Our dear readers, it is a pleasure to introduce to you Uganda National Association of Community and Occupational Health (UNACOH) in this 7th issue of the PHE newsletter.

UNACOH is a public health Non-Governmental Organization (NGO) Registered in 1991 under the NGO Act. UNACOH aims at promoting a positive health culture and influencing healthy public policies in Uganda through research, sensitization, and advocacy among others. Our motto is ‘health for all and by all’.

The Association has a National Executive Committee (NEC), elected every two years by the Bi-annual General Meeting. The Secretariat is headed by the Executive Director, currently the organization has four (4) projects in operation- viz- Alcohol Control Project (ALCP), Mercury Free Gold Mining Project (MFGM), Public Private Partnership in Health Project (PPPH Project) and the Pesticide Use, Health and Environment (PHE) Uganda Project.

We hope to continue researching, sensitizing Ugandans, and advocating for issues of Public Health importance, through projects such as the PHE Project and other initiatives.

For the next three years (2018-2020), this newsletter will be produced twice a year (in March and September). In the coming Issue 8, 9, 10, 11, and 12 we will continue to share with you topical news regarding pesticide regulation, trade, distribution, use, and disposal across the Country.

Please enjoy the reading.
The Pesticide Use, Health and Environment (PHE) Uganda Project is one of the projects being implemented by UNACOH. The project draws its financial and technical support from Dialogos (a Danish NGO). The project’s goal is to contribute towards improved life of Ugandans through prevention of negative health and environmental effects of pesticides.

For the last 7 years, the project has built the technical capacity of selected farmers, extension workers, agrodealers, public health spray personnel, health care workers, Village Health Team members, as well as district leaders from the districts of Pallisa and Wakiso. The project’s technical capacity building strategy is hinged on a curriculum of 7-9 modules covering areas of Integrated Pest Management, Pesticide application and toxicology, pesticide poisoning diagnosis and management among others.

For the next three (3) years (2018-2020), the project will reach out to different regions of the country to conduct research on the issue of pesticide residues in food and water, create awareness on pesticide safe use and handling, and engage a number of relevant stakeholders at district and national level.

The project has signed Memoranda of Understanding with the Uganda National Farmers Federation (UNFFE), a national level farmers’ umbrella organization, as well as around seventeen (17) District Farmer Associations in the districts of Nebbi, Adjumani, Gulu, Kitgum, Kumi, Kapchorwa, Pallisa, Budaka, Bugiri, Rakai, Sembabule, Bushenyi, Ntungamo, Kamwenge, Masindi, Wakiso and Kayunga. Memoranda of Understanding with Local Governments of the respective districts are being reviewed for final signing.

With this partnership, the project’s pesticide safe use awareness message will reach millions of Ugandan farmers, agro-input dealers, as well as the general public (consumers of agricultural produce) through the different sensitisation strategies to be used.

The project will work closely with Local Government’s Production and Health departments towards better regulation of pesticide trade and distribution, and diagnosis, treatment and reporting of pesticide poisoning in these intervention districts.

The farming sector in Uganda is entering a new era characterized by the pressure to increase farm level productivity so as to reverse chronic household level food and nutrition insecurity among the bottom 25 percent of Uganda’s population. The need for household level inclusive income growth driven by farming to sell/farming to earn or farming as a decent job. The need to integrate the smallholder farmers into the national, regional and global agricultural value chains. To achieve this farm level productivity emphasis is being placed on utilization of non-traditional methods of productivity enhancement. Smallholder farmers are being encouraged to adopt new technologies among them use of pesticides, fertilizers to name but a few.

The problem is that this drive is emerging with new challenges. The largest part of the farming sector is in the category of the informal sector of the economy in Uganda. They are not shielded by the occupation and health laws that otherwise guarantee the workers’ rights. This section of society hardly receives the necessary safety and inspection services. Thus smallholder farmers’ wake up every day to face their fields with makeshift tools, pesticides and technologies that expose their health and livelihoods to hazards related to use of these new technologies. This has led to an increase in exposure to agro-chemicals poisoning (pesticides etc) because of limited or absent protection measures and scanty knowledge among the practicing informal smallholder farmers on how to go about their own protection.

Cases of these challenges are already emerging, for instance, Joshua Mataama a farmer in Kyunga Bukakande in Kamuli District gives a live testimony of this after he bought a pesticide from a retailer which burnt his skin and his children’s. “I bought this pesticide, I went home and used it, but when I mixed as per advise on the bottle however, I did not have any gloves, I used it and to my surprise when I went to sleep, I woke up to a reaction of a burning skin, this affected even my children too, because they helped me in the field that day, but thank God they did not directly touch the pesticide, my skin is now burnt” said Matama

Matama’s story is clear indicator of low levels of education among the majority of small holder farmers, the technical know-how on pesticide use is still a missing link exposing them to risk in the utilization of such agro related chemicals. It has been very evident that several farmers do not use the Personal Protective Equipment like Masks, overalls, gloves; gum boots. This is so common with the majority of the farmers not aware about the usage of these protective measures.

The reality on the farms and any other informal sector actors within the agrochemical industry is characterized by limited levels of education that influences their ability to understand proper application procedures for these agro chemicals and most of them do not know the

Mr. Aggrey Atuhaire
Coordinator
PHE Uganda Project

The goal is pursued through research on topical pesticide safety issues, technical capacity building and awareness raising, and lobbying key stakeholders and policy makers towards sound management of the pesticide lifecycle.

UNACOH and UNFFE
Partnering for Occupational Health in the Farming Sector

Dr. Dick Nuwamanya Kamuganga
President
Uganda National Farmers Federation (UNFFE)
implications on their livelihoods. For example commonly among farmers while applying agro chemicals, the farmers remove shirts and do the spray on an empty chest, while others have been engaged in poorly storing pesticides like in the bedrooms, under the beds, kitchen-next to food while others have been sharing in reusing the pesticide containers to keep salt, pack lunch for children at etc. Bearing in mind that the smallholder farmers' constitute the majority of the informal sector actors approximately 70 percent are active in smallholder agriculture that uses agrochemicals, as a nation we are seeing on a time bomb of occupational hazard emanating from agrochemical use. Exacerbated by changing patterns in both demand for food and climate, we will see more not less use of agrochemicals. We will also see increase in use of agro-chemicals to extend farm output shelf life especially in horticultural subsector. Professionally with use of agro chemicals, there is need to observe withdrawal period from the application of these pesticides especially towards harvesting time, however some farmers do not observe this and thus putting consumers of such products at risk. Recently, farmers in the region witnessed an outbreak of the Fall Army Worm. The nation, experts, scientists and farmers responded out to the call for use of pesticides against the worm fell short of the majority of the farmers who have basic pesticide handling skills than the farmers do thus reducing the chances for the misuse. Training in good Agricultural Practices like mulching and timely planting is key in enabling reduction of chances of misuse of pesticide and other agro chemicals as desired by UNFFE. On policy we appeal to the policy makers to facilitate the process of abolishing the banned pesticides to prevent farmers access to occupational risks related to them. Emphasis could be prioritised in building the capacity of the farmers to demand for quality agricultural inputs and also to enable them demand for increased inspection opportunities for the informal sector which the majority of the farming communities belong.

We are grateful to the partnership with UNACOH on supporting the opportunities of awareness raising amongst the farming communities in Wakiso, Pallisa, Gulu, Masindi, Nebbi, Kitgum, Rakai, Adjumani, Bushenyi, Kamwenge, Ssembabule, Budaka, Kayunga, Ntungamo, Kumi, Bugiri and Kapchorwa District Farmers Associations in Uganda. UNFFE will continue to focus on multilevel and multi-stakeholder partnerships to deliver safe environment, quality agricultural inputs and strengthen or formalize the actors in smallholder farmers' space to improve productivity and safety of the farm and its value chains.

To achieve this we will be focusing on increasing the farmers' knowledge on occupational health and also good practices on the farm and in agrochemical value chain to sustainable farm development and safe farm environment and sustainable farm livelihoods.

We strongly believe that delivery of effective extension services is a concerted effort involving all actors and inclusive at all stages. It's through such multilevel, multi-stakeholder platforms, including government inspection on labor and general safety issues, extending a hand through the agricultural systems that we will eliminate vulnerabilities of a smallholder farmer when using agrochemicals at the farm. It is significant therefore that collective efforts amongst stakeholders are joined to guide and equip the farmers with the skills in handling the safety issues to ensure that we can work, stay and feed healthy.

### AWARENESS AND REGULATION of Pesticides in Budaka District

Budaka is a district situated in eastern Uganda. Agriculture is the occupation through which majority of the residents generate household income. The main crops grown are Maize, Cassava, and Ground nuts for home consumption and Mangoes/Oranges for sale. Along these agricultural activities there is increased use of pesticides, though with limited compliance to the minimum standards regulating pesticide trade and use. In light of this, as the Department of Production and Marketing, we are taking the following steps:

- Creating awareness through public rallies conducted jointly with Ministry of Agriculture Animal Industry and Fishers (MAAIF) and Uganda National Agro-input Dealers’ Association (UNADA) to provide guidance on safe use and handling of pesticides
- Operationalization of plant health clinics on market days for diagnosis and prescription of management options for plant health problems. Genuine and counterfeit pesticides showed to farmers and non-chemical management options prescribed.
- Quarterly inspection of agro-input dealers for compliance by the District Agricultural Officer.
- Issuance of operational licenses to pesticide dealers and in some instances revoking the same for non-compliance.

Though we have undertaken the above efforts, there are still glaring gaps to address regarding pesticide regulation. This may require the following measures to be taken:

- Revise the minimum qualifications for pesticide distributors and retailers
- Set stringent penalties for offenders to curb repeat offences
- Revitalize and strengthen inspection by recruitment, deployment and facilitation of Agricultural Inspectors
- Recruit and deploy more extension staff for effective sensitisation

Mr. Botiri Abner, District Agricultural Officer
Budaka District Local Government

If the above areas are addressed, pesticide regulation will undoubtedly improve in Budaka
Pesticide poisoning trend and management in Kayunga District

Dr. Matovu Ahmed,
District Health Officer
Kayunga District Local Government

Qn.
How much of a burden is pesticide poisoning in Kayunga District?
When I was a medical superintendent at Kayunga Hospital, pesticides poisoning was not a major problem, but still we received a few cases of poisoning. On average we could record one case in a month. Most pesticide poisoning cases were mainly those of organophosphate pesticides.

It is also a fact that such cases sometimes are wrongly diagnosed as it takes a lot of clerkship to ascertain the root cause of the signs and symptoms presented by the patient. At health facilities, most patients come with itching body and eyes, some with abdominal pain and they do not associate the complaints with the pesticides they may have been exposed to. Only a few cases of children who were seen drink water from the pesticide bottles that we could treat and record as a pesticide poisoning case but generally it takes time to probe a case for pesticide poisoning.

Qn.
Do you have any recommendations to prevent pesticide poisoning in Kayunga District and the Country?
There is need to create pesticide safety awareness amongst pesticide users and the general public. This should be done through a holistic health promotion approach involving Village Health Teams, agricultural extension workers, health educators, private and non-governmental organisations.

There is an urgent need for the mandated authorities to control and restrict importation and distribution/sale of extremely and highly toxic pesticides in the country.

Pesticide Poisonings in Low- and Middle-Income Countries

Low- and middle-income countries (LMICs) are continuously striving to boost their often ineffective agricultural production. Among others, these efforts have resulted into increased use of synthetic pesticides. Along with this use is the increased burden of pesticide poisoning.

Different studies point to the need to understand pesticide poisoning as a multifactorial public health problem resulting in an increased burden for vulnerable populations especially in LMICs. To deal with this, attention to both proximal causes and the distal policy and contextual factors is required.

Different studies published so far show a relatively high percentage of farmers in LMICs reporting acute symptoms of pesticide poisonings after spraying, and objective measures have confirmed this. These studies show that the incidence of poisonings among farmers varies in accordance with spraying circumstances.

Various global estimates on incidence of pesticide poisonings have been made, and the most often cited numbers are 3,000,000 hospitalized acute pesticide poisonings, 25,000,000 less severe...
poisonings, and around 300,000 deaths from pesticide poisoning per year. Farmers and spray men in public vector programs are the ones most at risk of less serious acute and chronic poisonings, whereas children often suffer from more serious accidental poisonings, and pesticides are the most popular means of self-harm in LMICs leading to most of the deadly pesticide poisonings. The number of poisonings might be overjudged in some epidemiologic studies due to inaccurate diagnosis and exposure measurements. A paper published few years ago in the World Health Organization (WHO)-Bulletin did set up a matrix for diagnosing pesticide poisonings that should meet at least one of the following criteria: (a) documentation of exposure, (b) health effects (at least 3 symptoms present and possibly a depressed Cholinesterase Enzyme), and (c) causality.

Several studies have highlighted that improving diagnostic skills among health care workers as better ascertainment of acute pesticide poisoning is a prerequisite for better surveillance data to improve policy decisions. It is shown that training of health care workers can successfully improve their diagnostic skills of pesticide poisoning cases.

Severe chronic diseases (including cancer and impaired neurological development of children exposed in utero) have been linked to pesticide exposure. Apart from acute poisonings, exposures leading to such chronic effects might also stem from pesticide intake from residues in food and drinking water, as also shown in different studies done in LMICs. Generally, there is little public concern on consumer safety in LMICs and there are weak or no government pesticide residue surveillance mechanisms. Empty pesticide containers leading to pollution are commonly found abandoned in the environment because of a lack of support from the authorities and unwillingness on the part of the pesticide companies to recycle containers. One study from Bolivia suggests that solutions involving collecting and recycling containers are possible and can generate benefits for both the farmers and the industry—a model that might be copied in other settings as well.

Preventive measures of occupational exposure with an education of farmers and other users on Integrated Pest Management (IPM) with Good Agricultural Practices (GAP) and greater use of ecologic alternatives have proven effective not only in reducing number of poisonings but, in some cases, also in increasing profits. Yet, IPM has not spread as should have been expected probably due to weak control with pesticide imports and sales giving ground for sale of cheap, banned, or low-quality pesticides; IPM being too complicated to learn; a lack of public policy to invest in national IPM extension services for training farmers; a strong lobbyism by the pesticide companies; pesticides providing an effective and simple answer to the problems farmers are facing; and IPM being too costly to diffuse, among others, and some studies also point out a disproportion between labor efforts and market prices of the IPM grown products.

Upstream interventions show the most promise, for example, banning of the most toxic WHO class I pesticides has been shown to decrease the number of poisonings due to suicide in Sri Lanka with no evidence of method substitution. However, toxic pesticides are still produced in high- and middle-income countries to be marketed in low-income countries. Interventions to prevent self-harm and accidental poisonings through restricting access have been tried out with varying success, largely because of failure to take account of adequate training and awareness about why locking up pesticides is vital. Social determinants that trigger self-harm (e.g., poverty, domestic violence, hunger) must also be addressed if this problem of suicide is to be comprehensively prevented.

Different studies in LMICs confirm a need for strategies most effective for preventive actions as adequate knowledge on toxicity, prevention, and treatment of pesticide poisonings is lacking among users, health care workers, and the population in general.

As indicated, IPM education is a powerful tool but might be difficult to implement on a large scale if no central political action is taken to support its dissemination and uptake. In addition, government policies that promote increased use of synthetic inputs in agriculture as well as the vigorous marketing strategies of the pesticide industry undermine IPM promotion and adoption efforts. It is understandable that a modernization of agriculture in LMICs with the often hot and humid climates might also imply an increased use of pesticides as was seen in the green revolution in high-income countries decades ago. Documentation of the problems arising from increased pesticide use suggests that solely promoting increased use of pesticides may be associated with greater harm than benefit.

Possible solutions that avoid negative health effects and environmental damage have been successfully tested and are ready to implement. The main responsibility to promote safe and sustainable agricultural production lies with governments and intergovernmental agencies. They have a dual role to play—on the one hand, to invest in awareness-raising among the general population, continuously support, and educate pesticide users on the hazards of pesticide use, how to reduce exposures, and availability of alternatives to pesticides as well as better training of health care workers in the diagnosis, treatment, and surveillance of pesticide poisoning; on the other hand, government needs to regulate the pesticide industry and ensure they contribute to programs to reduce exposure to hazardous pesticides and not just rely on educational interventions.

The United Nations (UN) Guiding Principles for Business and Human Rights point to responsibilities of pesticide companies to support such efforts and UN organizations and civil society organizations can assist. 18 However, it does require political will and the lead must be taken by politicians and policymakers in LMICs.

Dr. Jørs co-authored this article with Dr Dinesh Neupane (a postdoctoral NCD fellow at Duke Kunshan University, Kunshan, China) and Dr Leslie London (head of the Division of Public Health Medicine and professor of Public Health in the School of Public Health and Family Medicine in the University of Cape Town, South Africa).

The article was published in the Journal of Environmental Health Insights in January, 2018.
Shading a light on the amazing pesticide regulation work

Kindly share with us the agricultural enterprises you are promoting in Bugiri District?

Bugiri District Local Government is implementing the Commodity based approach as mandated by the government. The District has prioritized this approach and our key priority enterprises are mangoes, citrus, coffee, poultry, diary, and fish (under the commercial enterprises) and maize, bananas, cassava, rice, groundnuts, soya beans, and beans (under the food security enterprises). In addition, the district is also promoting other high value enterprises such as ginger, passion fruits, piggery, bee keeping and upgrading local cattle through artificial insemination.

What is the status of pesticide regulation in your district (area of jurisdiction)?

As a district, the office of the District Agriculture Office (DAO) under the District Production and Marketing Department in partnership with Bugiri District Farmers’ Association has mapped out, profiled and registered all agro dealers in the district. There are 38 agro dealers in the district and their registration status is known. The district organized a pesticide safe use training for all these dealers, including some from outside the district to ensure that they at least operate while meeting the minimum requirements needed to start the agro-input business.

The office of the District Agriculture Officer draws powers from the Agricultural Chemicals Control Act, 2006, National Agriculture Policy and mandate of inspection provided by the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) to crack down and apprehend offenders caught in the act of dealing in agricultural counterfeits and once in a while some are reprimanded in the courts of law.

In line with this, Bugiri DAO’s office (with support from RDC and DPC’s offices) conducts routine (usually quarterly) spot inspections, monitoring and follow up on all agro dealers in the district so as to help fight the high rate of agricultural counterfeits. As a matter of fact, we once closed down 28 agro dealer shops who were not complying with the minimum required standards to operate as an agro-input business.

What efforts have you employed to sensitise farmers of Bugiri District on safe pesticide handling?

- The district through the district council with support from the district product department, world Vision, Techno serve, USAID (Feed the Future) together with Bugiri District Farmers’ Association have developed an Agricultural Counterfeit Ordinance, 2017 that is going to help in cracking down people dealing in counterfeit agro-inputs. Strong penalties for offenders have been provided for in that ordinance.
- Through radio talk shows, we have sensitised Bugiri farmers on agricultural counterfeits, their effects, and how to identify them. This has been done in collaboration with other implementing partners such as ACODE, IITA and MAAIF.

In your opinion, how can the regulation of agro-inputs in Uganda be improved?

- The government should map out and profile all agro-input dealers in the country. This can be effectively done if MAAIF (Crop protection department) supports and empowers DAOs to gather and submit this data from their respective districts of jurisdiction.
- MAAIF should conduct refresher training courses for DAOs on pesticide safe use and handling. This will equip them with the right technical skills to inspect agro-input shops in their respective districts.
- MAAIF should clearly delegate the inspection mandate to all DAOs. A circular with a communication to that effect should be clearly put to the attention of the Chief Administrative Officer. This will serve to support efforts to allocate a budget line for this activity and hence resulting into improved and frequent inspection of pesticide traders across the country.
Mr. Opira Winfred
Payera Parish,
Erusi Sub County,
Nebbi District

I am Opira Winfred aged 45 years from Payera Parish, Erusi Sub County-Nebbi district. I have been practicing subsistence farming since 1998 to date; growing cassava, beans, groundnuts, potatoes and passion fruits among others. However, I mainly sell ground nuts and passion fruits to get my children’s school fees.

In growing these crops, have you been using pesticides?
Yes, I have been using pesticides for quite some time. However, they are costly for farmers like me who don’t earn much from our farming activities. Of late, apart from spraying Irish potatoes, I don’t use pesticides from the shops regularly on other crops. This is because I attended a training last year where we were encouraged to use organic pesticides (local plant extracts).

Have you ever experienced any health problems after handling pesticides?
• I occasionally feel the body itching and eye irritation after spraying in the garden.

Are there any other physical health problems you have experienced as you undertake your farming activities?
• Well, I have fallen once in a while especially when it has rained, one is exhausted and surfaces are slippery.
• I also experience a lot of body fatigue since I work for long hours in the garden, 6 days a week.
• I also experience skin irritations when I get in contact with a common poisonous plant called “Agwaya” here in our community.
• I experience neck and back pain after digging with my hand hoe, a tool that I have used all my life.
• Sometimes I experience neck pain when I lift heavy produce from my gardens to home.

From an economics perspective, what challenges do you face?
• The cost of acquiring improved seeds is quite high. However, recently I joined a farmers’ group registered in our sub county, through which we are able to access high quality seeds from well-established and registered suppliers from Kampala who sell to us at a relatively cheaper price.
• Produce buyers (middle men) always take us (farmers) for granted and exploit us since we the farmers have no alternative markets to sell our produce to. Therefore we end up selling our produce at very low prices except for a few crops like passion fruits whose prices are always good.

Your last words for the readers of this newsletter
• As smallholder farmers of Nebbi District, we have in the recent months been greatly hit by drought. Even the seasons are no longer predictable. Therefore we request the Government of Uganda and other development partners to support us with irrigation schemes to allow Farmers to continue producing crops to feed our families and generate some side income.
• I would also like government to help fight against fake agro-inputs such as pesticides, seeds, and fertilisers.
• As Nebbi farmers, we would be very happy if the government re-introduced cooperatives and marketing societies that can then be charged with the duties of seeking markets and determining the product price to eliminate the middle men that have made it a habit to cheat the uninformed ordinary farmer like myself.

I thank UNACOH for giving me this chance to air out my story and views on behalf of Nebbi farmers.
Uganda, like many developing countries, still lags behind in the area of Occupational Safety and Health (OSH); there are lots of safety issues in many workplaces that need to be fixed. For example, the OSH Act, 2006, stipulates that "any workplace with twenty or more employees should have an OSH policy with a manual to operationalise the policy", however, there are many companies/firms/organizations without these requirements in place.

Nevertheless efforts have been undertaken by the Government of Uganda, through the Ministry of Gender Labor and Social Development (MGLSD) to improve labor, employment and working conditions of the people of Uganda. The Department of OSH is specifically responsible for ensuring safety, health and welfare of workers in the working environments. By law this department is mandated to supervise and ensure that workers are not exposed to working conditions that may cause ill-health or injury.

During the outreach programs, inspectors from the department focus on finding out whether owners of different enterprises are adhering to the occupational safety and health standards such as using personal protective equipment when handling chemicals, sharp tools, as well as other welfare issues.

This form of inspection though has for a while put emphasis on formal employment work places, thus neglecting the informal sector. So generally, agriculture at household level is not receiving inspection services with the exception of farmers in organized groups and/or big farms like flower farms, coffee and tea plantations. The small holder farmers need a special program which is not yet out but there are prospects of designing such a program in future to address safety issues in the informal sector. This is an urgent need, given the fact that agriculture forms the backbone of our economy with the majority of Ugandans deriving their livelihoods from this key sector.

However, MGLSD is constrained and unable to offer the desired OSH services to all Ugandans. The Ministry therefore appreciates the role played by various partners in supplementing efforts geared towards improving OSH in the different sectors of the country’s economy. Such partnerships and forms of support will allow the Ministry to among other things, concentrate on handling policy issues related to OSH in agriculture and formulating regulations on use of some agrochemicals, codes of practice and procedure manuals.

In conclusion, it should be noted that we spend most of our time in work places such as on a farm, office, factory or any other working environment. It is thus imperative that such workplaces are safe and healthy. Although labour laws require our employers to ensure that we are safe, it is also the responsibility of everyone to ensure that he/she is safe through our behavior and mindset.