Nexus Private Sector and Alternative Potash Fertilizers

Session chairs - D. Manning - Professor of Soil Science
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Executive Summary – What is the role of the private sector in promoting the development and use of alternative forms of potash fertilizers? This overarching question drove this session of the workshop. The main focus of this workshop has been given to the research communities, the farmers and their needs/constraints. Additionally, those geographical characteristics that directly affect agricultural yields (e.g., soil quality, climate, etc.) were also discussed. However, when discussing alternative potash fertilizers, an additional important role can be played by private enterprises, which seek out for new business opportunities. Although the potash market is strongly dominated by a few giant producers, it was demonstrated that a strong business case exists for the development of alternative potash fertilizers.

This session on the nexus between private sector and alternative fertilizers, was led by an experienced geologist/soil scientist (D. Manning) and an experienced entrepreneur (I. Wender). The two presentations The Future of Fertilizers from Sirius Minerals (presented by Manning) and HydroPotash, An Efficient Potash Fertilizer Produced From K-Feldspar and Suited for Tropical Soils from Terrativa Minerals (presented by Wender), provided answers to some of the questions that were prepared as a framework for discussion. A summary of the session is as follow:

1. What is the cost model for existing producers?
The current price of KCl (approximately US$300/ton) allows giant producers to maintain strong margins on their sales. On the other hand, such a price is not sufficient to justify the development from scratch of new greenfield mines in areas such as China, Brazil and Africa. The capital expenditure for a new mine is very high.

2. What is the role of transportation in the overall cost?
Cost for transportation of KCl is the key parameter. Local sources of KCl are limited in Brazil, Africa and India, which have to resort to imports (mainly by sea) to their ports. Further to that, poor internal infrastructures make the additional inland transport very expensive.

3. How much exploration/geological survey cost, and how long it takes to set up a KCl mine in operation?
Exploration and survey of alternative forms of potash (e.g., K-feldspar) is not exceedingly expensive, and a good deal of work can be done remotely, through references and literature crosschecks. A ballpark value could be estimated around 20 M US$ to map out resources. Opening of a new KCl mine is cost-prohibitive.
4. What could be different if alternative rocks are used?
In the domain of soluble potash, a good example is given by polyhalite (Sirius). In the domain of insoluble potash a good example is given by syenites/K-feldspar (Terrativa).