I am prompted to select this paper for comment for several reasons. Papers from Zimbabwe, where a new branch of the Southern African Institute of Mining and Metallurgy has been established, are of special interest, and even more so when from a group of university biologists with obvious interests in environmental botany. This is endorsed by a contributing author from Australia, where the Pratt Organization was a leading protagonist in the development of agricultural methods of hydroponic fertigation, (HPF).

This method – more commonly known as drip irrigation – will, I believe, be the basis of a new era of small-lot farming based on the digital computer evolution similar to that highlighted in this issue of the journal. This can be catalysed by a small group of plant biologists skilled also in computer modelling who can provide options for creating large numbers of good income-generating activities for relatively unskilled farmer families by producing crops on non-agricultural areas such as slimes dams. Irrigation water is the key, of course. HPF offers three options; domestic effluent, treated mine water, and rainfall.

In the area surrounding the Mhangura mine I calculate for the waste slimes dams a productivity level for growing maize throughout the year of the order of 100 tons per hectare per annum. At this level, a mine village farming cluster could be a model option for Africa, making sense of sustainability targets provided attention is given to depositing toxicity-free slime dams. But this calls for pioneers to initiate an R&D portfolio programme. I am a lone voice in advocating such a concept and I will listen attentively for a call for more details.

R.E. Robinson 

W e have come to the end of another year, and it is the time to slow down and take stock of the 12 months that have passed and to look forward to the year ahead. In the South African mining industry a very traumatic 2012 has been followed by an uncertain 2013. I would like to think that 2014 will be more positive. There are many positive indications, and we should dwell on these since the negatives have a tendency to obscure the positives.

I attended the 2013 MineSafe conference in my capacity as SAIMM President, and I have to say that the way safety in the mining industry is approached is really inspiring. I was taken aback by how many mines had a 12-month period without a single injury. Zero Harm is not a dream, it can be reality.

Looking at how the stakeholders in the mining industry approach safety made me think – if only the same approach was used for the economic and social aspects of the industry. The SAIMM is a proud co-organizer of the MineSafe conference and this will continue to be the most significant mine safety event each year in South Africa. I was, however, disappointed at how few metallurgists attended the conference. As a metallurgist I appreciate that mine safety concerns mining engineers and metallurgists, and both groups contribute to the safety improvements that the industry has seen. I will therefore be encouraging my fellow metallurgists to attend and to contribute to MineSafe 2014.

South Africa is a significant player in the global mining industry, with the world’s largest mineral resources by value. South Africa is in the world’s top ten producers of gold, platinum, coal, iron ore, manganese, chromium, vanadium, nickel, titanium, zirconium, and diamonds. Technical practice and innovation in the mining and metallurgy disciplines are world class.

Underground mining in South Africa has no equal, and we are the global benchmark for underground mining. For metallurgy we can tick all the boxes for processing intensity for all the commodities. We produce high-purity metals and minerals. We produce mild steel, stainless steel, and ferroalloys. Therefore, it is correct to say that the South African mining industry has a solid production and technical foundation.

To build on this foundation we have to improve our competiveness. There are, of course many, definitions for competiveness. From a mining industry perspective we need to produce metals and minerals that are in demand. We need to produce a wide range of commodities, which introduces economic flexibility. These two aspects are satisfied currently and should continue to be so. Ideally the cost of producing metals and minerals should be targeted for the lowest quartile. Reducing cost is not only about reducing consumption and finding cheaper consumables, it is also about improving efficiency.

One aspect of efficiency that does not receive enough attention is the question of operational stability and consistency. Is there always enough ROM ore stockpiled so that there are no unnecessary plant shutdowns? Is ROM ore grade and particle size consistent so that plant operation can be stable? These two questions involve effective and continual communication between mining engineers and metallurgists. Is the plant designed such that consistent stable operation is possible? This is about process design flexibility, because metallurgists should be well aware that the ore does not always behave the way you expect it to, and you cannot always blame the mining engineers! Is the plant designed such that equipment availability is maximized? This involves effective and continual communication between metallurgists and maintenance engineers. All these aspects around efficiency ultimately point to one overriding conclusion – consistency depends on teamwork!

This leads me to my proposed New Year’s resolution for the South African mining industry, teamwork. Geologists, mining engineers, metallurgists, and maintenance engineers need to come to the mine efficiency party and they need to embrace teamwork to realize the goal of stable and consistent mine operations.

To close I would like to wish all SAIMM members and their families a safe and enjoyable holiday. May you return to work safely in 2014 and look forward to a positive and productive year.

M. Dworzanowski 
President, SAIMM