Environmental issues and sustainable growth

Eco-management systems for institutions and companies

Environmental issues

- *Greenhouse effects and ozone depletion: climate change and natural emergency*
- *Hazardous substances leakage*
- *Availability and quality of water for human activities and life*
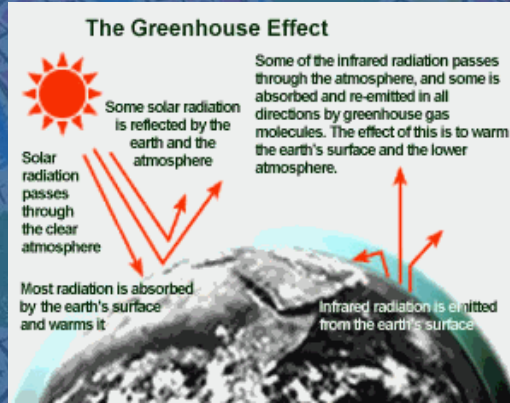- *Local and regional pollution: pollutant localization issues*
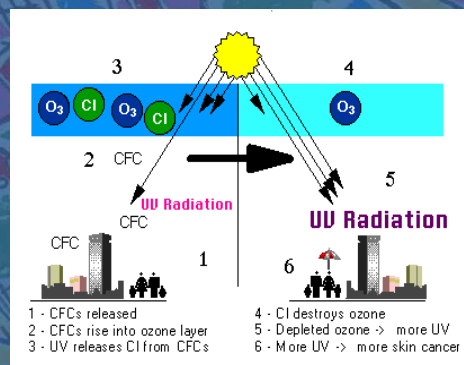
Global

Local

Greenhouse effects

- International effort
- Technology innovation
- Impact on legislations:
  - CFC & HCFC prohibition
  - Kyoto protocol on greenhouse gases (e.g. CO_2)

The Greenhouse Effect

Some solar radiation is reflected by the earth and the atmosphere

Solar radiation passes through the clear atmosphere

Most radiation is absorbed by the earth's surface and warms it

Some of the infrared radiation passes through the atmosphere, and some is absorbed and re-emitted in all directions by greenhouse gas molecules. The effect of this is to warm the earth's surface and the lower atmosphere.

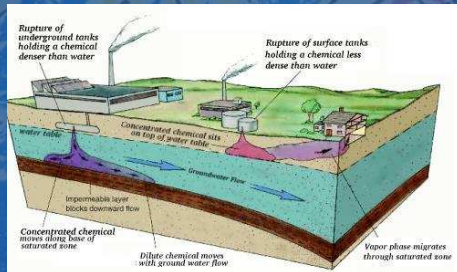Infrared radiation is emitted from the earth's surface

Ozone depletion

- International effort
- High technology research
- Impact on legislation:
  - CFC total prohibition
  - HCFC reduction
 - Impact on common life (spray, etc.)

O_3 Cl O_3 Cl

3

2 CFC

UV Radiation
CFC
CFC

1

O_3

4

5

UV Radiation

6

1 - CFCs released
2 - CFCs rise into ozone layer
3 - UV releases Cl from CFCs
4 - Cl destroys ozone
5 - Depleted ozone -> more UV
6 - More UV -> more skin cancer

Water issues

- Domestic use
- Recreational use
- Industrial use
  Water and Life

- Pollution of rivers, lakes and sea
- Pollution of underwater resources
- Agricultural practices
- Chemical leakage
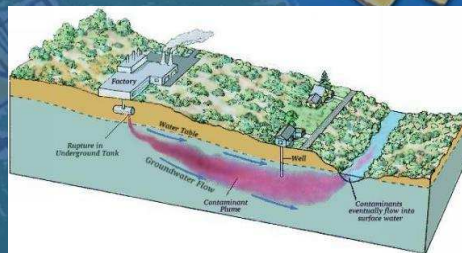
Hazardous subst. leakage

- The Seveso accident and EC legislation (the Seveso directives):

  – People troubles

  – High risks regulation

  – Emergency plans

  – Public health and public information

Pollutants localization

Regional impact

Local impact

Long and short term

- Different timing of consequences
  - Long term = low level of pollution, chronic and slight disease: e.g. urban air pollution and respiratory disease
  - Short term = high level of pollution, intense and serious disease: e.g. Bophal or Seveso accident
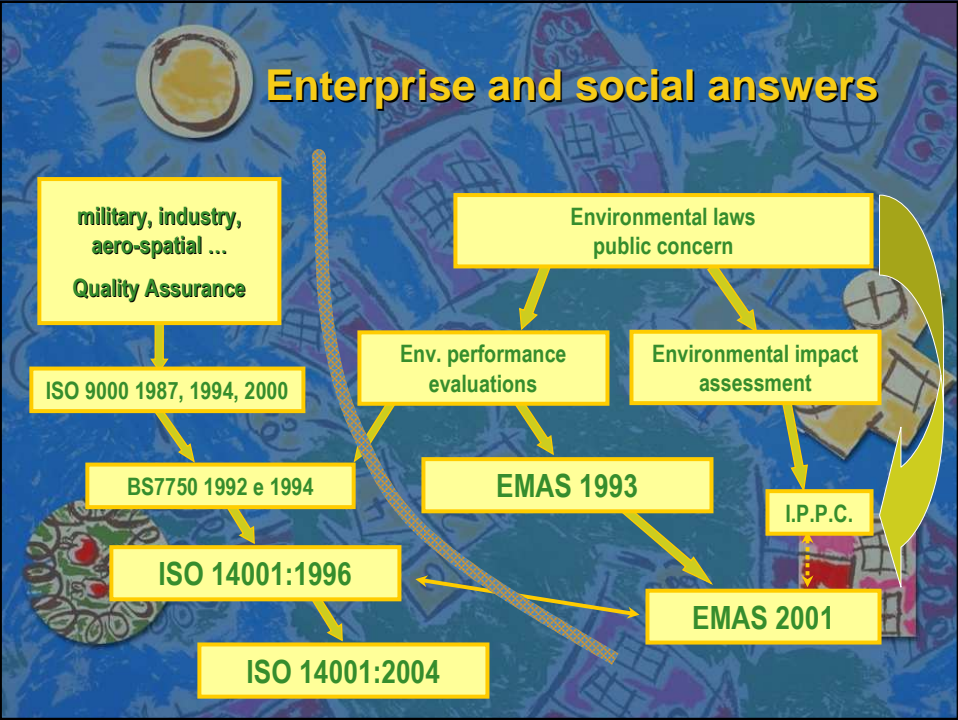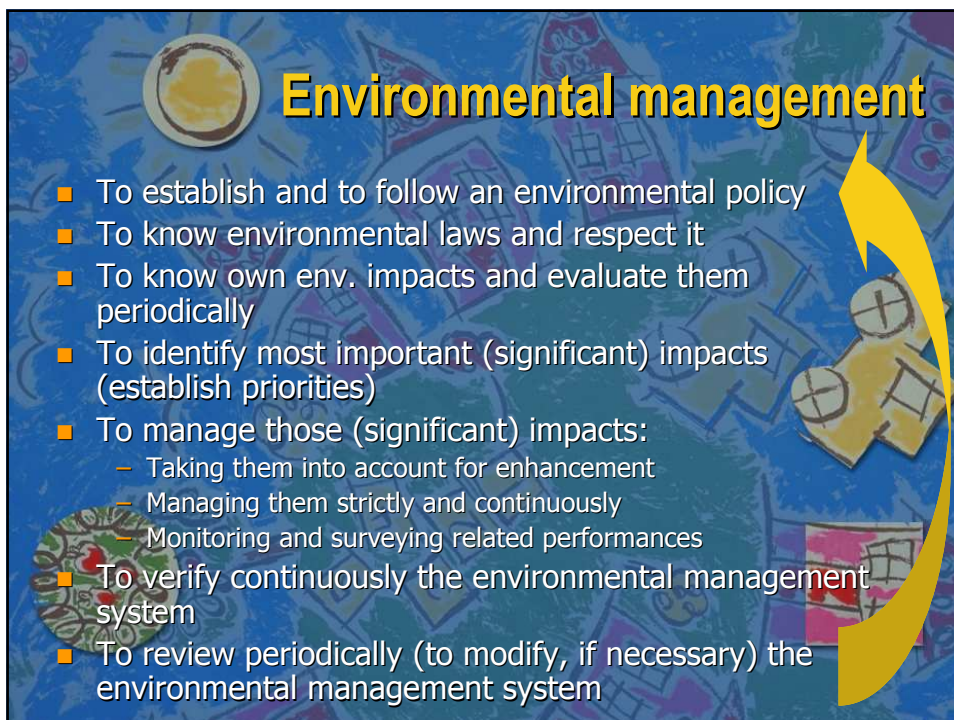
Environmental pressures to firms

- Legal constrains
- Responsibility
- Public incentives & disincentives
- Market, consumers & products
- Public relations
- Cost reduction

Actors (Stakeholder) …

- Owners & shareholders
- Local authorities
- customers and market
- employees

Enterprise and social answers

military, industry, aero-spatial ...
Quality Assurance

Environmental laws
public concern

ISO 9000 1987, 1994, 2000

Env. performance
evaluations

Environmental impact
assessment

BS7750 1992 e 1994

EMAS 1993

I.P.P.C.

ISO 14001:1996

EMAS 2001

ISO 14001:2004

What is EMS?

PLAN
establish the objectives and processes necessary to deliver results in accordance with the organization's environmental policy.

DO
implement the processes.

Environmental Management System

ACT
take actions to continually improve performance of the environmental management system

CHECK
monitor and measure processes against environmental policy, objectives, targets, legal and other requirements, and report the results.

Environmental management

- To establish and to follow an environmental policy
- To know environmental laws and respect it
- To know own env. impacts and evaluate them periodically
- To identify most important (significant) impacts (establish priorities)
- To manage those (significant) impacts:
  – Taking them into account for enhancement
  – Managing them strictly and continuously
  – Monitoring and surveying related performances
- To verify continuously the environmental management system
- To review periodically (to modify, if necessary) the environmental management system

Commitment and responsibility

- Top management commitment
- Responsibility
- Firms awareness of their own responsibilities
- Department level awareness … involve all key-men
- Everyone to perform (top management, management, departments, all employees, suppliers)
- Clear target: to implement the environmental policy, to change processes, to enhance performances, to achieve certification
- Planning, scheduling, reporting

Who uses ISO 14001 *(Emas)*?

in Italy

- **Companies:**

  – ca. **5000** *(300)*

- **Public administrations:**

  – **81** *(17)* Local Authorities (municipalities, province, others)

  – **15** *(3)* Protected areas (nat./reg. parks, natural areas, etc.)

Why ISO 14001/Emas?

- Management tool (companies)
    - To reduce environmental risks
    - To obtain competitive benefit
    - To enhance relations with local communities
- Land governance tool (Public Administrations)
    - To apply modern methodologies for governance
    - To enhance relations with citizens & entrepreneurs

Why ISO/Emas certification?

- Managing the relationship of enterprises with the Environment
- Environment as an opportunity
- Environment as a driver of organizations and process re-engineering
- External acknowledgement of certification
- Periodic verification: **continuous improvement**

Environment & Food

The food context …

Healthy eating!
- **Pollution damages water, air, soils**
- **By consequence: agricultural productions, animals.**
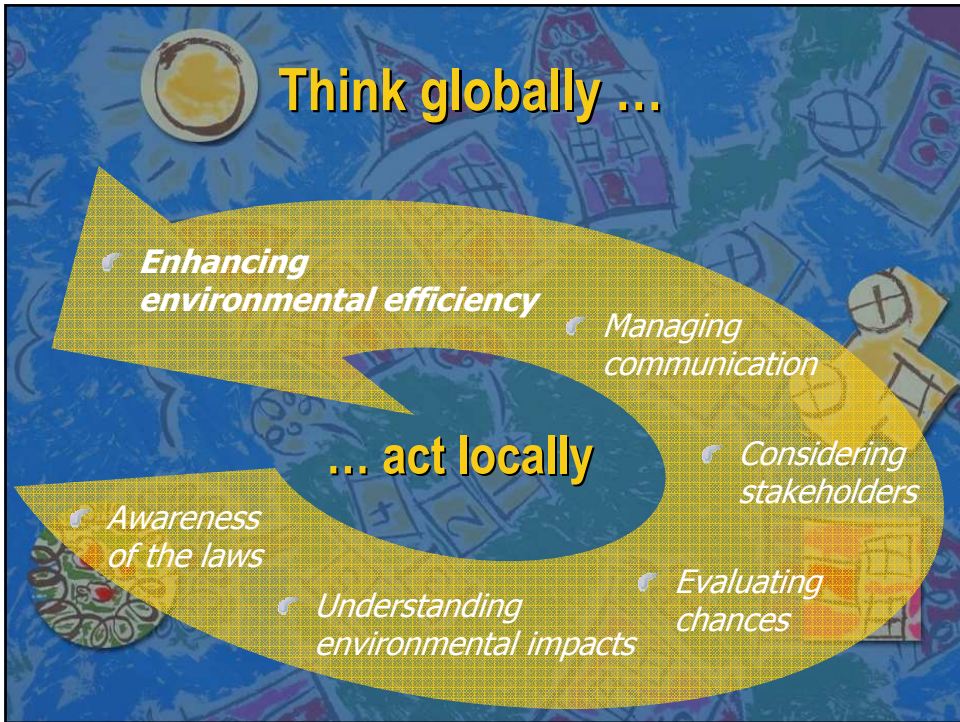
CONSUMER MORE SENSIBLE!
- **Biological food**
- **Attention to labels**
- **Geographic denominations, etc. …**

Environment, food, typical products and territory

- Development of sensibility for food quality, for "gusto" and for health of food
- Demand of typical products, with certified and guaranteed origin, interpreted as assurance of their quality
- Typical = territory relationship = territory development
- Promotion of typical products reinforce and enhance local economy, … benefit to all stakeholders
- Work, prosperity, social sustainability

Think globally …

- Enhancing environmental efficiency
- Managing communication
- … act locally
- Considering stakeholders
- Awareness of the laws
- Evaluating chances
- Understanding environmental impacts

"Green" market: sustainable …

territory

efficiency …

product

Producers … districts Customers

ISO 14001 - EMAS - green products

Environmental quality …

- Between demand and offer:
  - Demand **from** territory
  - Offer **to** territory
- Defining demand **from** territory
  - Identifying environmental priority
- Supporting offer **to** territory
  - Enhancing environmental impacts

Call for synergy!

- Many enterprises should operate in the territory:
  - Adopting environmental criteria and/or management systems
  - Enhancing their own environmental performances
  - Co-operating for common benefit
- Local authorities should commit:
  - For common management of land and rural areas
  - For promotion of virtuous behaviour
  - For local development