

Future vision – expected impacts of climate change on intensive horticulture

Presentation to Australian Hydroponics and Greenhouse

Conference: **Sydney, Monday 20 July 2009**



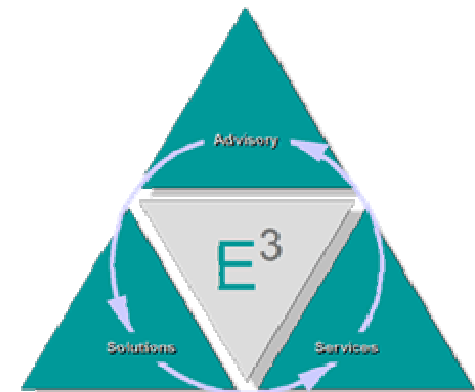
FutureFresh - Modernising Australian Farming

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E³

**Environment
Economics &
Ethics**

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Is climate change real?

Is real climate change happening?

**YES (probably) or
NO (probably not)**

Is human activity playing a part?

**YES (probably) or
NO (probably not)**

Is climate change real?

“Certainty? In this world nothing is certain but death and taxes”

(Benjamin Franklin, 1789)

Is climate change real?

“Certainty? In this world nothing is certain but death and taxes”

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“nothing is certain”

=

change is constant

Carbon Footprint

TESCO



TESCO Orange Juice - 260g CO2 per serving

Carbon Footprint



Walkers Potato Crisps – 80g CO2 per bag



Dealing with Change

- **The Risk Management Equation**

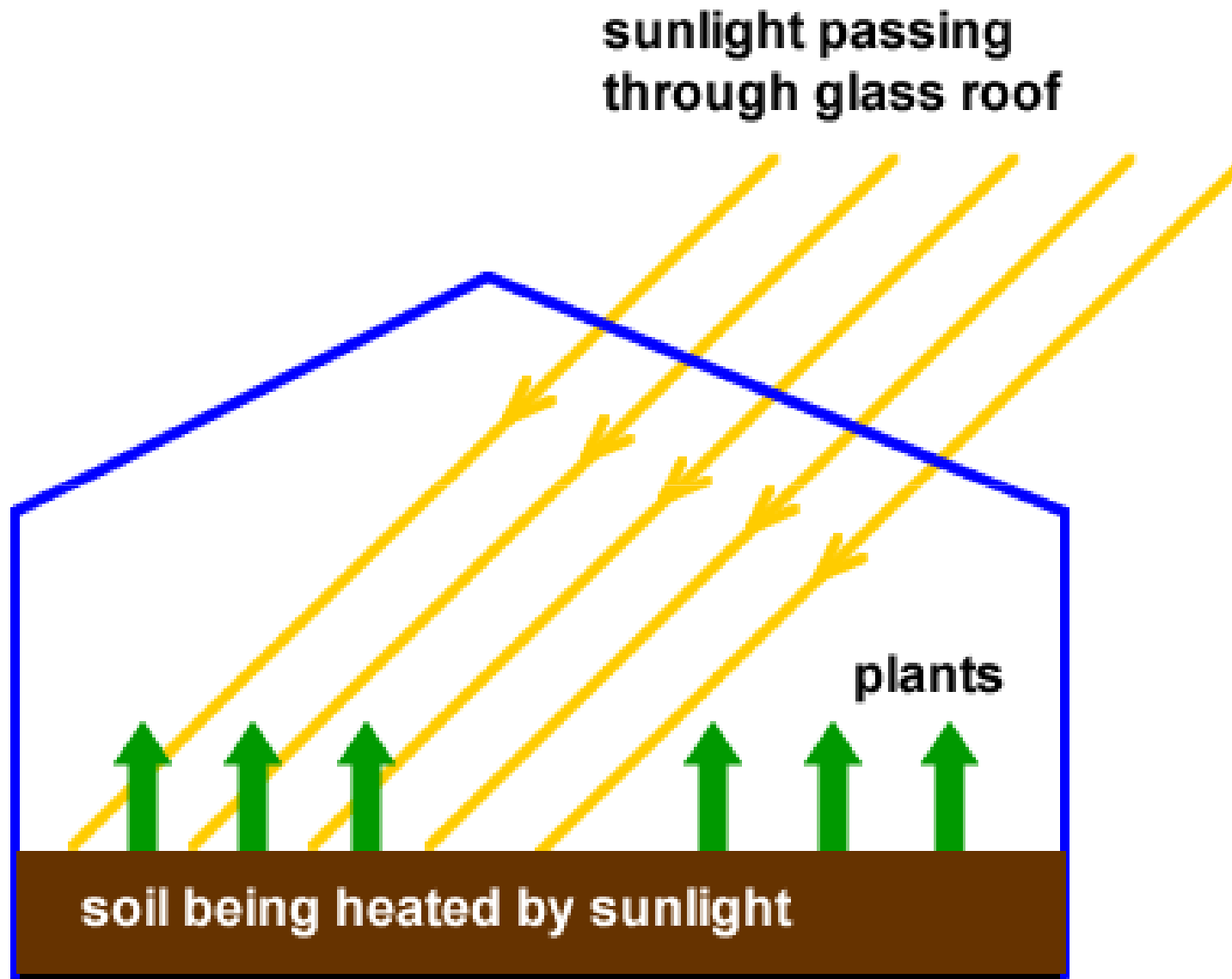
Risk = Likelihood x Impact

Opportunity = Possibility x Benefits

Overview

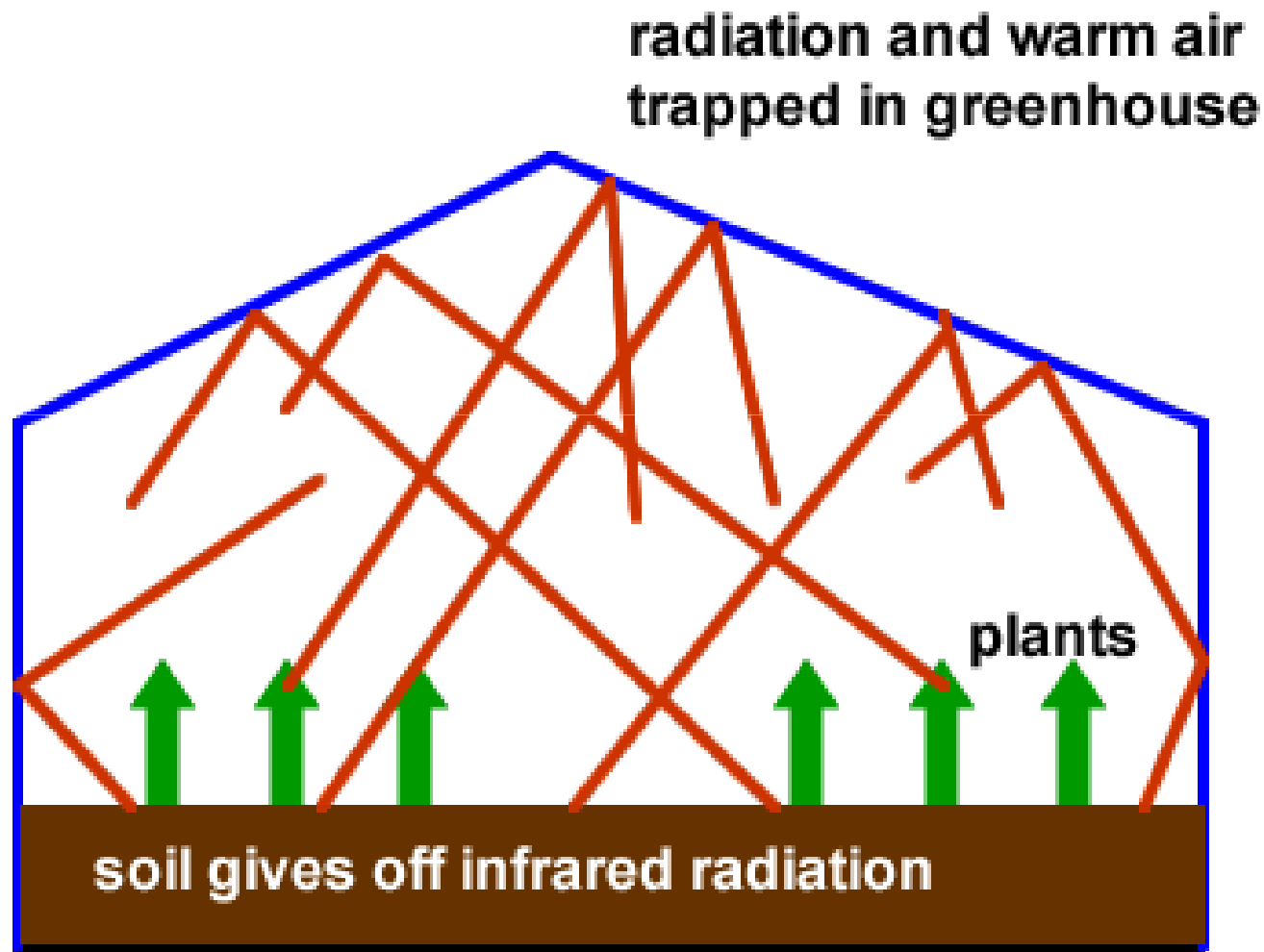
- **The Greenhouse Effect**
 - does it happen in your greenhouse?
 - does it happen in the atmosphere?
- **Where is Climate Change Policy heading?**
- **Why should you care? - the Three Impact Zones**
 1. Mitigation measures
 2. Adaptation measures
 3. Market Behaviour
- **How can we manage the Risks (and Opportunities)?**
- **What can we do next?**

The Greenhouse Effect – does it happen in your greenhouse?



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The Greenhouse Effect – does it happen in your greenhouse?



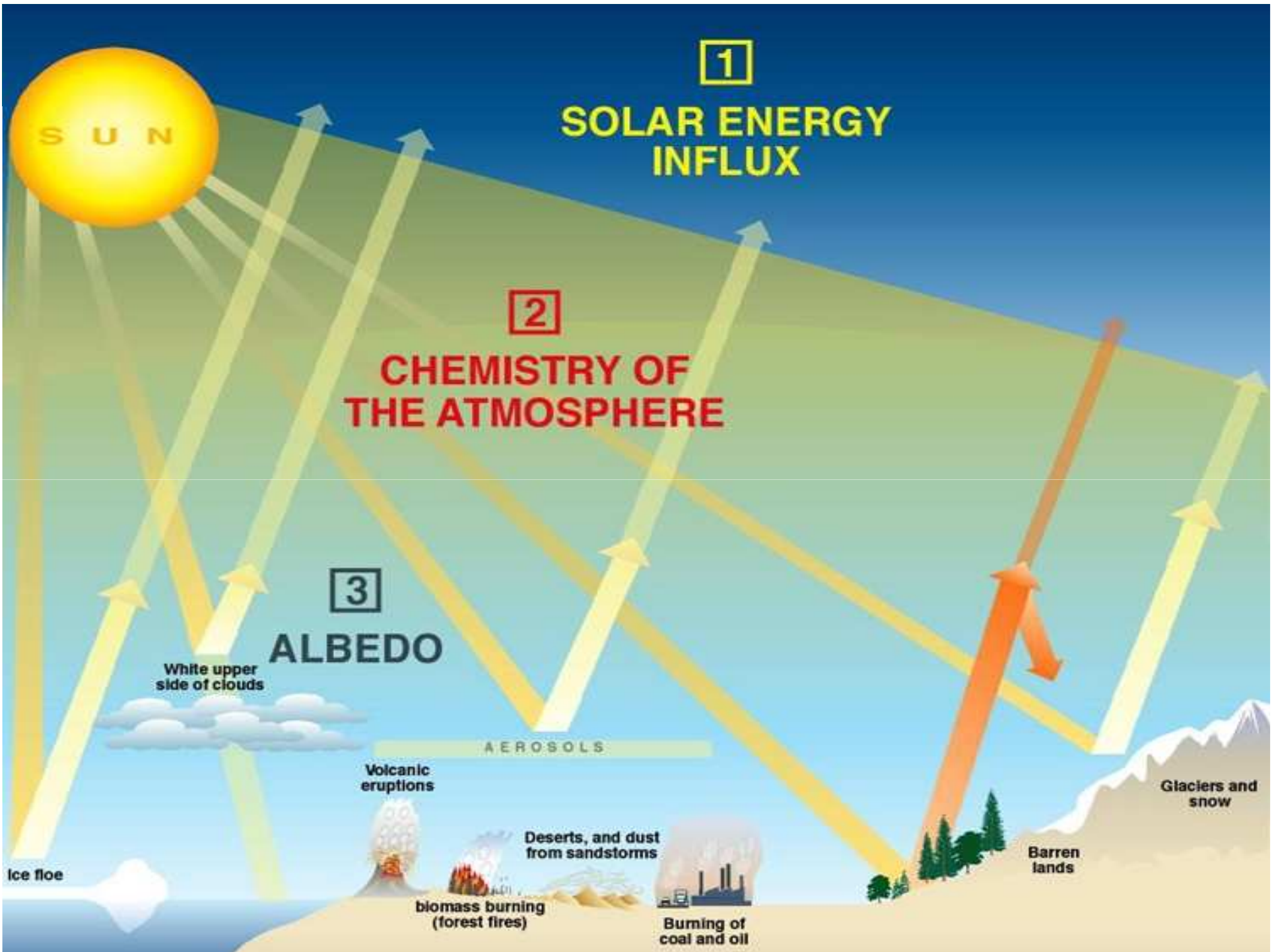
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The Greenhouse Effect – does it happen in the atmosphere?

Major Greenhouse Gases

- Carbon Dioxide CO₂
- Methane CH₄
- Nitrous Oxide N₂O
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride

Source: Intergovernmental Panel on Climate Change (IPCC)



Greenhouse Growers – the climate experts

- **How Greenhouse Growers manage the Three Factors in the energy balance**

- 1.(Solar) Energy Influx**

- choice of site & alignment
- add or remove energy

- 2.Chemistry of the atmosphere**

- misting
- ventilation (CO₂)

- 3.Reflection**

- geometry of structure
- Reflective paints, films, screens

Impact of Climate Change Policy

- **Very fluid situation regarding policy**
- **Global**
 - **Kyoto, December 1997**
 - **Copenhagen, December 2009**
- **Australia**
 - **CPRS (Carbon Pollution Reduction Scheme)**
 - **“Cap & Trade” scheme**
 - **Targets major sources of greenhouse gases**
 - **Decision on agriculture’s inclusion - 2013**
-

The Three Impact Zones

- 1. Mitigation measures**
- 2. Adaptation measures**
- 3. Market Behaviour**

1. Mitigation measures

Risks	Opportunities
Increased input costs	Technology to reduce energy costs and emissions
	?Government subsidies

2. Adaptation measures

Risks	Opportunities
Extreme weather events eg heatwaves	Reliable, continuous production
Water availability and price	
Pest outbreaks	

3. Market Behaviour

Risks	Opportunities
Consumer concern over food miles and “intensive” production	Consumer interest in “locally grown” food
Lack of reliable analysis of consumer and market behaviour	

What assures consumers on Climate Change?

Australian Survey – 1000 people, August 2008 (Net Balance Foundation)



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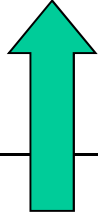
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Not Concerned, but <u>might</u> take action	1%	Concerned, <u>will</u> take action	21%
Not concerned, will NOT take action	4%	Concerned, but what's the point?	75%

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Carbon Footprint

Carbon Reduction Label
helping to reduce our footprint on the planet

PLANET ARK



**CARBON
TRUST**

3. Market Behaviour

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What can we do next?

- 1. Change is inevitable – climate change is only one factor to consider**
- 2. Collaborate to monitor policy**
- 3. Collaborate to monitor Market Behaviour**
- 4. Find a niche or find a partner**
- 5. Look for skills in negotiation**
- 6. Look for technology and production skills**

QUESTIONS?