Remote Sensing Application in Agriculture

Dipankar Mandal
M.Tech (Geoinformatics)

“Galvanizing Agriculture.”

dipankar_mandal@iitb.ac.in
Can you find broccoli with an IP !!! 10.1.1.12

Open Agriculture Initiative (OpenAg)
Concept of digital farming

http://www.digitalfarming.bayer.com/
• Right now, farmers can’t adopt such fascinating things in INDIA.
• However, in field situations are quite hard to be accepted by them.
• We have more challenging environment: drought, unseasonal rain, floods, environmental degradation, farmers suicides....
• The statistics are startling..
• So, How do we solve the problem?
Climate resilience agriculture

Crop loss due to unseasonal rain

Crop loss due to drought

http://www.devalt.org/newsletter/may13/of_5.htm
How remote sensing helps to monitor crop growth?

Optical remote sensing provides easy and cost effective way for monitoring crop.

- Normalized difference vegetation index (NDVI) mapping
- Chlorophyll map
- LAI and biomass mapping
- Water stress map
- fAPAR and Net Primary Production maps
Uprooting uncertainty in crop yield

- LAI, biomass, crop biophysical parameters from remote sensing data fosters the in-season prediction of crop yield.
- Optical as well as microwave remote sensing assures the yield prediction
- Integrated framework for crop yield forecasting e.g. FASAL-India, ICCYF-Canada
Fluorescence Explorer (FLEX) ESA’s mission