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Are we facing a multi-trillion dollar agri-bubble?

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09 Aug 2013, Ben Caldecott , BusinessGreen



The boom in agricultural commodity prices has sparked significant interest in agriculture as an investment opportunity. After declining in real terms throughout the 1980s and 1990s, international food prices began rising in 2002 and this began the longest commodity boom since 1945.

Low returns in equities and bonds, exacerbated by the financial crisis, have also encouraged investors to look to new areas in search of higher risk-adjusted returns. As new resources have flowed into agriculture, investment has risen in several emerging markets such as Brazil, Nigeria, China, India and parts of Europe. Even the more established agricultural powerhouses of North America, Russia and Australia are experiencing resurgent conditions. This has helped to push up global farmland asset values by more than 400 per cent since 2002.

'Stranded assets', where assets suffer from unanticipated or premature write-offs, downward revaluations or are converted to liabilities, can be caused by a range of environment-related risks. If and when environment-related risks materialise they can result in stranded assets across the agricultural supply chain. This could be at a sector or asset-specific level, such as with respect to processing facilities, or be felt across an entire commodity or region, potentially resulting in significant financial losses, degraded ecosystems and social upheaval.

The University of Oxford's Smith School of Enterprise and the Environment has published [new research today](#) that maps out these risks in agriculture and shows how they might affect agricultural assets. This is particularly relevant now given how much capital has been invested into the sector over a relatively short period of time. The risks investigated range from the spread of pests and diseases through to changing biofuel regulations.

The research systematises the different risks that could affect assets across the agricultural supply chain and completes a high-level assessment of where and how risks might affect these assets. A high-level Value at Risk assessment (VaR is a measure of risk used in the capital markets and by financial regulators) has also been completed to give an indication of the magnitudes of capital exposed.

As part of the VaR analysis we set out three scenarios to test to what extent declining natural capital could place the stock of invested capital in agriculture at risk globally: the first scenario represents current levels of natural capital, the next a medium level of loss of natural capital, and third a situation of extreme loss of natural capital. Each of these scenarios represents escalating levels of risk.

Under the extreme loss of natural capital scenario, we found that the loss measured by the 0.5 per cent VaR could almost double from \$6.3trn to \$11.2trn. In other words, there is a 0.5 per cent chance of the annual loss being more than \$11.2trn. The research also found that under the same scenario, but at the five per cent VaR, there is a 1/20 chance of the annual loss being greater than \$8trn. At both the 0.5 per cent and five per cent VaR there is clearly significant potential for asset stranding.

The 0.5 per cent VaR is of interest to the insurance sector as this corresponds to the Solvency II regulation, which requires insurers to determine their solvency capital requirements at this level of risk.

The speed at which risks materialise is also important to understand, with fast-moving risks being harder to manage than slower-moving ones. For example, regulatory change is often fast moving, but, at the other end of the spectrum, physical risks such as climate change tend to manifest themselves more slowly.

As well as the speed of change, understanding when risks are likely to materialise is essential. Risks can be classified along a continuum from the short term to the very long term. For example, biofuel regulation is part of current problem agendas facing many governments. At the other end of the spectrum, classic problems of the commons such as declining ecosystem services, water quality and land degradation are longer-term risks. Such problems often take a long time to manifest themselves, and are difficult to remedy once they have occurred.

In addition to investigating the timing aspects of environment-related risks in agriculture, the research has evaluated how asset stranding might affect different types of agricultural asset to indicate sensitivity to each risk factor. The research has applied this evaluation to natural assets (e.g. farmland water), physical assets (e.g. animals, crops, on-farm infrastructure), financial assets (e.g. farm loans, derivatives), human assets (e.g. know-how, management practices) and social assets (e.g. community networks) respectively.

There are three main conclusions that are emphasised throughout the research from Oxford's Smith School.

First, environment-related risk factors are material and can strand assets throughout the agricultural supply chain. The amount of value potentially at risk globally is significant.

Second, the potential challenge of stranded assets in agriculture is currently being exacerbated by an ongoing agricultural boom, which is feeding off high commodity prices and poor investment returns elsewhere in the economy to push farmland values to record highs in many markets.

Third, understanding environment-related risks that can induce asset stranding can help investors, businesses and policy makers to develop effective risk management strategies, which can improve resilience and minimise value at risk.

Businesses, investors and governments are increasingly facing complex risks, embedded in local markets, but with global consequences. Environment-related risks in agriculture are of this nature and can have knock-on effects elsewhere in society. For example, the Arab Spring has demonstrated how water supply constraints in North Africa, coupled with extreme weather in Russia, can affect food security and prices and contribute to governmental collapse and broader geopolitical tension.

So while it may be impossible to completely prevent or accurately forecast how environment-related risks might materialise, much of recent history has reminded us that people do not make reasonable preparations for risks that have been foreseeable. Investors, businesses and policy makers need to take steps today to better manage environment-related risks across the agricultural supply chain. This will be key to ensuring the sector's long-term environmental, as well as economic, sustainability.

Ben Caldecott is a co-author of the report, [Stranded Assets in Agriculture: Protecting Value from Environment-](#)

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