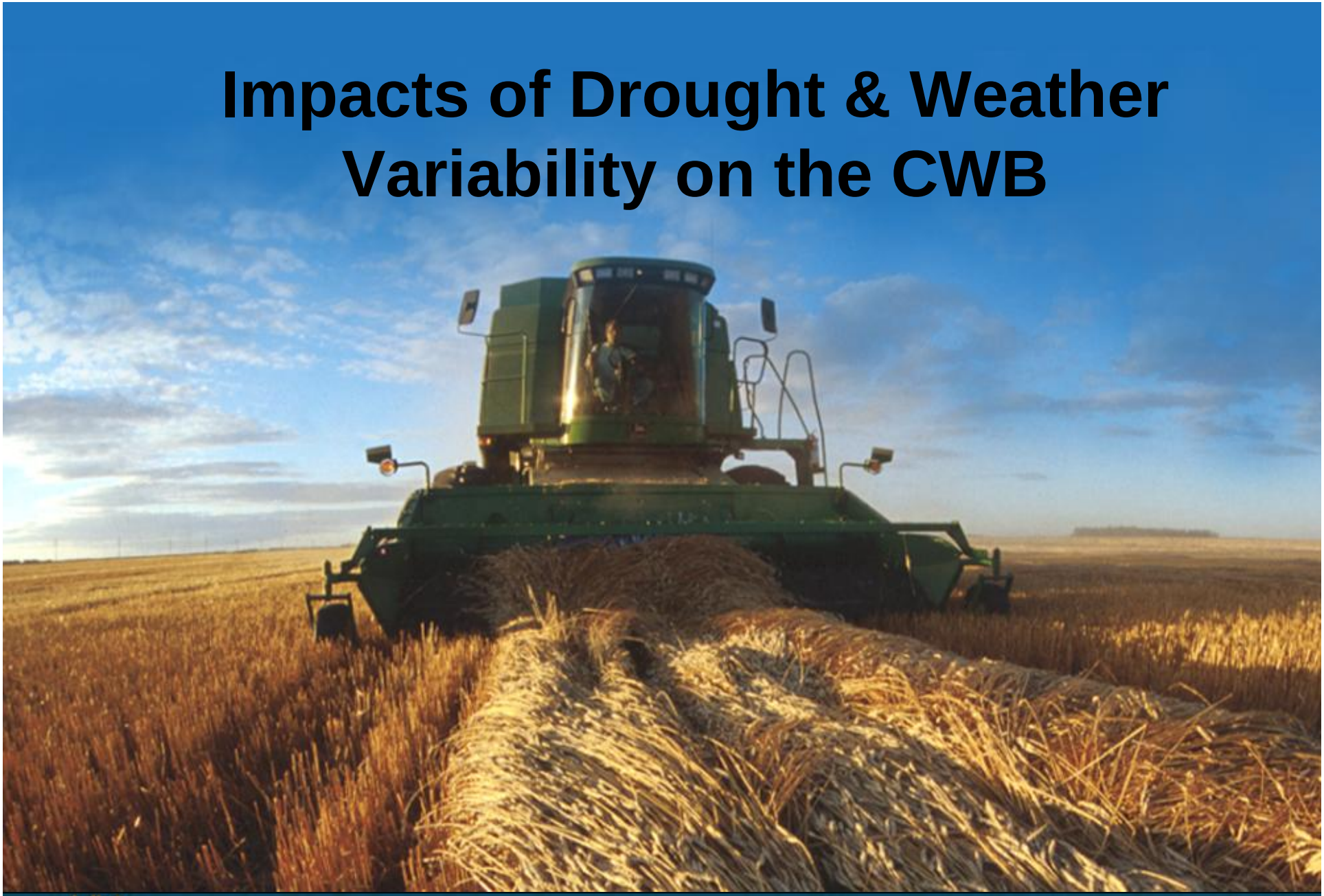
Impacts of Drought & Weather Variability on the CWB



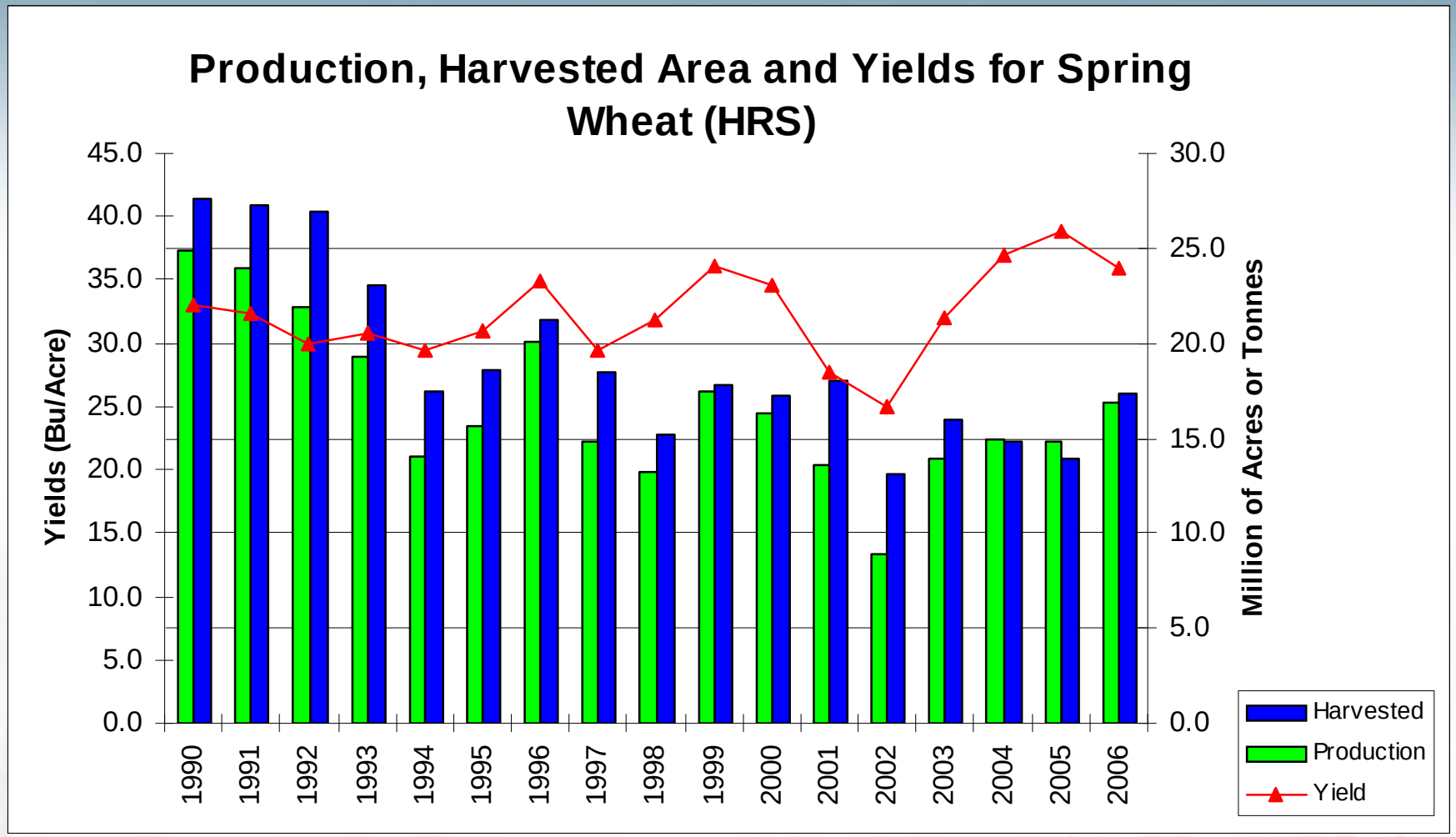
CWB

Prairie strong, worldwide

Drought & Weather Sensitivities:

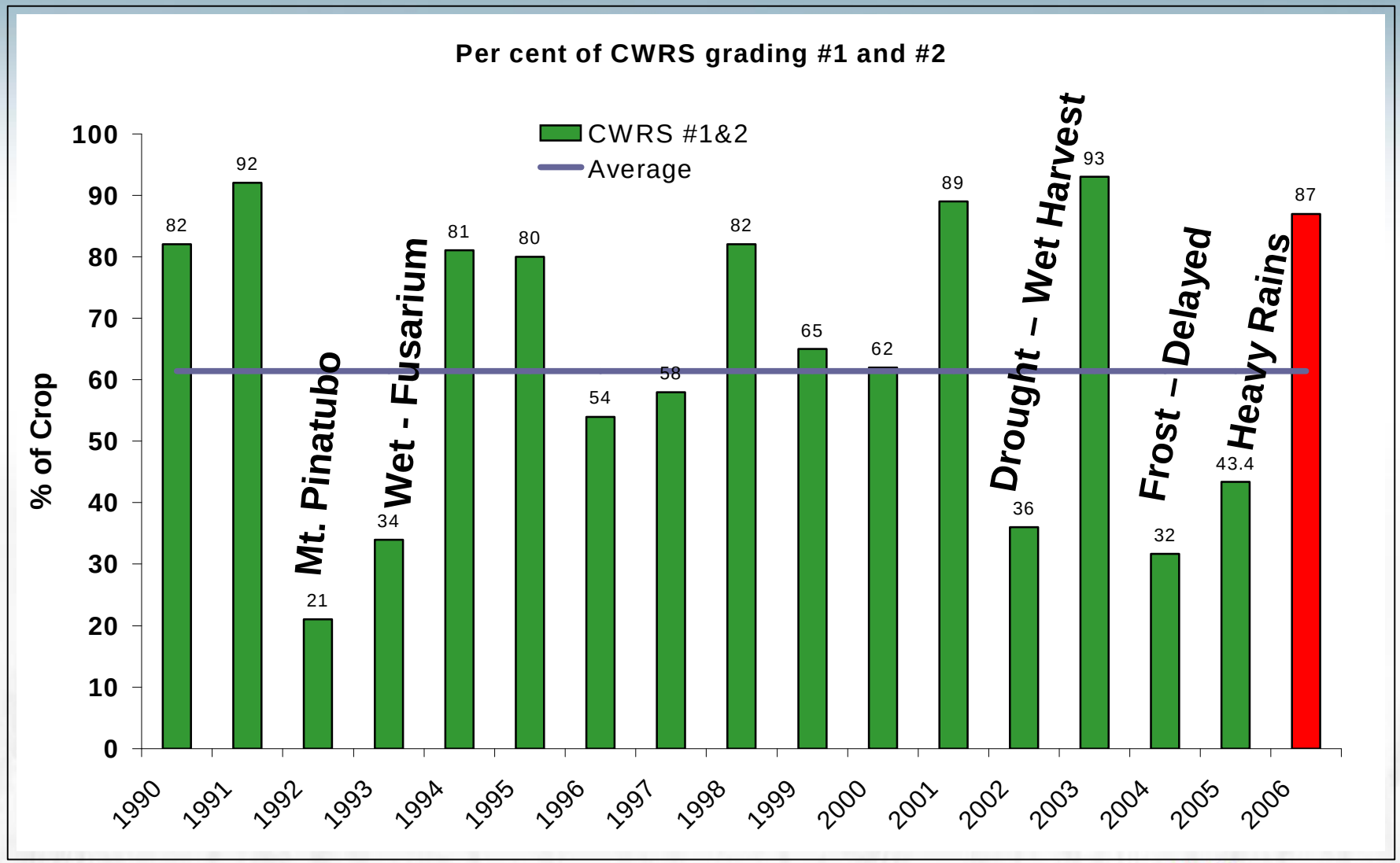
- Reduced seeded acreage (summer fallow, moisture conservation)
  - Abandonment of acreage (lost yields, cost of production/pricing, green feed)
    - Yield loss (heat & moisture stress)
      - Reduced tonnes of production (could be regional)
      - Quality profile or grade pattern (protein, test weights, falling number, HVK, insect damage, disease tolerance, sprout & frost damage)

Drought & Weather Sensitivities Continued:



Yield 5-Yr Avg = 33.8 bu/acre
Production 5-Yr Avg = 13.9 MT
Area 5-Yr Avg = 15.0 mln/acres

Drought & Weather Sensitivities Continued:



Drought & Weather Sensitivities Continued:

- **Impacts directly effect the marketing & sales plan**

  - 2002 - 5 million tonnes of production lost and 26% of CWRS below five-year average (62%) grade pattern.

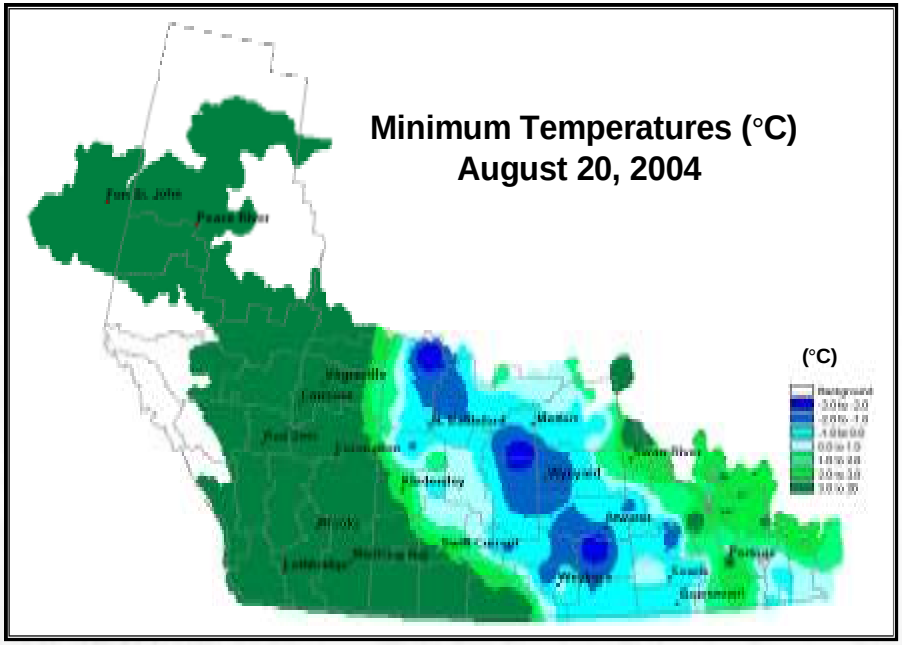
  - Drought & weather variability in 2002 caused $800 million to $1 billion in lost revenue to farmers (farm gate).

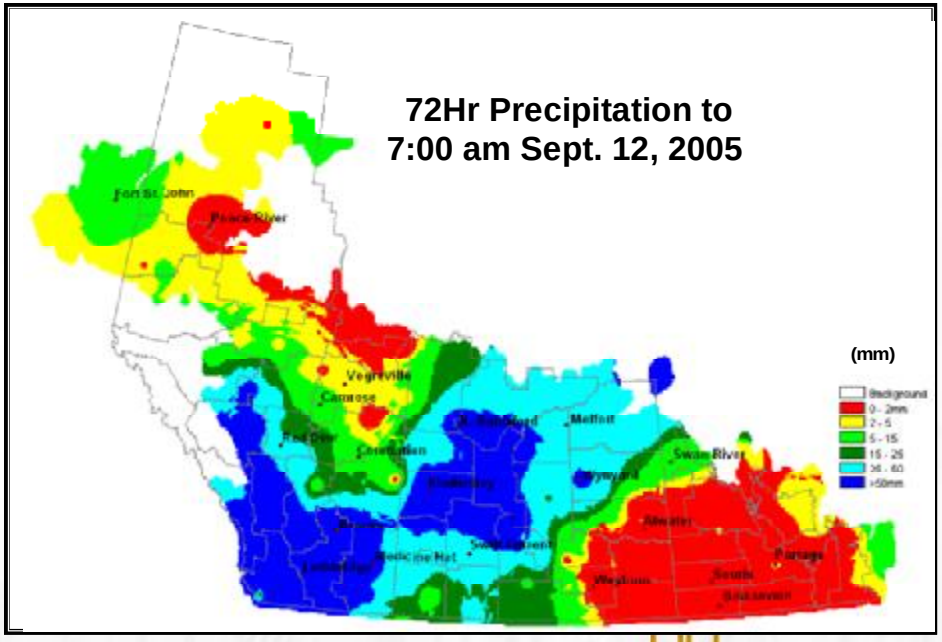
  - Caused by drought and delayed harvest (wet conditions).

- Sales & Marketing Impacts:
  - Global grain chess game – market segmentation.
  - Retain key customers – may mean education on new product profile.
  - Seek new markets – lower grade pattern, may mean feed markets.

Drought & Weather Sensitivities Continued:

- **Impacts directly effect the marketing & sales plan**
  - Higher cost to enter these markets since customers may not be use to your product - education. Could also mean higher shipping costs.
- These concerns extend to numerous weather sensitivities – Drought (2002), severe frost (2004), sprouting (2005).





Drought & Weather Sensitivities Continued:

- **Primary sources of drought and weather information:**
  - Wxdata – Western Canada & world weather feeds
  - Forecast model output – 6 to 48 hr, 1 to 5 day, 6 to 10 day, satellite and radar imagery.
  - Crop weather based models (eg. Soil moisture)
  - Satellite vegetation indexes (Statistics Canada & other providers), satellite imagery (low to moderate resolution)
  - Crop reports (Statistics Canada, industry contacts)
  - Farm Business Representatives (FBR's) and field scouting
- In today's grain industry hourly to daily information is required to reflect conditions. This is especially true for Risk Management.

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Drought & Weather Sensitivities Continued:

- **Benefits of DRI and Future Research:**
  - Quantify the physical features of this recent drought.
  - Assess and reduce uncertainties in the prediction of drought and its structure – still remains very uncertain. Need an understanding of the physical processes at work – e.g. record heat & dryness don't always mean poor production.
  - ***Compare the similarities and differences of the recent drought to previous droughts over the region and those in other regions, in the context of climate variability and change.
  - Extend DRI research into other agricultural weather sensitivities – excess moisture, frost, severe weather etc.

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