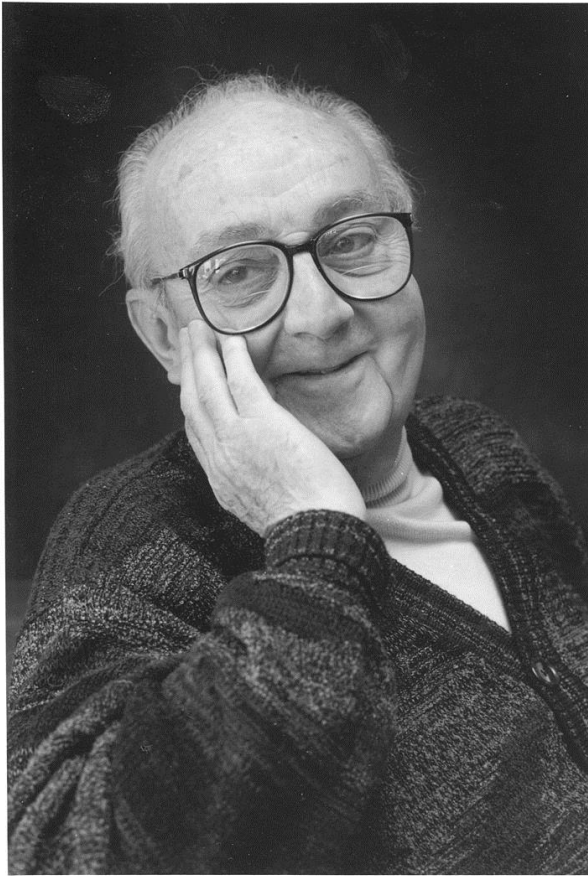

Workshop on Migration of Agriculture as One Path to Sustainability

October 21-23, 2015
NCAR Boulder Colorado

Giovanni Piccinni
Global Supply Chain
Production Sustainability Lead





George Edwards Pelham Box was a British mathematician and professor of statistics at the University of Wisconsin, and a pioneer in the areas of quality control, time series analysis, design of experiments and Bayesian inference.

“All models are wrongthe practical question is how wrong do they have to be to not be useful”.

- Sustainable Agriculture:
 - Increase in food demand – Increase yields
 - Nutrient loading – Understanding IUE
 - Migration due to economics of cost efficiencies
- Resilience to change: Academia/Extension/Fed. Agencies.
- Global Markets – New production areas opening – Competition for export.
- Industry migration to support crop migration (effect on population and jobs just as in drought).

- Modeling efforts: Better coordination and large projects using global databases from public and private sector – “Climate models yet to replicate and predict variation important to agriculture” – “Climate models predict a shift to the east”
- Food security (economical issues in some countries lack of food in others). Yield stability across years will aid food security.
- Environmental impact of crop migration – Are we going to affect climate change?
- Changes in Irrigation technology – West area decrease and east increase.

- Hugh Grant made a commitment to the World Council for Sustainable Development that Monsanto will work to increase water-application efficiency in irrigation across its own global seed production operations by 25 percent by 2020.
- “We have a tremendous opportunity to increase efficiency with modern irrigation technology and precision farming best practices,” said Bob Reiter, vice president of global supply chain. “We have been working to test and promote implementation of water-efficient technologies for years, and these efforts will be accelerated with our new irrigated water-use efficiency commitment.”
Monsanto Today | 4/29/2014



Hugh Grant
Chairman and Chief Executive Officer

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April 25, 2014

Dear UN Global Compact Office,

I am writing to endorse the CEO Water Mandate and commit Monsanto Company to adopting and implementing a comprehensive approach to water management that incorporates, over time, all six elements of the CEO Water Mandate.

We understand that as part of this commitment, Monsanto Company will develop annually a “Communication on Progress-Water,” per the Transparency Policy of the CEO Water Mandate, to be posted on the CEO Water Mandate website.

Sincerely,



Hugh Grant

World's highest net worth selfie? \$1 trillion in one shot (cnbc.com)



Event: Walmart Sustainability Product Expo

Prescriptive Irrigation

- SATELLITE IMAGERY** Combine measurement of vegetative health with weather parameters
- WEATHER FORECAST**
- PROPRIETARY ANALYTICS** Assess field variability and crop water use difference pixel by pixel within a field
- CLOUD-BASED**
- WEB-BASED APPLICATION**
- PRECISION AGRICULTURE** Create irrigation prescriptions using weighted average of pixel crop water use values
- INTEGRATED CONTROLS**
- MAXIMIZE CROP YIELDS**
- MINIMIZE WATER USAGE**

