

**People, Process, Projects, Politics:**  
The four “P’s” that define the present and future  
state of applied entomology in the private sector

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# Abilities that Matter Most ...

- Skill = Proficiency, facility, or dexterity that is acquired through training or experience
- Talent = natural aptitude or skill
- **Ability = The quality of being able (and willing) to do something**

# PEOPLE ...

- **ABILITY** to be “intrinsically motivated and inspired” by the potential of your work

*“We live in a world where self-leadership – taking responsibility for knowing yourself and for engaging in deliberate and constructive thought and contribution – is increasingly a core virtue.”*

Cliff Hakim

- **TRANSLATED** to the Private Sector ... your motivation should revolve around a passion for technology, the science behind it, and the promise it holds for improving peoples livelihood

– At Dow AgroSciences, our collective passion is: “Science serving the needs of a growing world”

*“We've arranged a civilization in which most crucial elements profoundly depend on science and technology.”*

Carl Sagan

# PEOPLE ...

- **ABILITY** to “think big” and the courage to pursue your thoughts
  - Accept the challenge to influence the real world and not just write about it; If you are working on world-relevant topics, funding it is easy

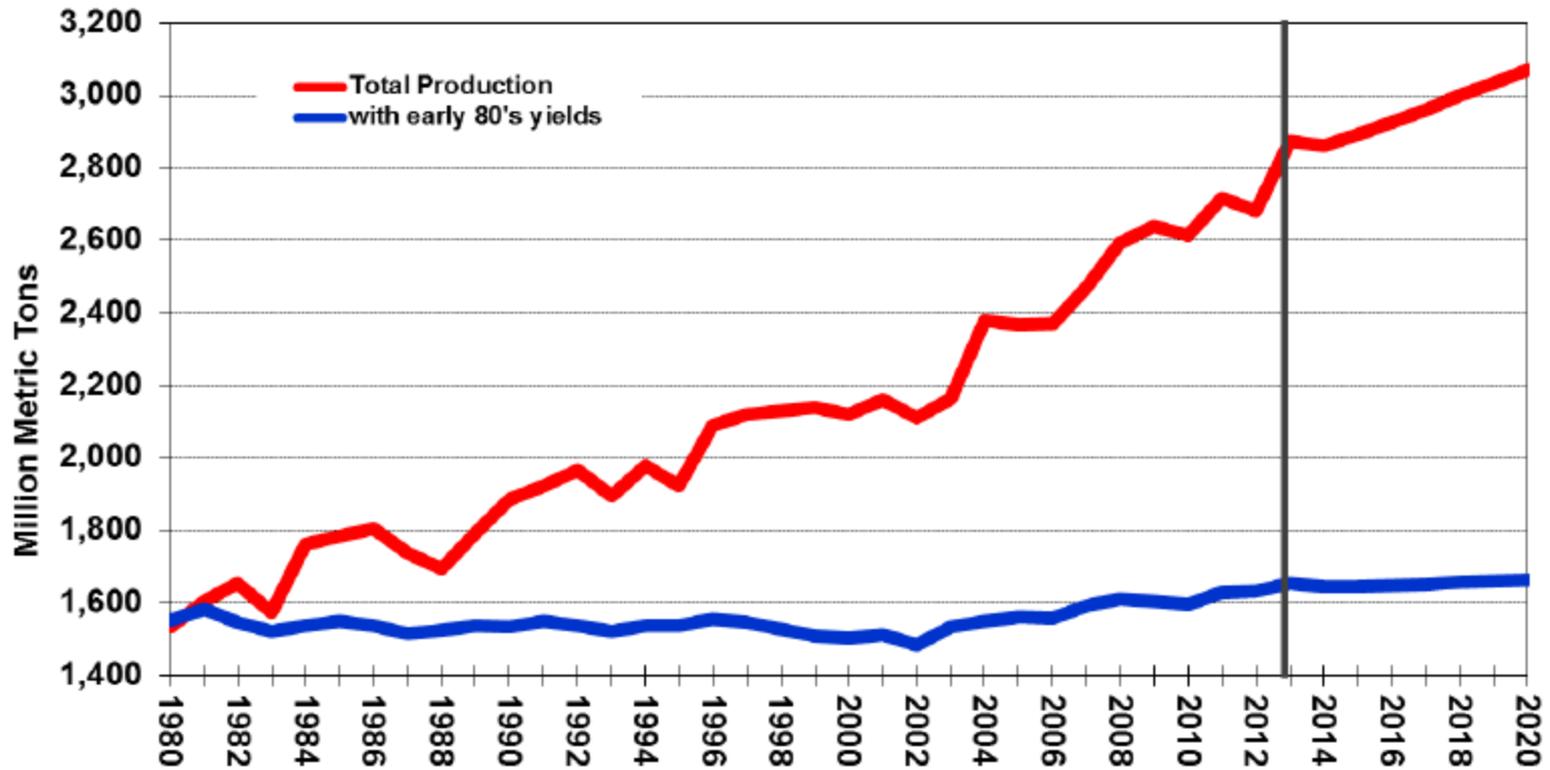
*“The world needs dreamers and the world needs doers. But above all, the world needs dreamers who do.”*

Sarah Ban Breathnach

- **TRANSLATED** to the Private Sector ... always be “Obsessed with Progress...”
  - The discovery and development of pest management technology is a “how to” case study in progress and something entomologists in the private sector should be proud to share

# PEOPLE ...

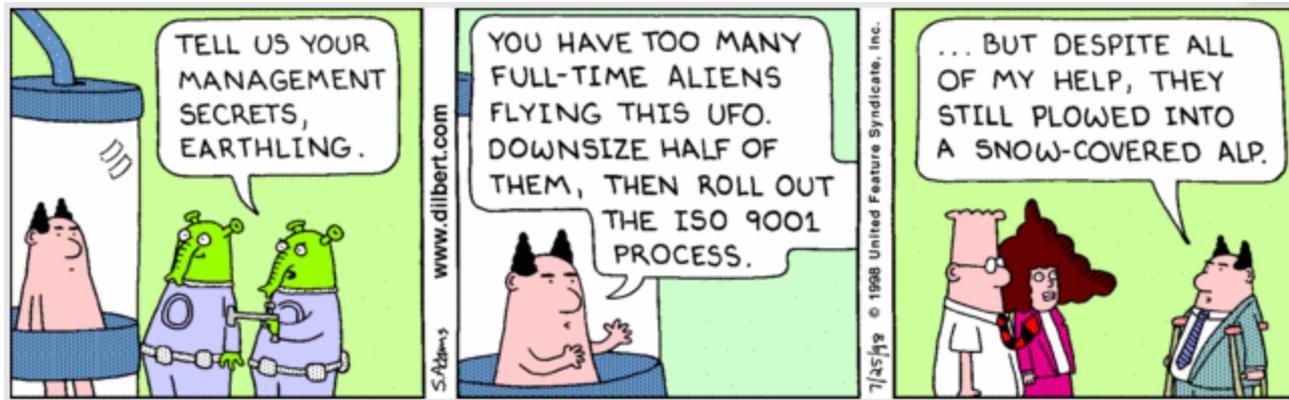
## World Crop Production, Grain and Oilseed



Source: Informa Economics

# PROCESS ...

- **ABILITY** to understand and adapt to the important measures of productivity and continually improve



- **TRANSLATED** to the Private Sector ... Accept that there is no status quo
  - Innovation Life Cycle:
    - BOLD NEW PARADIGMS -> Proof of Concept -> Reduce to Practice -> Reduce Cost/Cycle Time -> SEEK NEW PARADIGMS

# US and European R&D based Crop Protection Companies

1960  
(~42)

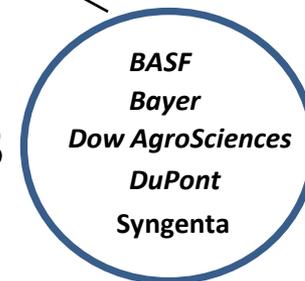
Allied Chem  
AmCy  
**BASF**  
**BAYER**  
Boots  
Ciba  
Diamond  
**DOW**  
**DuPont**  
E. Merck  
ESSO  
Fisons  
**FMC**  
Geigy  
Gulf  
Hercules  
Hoechst  
Hoffman LaRoche  
Hooker  
ICI  
Merck  
MGK  
**Monsanto**  
Morton Norwich  
Murphy Oil  
Olin Math.  
Pennwalt  
Phillips Petro  
Rhone Poulanc  
Rohm & Haas  
Sandoz  
Sauffer  
Schering  
Shell Internat  
Shell US  
Spencer Chem  
Standard Oil  
Sterling  
Union Carbide  
Universal Oil  
Velsicol  
Wyandotte

1980  
(~33)

Abbott  
AmCy  
**BASF**  
**BAYER**  
BFC  
Celamerck  
Chevron  
Ciba-Geigy  
**DOW**  
Duphar  
**DuPont**  
Elanco  
**FMC**  
Gulf  
Hoechst  
Hoffman LaRoche  
ICI  
Maag  
Mobile  
**Monsanto**  
NOR-AM (Schering)  
Rhone Poulanc  
Rohm & Haas  
Roussel UCLAF  
Sandoz  
Sauffer  
Shell Internat  
Shell US  
Union Carbide  
Uniroyal  
Upjohn  
Velsicol  
Zoecon

2013  
(5)

Crop Protection  
R&D Innovation  
Ability



# PROCESS ...

- **ABILITY** to understand that multi-disciplinary is NOT the same as interdependency
  - Product discovery and development exemplifies true interdependency: Biology, Regulatory, Supply, Commercial
- **TRANSLATED** to the Private Sector ... we are mission-based organizations, and we must be on the same mission together. There is tremendous freedom to act within the mission, but there is not “Academic Freedom” in the classical sense.

*“It is amazing what you can accomplish if you do not care who gets the credit.”*

Harry S. Truman

<b>DAS R&amp;D: Generating Customer Value</b>	<b>DAS R&amp;D: Delivering Innovative Solutions</b>	<b>DAS R&amp;D: Collaborating for Superior Results</b>
<i>Scope of Impact: The breadth of impact on the organizational mission and direction</i>	<i>Scope of Impact: The breadth of impact on the organizational mission and direction</i>	<i>Scope of Impact: The breadth of impact on the organizational mission and direction</i>
<b>STAKEHOLDER RELATIONSHIPS</b>  <b>UNDERSTANDING AND MEETING STAKEHOLDER NEEDS</b>  <b>ISSUE RESOLUTION WITH STAKEHOLDERS FOR COMPETITIVE ADVANTAGE</b>	<b>INNOVATION AND CONTINUOUS IMPROVEMENT</b>  <b>LEARNING AND ALIGNMENT FOR VALUE CREATION</b>  <b>BIAS FOR ACTION AND INITIATIVE</b>	<b>DIVERSITY AND INCLUSIVENESS WITH RELATIONSHIPS</b>  <b>COMMUNICATION EFFECTIVENESS</b>  <b>TEAMWORK</b>

<b>DAS R&amp;D: Leading Courageously</b>	<b>DAS R&amp;D: Business and Technical Knowledge</b>
<i>Scope of Impact: The breadth of impact on the organizational mission and direction</i>	<i>Scope of Impact: The breadth of impact on the organizational mission and direction</i>
<b>ACCOUNTABILITY</b>  <b>INITIATIVE, CHANGE, RISK MANAGEMENT</b>  <b>DEVELOPING SELF AND OTHERS</b>  <b>EXTERNAL INFLUENCE</b>	<b>TECHNICAL KNOW HOW</b>  <b>TECHNICAL LEARNING AND DEVELOPMENT</b>  <b>TECHNICAL CONSULTING AND MENTORSHIP</b>  <b>BUSINESS KNOWLEDGE</b>

# Projects ...

- **ABILITY** to multi-task and work simultaneously on many projects: raw capacity

*“A man who dares waste one hour of time has not discovered the value of life”.*

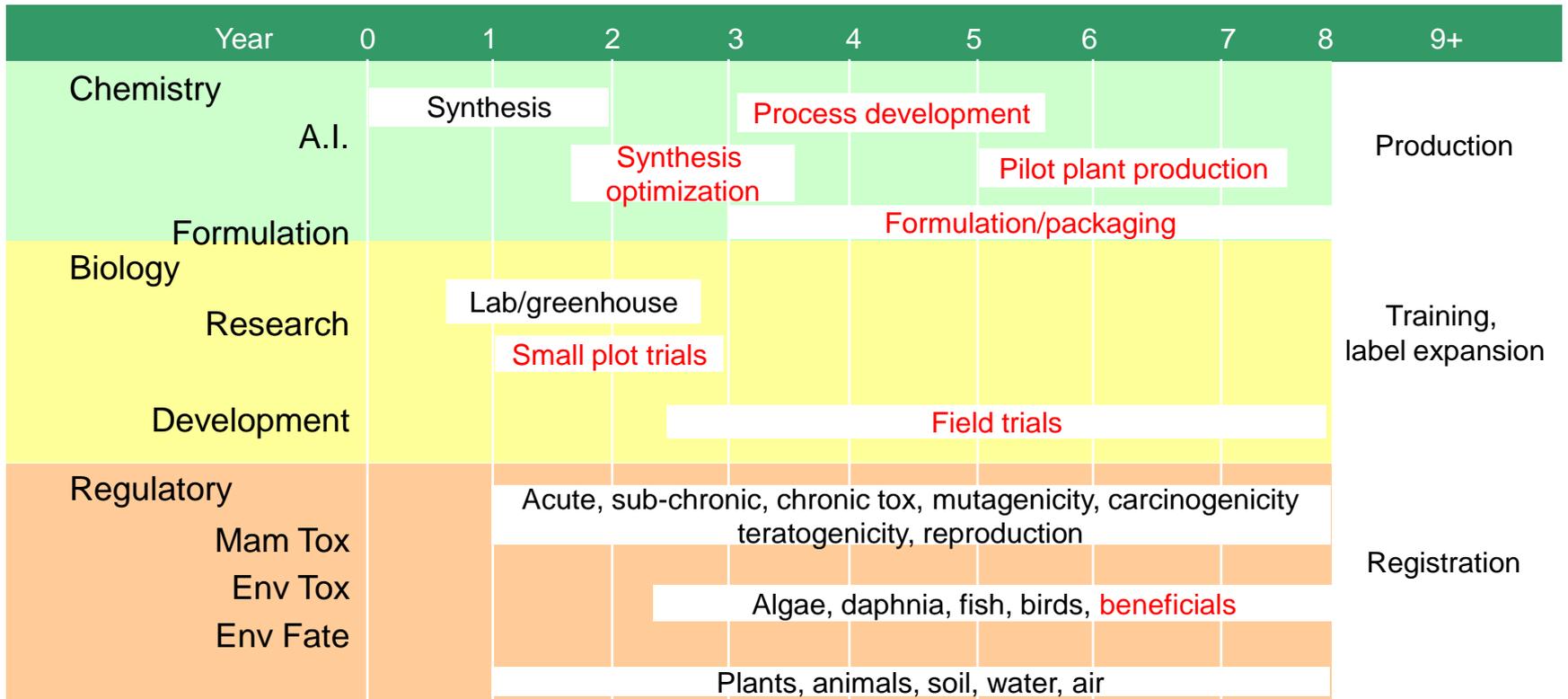
Charles Darwin

- **TRANSLATED** to the Private Sector ... Understand the difference between Important and Urgent from Important and Not Urgent and develop the discipline to dedicate time on the latter to truly move the dial.

*Percentage of: “People who focus on things they can impact rather than on things they can’t?” ... According to xQ survey = 31%*

# Projects ...

- **Ability** to manage uncertainty and provide leadership under often challenging circumstances to ensure project colleagues are accountable
  - Know when to encourage, when to confront, when to escalate



# Politics ...

- **Ability** ... to pursue and defend good science and not be discouraged by the advocates of those who confuse their personal choices with science
  - Perception can be confused for reality, but perception often is NOT reality

*“You cannot reason people out of a position that they did not reason themselves into.”*

Ben Goldacre

- **TRANSLATED** for the private sector ... You will need a thick skin and exceptional personal confidence in your professional commitment to science, the role of technology, and the solutions they provide

# Politics ...

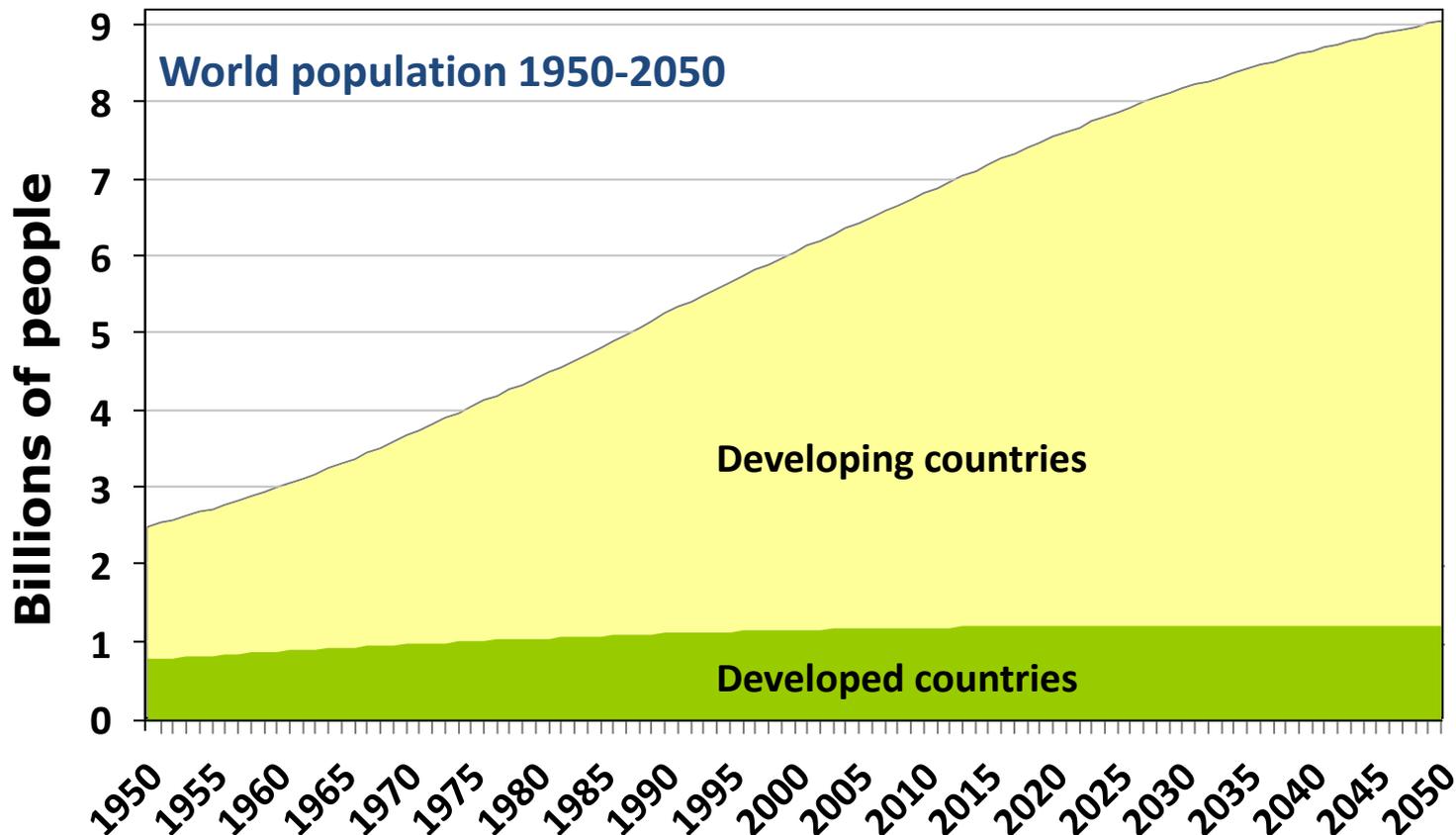
**PARADIGM: The way we see, understand, and interpret the world; our mental map.**

Steven Covey



# Politics ...

- **ABILITY ...** to be an advocate for your mission and the science behind it even in the face of misperception, criticism, and aggressive tactics
  - ESA and other science society venues provide a great venue and footing



# Abilities that Matter ...

Future success will take true **ABILITY** within the context of the four “P’s” ...

... let’s work together across all sectors to genuinely address the Grand Challenges we face

