Smart Farming

What is Smart Farming?

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- Smart farming is the transformation and reorientation of farming to **increase yields** through enhanced productivity, improved resilience and reduced side effects.
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- Smart farming centres around **seven ‘E’s.**
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i. Economic viability of the farming;
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ii. Efficient use of limited natural resources such as higher production per unit of water, land, and labour resources;
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iii. Enhancement in production through higher productivity;
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iv. Energy saving of limited fossil fuel;
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v. Equitable distribution of benefits across the farming community and inter and intra-regional distribution;
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vi. Environment/ecology protection; and finally,
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vii. Employment generation to ensure high income levels.
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What are the challenges and opportunities?

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- On the one hand, we see **stagnation and decline in agriculture** coupled with emerging challenges posed by climate change and water shortages.
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- On the other hand, there are **dramatic socio-economic changes** as literacy and life expectancy rise, more people are digitally connected and a data revolution takes root.
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- These are opportunities to meet the emerging challenges of the agri sector and offer an opportunity to leap ahead. Such a leap can come only if the nation is driven in its mission to adopt ‘smart farming’.
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What is the need for IT support?

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- There is work to be done in terms of sensing technologies for weather forecasting, land-use pattern-mapping, cropping-mapping, soil-testing and soil-enriching techniques, mineral-mapping of animals, and so on.
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- All this can be achieved through the higher use of software solutions involving data analytics leading to farm management information systems and a better network of communication systems.
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- In this context, the importance of an intensive hardware network cannot be denied.
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- In short, **smart farming is precision farming based on the use of the latest technology** along with the mitigation of side effects of various development programmes including the green, white, blue and golden revolutions that have caused irreparable loss to ecology and environment.
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What is the importance of credit facility?

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- A successful switch to smart farming will largely depend on the availability of credit.
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- The formal rural credit system registered a marked increase in market share in terms of quantum of credit from 7.3 per cent in 1951 to 56.0 per cent in 2012, according to the last available numbers published by the NSSO.
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- However, in terms of the number of indebted farmers, informal credit systems dominated by money lenders, etc, ruled the scene.
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- The agency-wise break-up reveals that in 2012, in the case of the formal credit market, commercial banks ranked first with a 25.1 per cent market share, closely followed by co-operatives at 24.9 per cent.
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- **Microfinance institutions accounted for only 2.2 per cent of market share.**
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- This suggests that microfinance institutions have not been able to make their presence felt in rural areas.
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- Commercial banks and cooperatives still rule the roost. Interestingly enough, while informal credit agencies have been neutral to the size of assets of the borrowers, formal credit agencies have a preference for higher asset households.
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How do innovations further the cause?

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- **A number of innovations such as the kisan credit card scheme, RIDF, financial inclusion plans including the PM Jan Dhan Yojana, the business correspondent scheme**, and the stipulation of targets for financing of short-term production credit under subvention of interest scheme have a favourable impact on the flow of credit to the farm sector.
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- Yet non-inclusion of investment credit under the interest subvention scheme will have an adverse impact on the flow of investment credit.
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- Needless to say, investment credit is crucial for capital formation in the farm sector and it should also be subsidised.
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- This means subsidising purchases such as computers, computer software, sensor systems, satellite trackers, and IoT devices used in the agri sector.
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- However, to encourage banks it is imperative that advances to technology providers for smart farming be treated as a part of indirect finance to agriculture under priority sector advance.
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Source: Business Line

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