



**All good things come in small packages,  
it's true...**

# Green Impact Come in Small Packages

Dr. Hjh Puziah Hanum Abdul Ghani

NH Strategic Resources

[puziahhanum@yahoo.com](mailto:puziahhanum@yahoo.com)

012 2326634

28 Oct. 2015

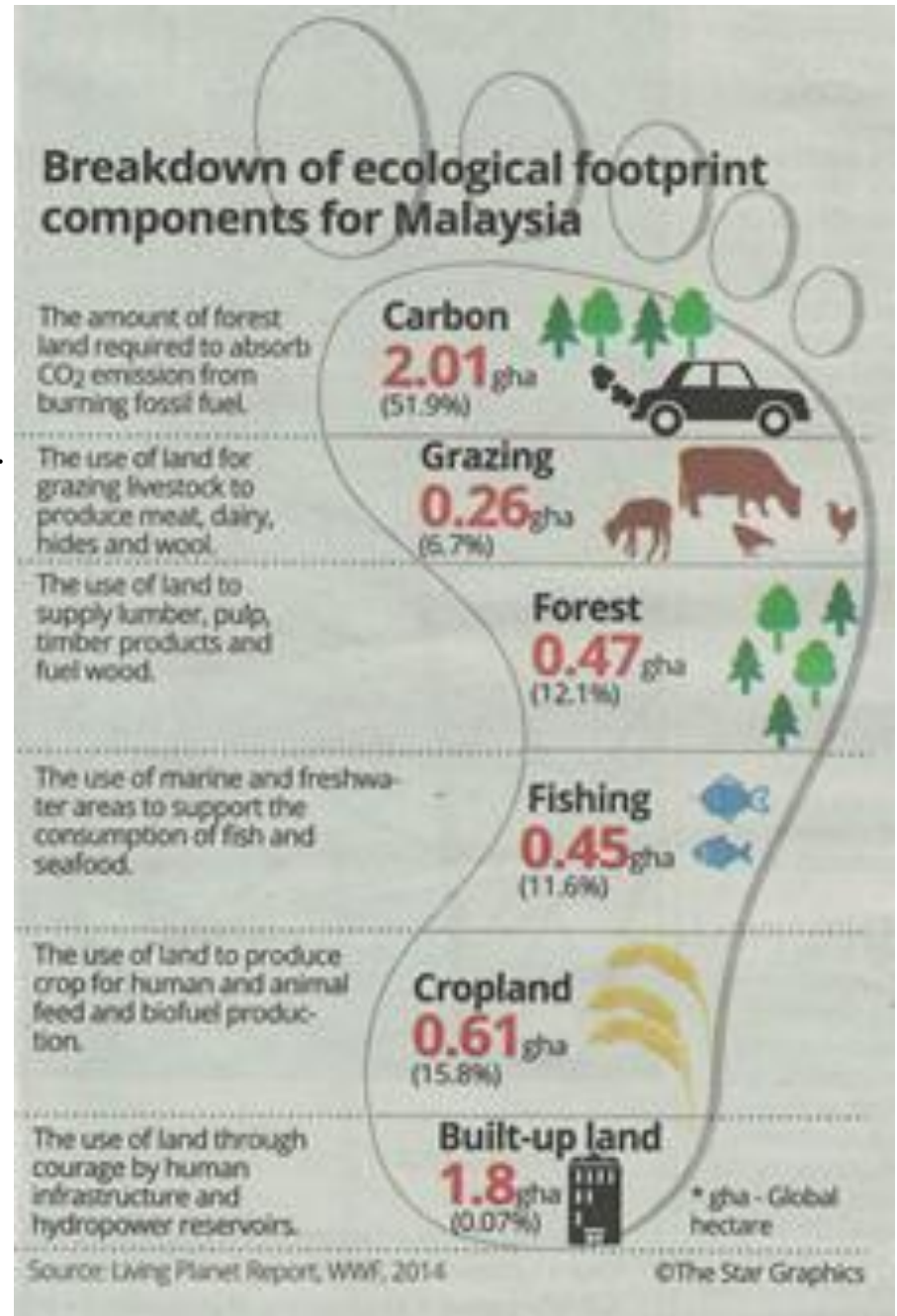
Shah Alam

# Content:

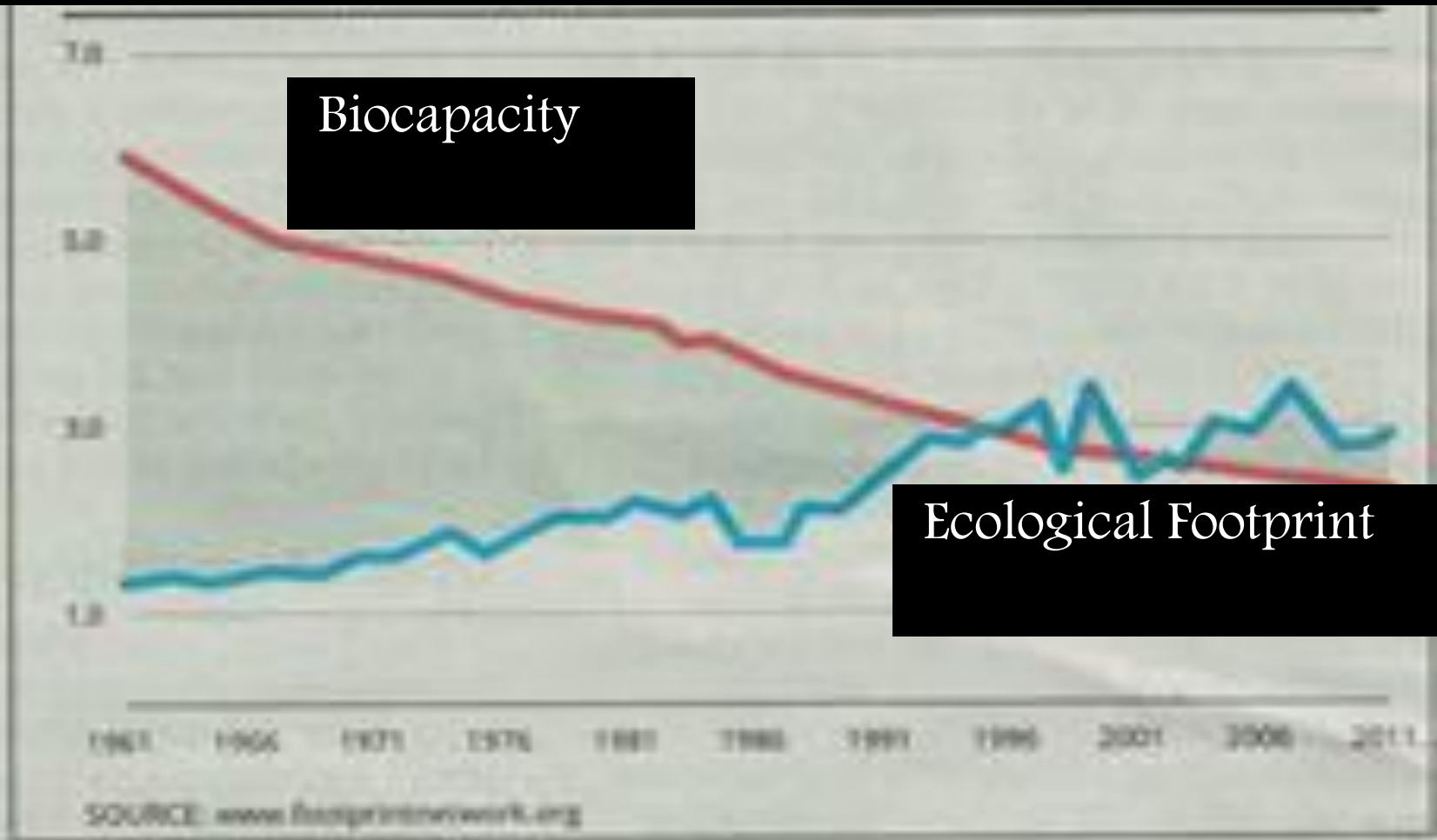
1. What is happening around us
2. Are there solutions or alternatives to it
3. How do we embark on the journey

# What is happening?

Ecological footprint: measurement on the impact of human activities on natural environment that sustains humans and other living beings.



# Malaysian Ecological Footprint versus Available Biocapacity (Global hectares per capital)





**We are still paddling the same wheel?**

# What have we created in our urban setting



# Climate change no longer a green issue

SUN  
NOV 25, 2012

BY MEMPHIS BARKER

EVERY climate change logo from here to Tokyo makes use of at least two of these three elements: a sketch of the globe, a branching tree or some green, vine-like swirls. You know what the logos mean. They paint climate change as an environmental problem, one that concerns the air we breathe and the trees we may or may not be hugging. The logo for the UN Climate Change conference in Warsaw is a particularly bureaucratic example. Cold, green, leafy. And yet, after the talks in Warsaw finish, these logos will, en masse, look embarrassingly out-of-date. Climate change is no longer about the environment; it's about people, and in particular the poor.

The conference in Warsaw was set to be routine. Then tropical storm Haiyan made land in the Philippines, splintering cities, killing at least 3,600, and carrying away the bungalows, flats and schools of several thousand more. Discussions in Warsaw darkened. The lead Filipino negotiator is now on hunger strike. He believes that his country is suffering the effects

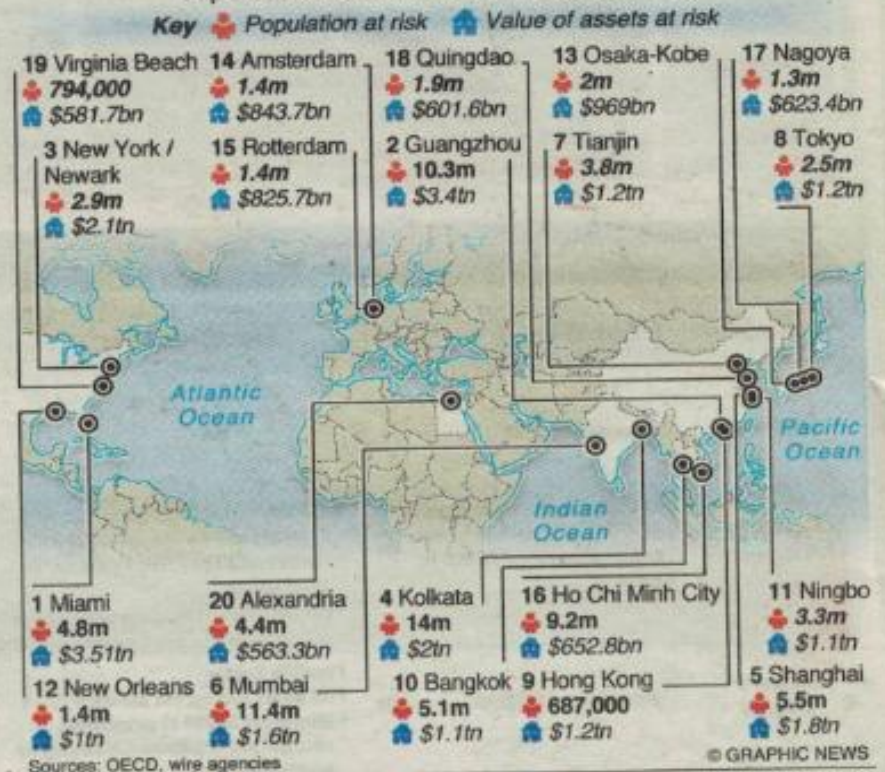
of climate change, and points the finger of blame squarely at the biggest historical emitters, rich countries like America and Britain.

Scientists cannot tell whether any single storm was caused, or worsened by climate change. But politicians tend to make the leap themselves. In the aftermath of Hurricane Sandy in 2012, President Obama played up the threat of global warming (having ignored it in his election campaign). David Cameron did the same after Haiyan (having threatened weeks before to remove green levies in the UK). People in developing nations are right to worry about such vacillating commitments. What scientists can predict is that climate change will add destructive force to future storms. And those storms will hurt the people least responsible for global warming the most, those in countries like Bangladesh and the Philippines.

The issue of compensation is now live. Should developing countries carry the cost of repairs or flood-defence systems when the growing might of storms and rising sea levels have precious little to do with them? The answer is no.

## Top 20 cities vulnerable to climate extremes

Estimated exposure of port cities to coastal flooding by 2070.  
Top 20 cities shown in terms of assets at risk



But it looks unlikely that rich countries will offer much help. The \$100 billion funding target for the Green Climate Fund - established to help poor countries adapt to global warming - remains unmet. Last month the US envoy on climate issues said that, in

terms of compensation for damages: "The fiscal reality of the United States and other developed countries is not going to allow it".

So let's update those logos. The future of climate change is far more red than green. - The Independent

# Negative externalities

What is cost?

Misconception is that the real cost is the selling price which is directly related to the cost of producing a product.

What about the cost of unleashed on society?

Which consumer has not paid for?

Who bears this extra cost?

What is the value of such cost?

-long term health costs, environmental damage, traffic congestion etc.

e.g. IMF estimate for Malaysia the damage cost for using petrol in a car is RM 2.20 per litre of petrol

1 litre of RON 95 cost RM 2.05

Total cost of filling up a family car of 40 litre

$$= \text{RM } 2.05 + 0 \text{ (no subsidy)} + 2.20 = \text{RM } 4.25 * 40 \\ = 170$$

Currently we are paying RM 82 but actually we should be paying RM 170

Who bear the difference in the cost, RM 88?



# Current emphasis:

- Pollution cleanup
- Waste disposal (bury or burn)
- Protecting species
- Environmental degradation



## Polluting air in Pandamaran

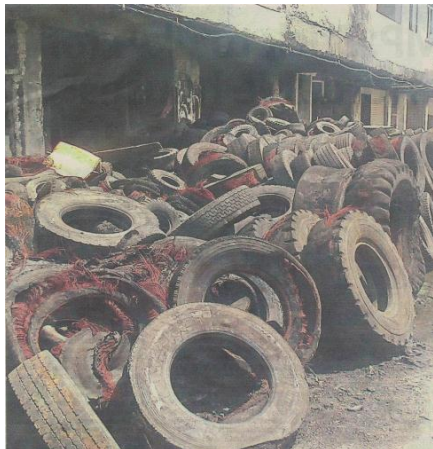
Syndicate burns old tyres for workshops at rate cheaper than legal disposal fee



story by  
**EDWARD RAJENDRA**

edward@thestar.com.my

HUNDREDS of scrap tyres are



## Tapirs to reduce Japan 'nightmares'

Pair a part of conservation research programme

By **JOSEPH KAOS Jr**  
joekaosjr@thestar.com.my

**PUTRAJAYA:** Two Malayan Tapirs are about to embark on a journey of their lives to Japan, where the animal is regarded as the "eater of nightmares".

Im, a two-year-old male tapir, and its mate, three-year-old Bertam, will be placed at the world-class Nagasaki Bio Park for 10 years under a conservation programme by Malaysia and Japan.

Japanese Ambassador to Malaysia Dr Makio Miyagawa said tapirs were known as "Baku" in the country's mythology, a creature believed to eat people's nightmares.

"The tapir is a charming animal. It is large and has a cute snout. The two tapirs will have a reason to be welcomed and loved by people in Japan.

"Hopefully the arrival of the Malayan Tapirs will reduce our nightmares," he said at the signing ceremony of the conservation programme's agreement here yesterday.

The agreement was signed by Department of Wildlife and National Parks (Perhilitan) director-general Datuk Abd Rasid Samsudin and Nagasaki Bio Park director Satoshi Yamaguchi, and witnessed by Natural Resources and Environment Minister Daruk Seri Dr Wan Junaidi Tuanku Jaafar

and Dr Miyagawa.

"Besides becoming a zoo attraction, the animals will provide more insight to the research on tapir conservation as well as wildlife captive breeding," said Dr Wan Junaidi.

Im and Bertam, from the Surgai Dusun Wildlife Conservation Centre, are expected to leave for Japan at the end of the month.

The collaboration with the bio park, said Dr Wan Junaidi, would also allow the ministry to learn more about zoo and park management.

"We will be sending two officers every year to be based at the park and they will be trained in zoo and park management," he said.

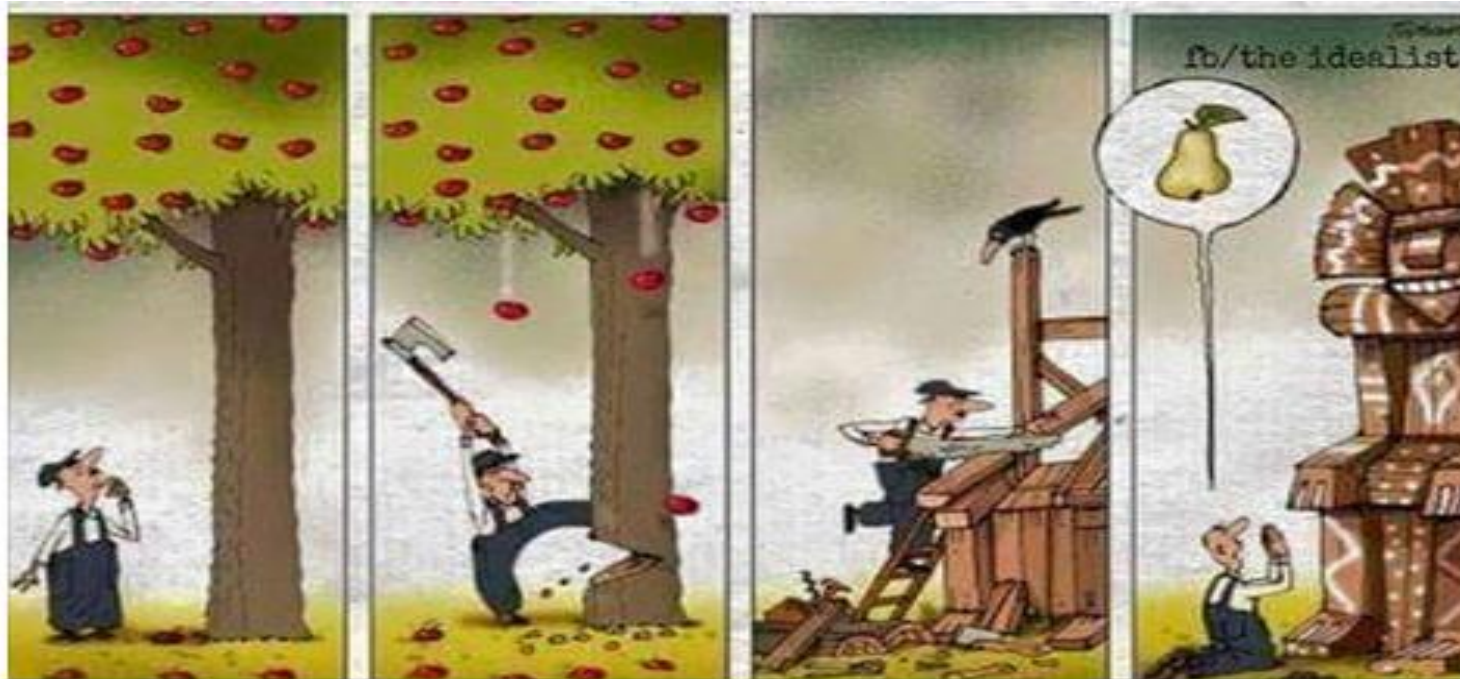


**Endangered animal:** Two Malayan Tapirs will be the latest addition to the Nagasaki Bio Park in Japan.

Increased resource use

Population growth

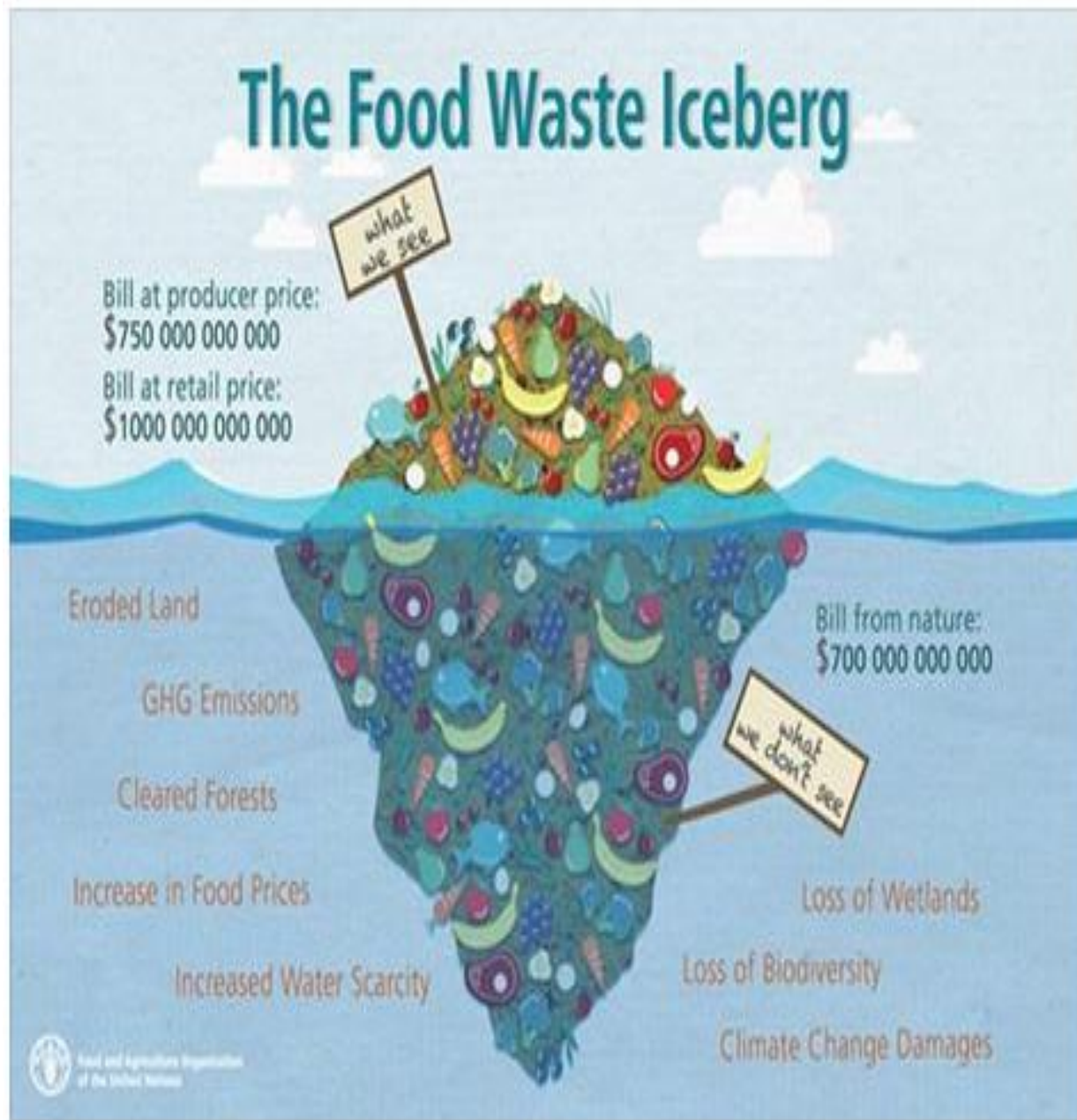
Depleting and degrading natural capital



Manufacturer cost:  
750 000 000 000 (usd)

Retailer cost:  
1 000 000 000 000 (usd)

Nature cost:  
700 000 000 000 (usd)



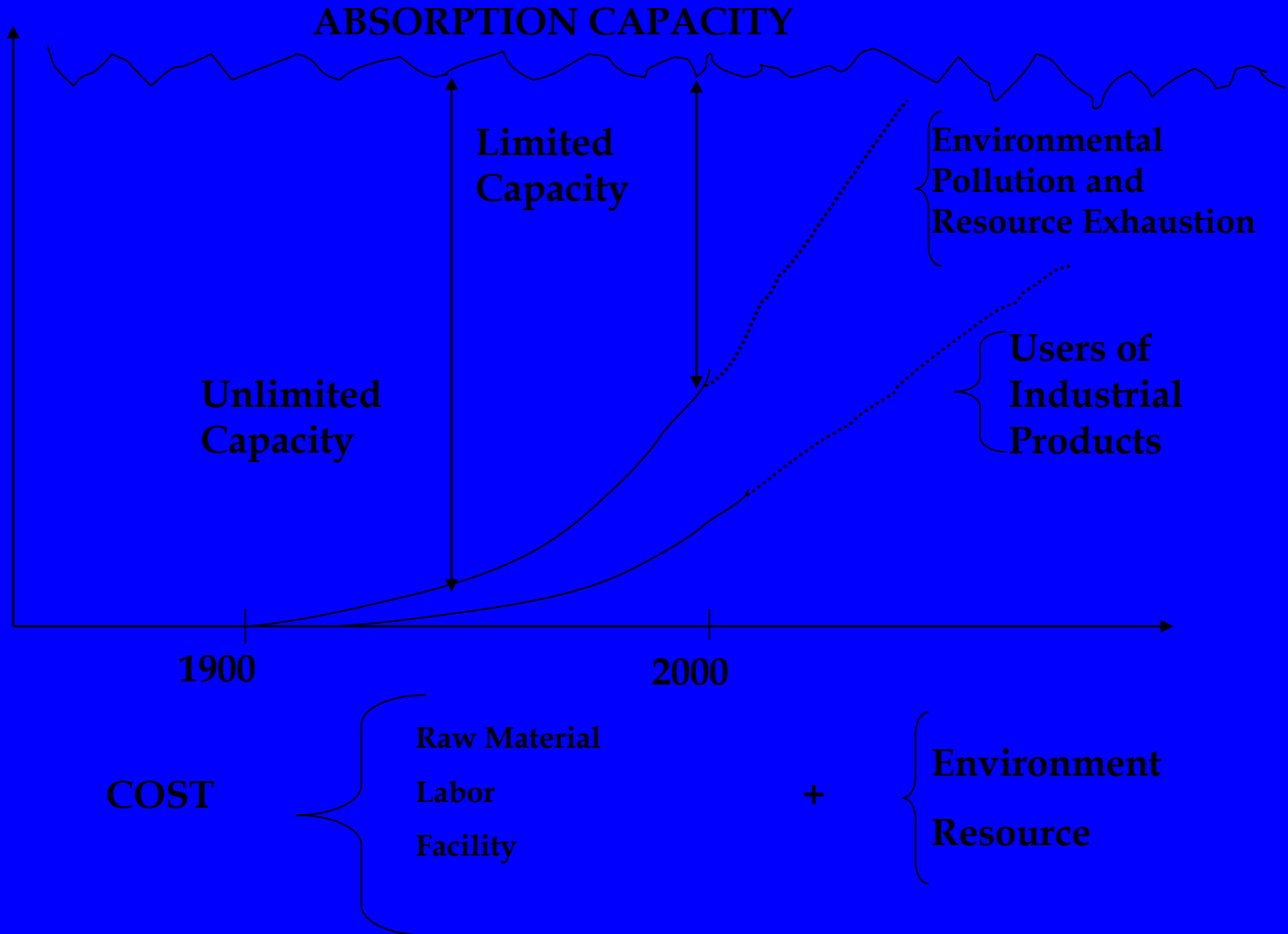
# River cleanup

## Cost ?



What's The Point Of  
Your **Education**,  
If You Still Throw **Garbage**  
On **Streets** To Be Ultimately  
Picked Up By  
An **Uneducated Person** Working.

# Resource Efficiency & Productivity



# Public Concern

Societal demand for a cleaner environment and a better “quality of life” is increasing.

Public concern is being expressed as:

- protests/law suits
- consumer boycotts of products
- willingness to pay a premium for eco-friendly products



Incidences	Cause	Result
Love Canal Episode, USA	Toxic Waste Poisoning	<b>PUBLIC PROTEST</b>
Minamata	Mercury Poisoning	
Bhopal gas Tragedy	MIC Gas release	
Bangladesh Wells	Arsenic Poisoning of the Ground water	
Rivers like Ganges, Yamuna, Yangtze, Irrawady etc.	Industrial wastewater & domestic sewage discharge	

# Environmentally sustainable society -myth or achievable

*Meets the basic needs of its people  
indefinitely without compromising future  
generations ability to meet those same  
needs*

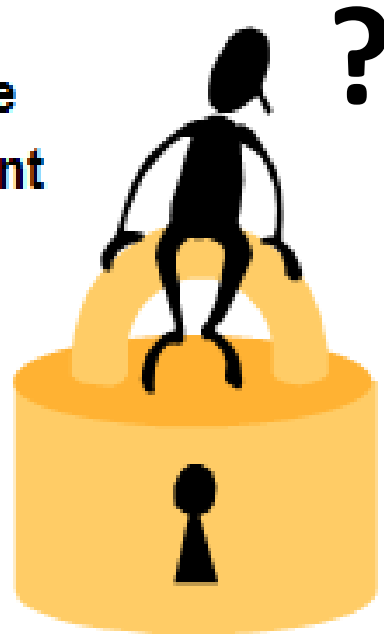


The abstract of the New Economic Model that aim towards achieving high income nation as outline in the policy principle on environmental management is quoted as below:

*In environmental terms, the government is committed to the stewardship and preservation of our natural environment and non-renewable resources. The government will ensure that environmental resources are properly priced and that the full costs of development are understood before investment decision are made.*



**Sustainable  
Development**



**Resource efficiency**

- **Eco-efficiency**
- **Eco-sustainability**
- **Eco-design**
- **Product Life-Cycle**
- **Green Productivity**

# Sustainability emphasis:



Pollution prevention  
(Green productivity)

Waste prevention & reduction

Protecting species home  
(habitat protection)

Environmental restoration

Less wasteful (more efficient)

Resource use

Protecting natural capital and living off  
the biological interest it provides

# International Environmental Treaties and Conventions

International treaties and conventions to address global issues

**IMPACT**

- **Basel Convention**
- **Montreal Protocol**
- **Climate Change Convention**
- **Convention on Biodiversity**
- **Convention to Combat Desertification**

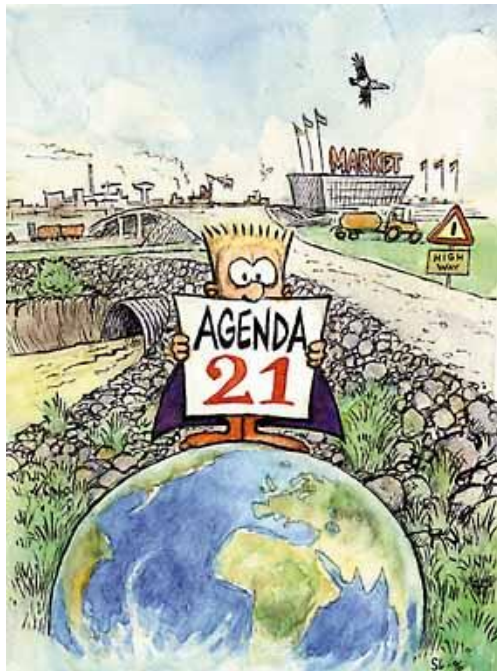
**Phase out of:**

- *hazardous materials*
- *lead in petrol*
- *CFCs in refrigeration*
- *GHG emitting processes*

**Biodiversity conservation promotion**

# Response to Agenda 21

Agenda 21, is a 300 page plan for achieving sustainable development in the 21st century. It was adopted in the first international Earth Summit, at the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil, on 14 June 1992



- Countries set up their own Local Agenda 21 plans.
- Formation of the World Business Council of Sustainable Development (WBCSD), 1992
- Formation of Malaysian Business Council of Sustainable Development, 1992
- WBCSD's Declaration for sustainable development stressed on eco-efficiency in production - *More for Less*

# Corporate response

Corporate responses to Agenda 21 have been in the form of a number of voluntary initiatives. These include agreements, programs, standards and codes of conduct.

Predominant among them are:

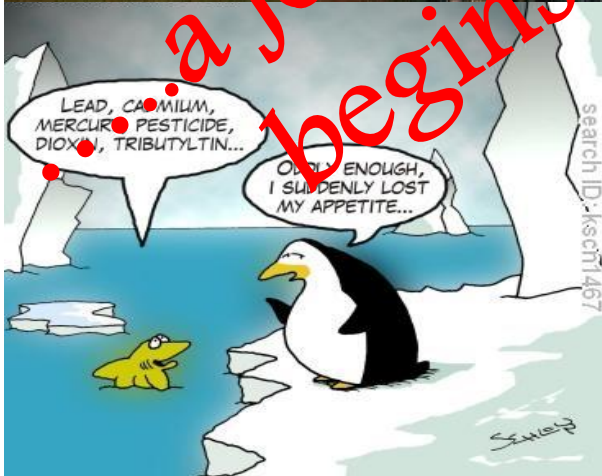
- Responsible Care
- Environmental Stewardship
- Corporate Environmental Policy and Reporting
- Certification such as ISO 14000, SA 8000



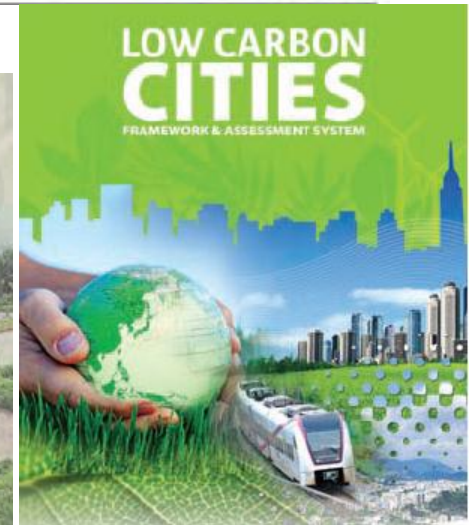
# Make a shift...



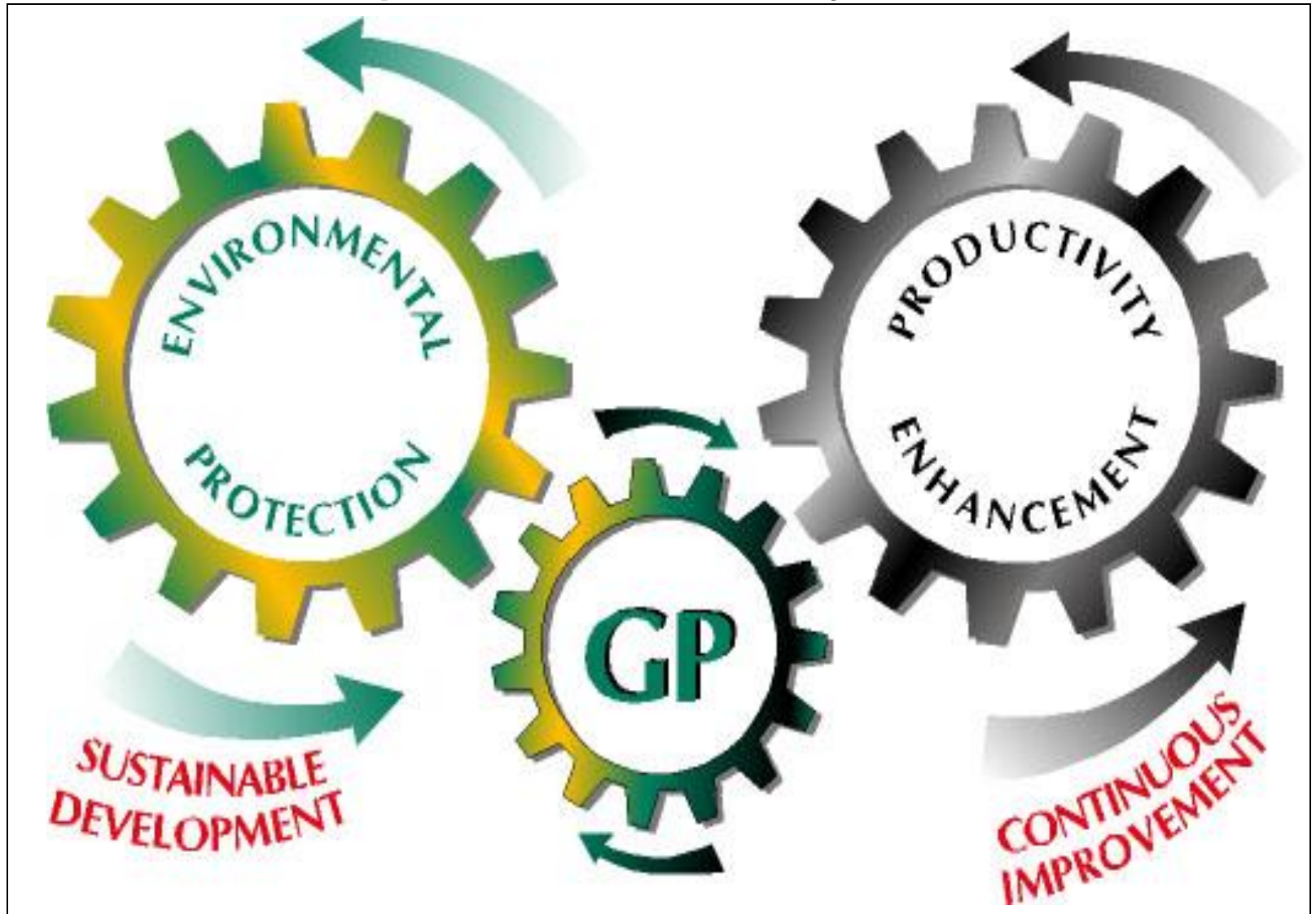
Loazi



a journey of a thousand miles begins with a single step...



# Relationship between Productivity & Environment



# **Ecological Principles Guiding GP**

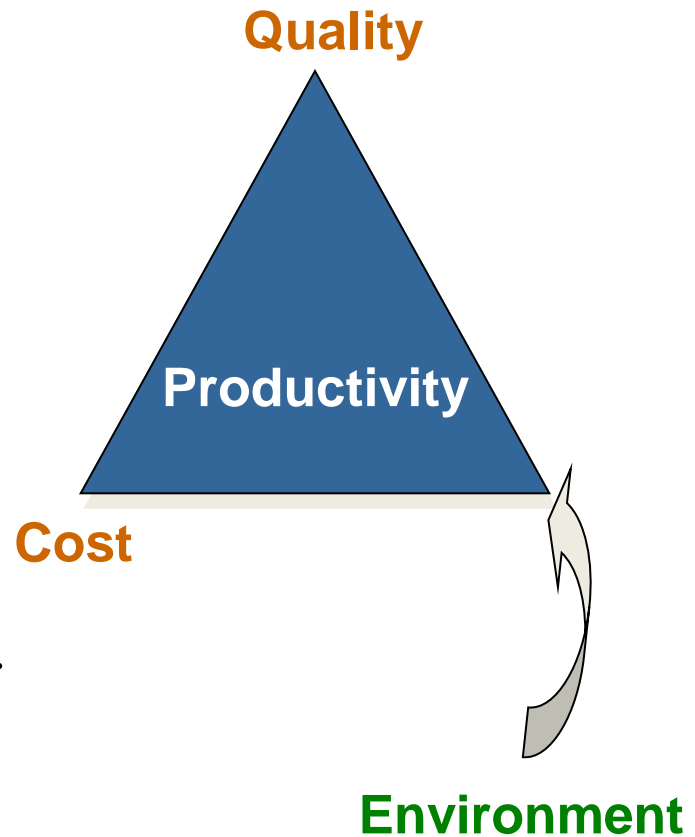
- 1. SUSTAINABLE USE OF NATURAL RESOURCES**
- 2. PROTECTION OF ECOLOGICAL BALANCE**
- 3. PROTECT PLANT AND ANIMAL SPECIES AND THEIR ENVIRONMENT**

# Resource Efficiency and Sustainability

- Sustainability thus emerges as a crucial component of any successful paradigm to guide development in the new Millennium.
- Requires a new emphasis on the nature and size of inputs to development, especially energy, resource, chemical and other material input.

# Productivity Practices

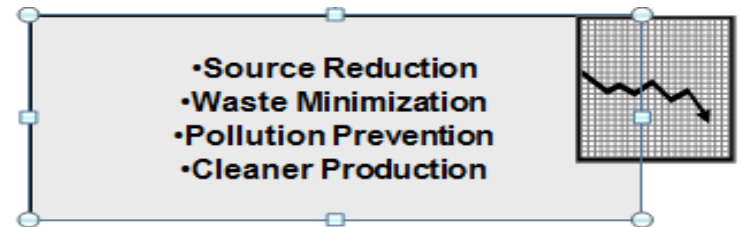
- Traditional focus of productivity was ensuring cost effectiveness through cost reduction.
- The quality drive and customer satisfaction was the next focus
- Programs to improve productivity by influencing the internal organization of an industry emerged. The most popular have been Kaizen, TQM, TPM etc.



The next step required integration of "Environment" into these productivity improvement programs.

# Environmental Practices:

- ✓ Source reduction
- ✓ Waste minimization
- ✓ Pollution prevention
- ✓ Green productivity
- ✓ Green approaches



# Beyond Pollution Prevention



**Holistic, integrated  
strategy to enable  
sustainable development**

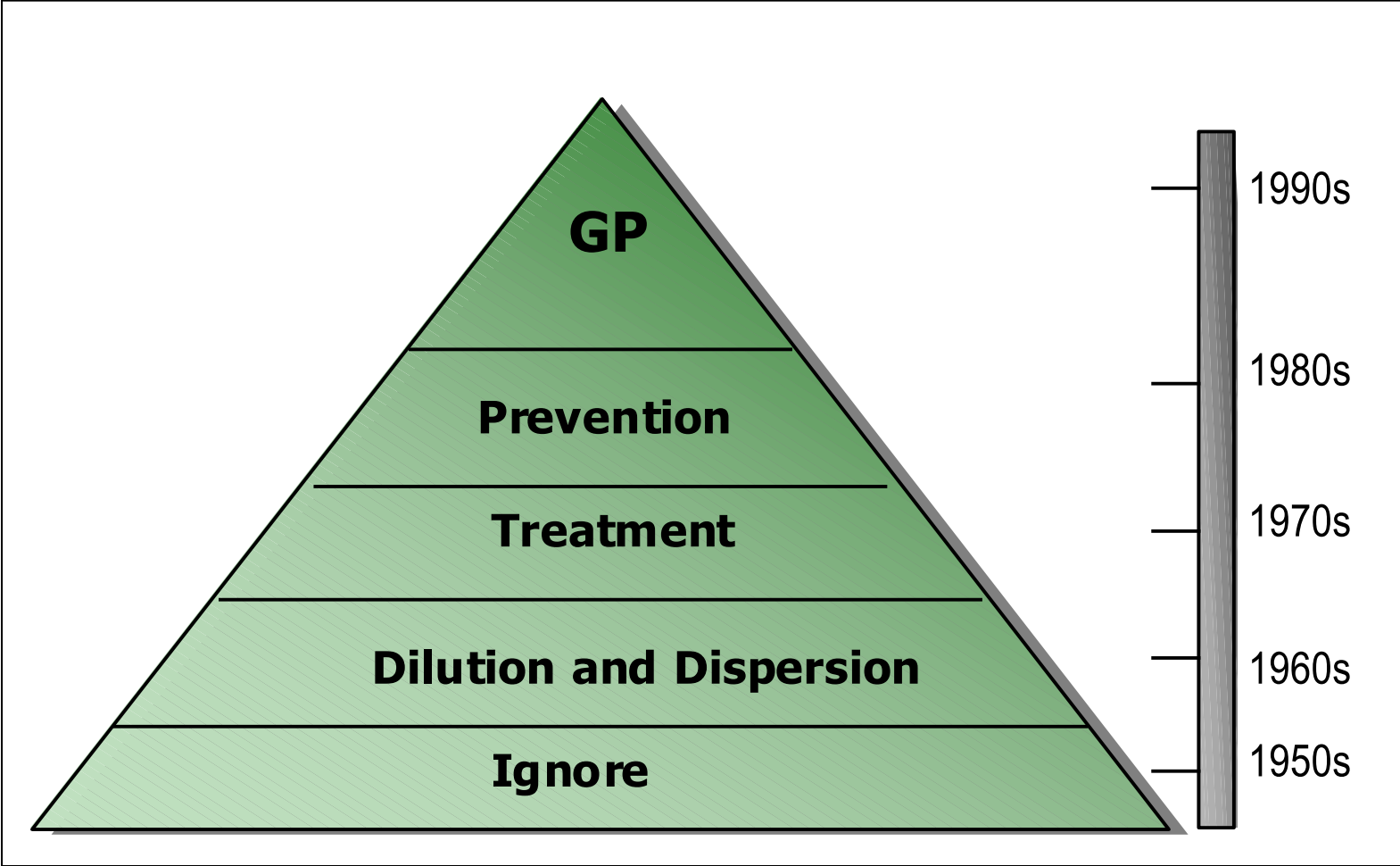
**Pollution Prevention  
Source reduction**

**End-Of-Pipe  
treatment**

*By considering pollution prevention separately from other manufacturing needs such as productivity and quality improvements, most pollution prevention programs fail to develop the vital synergies and working relationships with manufacturers that are essential to drive both pollution prevention and manufacturing competitiveness.....*

The US Congress, Office of Technology

# Environmental Management trends



## Environmental sustainability

Precautionary approach

Polluter pay

Profitability

Accountability

Competitive advantage

Reduce Environmental Impact

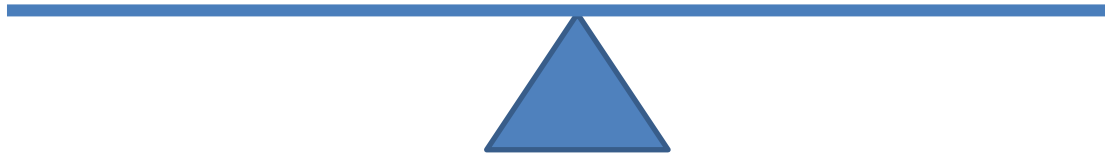
## Business objective

Ensure profitability

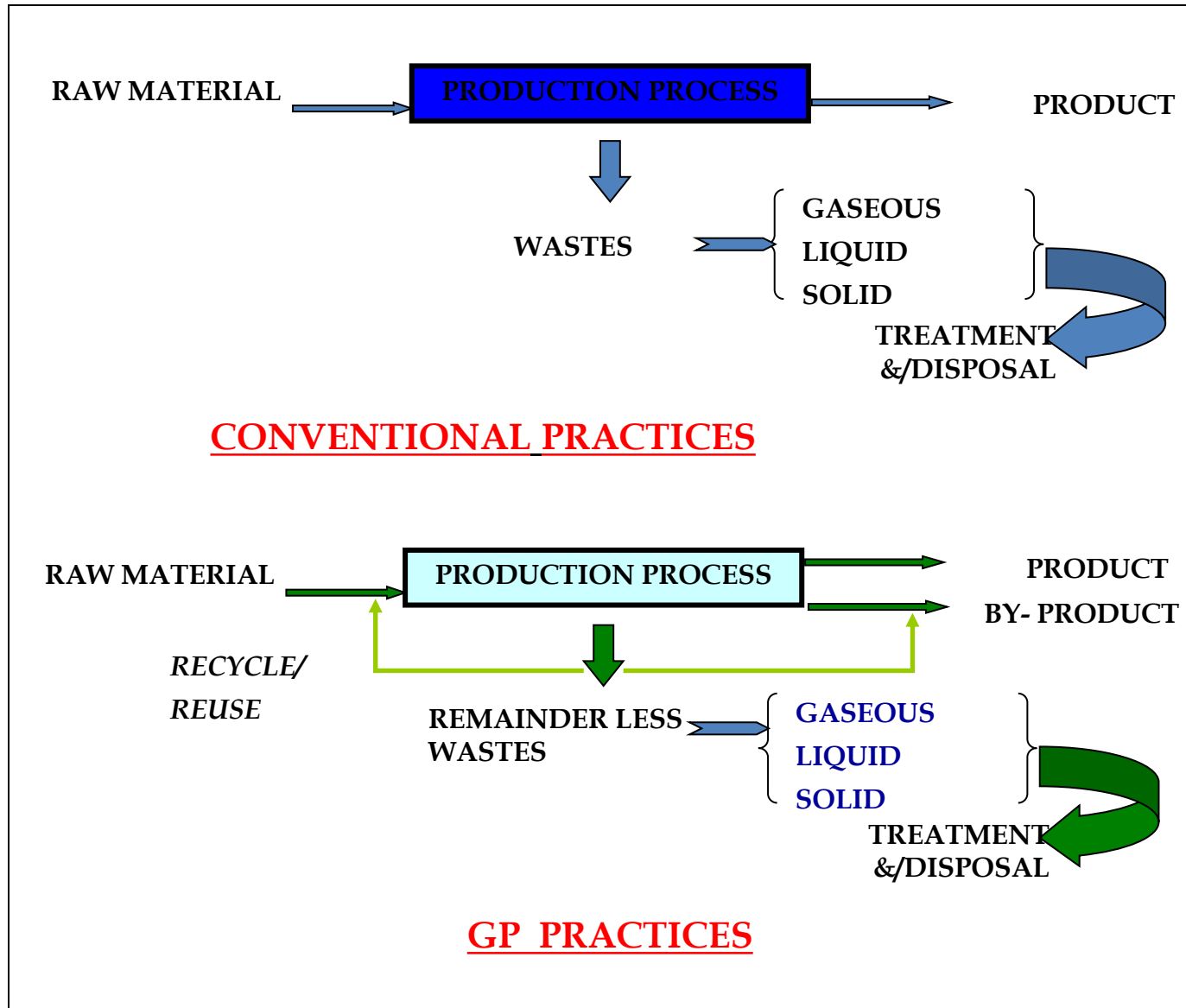
Ensure quality of life

Competitive market

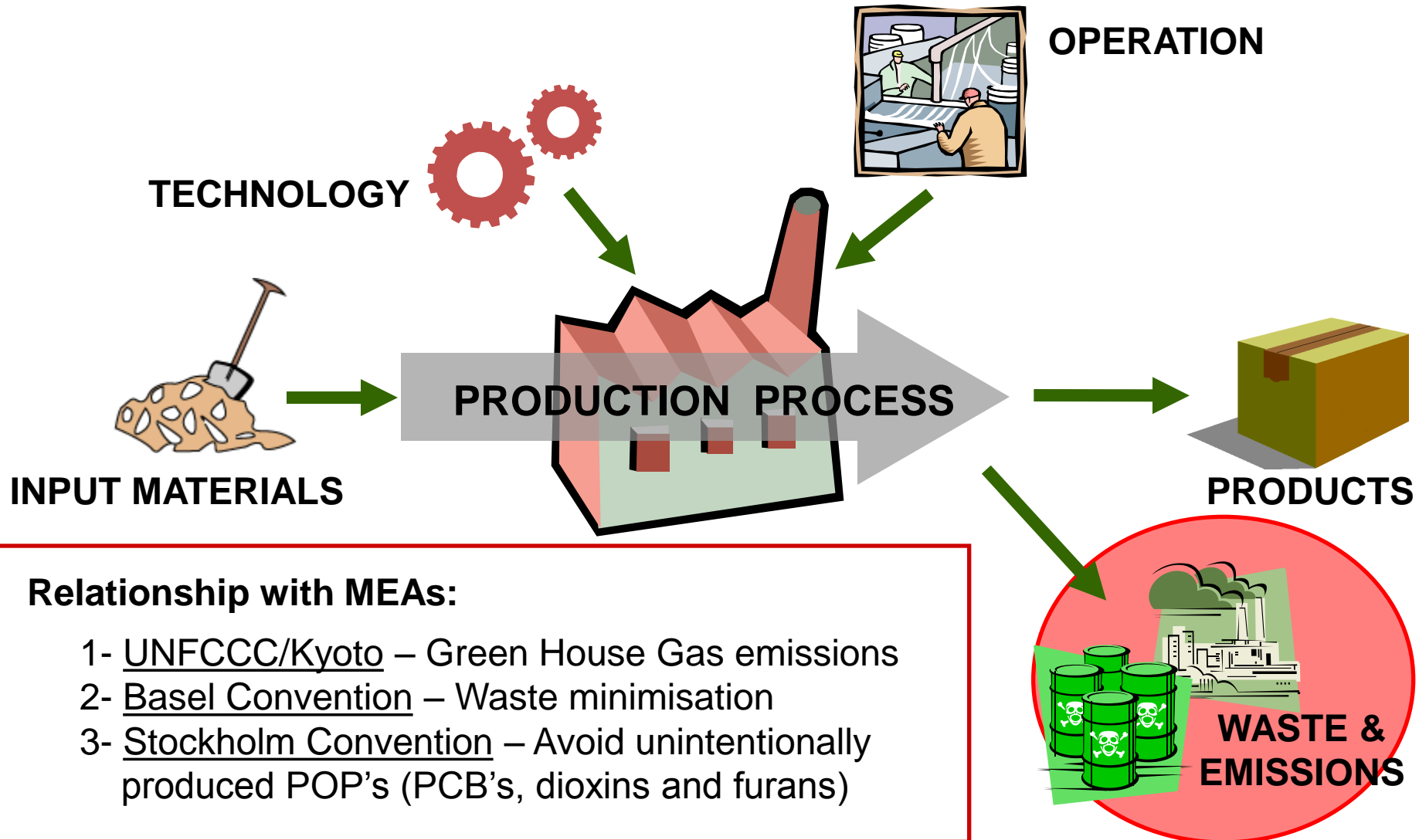
Company/product image



# Conventional Versus GP Practices



# Implementing Component



## Relationship with MEAs:

- 1- UNFCCC/Kyoto – Green House Gas emissions
- 2- Basel Convention – Waste minimisation
- 3- Stockholm Convention – Avoid unintentionally produced POP's (PCB's, dioxins and furans)

# Biotechnology

End of pipe treatment

Beneficial microbes

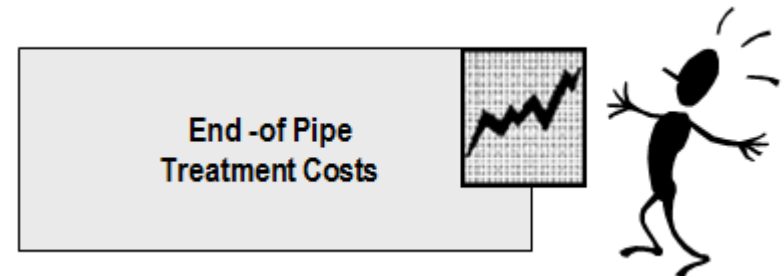


Use of environmentally friendly flocculants vs. chemical



# Why biotech?

**Biotechnology** is the use of living systems and organisms to develop or make products, or "any technological application that uses biological systems, living organisms or derivatives thereof, to make or modify products or processes for specific use" (UN Convention on Biological Diversity, Art. 2)



## Benefits:-

- Environmental friendly
- pollution free
- Community awareness
- Educate the consumers
- Reduce dependent on chemical

sustainable



Fig. 4.21 Strips of stones continue the footpath as it crosses the swale. Gaps allow the water to flow in between while the stones are slightly staggered in a playfully sculptural manner (image by Atelier Dreisaitl).

**Related terms and concepts that are emerging include:**

- **Eco-efficiency**
- **Eco-sustainability**
- **Eco-design**
- **Product Life-Cycle**
- **Green Productivity**

# Eco efficiency



Eco efficiency emphasizes economics, in addition to environmental improvement

It is concerned with resource productivity, that is, maximizing the value added per unit of resource input

# Green Productivity in Environmental sustainability



You must lead by example.



# Conventionally

## Productivity (Technical concept)

Productivity as the relationship between *output* and *Input*.

It measures one's ability to efficiently utilize available resources to produce desired output and, thus, reflects the changes in productivity.

It may result in an increase in output with deteriorating quality.

# Productivity (social concept)

An attitude of mind. It seek to continually improve what already exist. It is based on the belief that one can do things better today than yesterday and better tomorrow than today.

Hence, productivity can be a common objective of everybody. It aims to achieve a better quality of life for all.

# Productivity (economic concept)

One's ability to create more value for customers.

For many business organizations, the economic goal and basis for existence is value creation.

Economic gains for all (both the employees, management, government and other stakeholders) is measured in terms of value added, which may come from increases in inputs or improvements in productivity.

In most cases, increases in value added are attained through expansion in capital and labor.



# Multi-Factor Productivity

## MULTI - FACTOR PRODUCTIVITY AND GP

$$\text{Raw materials productivity} = \frac{\text{Output (value or unit or value added)}}{\text{Raw material used}}$$

$$\text{Labour productivity} = \frac{\text{Output}}{\text{number of employees (number of hours worked)}}$$

Variables for quantification of GP that can be factored in are:  
water, energy, materials (chemicals, auxiliaries, packaging etc.),  
technology, capital.

# Productivity improvement means improvement in QCDMS.

**Q= Quality**

Higher Quality that meets or exceeds customer requirements

**C= Cost**

Lower Cost

**D= Delivery**

Timely Delivery as desired by the customer

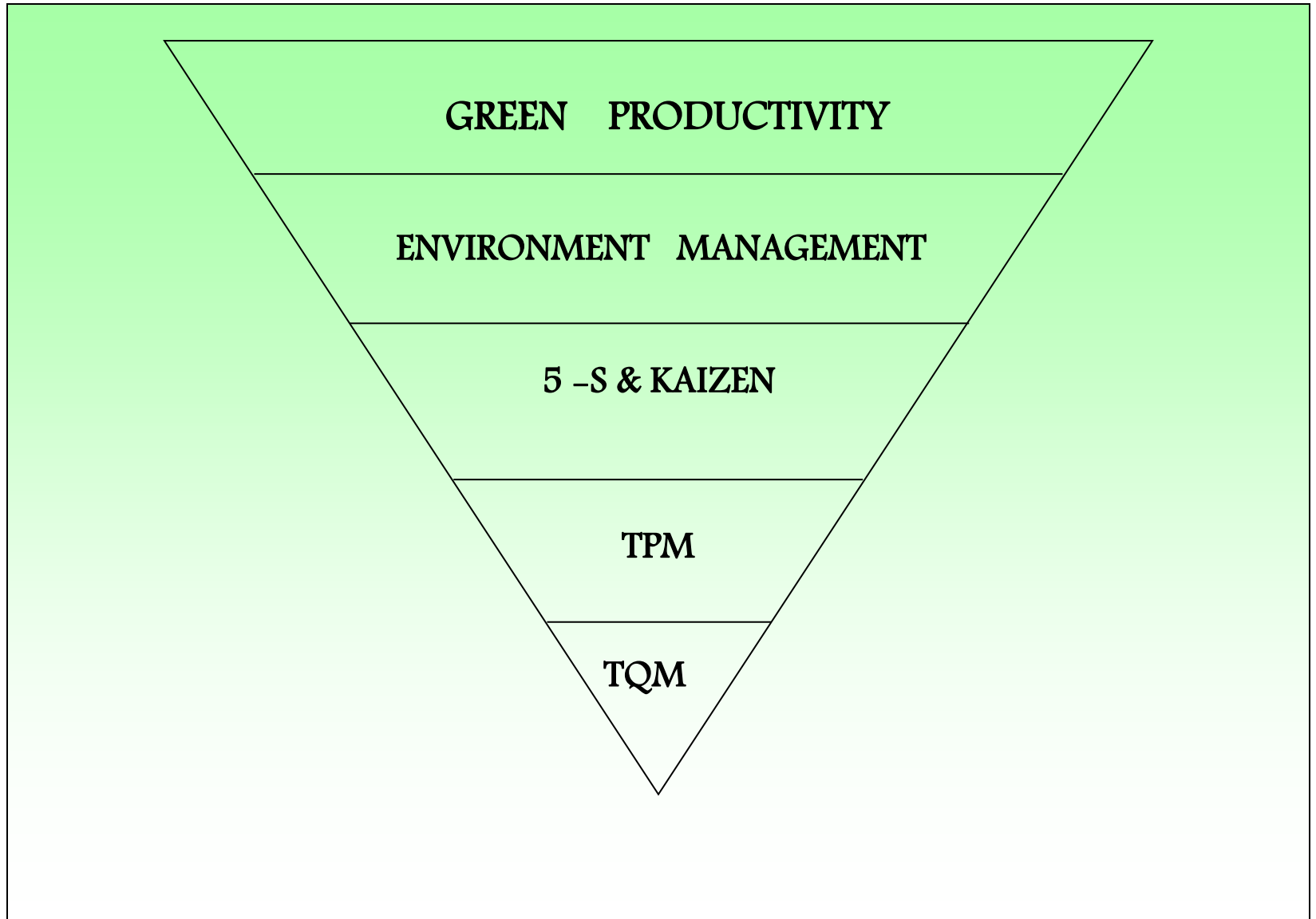
**M= Morale**

Boosting morale of all concerned

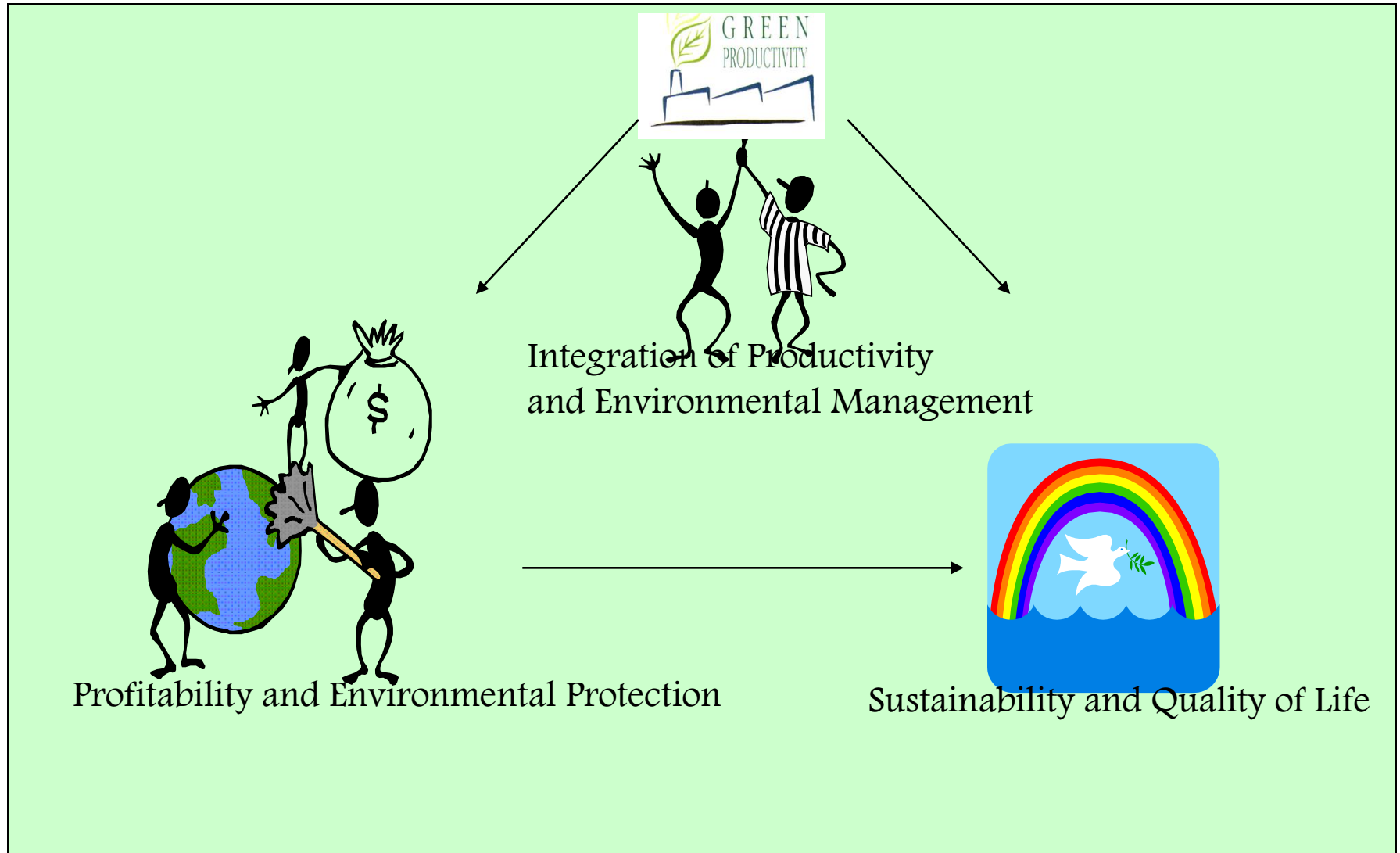
**S= Safety**

Thinking and improving safety of each and every aspect of the product and process

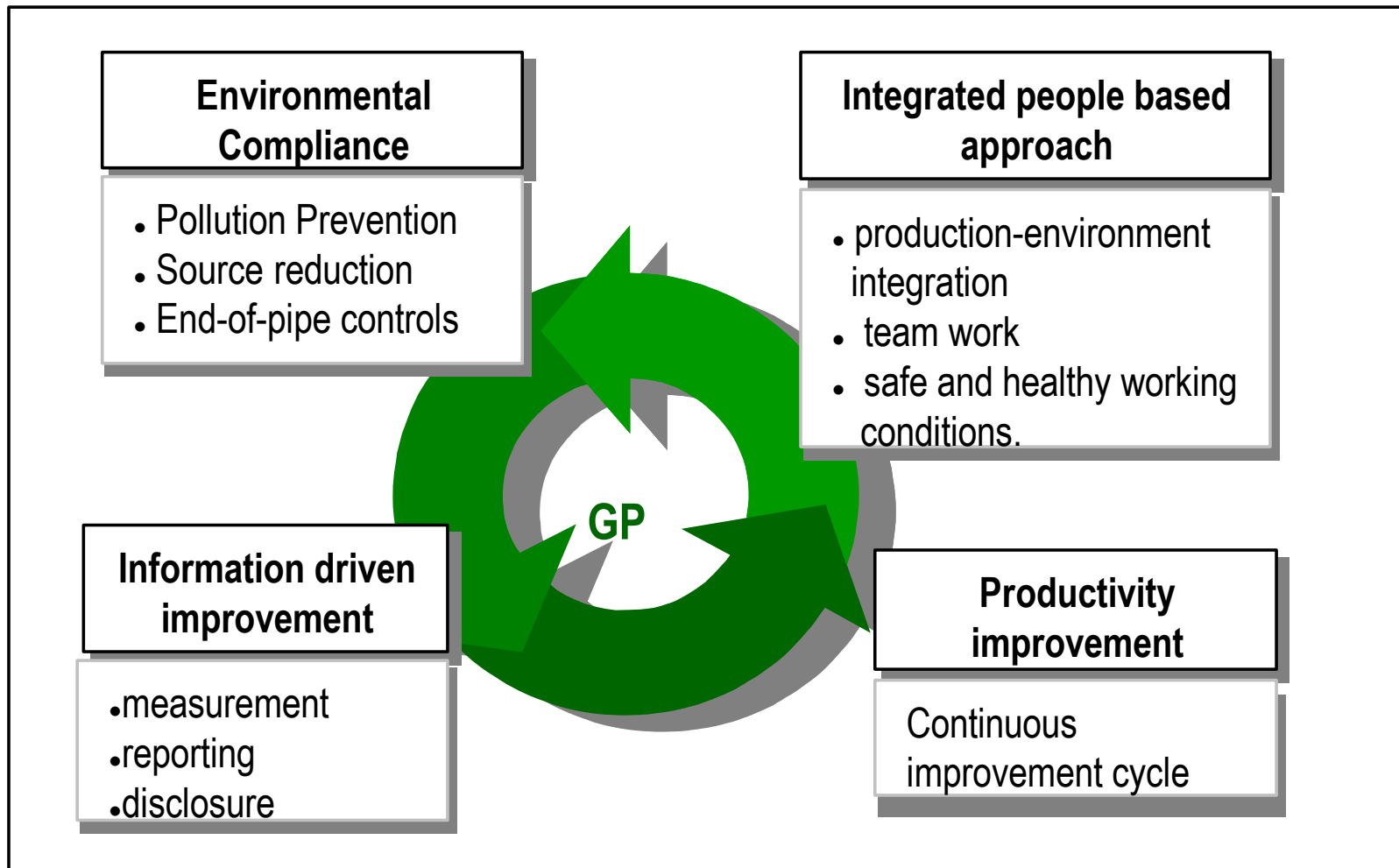
# EVOLUTION OF GREEN PRODUCTIVITY



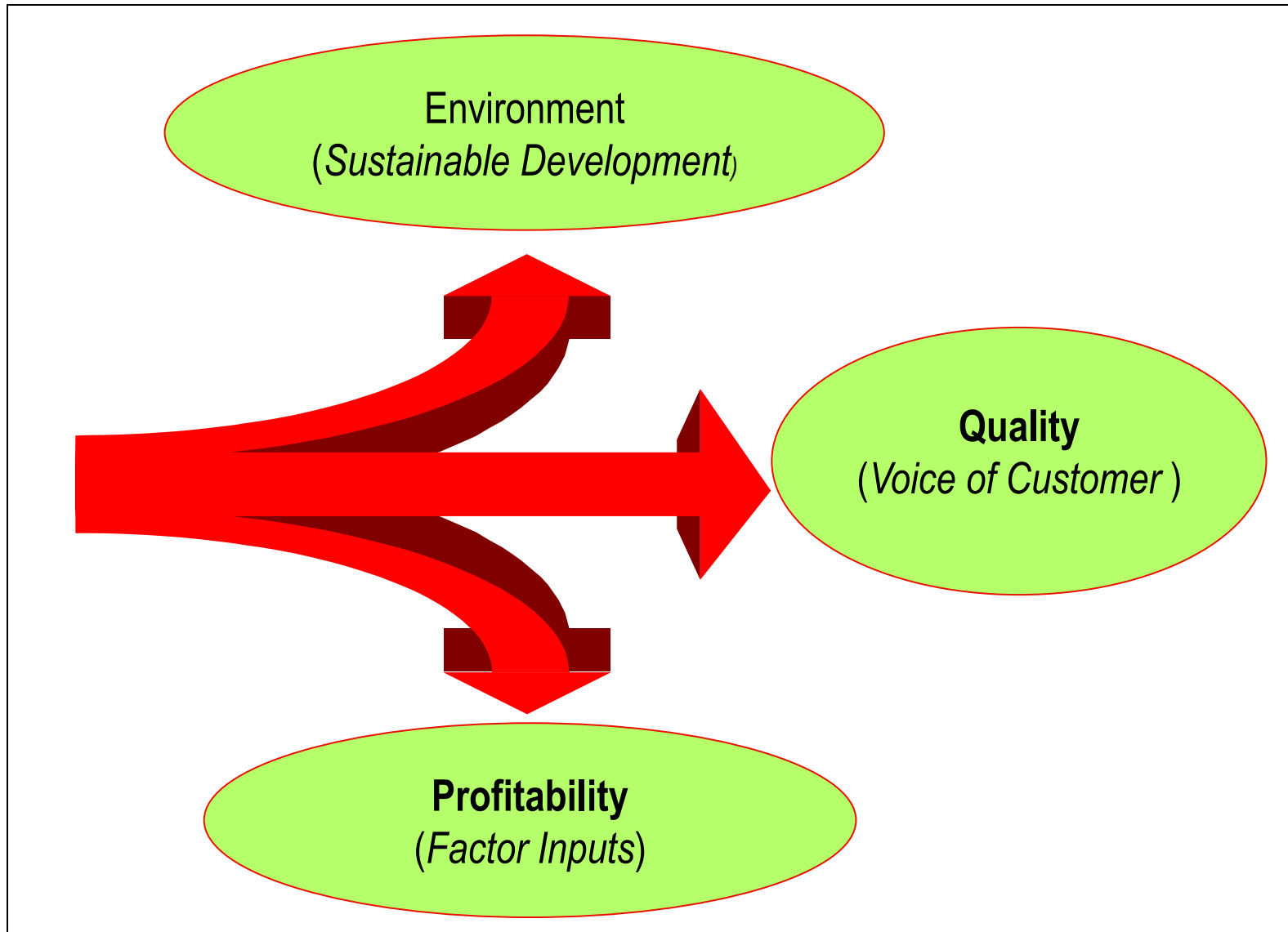
# From Productivity To Green Productivity



# Distinguishing characteristics of GP



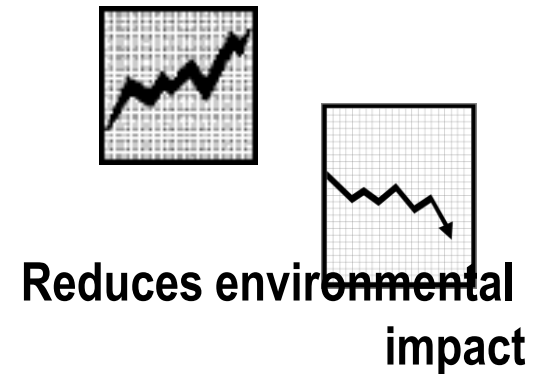
# TRIPLE FOCUS OF GP



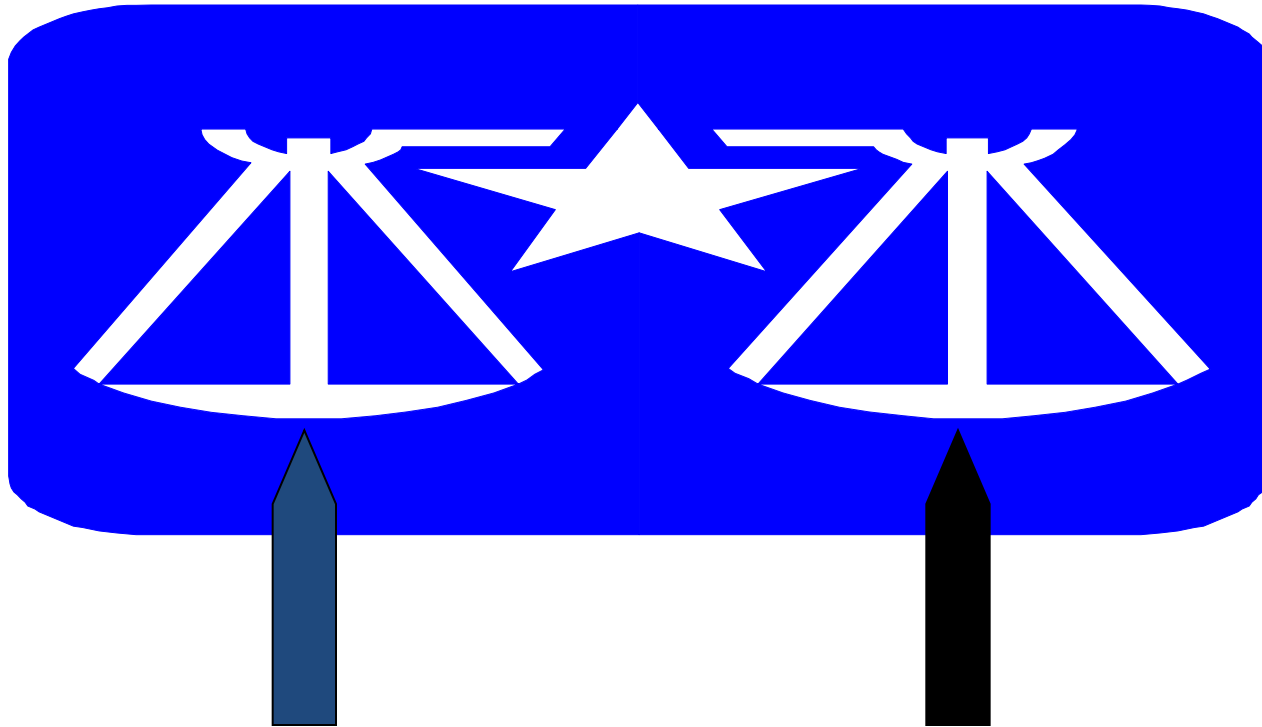
# GP ensures profitability and enhances Quality of Life



**Green Productivity (GP) is a strategy for enhancing productivity and environmental performance for overall socio-economic development. It is the application of appropriate productivity and environmental management tools, techniques, technologies to reduce the environmental impact of organization's activities, goods and services.**



# GUIDING PRINCIPLES OF GP



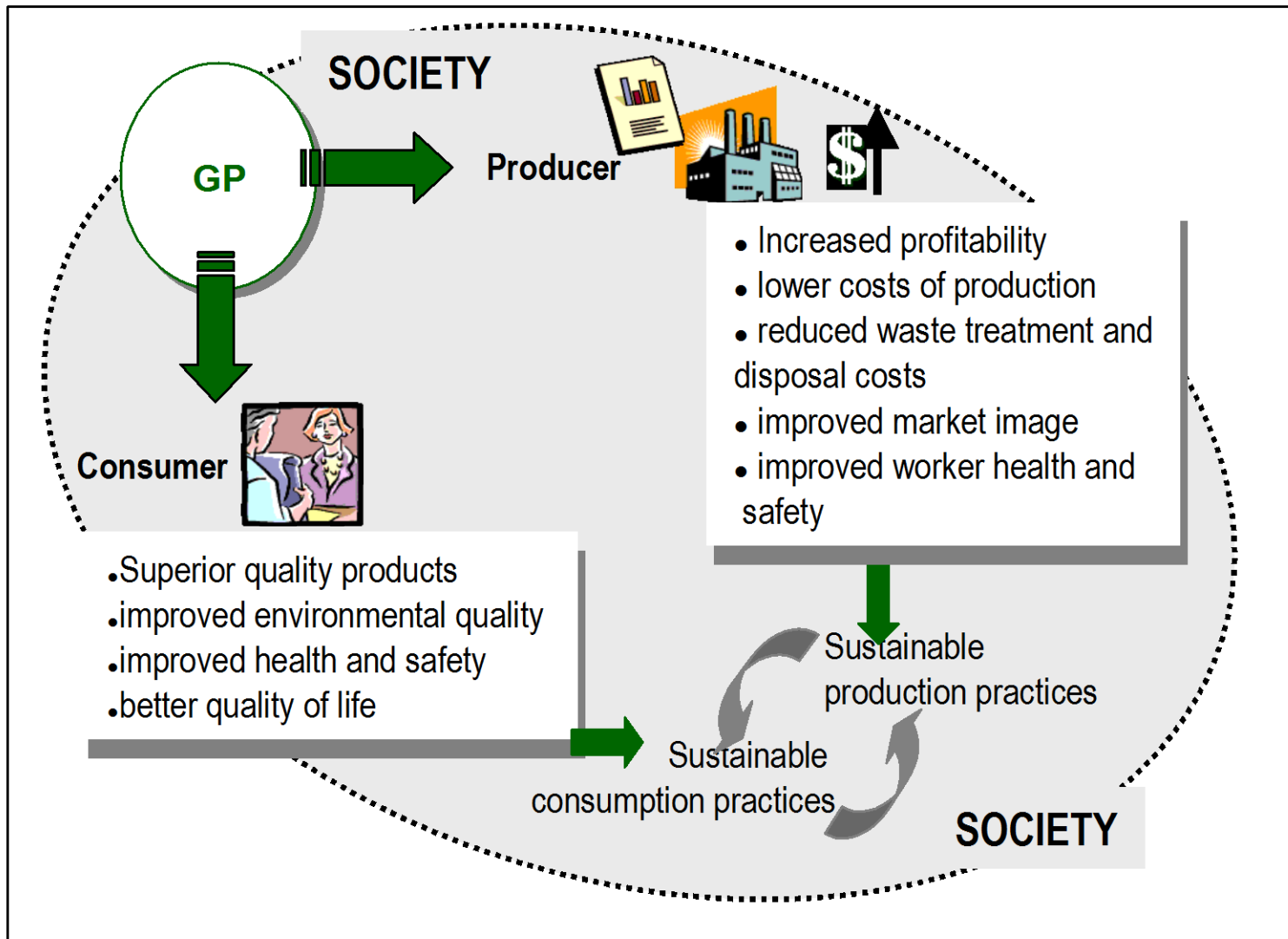
- **Accountability**
- **Polluter Pays**
- **Precautionary Approach**

- **Profitability**
- **Competitive Advantage**
- **People-Building**

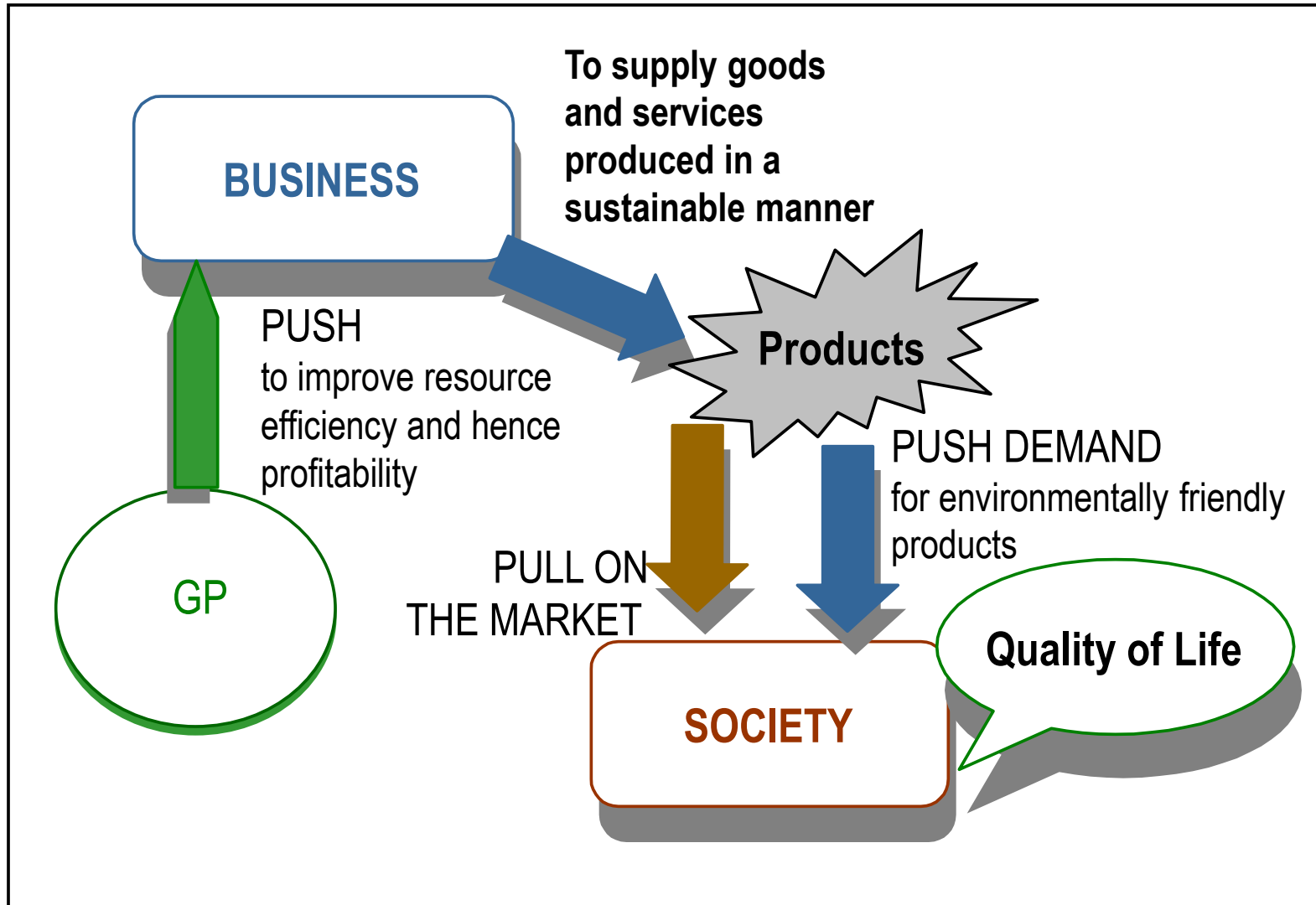
# Driving Forces of Green Productivity



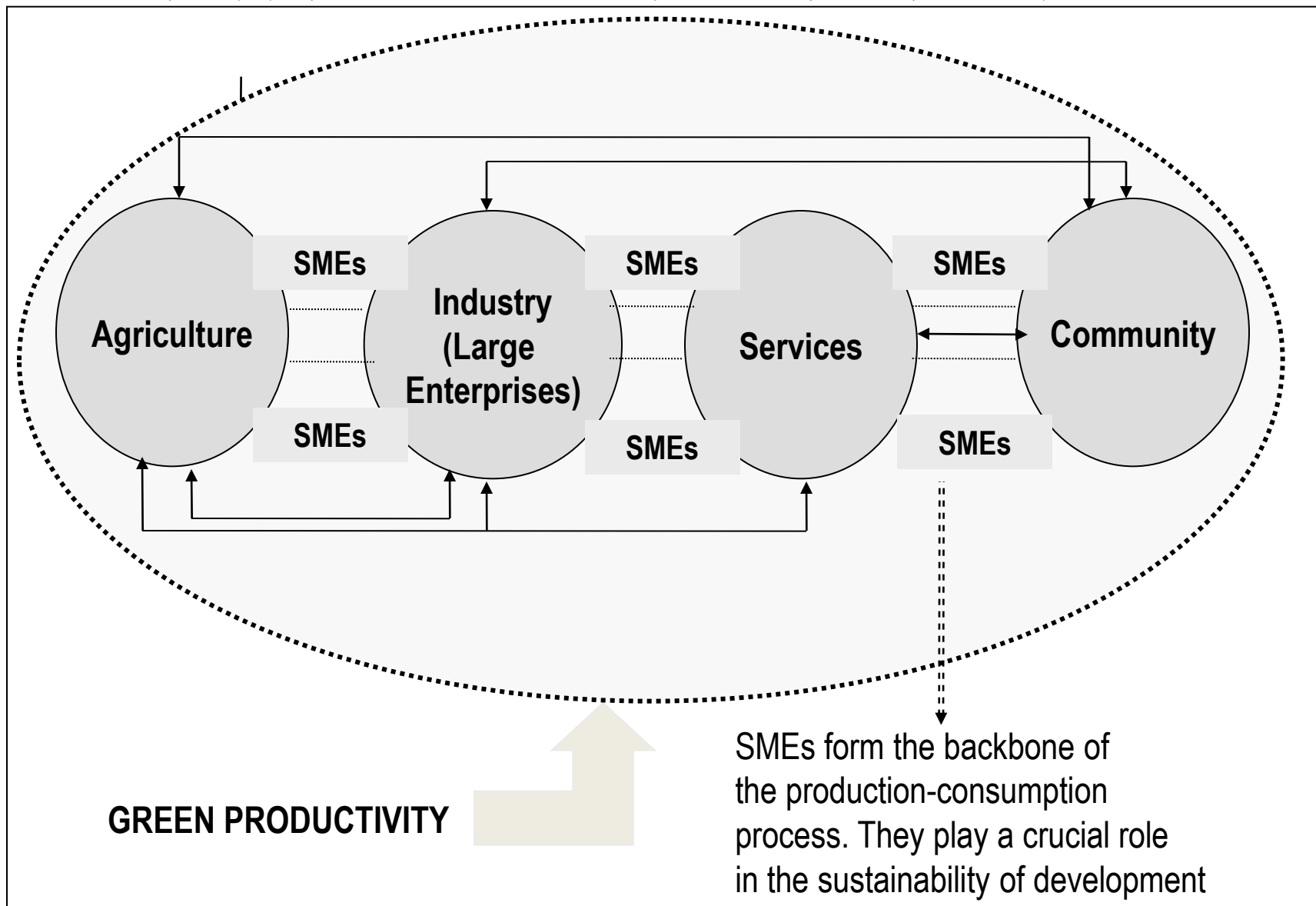
# Manifold Benefits of GP



# GP enhances Quality of Life



# GREEN PRODUCTIVITY MULTI SECTOR

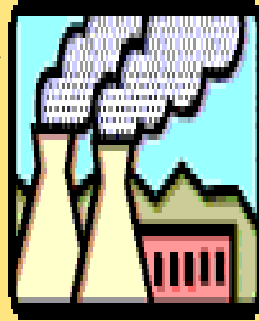


# Business in the environment.

- Inspires companies to work towards a development which is sustainable in the environment. This is seen as a strategy and a mainstream business issue.
- Environmental strategy represents a fundamental progression which intergrates environment into business planning and decision-making.
- This integration must be done in the way that meets business needs and improves a company's impact on the environment.

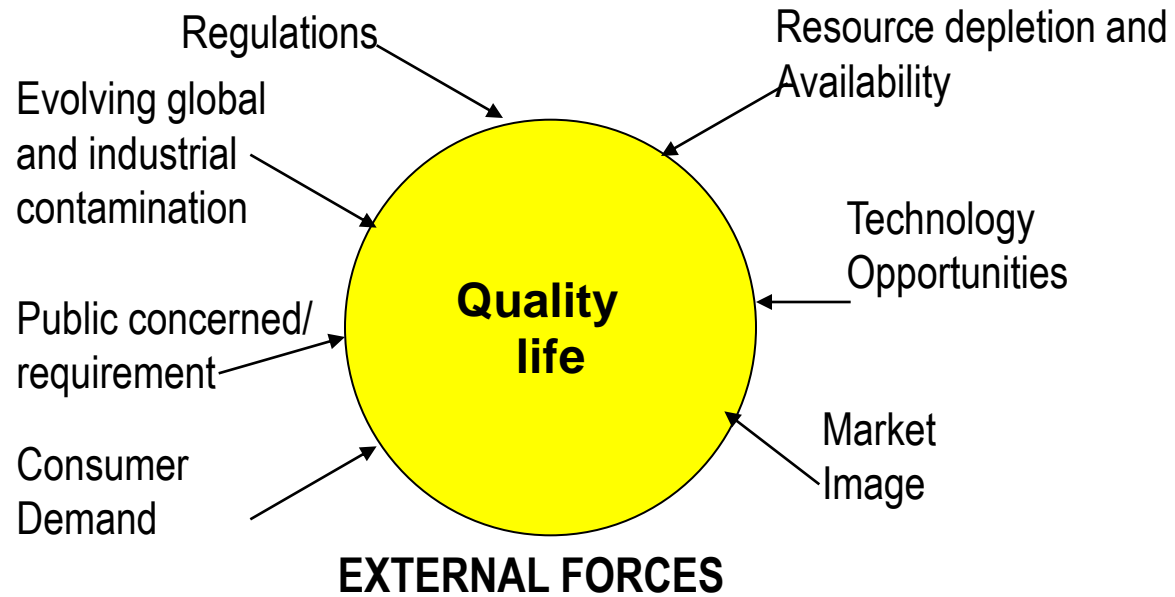
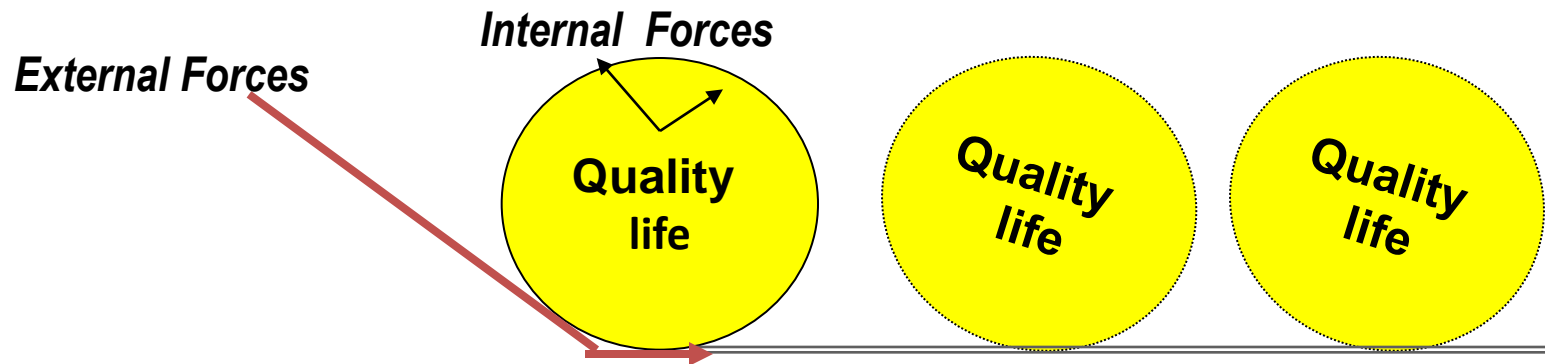
# Importance of SME 's

- A SME enterprise employ less than 100 people and has capital less than US \$ 1,00,000
- SMEs makeup 90% of number of enterprises in Asia
- Account for more than 50% of the Total Industrial Sector output in India and China and 10 to 25% in most other Asian countries
- Provide employment to about 50% workforce
- Contribute 50% of GDP
- Provide about 35% exports



<b>PROS</b>	<b>CONS</b>
<b>Important Source of Employment for low wage earners</b>	<b>Pose difficult pollution abatement problems</b>
<b>Flexible, React quickly to needs and demand</b>	<b>Specific pollution per unit of product greater than large scale units</b>
<b>Talent for innovation</b>	<b>Limited technical and Financial resources at their disposal</b>

# DRIVING FORCES OF QUALITY LIFE



Design for environment

Pollution control

Process & equipment changes

Input material changes

Resource conservation

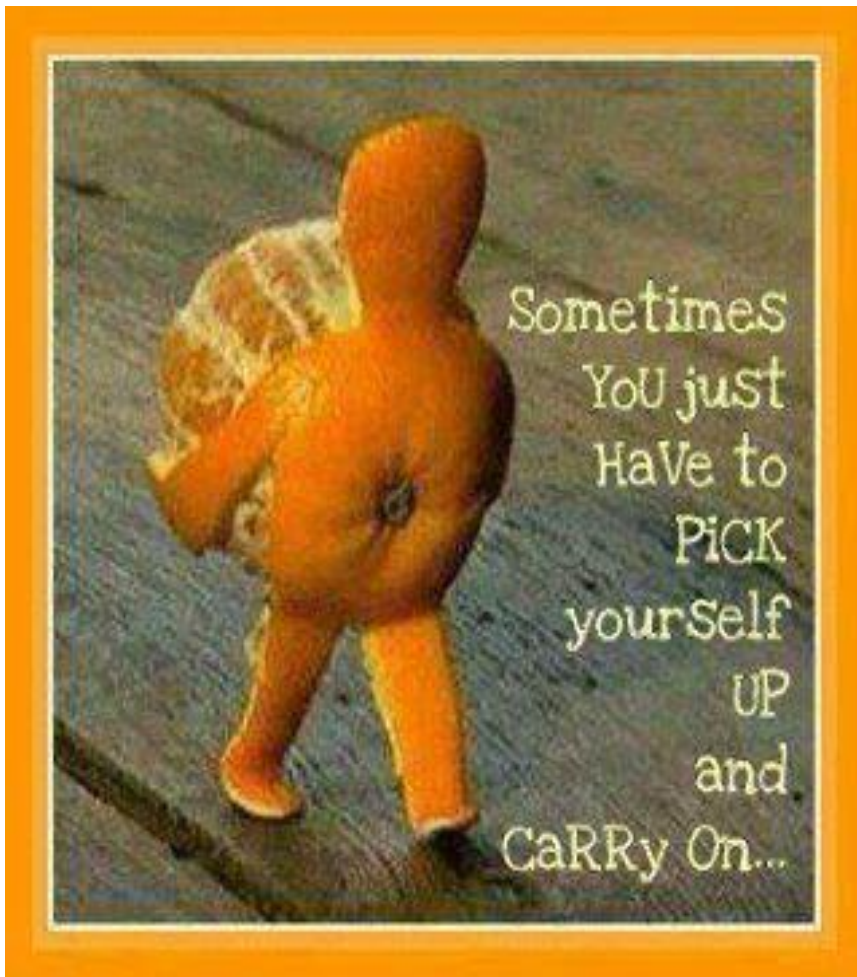
Recycle, reuse & recovery

Improve operating procedure

5S & 7waste



Green  
impact



22/11/2015  
THE STAR

# RM15bil for green economy

## Govt ready to set funds aside in 11th MP

By PATRICK LEE  
patrick.lee@thestar.com.my

**KUALA LUMPUR:** The Government is prepared to set aside some RM15bil under the 11th Malaysia Plan over the next five years to nudge Malaysia towards a green-based economy.

"It can be billions ... RM3bil or RM4bil for a year ... It could be more than RM15bil," said Economic Planning Unit director-general Datuk Seri Dr Rahamat Bivi Yusoff when commenting on the possible share of the pie for the environment under the 11th Plan (2016-2020).

The 11th Plan, an economic blueprint designed to push Malaysia to become a developed nation, is expected to be tabled by the Prime Minister in Parliament by the end of next month.

Speaking at a press conference after opening the United Nations Development Programmes' Towards Green Growth in Malaysia Conference here yesterday, Dr Rahamat later clarified that of the amount, some RM10bil would be direct allocation while the rest would be "indirect" in nature.

She added that the RM15bil would be spent on what she called "game-changers", which are expected to be moves to bring Malaysia into the green economy era.

These were separate from existing environment projects, such as flood mitigation and forest rehabilitation, for which money had already been set aside, she said.

"There are already billions going there ... (but) there are additional billions that we're going to allocate because we want to push it forward," said Dr Rahamat, who also hinted that money originally earmarked for less environment-friendly moves may be re-channelled to greener alternatives.

As an example, British High Commissioner to Kuala Lumpur Vicki Treadell said her government had woven green ideals into policy.

"Do you go for a coal-fired power station which might already be in the plan or do you save the money that you have for that (and) invest in new and renewable energy sources?" she said.

According to Dr Rahamat, striking this balance between growth and environment was what Malaysia wanted to learn.

"We're going to put aside a lot of money for game-changers ... We're serious about wanting to have development, but want it to be green," she said.

**We're going to put aside a lot of money for game-changers.**

DATUK SERI DR RAHAMAT BIVI YUSOFF

Who should implement sustainable approaches?  
Leaders- Decision makers, industries, managers,  
Those who are concerned in sustaining the environment

# CONCLUSION

## UPWARD DIFFUSION

National policies  
Legislation  
Action plans  
Funds



## LATERAL DIFFUSION

### *New Tools*

Financial incentives  
Environmental reporting/audit  
Eco-labeling/Green labeling  
ISO 14000  
Award scheme



**Environmental  
Approaches**



## LATERAL DIFFUSION

### *New Sectors*

Industrial estates  
Building design  
Tourism  
Eco-towns



## DOWNWARD DIFFUSION

Local authorities  
NGO's  
Smart Partnerships

Thank you for your attention...

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*Information sharing session*

