

The eight plagues of 'galamsey' in Ghana (1)

'GALAMSEY', illegal surface mining, has been a subtle thorn in the flesh of Ghanaians until recently. It is believed that 'galamsey' employed about 150,000 Ghanaians by 2002 (Ghana Academy of Arts and Sciences, 2003) and also contributed to about 10 per cent of the total amount of gold production in Ghana (Ntibery, 2004). 'Galamsey' workers believe it has provided employment opportunities for many vulnerable people. In spite of the employment benefits, the challenges and threats posed by 'galamsey' are far reaching. Most of the irreparable damages caused include diseases and disorders, land degradation, pollution of water bodies and infrastructural damages. In this article (Part 1), we discuss the mode of transmission of toxic chemicals used in 'galamsey' and four of eight ways many Ghanaians are or can be affected by 'galamsey' activities.

Chemicals in 'galamsey'

Toxic chemicals in the form of heavy metals are introduced into water, land and the atmosphere during 'galamsey' activities. 'Galamsey' chemicals include (a) Sulphuric acid and cyanide used in separating gold bits; (b) Ammonium nitrate used in explosions; (c) Methyl mercury, uranium, lead, nitric acid and arsenic used in cleaning; (d) toxic components from gasoline and diesel fuels that power mining equipment; and (e) Acetylene for repairing equipment. These metals are harmful to human life even in small doses.

Chemical in body

Toxic chemicals and fumes enter the body directly through skin contact and inhalation. It can be sourced from the dust, chemical spill, harmful fumes and radiation from mining. Also, our bodies absorb these chemicals through contaminated drinking water, crops (including vegetables) grown with contaminated water, as well as animals that consume contaminated forage and water.

The eight plagues

Plague 1 - Effects on physical health: The chemicals used in mining are known to be associated with cancers, cardiovascular diseases, blood and bone diseases, kidney failure, gingivitis and tremors, anaemia from bone marrow damage and digestive symptoms such as nausea, constipation and stomach cramps. Accidents such as fires, explosions or collapse of mining tunnels also affect miners. The use of drills and vibration machinery can cause damage to nerves and blood circulation of the workers and those in close proximity. These can result in hearing problems, loss of feeling and infections from injuries such as gangrene.

Plague 2 - Effects on reproductive health: Low sperm counts and erectile dysfunction have been reported among men highly exposed to these toxic substances. Arsenic, cadmium and lead account for recurrent miscarriages, stillbirths and low birthweight babies. Also, lead and mercury are associated with compromises of the immune system, irregular cell division during

pregnancy, foetal brain and central nervous system abnormalities.

Plague 3 - Effects on child development: Unborn children exposed to these heavy metals can also develop disorders, colic and motor disturbances which negatively affect the daily functioning of children, as well as their cognitive development and achievement in school. For instance, lead poisoning can induce stunted growth, mental retardation, learning disabilities, poor attention span, impaired hearing and behavioural and learning problems. Methyl mercury accounts for irregular development of organs such as pancreas, therefore, it is expected that high doses in soil and water through mining and other activities will lead to higher prevalence of diabetes. Heavy metals are also associated with gene mutations, genetic disorders and neurodegenerative diseases. A relationship between child exposure to high levels of lead and mercury in the womb and autism has been established. Unborn child and infant exposure to high levels of lead, arsenic and mercury have been associated with higher predisposition to Parkinson's and Alzheimer's diseases and death. According to news and environmental health journals, over 100 children died in villages in Zamfara state, Nigeria due to lead poisoning

Unborn children exposed to these heavy metals can also develop disorders.

epidemic linked to artisanal gold mining activities.

Plague 4 - Effects on mental health and burden of disease: The burden of chronic disorders from childhood has huge economic impact on families, communities and human productivity, perpetuating a cycle of family poverty, poor mental and overall well-being. It is, therefore, expected that mining communities with higher exposure to toxic heavy metals are more likely to report higher rates of diseases and disorders and their consequent burden overtime. In adults with chronic diseases including diabetes and cancers, the ability to maintain employment reduces, thereby affecting cost of living and childcare.

Depression sets in when chronic diseases or long-term caregiving places a heavy toll on living, inducing

smoking and alcohol use. In our society where mental ill health is still a mark of shame, stigmatisation increases the likelihood of isolation, lack of care and social support, thereby prolonging poor well-

being. The socio-economic and emotional deficits due to disease burden on individuals, families, communities and the nation exceed the benefits of 'galamsey' activities.

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To be continued.....



• The devastation of galamsey on the environment is evident throughout the country