

# Future vision – expected impacts of climate change on intensive horticulture

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Presentation to Australian Hydroponics and Greenhouse

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



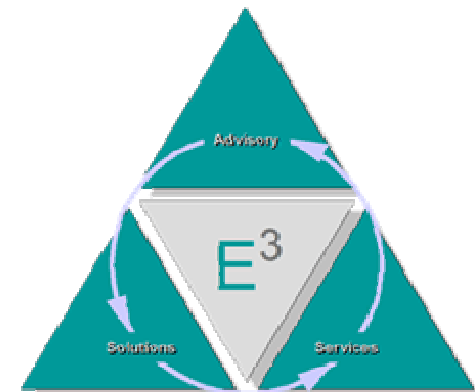
**FutureFresh - Modernising Australian Farming**

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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”

(Benjamin Franklin, 1789)

“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**

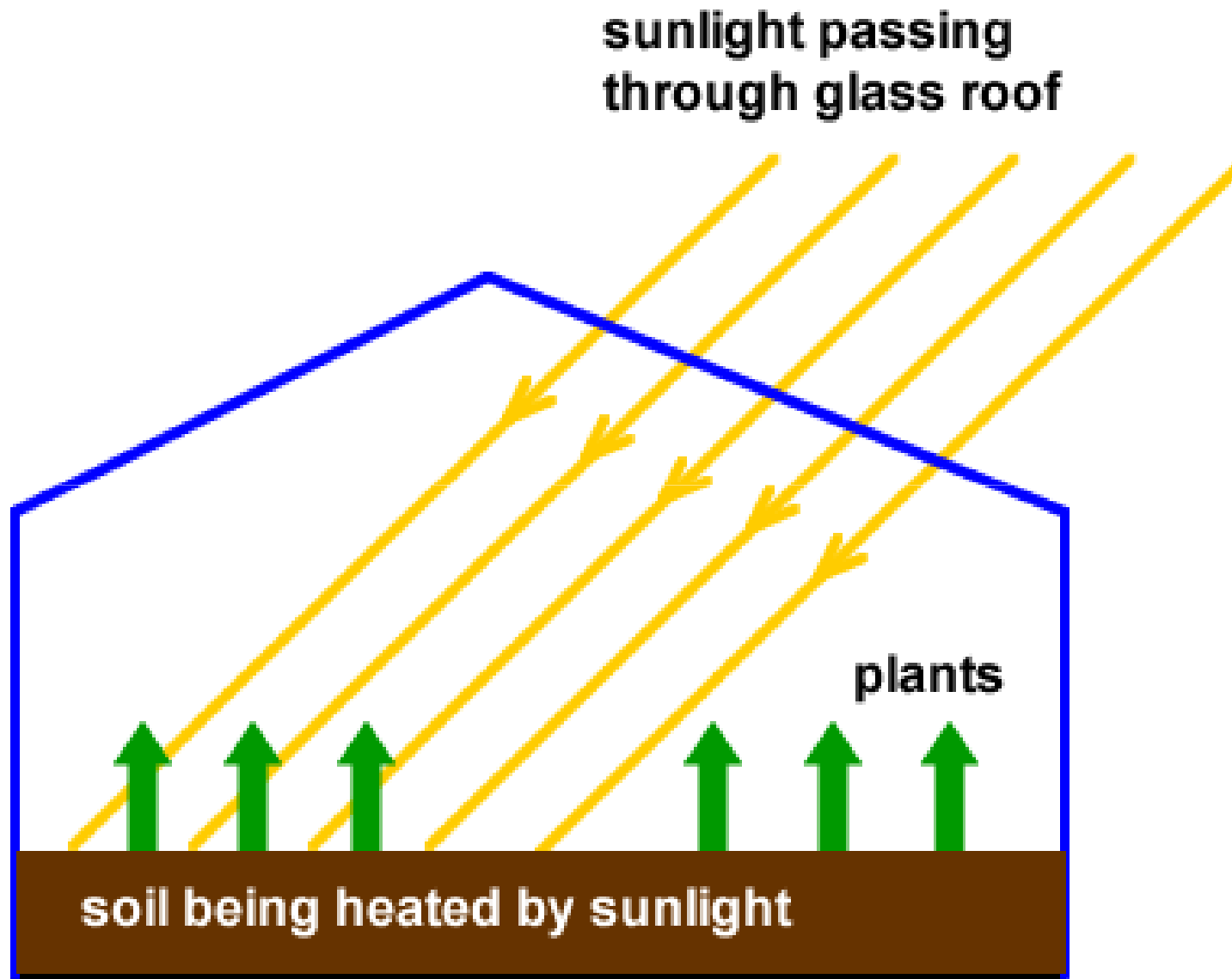
**Opportunity = Possibility x Benefits**

# 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?**

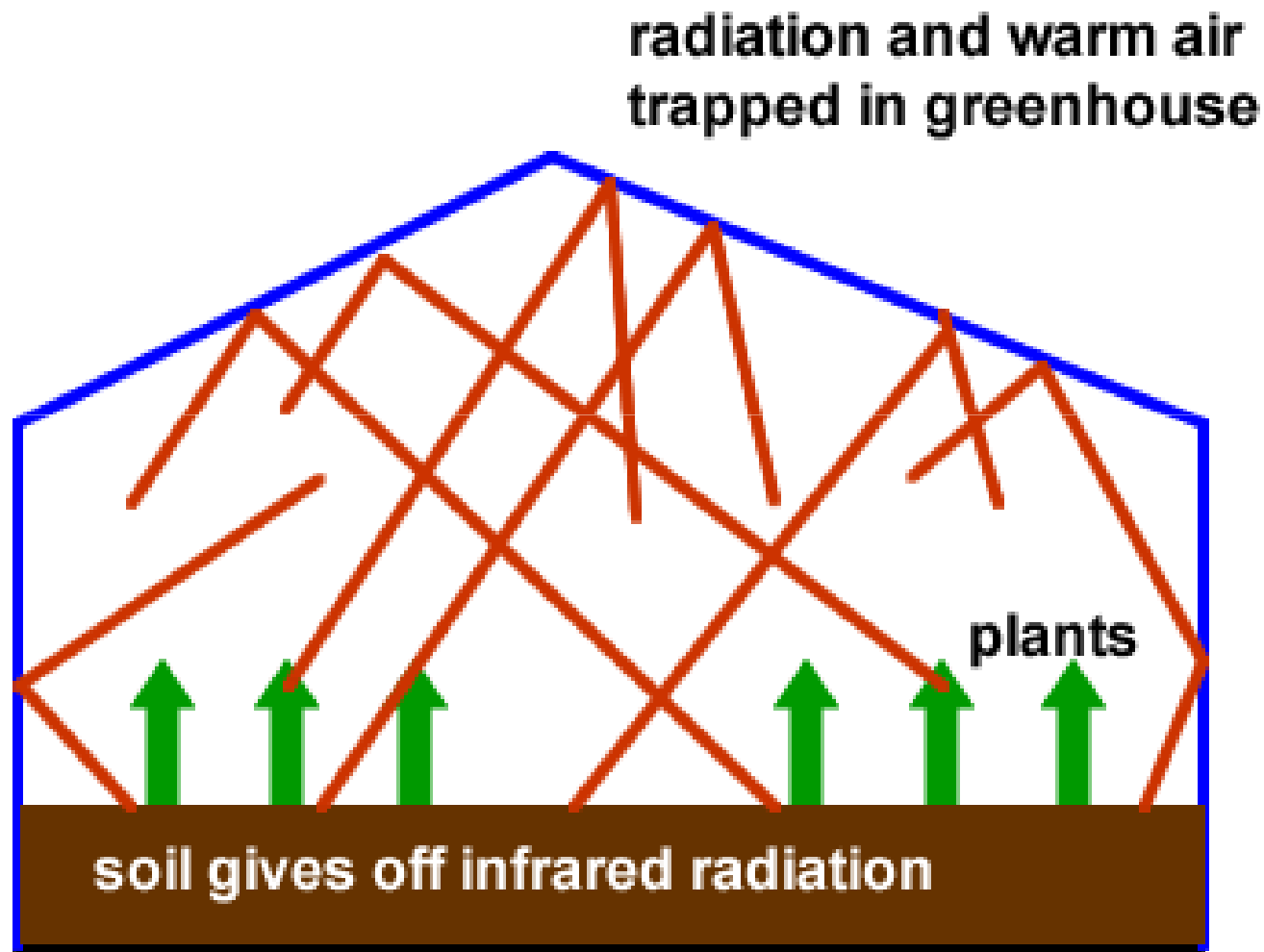


# The Greenhouse Effect – does it happen in your greenhouse?



[www.school-for-champions.com](http://www.school-for-champions.com)

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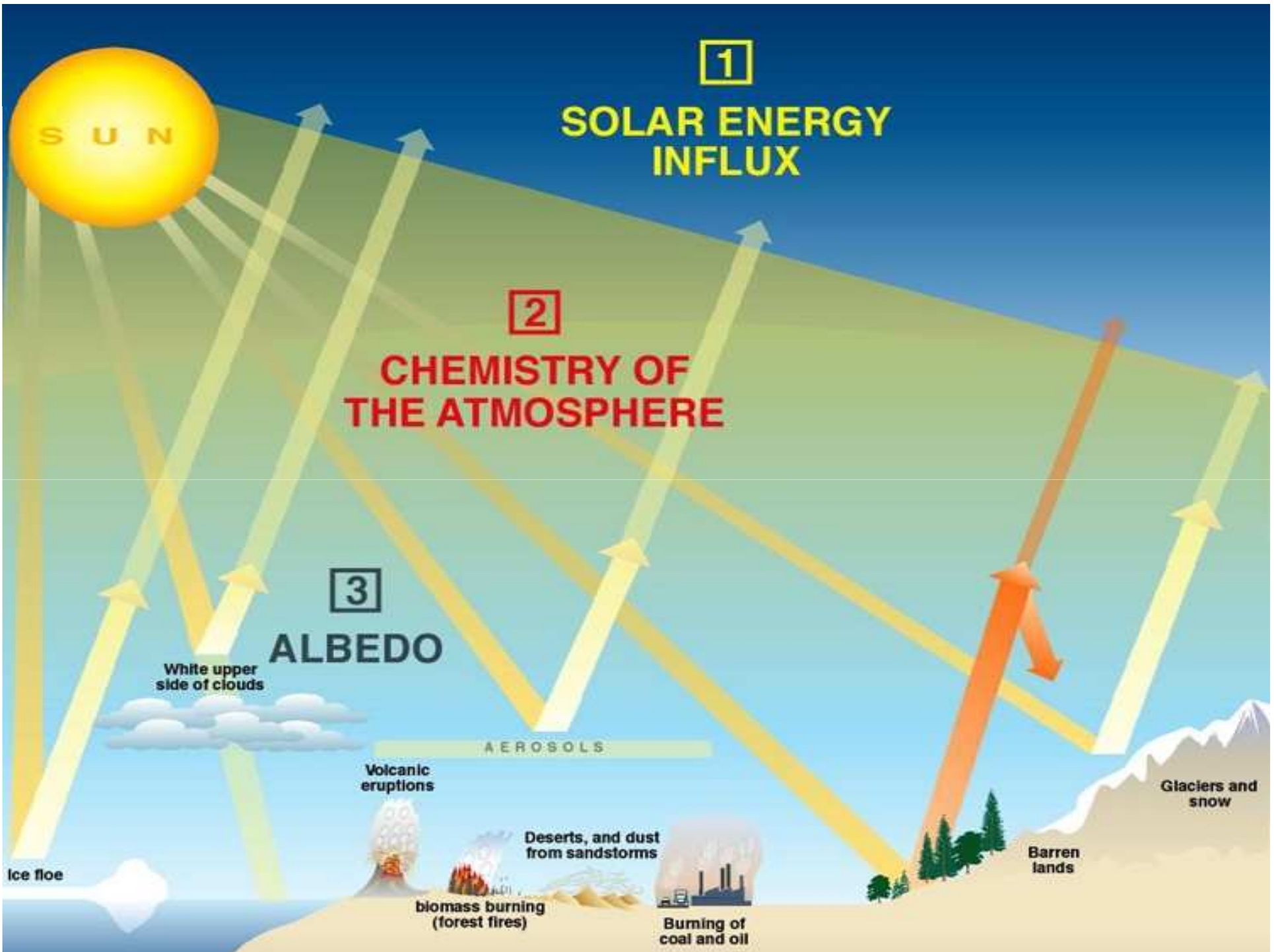
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# The Greenhouse Effect – does it happen in the atmosphere?

## Major Greenhouse Gases

- Carbon Dioxide CO<sub>2</sub>
- Methane CH<sub>4</sub>
- Nitrous Oxide N<sub>2</sub>O
- 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 (CO<sub>2</sub>)

- 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**
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# The Three Impact Zones

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

# 1. Mitigation measures

<b>Risks</b>	<b>Opportunities</b>
<b>Increased input costs</b>	<b>Technology to reduce energy costs and emissions</b>
	<b>?Government subsidies</b>



## 2. Adaptation measures

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

### 3. Market Behaviour

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

# What assures consumers on Climate Change?

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



# What assures consumers on Climate Change?

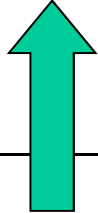
**Australian Survey – 1000 people, August 2008 (Net Balance Foundation)**

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

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# Carbon Footprint



**Walkers Potato Crisps – 80g CO2 per bag**



# 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?