Big Data for the next green revolution

What is big data?

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- The term "big data" often refers simply to the use of predictive analytics, user behavior analytics, or certain other advanced data analytics methods that extract value from data, and not just to a particular size of data set.
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- The availability of data is on the grow because they are increasingly gathered by cheap and numerous information-sensing mobile devices, aerial (remote sensing), software logs, cameras, microphones, radio-frequency identification (RFID) readers and wireless sensor networks
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What big data can do?

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- **Seed Selection -** Big-data businesses can analyse varieties of seeds across numerous fields, soil types, and climates and select the best.
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- **Crop disease -** Similar to the way in which Google can identify flu outbreaks based on where web searches are originating, analysing crops across farms helps identify diseases that could ruin a potential harvest.
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- **Irrigation -** Precision agriculture aids farmers in tailored and effective water management, helping in production, improving economic efficiency and minimising waste and environmental impact.
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- **Weather -** Advanced analytics capabilities and agri-robotics such as aerial imagery, sensors help provide sophisticated local weather forecasts can help increasing global agricultural productivity over the next few decades.
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- **Climate change -** Since, climate change and extreme weather events will demand proactive measures to adapt or develop resiliency, Big Data can bring in the right information to take informed decisions.

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- **Food processing –** They help in streamlining food processing value chains by finding the core determinants of process performance, and taking action to continually improve the accuracy, quality and yield of production. They also optimise production schedules based on supplier, customer, machine availability and cost constraints.
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- **Loss control -** In India, every year 21 million tons of wheat is lost, primarily due to scare cold-storage centres and refrigerated vehicles, poor transportation facilities and unreliable electricity supply. Big Data has the potential of systematisation of demand forecasting thus reducing such losses.
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- **Pricing -** A trading platform for agricultural commodities that links small-scale producers to retailers and bulk purchasers via mobile phone messaging can help send up-to-date market prices via an app or SMS and connect farmers with buyers, offering **collective bargaining opportunities** for small and marginal farmers.
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What are the challenges?

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- The challenges and opportunities of data is immense in a country like India with 638,000 villages and 130 million with 140 million hectares of cultivable land under 127 agro climatic regions capable of supporting 3,000 different crops and one million varieties.
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- Self-driven vehicles can already drive themselves across fields using Global Positioning System (GPS) signals accurate to less than inch of error thus helping farmers plant more accurately.
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- But the real potential is what happens when this data from thousands of tractors on thousands of farms is collected, grouped and analysed in real time.
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- There is need to formulate a business model wherein value can be captured from the scale of data being captured by different players in the agri-supply chain.
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- Companies must act now to focus, simplify and standardise big data through an enterprise-wide data management strategy.

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Source: businessline

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