hectares of peaches known as tomato trees.

The harvested peaches are sold mainly at local markets for 800 to 1000 Rwandan Franc while ordinary peaches are sold at 600 Rwandan Franc. The most striking thing is to find the children of farmers sitting in the peach plantations and eating the fruit directly removed from their stems. This would have been a threat to their health if the cooperative had been using synthetic products.

Organic agriculture and food security in Africa

Like in Rwanda, there are many highly convincing examples throughout the continent of the positive development and enormous progress that Organic Agriculture can bring – especially for poor farmers and their families. For example, the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Environment Program (UNEP), took food security very seriously and joined forces to contribute to the search for sustainable solutions through their Capacity Building Task-Force on Trade (CBTF). In a study published in 2008 titled "Organic Agriculture and Food Security in Africa" they undertook a research program of some 120 different organic agricultural farming systems across Africa.

The results showed that the notion of organic farming not leading to an increase of yields is a misconception. In fact the results showed in many of these organic agricultural farming systems increases in yields anywhere from 60 to 100 percent.

On the issue of food availability the study concluded that "Organic farming increases access to food on several levels. First, increased quantity of food produced per farm leads to household food security which results in all members of the household having access to enough food.

Second, the production and selling of food surpluses at local markets means that farmers benefit from high incomes, which increases their purchasing power.

Third, fresh organic produce becomes available to more people in the wider community. Finally, Organic farming enables new and different groups in the community to get involved in agriculture production and trade where previously they were excluded for financial or cultural reasons."

Organic agriculture should be integrated in Rwandan agriculture and rural development policies and action plans.

As the world population increases, sustainable food security should be every single nation's priority. This is particularly important for Rwanda which figures on the list of countries with high population pressure and where most families live for subsistence farming practiced on very inadequate arable land.

The experiences of farmers engaged in organic farming in and outside Rwanda demonstrate that Organic Agriculture has a significant role to play in addressing the problems of food insecurity, poverty, land degradation and climate change in Rwanda.

Given the affordability and multi-benefits of Organic Agriculture, it is therefore important that national policies in Rwanda do not overlook the valuable tool-kit provided by Organic Agriculture. There is undoubtedly room for substantial increase in organic production in the country so that millions of smallholder farmers and their families can move out of poverty and hunger and enjoy a better life.

Rwanda biodiversity boosts as a result of reforestation and further protection efforts

By Johnson Kanamugire

Reforestation, protected areas systems, degraded ecosystems' rehabilitation and restoration as well as trying to recover threatened species are among other endeavors that have mainly contributed to the increase of Rwanda biological diversity recorded within very few years ago. Previously endangered fauna and flora species thus found greater chances to survive and flourish owing to the national biodiversity policy in place. But for it to offer opportunities for local and national economic development, the Rwanda Environmental Management Authority, REMA calls for constant nationwide biodiversity conservation efforts.

Nyungwe forest rare Angolan colobus monkey species

Though Rwanda always came across a variety of biodiversity threats namely human activity, resource over-exploitation, habitat loss and degradation on the top of the list, the 2011 State of the Environment report 'Atlas of Rwanda's changing environment: Implications for climate change resilience', of late release, has indicated a positive step forward.

Surprisingly, the country remains home to rare and critically endangered primates species "mountain gorilla", large chimpanzee and monkey troops, in addition to being a habitat for 402 mammals, 1 061 bird species, 293 reptile and amphibian species plus about 5 793 higher plant species, the report reads.

"It's from stringent environment conservation measures that have been put in place, like the biodiversity policy and other legal frameworks that addresses the conservation of biodiversity whereby for instance, some areas like wetlands, parks, forests and other biodiversity hubs were rehabilitated and protected." highlights Dr. Elias Bizuru, a Senior Lecturer and Researcher at the National University of Rwanda.

Before, some Rwanda's forests regardless of their biodiversity repository function, were

threatened by agriculture, human settlement, illegal logging, charcoal production, bush fires, all putting their biodiversity at risk and making it hard for them to survive.

But with nationwide reforestation efforts, the country happened to reverse the situation and witnessed the recovery of many biodiversity species all through protecting as well as rehabilitating degraded ecosystems and zones for assorted biodiversity species.

To some areas like to the adjacent of Shyorongi area, of Kinyinya Sector in Kigali City, a small natural forest had always been hosting a large community of primates since long ago, but was likely to disappear down to the residents attack on the forest, and deforestation during the period starting from 1996 to about 2000.

"This forest was vulnerable due to domestic animal roaring, trees cutting for constructions, charcoal making and so forth by the local community," notifies Deogratias Barahira, a neighboring resident.

Today conversely, enlarged community of these chimp species is observed all around inside at near the afforested area. Some 4 to 5 groups of about 6 members each keep wander around bushes near the main road passing through the area to North, thanks to Rwanda's most ambitious forest restoration and reforestation efforts that made Kinyinya forest protected and made it possible for such wealth survive.

The recent rehabilitated Rugezi wetland for birdwatching promotion

The same record is being observed elsewhere countrywide since the Rwanda's planning and development visions and strategies embraced biological diversity wealth management and all aspects of environment promotion among top priorities.

Along with the EDPRS II preparations hence, REMA got on working hand in hand with all level planners as far as mainstreaming environment related issues in their activities and commitments were concerned, towards sustainable and green development.

"You couldn't believe it; reforestation helped much securing our parks, forests, lakes, islands, wetlands and many other places renowned for being home to a varsity of this wealth. Even planting just one tree or abiding by our protection regulations increases chances for the survival of the biodiversity," notifies Dr. Rose Mukankomeje, REMA Director General.

Likewise, Rugezi Wetland in the Northern Gicumbi district, once severely degraded is now a tourist attraction following its recent rehabilitation. Reforestation efforts during recent past years also increased Gishwati's forest in size.

Collective and sustained protection efforts assure benefits through ecotourism, investment opportunity and local employment.

Burning trashes not safe, here are less harmful waste handling alternatives – Experts

Illegal burning activities of vehicles' tyres in Nyabugogo valley

By Johnson Kanamugire &

Keza Munyaneza Déo

Similar to any exposure to dirt, burning rubbish is hazardous to human health as well as being subjected to many other risks including the release of air pollutants most causing harsh consequences to human health and environment in general. Public health experts recommend less harmful waste handling alternatives rather than the risk of burning practices also penalised by Rwanda's environment regulations.

Besides causing vast fire-raising also occasioning damages, burning is, for some wastes categories like those of hospitals, factories, plastics, etc; critically dangerous to the community and environmental concern because they release toxic chemicals, heavy metals, increase the risk of heart disease, and cancer.

Dr. Theobald Hategekimana, the Head of CHUK seriously cautions the burning practice as he points at it as very hazardous to both the health of those around and the entire community through the atmosphere.

"The air in the atmosphere is the first to be affected but on individual level, it undermines the respiratory system by inhaling or ingesting even a small amount of pollutants released during a backyard burn.

Children, the elderly, pregnant women, are particularly vulnerable to these pollutants," explains Hategekimana who also stresses that every garbage producer should learn to dispose them off in designated dumping areas, instead of burning them. "Burning garbage is a primary source of cancer-causing dioxins and other pollutants that enter and concentrate up through the food chain," he added.

To some countries in the world, currently priority is given to wastes recycling, reuse of those able to be transformed into useful materials. They furthermore stresses that the rest need a proper management such as landfill or any other method which could not necessarily be burning.

Rwanda's legal framework likewise, prohibits any illegal burning activity whereby its article 109 of the law determining the modalities of

Burning strictly affects human health and environment

protection, conservation and promotion of environment in Rwanda stipulates that illegal domestic rubbish burning activity such as old tyres and polythene bags attracts penalties with a fine of Rwf 10 000 to Rwf 50 000.

However still, despite these law provisions, around Nyabugogo valley in Muhima Sector in Kigali city, trashes namely tyres, and mixed wastes from Nyabugogo and Gatsata garages are burnt together with the city stores' obsolete electronic equipments and other categories of wastes namely papers, disposable furniture, tyres and old vehicles, etc.

"Burners usually do it during nights and earlier in mornings, for them to escape the police and local authorities," a nearby market seller revealed.

According to the practical tools on solid waste management released in 2010, REMA recommends to all Rwandans especially those involved in wastes business at all levels of imidugudu, small towns and cities not to burn.

Besides investing in prevention of waste material being created "reduction", alternative options also include the reuse, landfill and composting when feasible.

Incineration, in case of some particular hazardous waste materials such as biological medical wastes, is the only burning admitted waste disposal method, regardless of its emission of gaseous pollutants.

Col. Ben Karenzi, the Head of Kanombe Military Hospital clearly indicates that due to hazardous effects of some hospitals wastes, particularly made of chemical materials and others used in diseases treatment, they are taken through the incinerator instead of letting them out in dumpsite where they can cause devastating effects in contact with humans and the nature.

Incineration refers to high temperature waste treatment system whereby waste materials are converted into heat, gas, steam and ash.

EDPRS II, energy component: Does it go green?

A need for affordable energy saving solutions

By Johnson Kanamugire & Keza Munyaneza Déo

As Rwanda aspires halving the number of population relying on wood and charcoal for fuel by 2020 and with challenges associated with low and costly electricity penetration, promoting green initiatives and innovative approaches in line with energy saving solutions is the way to go.

Chalcoal trading activities

As far as reducing biomass consumption is concerned, green energy aspect is among top energy priorities within the second phase of the Economic Development and Poverty Reduction Strategy (EDPRS 2), of late elaboration. The Ministry of Infrastructure (MININFRA) assures affordable and cost effective cooking preferences through private investment attraction.

For the time being, around 86 percent of the population relies on firewood and agricultural residues as the main source of energy but shortly the government wishes to see the fuel wood consumption decreasing to at least 50 percent, which can also help to manage available forest resources.

Consequently, the recent elaborated EDPRS II considers access to electricity as a way forward whereby the government plans to scale up electricity access from the current 16 percent to 70 percent in 2017.

Also via partnership with other energy stakeholders it envisions contributing to mass use of improved cooking stoves to 80 percent as well as disseminating other modern domestic power sources namely biogas and solar panels among others.

Considering many residents' capabilities yet, opting for modern cooking practices and other energy alternatives in this regard remain costly, especially for bigger fuel consumers who are highly responsible for gradual environmental degradation by their high fuel demand.

"It's too costly, said David Mukiza, a restaurant owner in Kicukiro District.

"The government should allocate some incentives for us to feel ease with prices on these appliances, it's always for high class [rich] people."

Mukiza argues that he failed to find about 350 000 Rwf to

Green and energy saving TEKUTANGIJE wood cooking device

own a less fuel consumption cooking stove "small TEKUTANGIJE", arguing that it is too expensive.

Rwanda's energy sector strategic plan for over the next five years (2012-2017) has nonetheless emphasized on addressing such cost constraints by bringing down the energy costs as well as reducing shortfall in supply to stimulate economic development and poverty reduction.

"The EDPRS 2 targets other energy resources including peat sources, solar and geothermal, but also the initiated Lake Kivu methane gas project would help in this regard," stated Emma Francoise Isumbingabo, the Minister of State in Charge of Energy and Water in MININFRA while presenting next 5 years energy sector strategic plan last year.

MININFRA has moreover invested in addressing high costs issues for modern cooking preferences through attracting more investments as well as trying to encourage and boost a number of locals who came up with such green initiatives.

Mr. Emmanuel Hategekimana, the MININFRA's Director in charge of energy, water and sanitation argues that so many energy projects whatever can be their prices on markets would obviously reduce. "But let's first get people aware of these and own it," he noted.

Greening School: Students and community increased environmental awareness

By Johnson Kanamugire

Through the greening school program launched within some Northern and Western schools, students have gone far becoming environmentally responsible agents. Environmental clubs formed in each of the project beneficiary school have not only led to contributing to the community increased environmental awareness but also hygiene, sanitation and healthy learning place among other benefits.

GS MUKO students show the pride for their own trees

GS Umubano I in Western Rubavu District, and GS Muko of the Northern Musanze District benefited from the Greening School program since it was initiated by REMA within various other schools countrywide, with the aim of teaching young minds how to protect and conserve the environment and make sure that their school become a clean, green and healthier learning place.

For the time being since 2011, when the program kicked off, these schools' compounds no longer look dusty, or muddy in case of rain like it used to be before, according to schools' officials. Trees are planted alongside classrooms, grass and flower gardens surround the ground as a result of environmental clubs members' efforts and overall students' passion for going green.

From growing and planting trees, gardening, cleaning, watering in case of drought other greening activities carried out by the environmental clubs' members include sensitizing their fellows, family members and the local community about environmental protection.

As to G.S. Umubano I for instance, students established waste disposal systems "rubbish bin" for garbage collection and a hand washing systems known as "KANDAGIRUKARABE" near the school toilets.

"It's a kind of public garbage bin in the centre of the school for students not to discard trashes everywhere at the school ground. They empty it in the end when it is full and all of them taken to the garbage site. Also students after toilet, immediately wash hands before entering class or heading to anywhere else, to avoid contamination,"points out Alphonse Kaberuka, Deputy Headteacher of GS Umubano I in Rubavu District – a school whose environmental club "DUKORE" brings together the school's primary and secondary students.

"This used to be a dusty ground that tarnished our body and clothes, but after we ourselves planted grasses and flowers,

A green and clean place for learners (GS Umubano I, Rubavu District)

it immediately changed the school look. Now that somebody cannot necessarily need a chair to sit, and it makes pleasure for us when seeing the best gardens all around," states Israel Bizabukwishaka, a senior one GS Muko student and environmental club founder, also winner for environmental protection competitions.

In the beginning, environmental clubs brought together trained students mainly a section of the school population that is passionate about the environment who thereafter had to spearhead the efforts to protecting the environment at schools by training their fellows and sensitizing the community where they live.

For the time being moreover, both students and tutors argue that Greening School Project has not only contributed to bettering the look of the schools but also change students attitudes and impact on the community understanding of environmental concepts as well.

"They go back to their home areas to sensitize their neighbors about environmental protection," says Jean damascene Rwarekeyaho, the Head GS Muko who also underscores that his school is commendable to many others in the area.

Extended within 125 schools countrywide, the greening school project as initiated by REMA is expected to provide students with environmental awareness, help them develop their thinking towards environmental protection and further help the community.

They furthermore embrace Environmental education which is now part of the curriculum of what children are taught. On its behalf, REMA reveals that if sustained, future generations will be able to understand and stuck on their prime role of mitigating environmental damage, and other top world environmental trending issues.

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