NAIROBI FLOODS AGAIN!

A CALL FOR LESS TALK AND MORE ACTION

The ongoing heavy rains have resulted in major floods as recently evidenced along major streets in the CBD of Nairobi and industrial area; major arteries including Mombasa Road, Jogoo Road, Uhuru Highway and Limuru Road and in informal settlements constructed on riparian land along Nairobi River such as in Mathare, Mukuru and Sinai.

As a result, these floods have caused traffic congestion which has resulted into structurally unsound buildings collapsing in Juja, Ruai, Kariobangi among other. Some of these buildings had already been identified as unfit for occupation by the NCA. These collapses have led to unnecessary damage of property and even unfortunate loss of lives.

The good news is that we all agree what the problem is – the poor drainage system of the city. Governor Sonko himself agrees as captured in his recently released statement. The sad news however is that we have sung this song for too many years now. Immediate action needs to be taken.

As we call government and citizens to action, it would be prudent to first grasp an understanding of why our city's drainage system is non-performing.

- Our riparian reserves and natural water courses have in many cases been encroached onto and others obstructed. A riparian reserve is land situated on the bank of a river or wetland. One of its fundamental functions is to buffer the adjacent land from potential flooding of the river. However, some unscrupulous developers have constructed buildings on this land – rendering them potential flood zones. The unfortunate scenario in many of these cases is that the property is sold or rented to innocent third parties who are none the wiser and have to bear the brunt in financial loss.

  The National Environmental Management Authority (NEMA) and County Governments must both shoulder the blame and responsibility of issuing development approval on riparian land.

- Disposal and accumulation of solid waste, soil and sewage in the storm water drainage systems is yet another situation we face as Nairobians. Due to poor maintenance of these drains, they end up getting blocked thus restricting the proper functioning of the system whenever it rains.

  It is the responsibility of the County Government of Nairobi to always ensure that the drains – and in extension the roads alongside them - are always clear of any obstruction. Further, proper technical expertise needs to be applied in the design, layout and construction of storm water drains in order to effectively capture flood water. We have seen in many cases, newly constructed highways with very poor storm water drainage systems.

- Nairobi City County is responsible for maintaining roads, footpaths, drainage and collecting and disposing solid waste. Maintenance of storm water drainages is a common challenge in the city estates with solid and liquid waste blocking parts of existing drainage systems. AAK advocates for the promotion of litter control in residential estates, including promoting the creation and use of community-based organizations (CBOs) that perform a service in exchange for a fee from households. However, the City County Government must collect waste from the sites where the CBOs dump for the system to be effective. We urgently need to develop and implement a Community Solid Waste Management Strategy for Informal Settlements in the city to avoid the practice of dumping waste in storm water drainage lines.

- Most of the city's natural ground cover has been replaced with concrete which is impervious. The natural cover is meant to seep water back into the ground. As a result, surface water runoff increases whenever it rains but this is not met with an expanded drainage system capacity. Even in cases where the drainage infrastructure has been constructed, the workmanship has been poorly executed and the storm water drains are undersized. Automatically, this results into floods.

  To mitigate this, the County Government of Nairobi needs to formulate a policy, plan and enforce rain water harvesting mechanisms. The County lacks a rain water harvesting system and accompanying conservation points. The city entirely depends on water from surrounding counties and lacks its own reserves. It is a sorry fact that a few months after the floods, news headlines will read of water rationing resulting from drought.

  In addition to poorly designed and managed storm water infrastructure, the way we have hitherto dealt with rain water leaves a lot to be desired. The obsession with curbs, culverts and ditches that treat storm water as waste that needs to be conveyed out of site as fast as possible is as tired as it is wasteful.

  New approaches need to be sought and implemented urgently. The landscape offers immense opportunities for dealing with storm water more sustainably. Some of these include:

  - *Detention and Retention*

  Storm water detention systems detain and store collected storm water runoff for a period time, releasing it slowly to reduce flooding. Many times such systems are disguised as ornamental ponds in the landscape.

  Retention systems on the other hand hold storm water for re-use in the dry season. Incidentally, such systems don't have to be the traditional round or square galvanized iron or plastic tanks. They can be innovatively incorporated as landscape features such as fountains and waterfalls.

- *Filtration and Infiltration*

Filtration systems do more than just retaining or detaining water on-site. They also reduce water pollution through various methods. Bio-retention gardens, for instance, use certain plants to systematically filter grey water into fresh water that can be used to water plants in the landscape and maintain ornamental water features.

Green roof systems and constructed wetlands consist of a series of manmade tanks or ponds that separates wastes and recycles water before allowing it to slowly filter into the ground. Both systems can be designed, not as hard mechanical systems, but as ornate landscape features.

Infiltration systems promote groundwater recharge. French drains are a good example of such a system. They redirect storm water into the ground and allow it to percolate slowly overtime. They include Infiltration trenches and basins as well as porous pavements.