Sierra Leone experiences annual flooding and had recorded numerous small- and large-scale disasters prior to 2017. However, none of these had had such a powerful impact or drawn the scale of international attention as the flooding and mudslide on 14 August, this year. Consequently, the occurrence has served as a catalyst, under-scoring the urgent need to understand and address long-term challenges, and reduce the impact of natural hazards, in the future.

Recovery and Risk-Management Action Plan

Providing coordination to the UN system, the United Nations Development Programme (UNDP) has been supporting the development of a Recovery and Risk Management Action Plan (RRMAP), under the leadership of the Ministry of Finance and Economic Development, and in coordination with the Office of National Security.

Drawing from both existing documents, and the sector-specific assessments and multi-hazards mapping exercises that have been carried out since August, the plan equips stakeholders to make evidence-based decisions on recovery and sustainable long-term development. In addition to socio-economic recovery, the RRMAP anticipates future hazards and includes measures for prevention, preparedness, response and recovery.

The RRMAP is scheduled for completion, this month.

Landslide Risk Assessment

Having concluded his four-week mission, UNDP Landslide Risk-Management Specialist, Dr. Muhi Usamah has finalized the Analysis of the Causal and Trigger Factors of the August 2017 Landslide in Freetown: Towards a Sustainable Landslide Risk-Management in Sierra Leone.

This report provides both technical and social analysis of the triggers and root causes of the 14 August mudslide; and proposes vulnerability reduction recommendations for effective landslide risk-management – in Sierra Leone, in general, and in Freetown, in particular.

National mortality, due to natural disasters (1990 - 2014)
Having commenced earlier this week, the UNDP Cash-for-Work project involves affected communities in repairing and rebuilding - in ways that reduce risk in both the short and long term, while also generating income.

In addition to natural causes of flooding and landslides – intense rainfall and subsequent erosion, steep slopes, deeply weathered rocks, and heavy, clay-like soil – the project recognizes human contributors. Informal settlements occupy some particularly dangerous areas and the things that people do to build their houses and homes are also significant factors: cutting soil away vertically to create flat spaces, and using trees to produce charcoal – effectively removing the natural counterweight that would normally keep existing soil in place.

In addition to the hazards, themselves, communities also deal with their on-going consequences. Some of them are experienced as regular, day-to-day challenges, but they are no less dangerous and can also have life-threatening implications.

Drains between houses get blocked by soil and rock and other waste, and cannot accommodate the large volumes of water that accumulate during intense rainfall. In an effort to keep water from spilling over into their homes, some communities fortify drain retention walls. This resolves their own issue, but increases the force of the water and overwhelms other communities, further downhill.

Water also becomes contaminated by mud and waste. In times of flood, this contaminated water is washed into open drinking water wells and can be dangerous for human health.

**Economic loss, due to natural disasters (1990 - 2014)**

According to the International Disaster Database, more than half of disaster-related economic loss is the result of storms and flooding.

The landslide is observed to have been caused by slope destabilization from environmental factors – geomorphology, geology of sub-surface formations, soil type and rate of weathering – triggered by intense rainfall.

However, the report notes, these environmental conditions were also exacerbated by human contributors – rapid population growth, increasing informal settlements, land-use change, deforestation, and weak disaster risk management systems. These factors, combined with a lack of legislation, low community risk perception, and non-existence of early warning systems and contingency plans meant that what could have been a natural “hazard” became a “disaster.”

The report has served as a basis for discussions and has equipped the national Environment Protection Agency to advocate for risk-informed development. Access the full report here.

**Risk Awareness-Raising: Radio Jingle**

“We have seen mudslide-enveloped people and property... But let us ask ourselves: why are all these things happening?”

These words currently ring out, across Sierra Leone's airwaves.

With support from UNDP, and in partnership with the Office of National Security, Freetown City Council and the National Protection Area Authority; the Environment Protection Agency of Sierra Leone has developed a radio jingle, to raise awareness of the ways in which human activity can be harmful to the environment.

This jingle is currently being aired in five local languages (Krio, Mende, Temne, Limba and Kono) on 7 radio stations, reaching districts throughout the entire country. As of 20 October, the jingles air every day, once in the morning and once in the evening, for a total duration of 70 days. Access the complete lyrics here.

Informal settlements have pushed the forest boundary south by 5km. In the last four decades, 60% of forest in northern Freetown has been lost.

“It’s quite a complex system of mutually-affective issues,” explains Getaneh Gebre, one of the two UNDP Debris Management Advisors overseeing the project. “The solution to one problem may be the cause of another problem. So, if we want to be effective, we have to consider all aspects.”

The Cash-for-Work project engages members of affected communities to better understand and address the risks they live with. UNDP Advisors are providing on-the-job training to small groups of workers, who will go on to share their skills with other groups, employing a training-of-trainers approach, until more than 500 workers are fully-equipped.

“Training is relatively simple,” says Thorsten Kallnischkies, who has implemented similar projects in other post-disaster countries. “Many of the required skills already exist. It is largely a matter of using those skills in different ways. So skills are learned on-the-job and training is relatively quick. And, we will oversee the entire process, so there are always opportunities for more help and for the participants to ask questions.”

The teams are addressing several short-term and long-term risk factors; and will focus on the specific needs of particular communities.

In communities like Dwazark and Firestone, drains are being cleared of waste and rocks or – where it is necessary – will be reconstructed.

In Kamayama/Malama, Dwazark and Firestone, participants will construct gabions and terraces, to protect banks from erosion, reduce the impact of flowing water, and prevent soil from falling into the river bed.

In Dwarzark, cement walls will be erected around drinking water wells to protect them from contamination during rainfalls and to improve community access to clean water.

Starting with Dwazark and Kamayama, straight, angular slopes are being cut into terraces and used for urban or peri-urban gardening. Household composting will provide nutrients to grow vegetables like pumpkins, sweet potatoes, okra, and plantain. Cultivation of agriculture and compost will reduce the overall impact of rain on the soil and, by extension, reduce the erosion of slopes inside communities. As an additional benefit, agricultural activities can feed families and become a source of income.

Each participant will be involved in the disaster recovery activities for 2-3 weeks – altogether, the equivalent amount of work hours that 50 people would be able to achieve in one year.

The participants will be able to keep the tools they have been given, and will be well-equipped to lead other community members in risk-reduction activities, so that work can continue even after the project is concluded. In addition to helping create safer living spaces, the work that has been initiated – in particular, agricultural activities – will be a significant community income-generator.

Soil and Water Quality Assessment

UNDP Experts are currently drafting a design for an assessment of soil and drinking water quality.

Of particular concern is that garbage dumps in Kissy and Kingtom sit inside and upstream rivers. In addition to increasing the chance of flooding, this contaminates water as it flows into collection points in communities further downstream. It could also lead to outbreaks of diseases like malaria, dengue fever and cholera. A 2014 cholera epidemic study recorded lead to disease.
Consumption of contaminated water could lead to outbreaks of diseases like malaria, dengue fever and cholera.

greater incidences in neighbourhoods close to solid-waste dump sites than in other areas of Freetown.5

Questions have also been raised as to whether human body parts, still buried in mud along water ways in the communities surrounding Regent, also contribute to contamination.

Two international Debris Management Experts, currently in Freetown and both highly experienced in water quality studies, are poised to initiate the project, beginning with an analysis of water collected at Kissy and Kingtom dump sites, a number of streams, and household drinking water wells; and resulting recommendations for preventing and mitigating contamination risks. These could include relocation of dump sites, early contamination warning systems, and treatment of water for household use, as just some examples.

Conducting the analysis and producing recommendations could be completed swiftly, at an estimated cost of US $62,000. UNDP is currently seeking funding.

Next on the Agenda...

Sierra Leone’s first climate information web portal
The Climate Information, Disaster Management, and Early Warning System – Sierra Leone (CIDMEWS-SL) web portal is scheduled to launch in November. The first instrument of its kind in SL, the portal will serve as both a planning and response tool.

The CIDMEWS will provide a comprehensive data set for risk-management, detailing environment, climate change, hydrology and general risk factors.

In real time, users may access a ten-day forecast, with six-hourly weather projections, ensuring sufficient notice of imminent dangers. The portal also identifies communities that are exposed to water risk, the number of persons in those communities, and surrounding road conditions, for efficient evacuation planning. So, for example when conditions and weather patterns indicate that rainfall will present a risk, the Office of National Security will notify radio stations and mobile companies to alert the public.

In cases where disasters have already occurred, the CIDMEWS facilitates response efforts by indicating the location and number of houses affected, the state of surrounding roads, and the proximity of emergency services, such as hospitals. A review of data from previous months is also indicative of the cause.

The CIDMEWS was created by the Integrated Geo-Information and Environmental Management Services (INTEGEMS), under contract to UNDP SL and funded by the Global Environment Facility (GEF).

National Hazard Assessment
In partnership with the Office of National Security Disaster Management Department, UNDP has commissioned the local consultancy firm, Integrated Geo-innovations and Environmental Management Services (INTEGEMS) to produce the Update of Sierra Leone Hazard Profile and Capacity Gap Analysis.

The objective is to review and revise the last national hazard assessment, conducted in 2004, and to develop an efficient risk information system for Sierra Leone. By mapping and assessing area-specific hazards, the document will inform risk-reduction policies, strategies, and planning for sustainable development.

In October, a validation workshop enabled partners to review and provide inputs to the draft. The report is currently being finalized and is to be published by Government, in November.

National Disaster Risk-Management Policy
The Government of Sierra Leone is finalizing a National Disaster Risk Management Policy, to which it will commit funds from its regular budget.

The policy aims to establish structures and processes for coordinating disaster response and reduction, and to ensure integration of risk-management throughout development plans. It will clearly detail roles and responsibilities at local and national levels, and for development partners. The policy is scheduled for publication in November.

Public awareness campaign: “Know your National Land Policy”
Starting in November, Sierra Leone’s Ministry of Land and Country Planning will launch a nationwide campaign, to raise awareness of the National Land Policy. Specifically, the UNDP-funded campaign will advocate equal access to land for all citizens, through radio and television drama and jingles.
This initiative is particularly relevant to women. Although women are legally entitled to own property, this right is often unrecognized in practice. In rural communities, for example, land property documents are not the norm, meaning that ownership may not be clear. The campaign will begin today and continue until March 2018.

**Waste to wealth: improving livelihoods in Sierra Leone’s slums**

UNDP’s waste management and plastic recovery project will use plastic waste for income-generation in Sierra Leone’s slum communities, as of November. With women and youth as primary beneficiaries, this project will target six communities: Dwazark, Old wharf, Funkia, Susan’s Bay, Cockle Bay and Culvert.

Funded through this project, Women in Progress, Women’s Network for Environmental Sustainability and Market Women’s Association will enable community volunteers to carry out drainage cleaning in the first phase. UNDP will coordinate and establish a working committee to plan project activities, and identify temporary waste storage points working with Masada.

With UNDP support, these women’s groups will carry out community awareness-raising and training on safe waste handling. In order to reduce plastic waste in the environment, UNDP will also develop strategies with plastic producing companies for safe disposal.

The second phase of the project will involve training of the women’s groups in recycling plastic products for income-generation.

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