DIGITAL AGRICULTURE

THE POWER OF ZEMA

by Rebecca Sherratt, Production editor, Milling and grain

The world is unpredictable, and nobody knows this better than farmers. With climate change drastically a ffecting the amount of rain we get yearly and temperatures soaring, crops are becoming a dangerous game, as farmers never know what will happen next.

ZE has a solution for this: ZEMA. The Vancouver-based data company, responsible for the data and software technologies for thousands of companies globally, has designed one comprehensive data analytics software that can keep farmers and traders up to date with the latest in yields, stocks and prices, as well as monitoring the success of their own crops and their expected income. With this technology, the future of farming needn't be so uncertain.

Minimising the risks

ZE are acutely aware of the risks and challenges that farmers and traders face, and their goal is to provide software that can harvest this data and find solutions to these problems. By turning data into intelligence, ZEMA's advancements can innovate agriculture into a new digital frontier, making sense of big and real-time data, and considering geopolitical risks and opportunities.

ZE have placed the risks of agriculture into three categories:

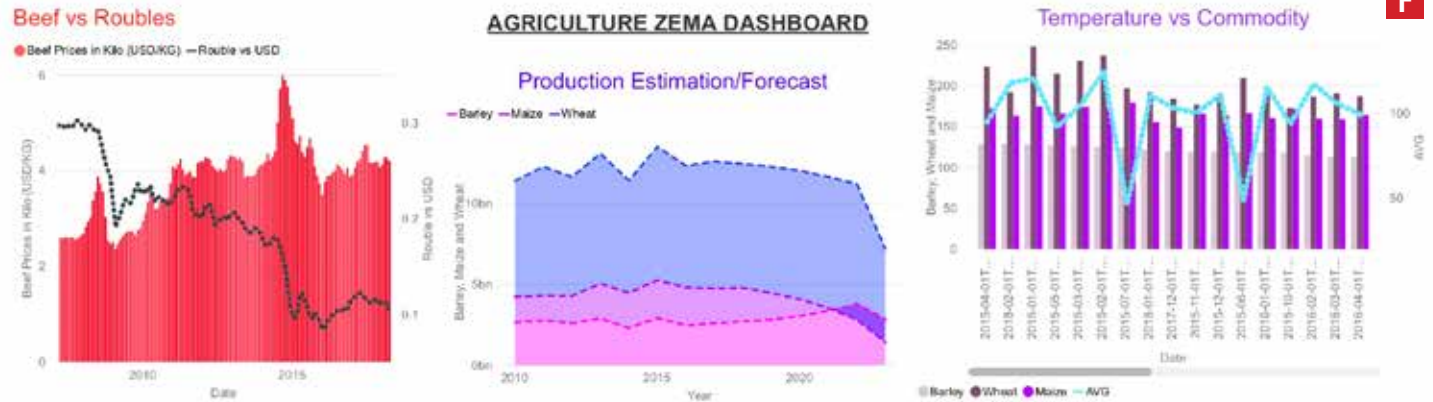
Population- One big issue is where will we gather enough food to feed everyone? The most recent EU estimate suggested there are 7.3 billion people on Earth, however, this will rise by 2.3 billion, up to 9.6 billion by 2050.

Lack of investment- In the past thirty years, developing countries' investments in agriculture has dropped significantly, especially when compared to developed countries. This is resulting in low productivity and stagnant agricultural production in these developing countries, placing a strain on other developed countries to provide food for those countries which are struggling to maintain their produce.

Climate change- Water scarcity, extreme weather conditions and rising global temperatures are all having severe effects on crop yields. Crops failing can have drastic effects on countries, most notably places such as India, where farmers commonly commit suicide during droughts where the annual hurricanes don't arrive to nourish the fields.

The food supply chain is very delicate, complex and therefore also easy to disrupt. Alongside all the environmental changes that affect prices of items, agricultural products also often have high transport costs, which also are subject to change and can affect local and regional prices. Wheat, in particular, is subject to sudden shifts in price. In the past ten years alone, the price of wheat has shifted dramatically. Some years, transport costs of wheat has accounted for 15 percent of the overall price for the produce, whereas other months it has suddenly inflated up to being 20 percent of the overall costs, placing a serious strain on buyers and traders.

Russia in 2014 also underwent a similar crash, when prices of agricultural goods were subject to sudden changes, and global sanctions caused problems for the country, almost leading to

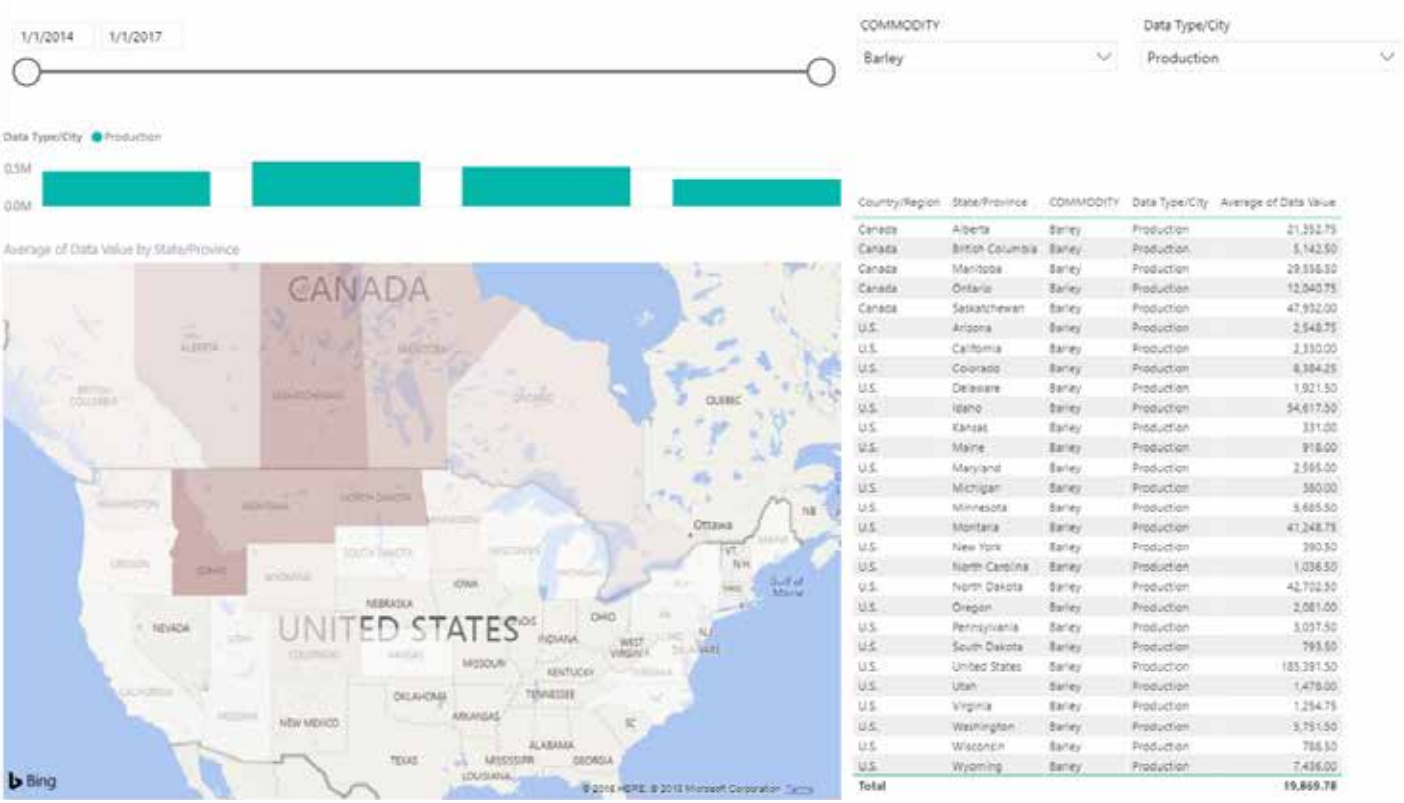


the collapse of the Ruble. Banks failed, wheat, dairy, meat and vegetables soared in price, and Russia blocked imports from the West.

This carried a knock-on effect to other countries, with crops, oil, energy and aviation. Mediocre crop conditions in the US resulted in a further rise in prices and a decrease in production, whilst the Ruble weakening led to the strengthening of other currencies.

Solving the problem with data

ZE believe that these problems can be averted by the utilisation of suitable data software and efficient planning. Up-to-date supplies of data, primarily financial contracts on commodities,



Above: Image from the agriculture dashboard

are the best defence, according to ZE. Ensuring to allow for risk-pricing with an up-to-date market sentiment is hugely beneficial, as farmers and traders will be ready for any situation that approaches them.

Advances in agricultural data have also been vast and incredibly beneficial. Granular and sensor data are now available, which can provide even more highly accurate predictions of crop sizes and potential yields. This precision farming is a tool which ZE urge farmers and traders to use, and in correlation with their data software, can ensure that harvests are easy to record, manage and understand.

Other technologies are also available that need to begin to be widely used, such as GPS fertiliser distribution, in-field moisture and temperature sensors and environmentally optimised crop rotations and yield monitors.

However, the problem that again rears its ugly head, even with the use of reliable technology and data, is the fragmentation of these statistics. The collaborative union of the world's crop and weather data could be an indispensable tool for farmers worldwide, to understand how the next month, year, or decade of farming will appear. With all our data divided up by individual farms and farmers, no significant results can be gathered that provide conclusive, reliable data.

ZEMA: All in one

ZEMA offers one comprehensive, fully integratable software technology that collects farming data, and combines it with the latest data from all other farms also using the same software. Through this technological teamwork, ZEMA gives even more efficient, informative and useful data, to help farmers and traders keep on track with their crops and harvests, as well as being a serious competitive advantage.

This new software also isn't just for the biggest names in farming and trading, smaller companies and even individual farmers are using ZEMA, by signing on with major companies such as John Deere and Monsanto, to pool their precision farming data in one centralised database.

This unified system gathers over 8,500 data feeds from over 800 data suppliers, gathering files and information and delivering it in an easy to process package. The software then offers a variety of formats and tools for those in the agricultural market to use, with market analysis, spreadsheets and development tools.

Users have access to business intelligence (BI) tools, billing and invoicing, custom apps, analysis tools and structured query language (SQL) tools. ZE claim that, through use of their data software, agriculture industries have reduced output costs by up to 15 percent, and their crop yields have increased by 13 percent.

Features of ZEMA

ZEMA collects public and private data from a multitude of sources, such as financial institutions, government agencies, exchanges, famers and the traders who utilise the software. The catalogue that is made from the gathered data is then made into an easily-accessible set of applications.

Users of ZEMA are able to access:

- Internal data collection and support
- Format- and industry-agnostic architecture
- Global data reach
- One single point of data access
- Real-time data capturing
- Public, third-party and proprietary data collection.

The data that ZEMA gathers is also continually assessed and graded, to ensure only the best, reliable and accurate information makes it into the database. The ZE team regularly monitors the ZEMA databases, ensuring cleanliness, completeness and

timeliness of all incoming data. User permissions, usage pattern reviews and auditing systems are also available for clients to set up, so that they can thoroughly monitor their employees, promoting data security. Data can be discreetly assigned to specific users, event logs can be viewed, and data entitlements can be adjusted to client specifications.

Market Analyser

One of the especially useful ZEMA tools for those working in agriculture is the Market Analyzer. This tool, with an assorted range of prebuilt mathematical and statistical formulas, enables users to build interactive tables, graphs and charts to export to MS Excel and share with other ZEMA users and systems. With the ability to freely manipulate and transform data, Markey Analyser is an innovative new tool for farmers and traders, wanting to compare and analyse their crops, harvest, yield and profits in easy to view and manage charts and figures.

Users of Market Analyser reap multiple benefits, including:

- Access to free-form formulas to build with
- Cross-source comparisons
- Prebuilt formula libraries

Highly customisable graphs and charts

- The ability to share and save analysis with multiple users worldwide
- Prepare spot, forecast and futures analysis.

For those in a farming or trading team who might not need to be so tech-savvy or interactive with ZEMA technology, the Dashboard application serves as an interesting way to view all the crucial information they may require, in an information-rich, collaborative and user-friendly interface. All your needed information, from charts to graphs and text are available on one screen.

ZEMA emphasises flexibility, and this is also reflected in its integration with a bevy of third-party software. All the data gathered in ZEMA can easily move through to other systems and software, to fit each unique business requirement. ZEMA works with SAS, Lacima, Matlab, IDC FutureSource, Tableau, Power Pivot and Spotfire, to just name a few.

About ZE

Founded in 1995, ZE is run by President and CEO Dr Zak El-Ramly. For the past 23 years, ZE has provided customers with innovative software solutions in a variety of industries, especially those in the farming, agriculture and trading industries.

ZE have gained a plethora of awards for their technical innovations, winning the Commodity Business Award 2016 in Data Management and, in the same year, being positioned in the top 100 of the most promising solution providers, by CIO Review.

The ZE team have always ensured to be family-oriented and have succeeded in this goal with their close relationships and attention paid towards clients and various business partners.

As the company has grown they have remained private and family run, but only continue to add to the ZE family with the many hundreds of businesses, farmers and traders who use their services.

With all these technical services available to farmers and traders at the simple click of a button, the future of the agriculture industry can continue to prosper, despite the oncoming challenges that overpopulation and climate change pose.