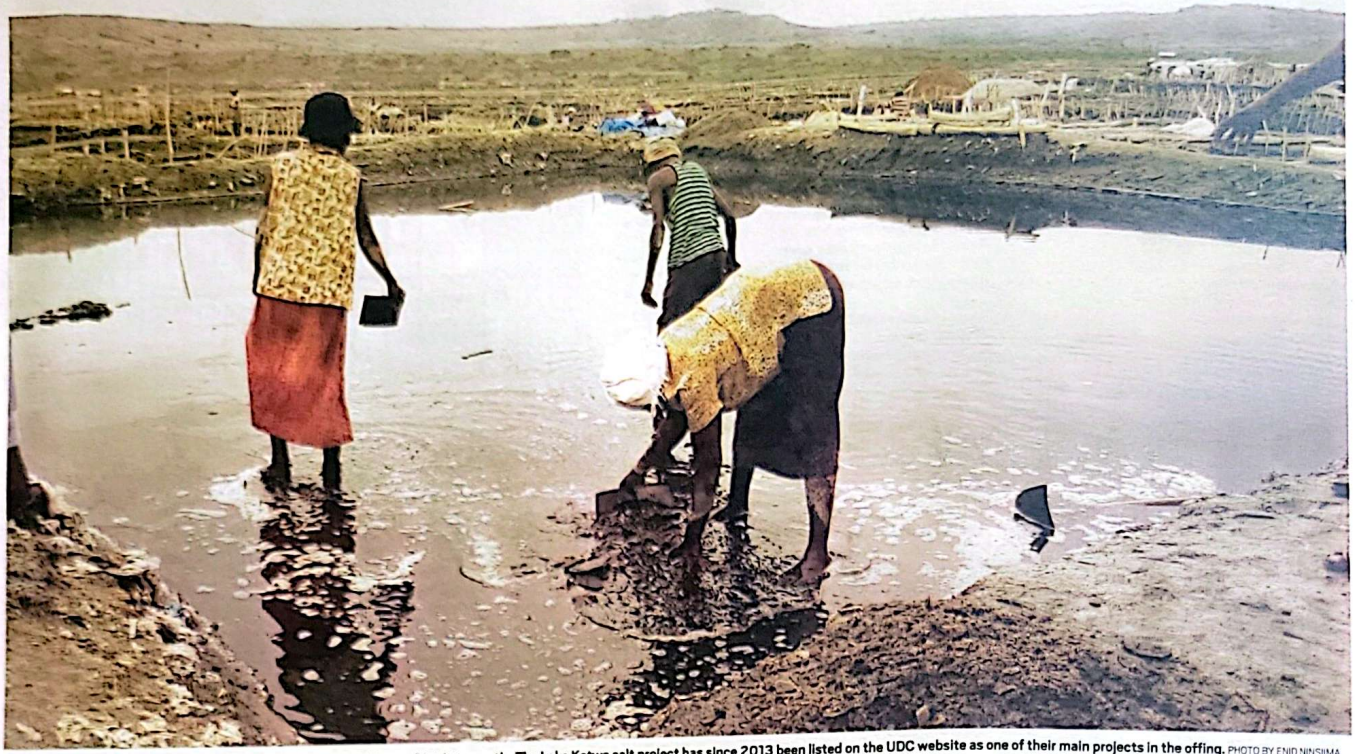
special report

OLD SALT FACTORY. In the 1970s, Germans from a group called Thysen set up Lake Katwe Salt Company. However, a few years down the road, the sodium chloride had corroded all the pipes which the Germans had put up to transport the salt and it became expensive to import new machinery, coupled with mismanagement, the salt plant collapsed and since then there have never been attempts to revive it.

Revival Plan. The Lake Katwe salt project has since 2013 been listed on the UDC website as one of their main projects in the offing. The thinking is that local production of salt for both human and animal consumption from the deposits at Lake Katwe will save the Ugandan economy the badly needed foreign exchange spent on imports.



Earning a living. People extract salt from a pan at Lake Katwe in Kasese District recently. The Lake Katwe salt project has since 2013 been listed on the UDC website as one of their main projects in the offing. PHOTO BY ENID NINSIIMA

Govt plans revival of Lake Katwe salt project after 40 years on shelf

Part V: The Uganda Development Corporation (UDC) says it is currently undertaking a feasibility study that will inform the decision of whether or not to revive the salt processing plant in Kasese, south-western Uganda. The plans have over the years been on and off, including the government getting a few proposals from private players whom officials say were never serious. While the study was expected to be completed by May, a lot of questions still linger whether the project can take off, writes **Frederic Musisi.**

Salt is one of the world's most important and affordable minerals mined, with key uses not just in the food industry but also in many other processes - with as many as 14,000 uses.

Worldwide, salt mining is a billion dollar industry with China topping the list of producers with 68 tonnes annually, closely followed by the United States and India.

The top 10 salt producers in Africa are Angola, Botswana, Ethiopia, Ghana, Mozambique, Namibia, Senegal, South Africa, Sudan, and Tanzania.

As the food market grows given the growing population, so does the market for salt.

Uganda is sitting on huge deposits of salt buried in the south western but is unable to make a killing out of it in the foreign market, let alone successfully producing it to be consumed at home.

Salt mining at Lake Katwe in Kasese could possibly be classified as one of the largest 'white elephants' in the country.

According to the Uganda Revenue Authority (URA), salt imports averaged around 198 tonnes by end of 2017 with an import bill of Shs100 billion, up from Shs27 billion recorded in 2013 for the previous five years.

About 90 per cent of the salt consumed in Uganda is imported mainly from Kenya.

For anyone who has not been to Lake Katwe nor been told or read about it, the story of men wearing condoms to protect their genitals before descending into the water to excavate salt rocks, could sound bizarrely funny.

The women too have to pad themselves with thick wool and anything else of the kind before they get inside the salt water to prevent (reduce) exposure to ammonia gas which, once it enters their reproductive organs triggers among others, infections and uterus irritation.

During a recent tour of the site by *Daily Monitor*, several women eking a living from the salt mining trade recounted suffering miscarriages as a consequence and other after-effects.

The revival plan

According to UDC's acting executive director Emmanuel Mutahunga, a study was commissioned last year to detail both the feasibility and investment plan for the proposed factory. The final report is expected towards end of April.

"Our preliminary evaluation shows that it should be expanded into a chemical industry for it to make more economic sense," Mr Mutahunga told this newspaper. "We have identified several areas where we need to do improvements to expand and make it viable."

The salt byproducts from the chemical plant include sodium hydroxide used in, among others, making soap, hydrogen used as fuel and in the manufacturing of fertilisers and chlorine used to treat swimming pools and make drinking water safe.

The Lake Katwe salt project has since 2013 been listed on the UDC website as one of their main projects in the offing. The thinking is that local production of salt for both human and animal consumption from the deposits at Lake Katwe will save the Ugandan economy the badly needed foreign exchange spent on imports.

Details of the financing and investment plan, Mr Mutahunga said, are pending completion of the final report.

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22.5m tonnes

SALT DEPOSITS. According to a January 2013 study by Makerere University, Lake Katwe has 22.5 million tonnes of crystalline salts, which would be enough to support commercial production. The study says these deposits can sustain a salt plant for more than 30 years at 40,000 tonnes per annum.

"But we are certainly looking at a public-private partnership (PPP) given the current circumstances," he said.

"The proposed salt project will not only produce salt but other potential products such as sodium sulphate, potassium chloride. UDC is to revalidate the feasibility study that was undertaken in 1996 to ascertain the viability of the project before it can invest in the project," a brief on the UDC website reads in part.

The salt lake story

Lake Katwe is found within an explosion crater in the formerly active volcanic area northeast of Lake Edward and southeast of Lake George. It was formed as a result of volcanic eruption about 10,000 years ago.

The lake is located in the rift valley on the outskirts of the Queen Elizabeth National Park. Its shores are lined with small pans of water which solidify after the evaporation process, from which the salt is extracted – the process known as salt panning. The lake is located in a semi-arid area with high evaporation rates and high ambient temperatures of up to 34°C.

The pans are square like, measuring nine feet wide and two metres deep. They are dug using hoes and demarcated using earth and pieces of wood. There are more than 1,000 salt pans, although only 800 are registered by Katwe Town Council.

Salt mining around the lake is believed to have started as early as the 1600s. There are locals who own as many as 10 to 20 pans.

It is on rare occasions that one sells a pan but in such transactions, the price ranges from Shs800,000 to Shs2m depending on its size. Most of the pans are inherited.

In an effort to conserve the lake, no more salt pans are allowed to be dug up. At the shoreline of the lake grows a salt-tolerant plant species called Cyperus Llevitigetus.

The lake is about 9km wide and the deepest point is six feet. There is a raised settlement near the lake which people who came from neighbouring areas to buy salt called "aha katwe". It is from this that the name Katwe was derived.

It helps in conserving the lake by filtering impurities such as sediments from the blowing wind and rain water from the surrounding hills. The grass helps to control the rate at which the impurities get into the lake. Those who cut it use it for making mats.

The lakebed is 0.8 metres thick and contains approximately 12 million tonnes of salt, varying in composition and depth and has salt stocks estimated to sustain an industrial extraction plant with a production rate of seven tonnes of salt per hour for 34 years.

There are two salt mining activities at the lake: rock salt activity and salt winning. Rock salt activity is done in the main lake by only men whereas salt winning is carried out in the salt pans by both sexes. The salt in the pans forms by a process called fractional crystallisation. The formed salt crystals are scrapped from the bottom of the pan using a curved iron sheet locally called Akabaati.

This activity is only carried out during the dry season. The difference it has with packed salt we buy from shops is that it has bigger crystals and is low on iodine. One hundred kilogrammes of this salt goes for Shs40,000.

Rock salt activity is carried out in the main lake. Beneath the lake is a "mother rock" of sodium chloride. This type of salt is locally called *mahonde* or *ekisula*. It forms at the bottom of the main lake by a process called cementation. The major markets for this salt are Rwanda and DR Congo.

This salt acts as a catalyst in boiling dry beans, preserves hides and skins and enhances milk production when licked by cows. It is also used in dyeing clothes and facilitation of a process called saponification in soap making. One hundred kilogrammes of rock salt is sold at Shs20,000.

The lake is also a source of a black mud called Trona which is on high demand in Kenya. It is converted into fertiliser and also used in making glass.

Salt mining, however, has some adverse effects on people's health and the environment. The sand in Katwe has a high content of sodium chloride, which corrodes the house when used for building. The iron sheets have to be galvanised or painted, or else they rust.

In the 1970s, Germans from a group called Thysen set up Lake Katwe Salt Company. However, a few years down the road, the sodium chloride had corroded all the pipes which the Germans had put up to transport the salt and it became expensive to import new machinery, coupled with mismanagement, the salt plant collapsed and since then there have never been attempts to revive it.

Will the plans materialise?

Mr Mutahunga said the plan currently on the table is to construct a new plant.

"That old plant shut down after most of the equipment corroded," he explained. "Surely we cannot repeat the same mistake."

Shs100b

Import bill. According to the Uganda Revenue Authority (URA), salt imports averaged around 198 tonnes by end of 2017 with an import bill of Shs100 billion, up from Shs27 billion recorded in 2013 for the previous five years.

Ready for market. A man loads salt into sacks on the shores of Lake Katwe in Kasese District. PHOTO BY FELIX BASIIME

STATUS

Salt mining: Currently, 15,000 tonnes of salt are mined from Lake Katwe annually. Salt mining is currently carried out using rudimentary methods.

The chairperson of the Uganda Chamber of Mines and Petroleum, Mr Elly Karuhanga, in a separate interview revealed that during the last Presidential Round Table Initiative meeting late last year at State House, it was resolved that government will look for $1m (Shs3.7b) within its budget to get the project off the ground.

According to a January 2013 study by Makerere University, Lake Katwe has 22.5 million tonnes of crystalline salts, which would be enough to support commercial production.

The study titled: 'Towards the improvement of salt extraction at Lake Katwe', says these deposits can sustain a salt plant for more than 30 years at 40,000 tonnes per annum.

Presently, it yields only 15,000 tonnes annually because the salt mining is carried out rudimentarily. Much of it is not iodised and is, therefore, not suitable for human consumption, according to a 2010 study by the Uganda National Bureau of Standards.

Apart from Lake Katwe, the study indicates that limited quantities of salt for human and animal consumption have been extracted from the hot spring waters at Lake Kibiro located in the Albertine region and at Lake Kasenyi on the shores of Lake George. At Kibiro, salt is produced from the waters of the spring and the saline muds around the lake.

The Common Market for Eastern and Southern Africa (Comesa), a 19-member free trade area from Swaziland to Libya, in a 2011 brief on the salt industry indicated that with a growing population in the region, the total addressable market is equal to 5200 tonnes. The assumption is that the market share in year one is 25 per cent growing to 50 per cent in the third year, and reaching 80 per cent by the sixth year.

Comesa also pointed out, among others, the growing regional market with insufficient local supply compared to demand levels, regional need for high quality salt with purity over 99.3 per cent and absence of still competition within the trade bloc.

While officials could not put timelines to plans to revive the salt mining project, any of such plans if fast-tracked to the end, are a step in the right direction as part of the wider efforts and ongoing conversations to unlock the country's largely untapped mineral potential that offers, among other, opportunities for wealth creation and employment through the value chain industry.

Besides what has been explored and appraised so far, from gold, petroleum reservoirs, tin, phosphate, tungsten, wolfram, the list is long, Uganda is endowed with a vast array of value resources like rare-earth metals, iron, uranium and several others, which only mentioned in passing and yet could quickly turn around our fortunes.

The ministry of Energy/European Union/United Nations Development Programme (UNDP) "Baseline Assessment and Value Chain Analysis of Development Minerals" report showed the mining industry has the capacity to generate up to $1.6b (Shs6 trillion) annually and create more than 70,000 jobs.

After all has been said, one can only hope that the government is paying attention.