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Fertilizer Focus

Potash production at the Dead Sea:

A story of vision, innovation and unique geopolitics

Written by

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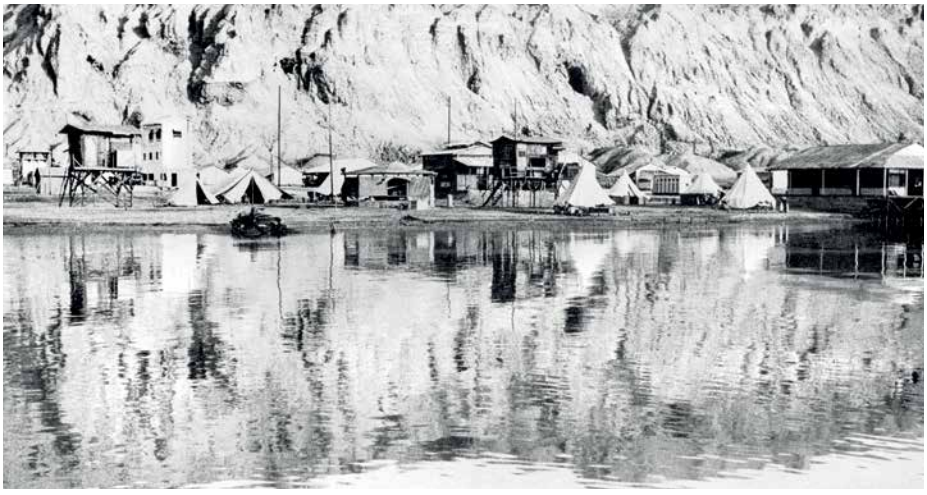
In 1930, after almost 80 years of German dominance in the global potash market and with a major supply disruption in WWI, Moshe Novomeisky (1873-1961), a very experienced mining engineer and entrepreneur from Siberia and Major T. G. Tulloch (1866-1938) a veteran British army officer who lived in Jericho, received a concession from the British Mandate to develop potash and bromine extraction from the waters of the Dead Sea. This started a new page in the history of potash production.

By the end of the 18th century, it was quite well known that the chemical composition of the Dead Sea water was unique, with its richness in sodium, magnesium, chloride and potassium. Known then as "Lake Asphaltite", it has attracted many travellers interested in the water level versus sea level, its geology and the flora and fauna around the sea. The conditions were harsh and even dangerous and some, especially those who chose to travel in summer, lost their lives.

Simultaneously, yet independently, both the 'Theory of Mineral Nutrition of Plants and the Law of Minimum' and the commercial mining of Potash started around 1850, both by German scientists and industry. As potash mining became a significant buisness, Theodor Herzl, the founder of the Zionist movement, marked it as an essential project for development of the Zionist movement in Palestine. Herzl was also influenced by the German commercial attaché in Constantinopole who advised the German potash industry to expand to other regions, including the North shores of the Dead Sea. Potash was a rising commodity.

Potash demand picked up quickly - in 1862 the first 20,000 t potash salt was produced in Stassfurt (Staßfurt), and then during next 45 years production steadily increased to reach 7 mn t by 1909, with an average price of 10-12 German Mark per ton. Moreover, during these years, potash use as a fertilizer became more widespread then its industrial uses such as explosives and other chemical industry uses, the US being the most important consumer outside of Germany.



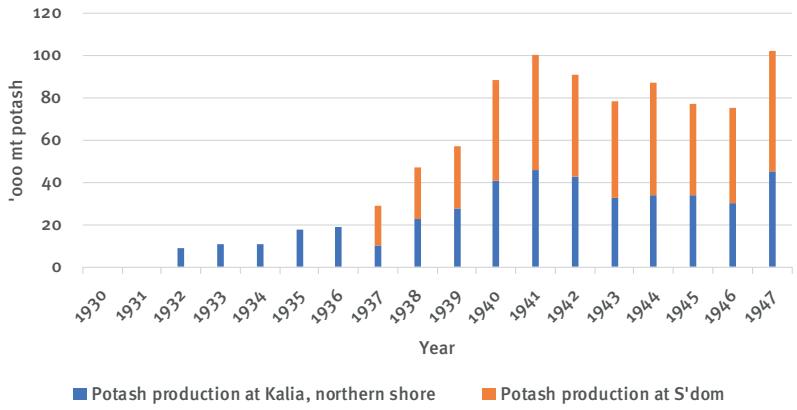
S'dom site workers area 1940s with S'dom mount behind

Research trips

Between 1894 and 1904, German geologist, Dr. Max Blanckenhorn conducted four research trips to the Dead Sea. These were in fact the scientific basis for the industrial exploitation of the minerals from the sea, based on the process that Novomeisky had developed.

Moshe Novomeisky developed the industrial process for potash extraction based on Blanckenhorn's research

Figure 1. Potash production at the Dead Sea, from the year of consession until 1947



The Potash plant at Kalia, the Northern shores of the Dead Sea, 1930s

The person that combined it all to from a laboratory analysis of water of the Dead Sea into a strong presence in the potash market is Moshe Novomeisky. Born 1873 in Barguzin, Siberia, grandson to a Jewish refugee family that fled from Poland, he studied mining engineering and in 1898 he completed his studies, including a period in Clausthal, near Hannover, Germany. When in Germany, he spent his holidays working lead and copper mines, but also in Stassfurt, the 'potash capital' of the world during these days. He mentions in his book that at that time he did not even dream that he would devote himself to the development of potash in Israel. From 1900 to his first visit in Palestine in 1911, the young mining engineer Novomeisky developed in Siberia a business in sodium sulphate production from which he generated capital to be later used in developing the process of extracting potash from the water of the Dead Sea. In 1914, after his return to Siberia, and back from his first visit to the Dead Sea, he starts a new business of gold extraction using innovative dredging on frozen riverbeds with special machinery brought from the UK – the first time that electrical generated industrial equipment was used in Siberia. Moshe also learns that working in remote places (such as in Siberia) requires good relations and trust between the local workers, their communities and the industry. Hence in 1921, when Novomeisky applies for a concession to develop potash and bromine production from the Dead Sea, he is already 48 years of age, with a solid proven record of industrial activity - and capital. He is not only a Zionist dreamer and ideologist, but also a successful, able and impressive entrepreneur. The British must have realized that as well, otherwise why grant him the concession?

Growing potash market

The need to develop the Dead Sea was not only Herzl's Zionist vision. At the beginning of the 20th century there is a growing potash market, with one supplier leading and controlling it - Germany. A fair entry for hungry entrepreneurs. In 1913, Tosdal (published by Oxford Journals) writes that "The actual source of the world's potash supply is at present in the deposits of potash salts found in northern Germany. The great Stassfurt potash industry is based on the presence of those salts…Germany thus possesses a practically complete monopoly of potash salts".

In 1914 with WWI, the German potash industry was instructed to impose an immediate embargo on all potash deliveries out of Germany (for both, fertilizer and the explosives industry). This will last until the end of the war. Consequently, the price of potash in the USA before WW1 was USD~8-10/t,

Moshe Novomeisky, the pioneer who initiated and built potash production at the Dead Sea (1873-1961)

Potash plant and evaporation ponds Kalia 1930s

Germany prohibited potash sales during WW1 (1914-1917)

but after the German sanction rose to USD150/t.

The British were aware of the riches of the Dead Sea. In 1917, when General Allenby captured Jerusalem, he sent Major T.G. Tulloch, a competent engineer, to survey the potential of the Dead Sea. Tulloch was a bit disappointed when Churchill turned down his first request (submitted 1918) for the concession, but few years later, in 1923 he successfully applied with Novomeisky to start the new Palestine Potash Company founded in 1929. The economic value of the Dead Sea is enormous. In 1927, a detailed report from The New York Times stated: "The Dead Sea Guards A Colossal Fortune; Pure Potash and Other Important Salts, Valued at USD1,200,000,000,000, Await Recovery in the Creation of the First Great Industry in the Orient… For the first time we shall witness the transference of a great industry from the Occident to the Orient".

The successful submission for the concession in 1929 was only after almost nine tedious years of elaborations and discussions between Novomeisky (and other concessionaries) and the British government. A major issue discussed was that there could be no access whatsoever to the German potash industry, which would secure potash supplies to the crown in a crisis. Indeed, during WWII, potash from the Dead Sea supplied 50% of UK potash demand, and 80% of the British Commonwealth needs.

Global impact

Eventually the agreement was signed on behalf of the Governments of Palestine and Transjordania by the Senior Crown Agent and by Novomeisky and Tulloch in behalf of the concessionaries.

Once WWII came to an end, the potash market returned back to its usual growth pace and farmers around the world learnt more and more of the value of this fertilizer. There was a fair appetite to supply more potash to the growing market, and to get away from the German grip of the market.

The presence of the Dead Sea potash industry was very significant. In 1943, 50% of global potash reserves were in Germany, 25% at the Dead Sea, the remainder in Russia, France, and Spain. During WWII, after additional sanctions on the German potash industry, Palestine Potash was able to expand to the markets in the USA, UK and China, mitigating the adverse effect of another German potash embargo. Clearly, the onset of potash production at the Dead Sea had a global impact.

In 1930, after 80 years of German dominance in the potash market with two major supply disruptions in WWI and WWII along with quickly growing demand for potash fertilizers, a very experienced mining engineer and entrepreneur from Siberia and a veteran British army major that lived in Jericho started a new page in the history of potash. ■

About the author
Hillel Magen worked for Dead Sea and ICL since the early 1990s until his retirement last year. He was also the Director of the International Potash Institute (IPI) 2004-2021. Since his retirement he is an independent consultant with ag tech incubators and companies.