Emerging Needs and Importance of Green Supply Chain Management

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Introduction

Supply chain management (SCM) is the oversight of materials, information, and finances as they move in a process from supplier to manufacturer to wholesaler to retailer to consumer.

Economic Impacts	1.Traffic Congestion 2. Resource waste
Ecological Impacts:	1. Greenhouse Gases Cause Climate Change 2. The use of non-renewable fossil fuel 3. The effects of waste products such as tires and oil 4. Ecosystem destruction and species extinction
Social Impacts:	1. Negative public health impacts of pollution 2. Crop destruction 3. Injuries and deaths resulting from traffic accidents 4. Noise 5. Visual intrusion 6. Congestion deterring passenger travel 7. Loss of Greenfield sites and open spaces 8. Deterioration of Buildings/Infrastructure

Why there is need for Green SCM?

- Increasing Environmental Constraints due to Global Warming
- Corporate Social Responsibility
- Beneficial for Organization Eco-friendly
- Increasing Environmental awareness in stakeholders
- Evolving Consumer and Client Demand
- Response to increasing fuel prices

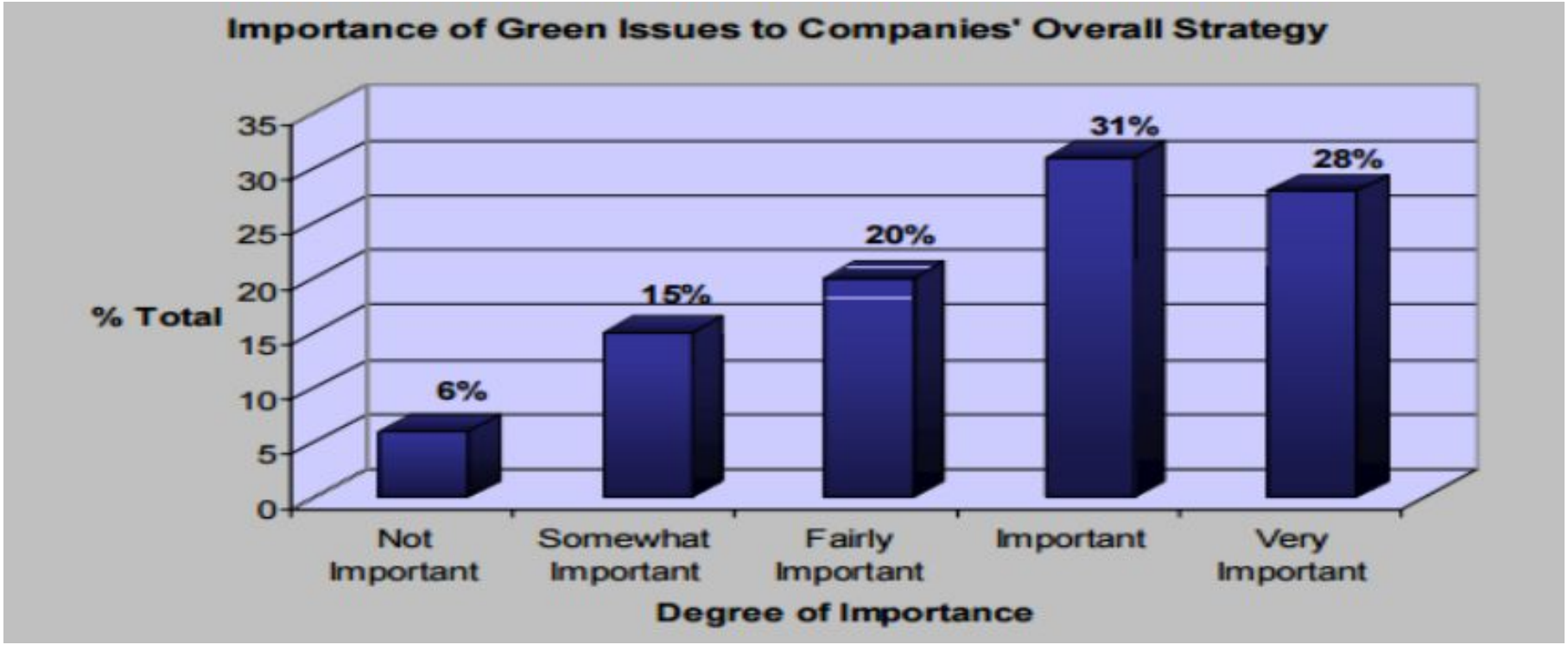
What is Green Supply Chain Management?

Green Logistics

The study of the environmental consequences of all the activities involved in the transportation, storage and handling of physical products as they move along supply chains in both forward and reverse directions.

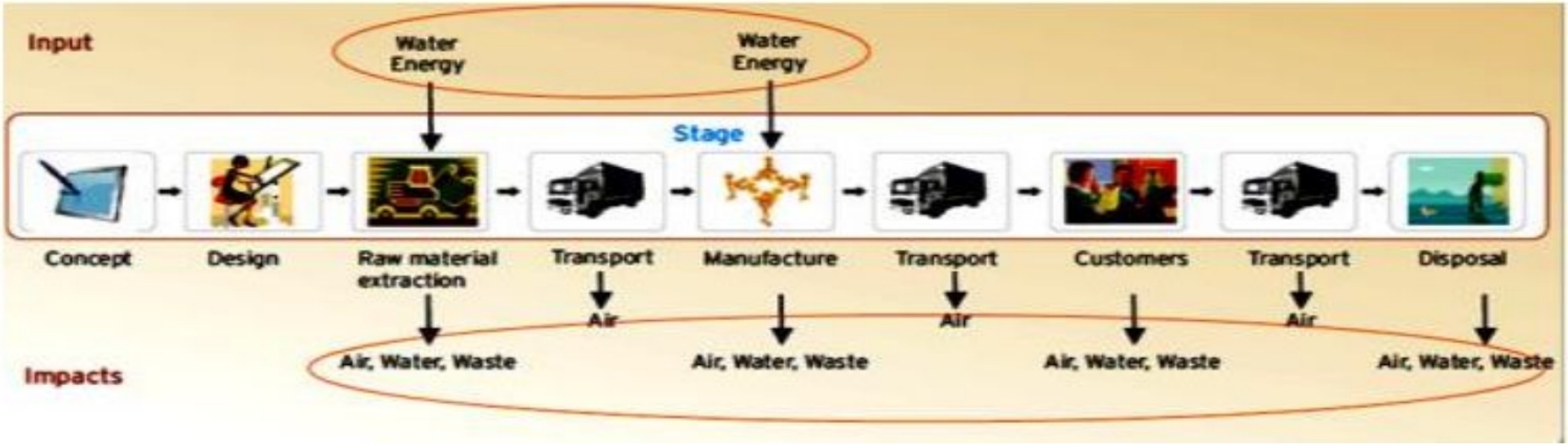
It takes into account the nature and scale of these effects and examines the various ways in which they can be reduced in order to develop a sustainable balance between economic, environmental and social objectives.

Importance of Green issues to companies' strategy



This raised awareness with regard to logistics brings the concept of Green (or sustainable) supply chain management.

It is based on the recognition that an individual firm's environmental impact extends well beyond its corporate boundaries.



Steps towards the efficient establishment of GSCM

Companies should consider:

• Use of compliance-based strategies that support the cascading of basic environmental requirements generically across all suppliers.

• Aligning supply chain goals for both efficiency and pollution-reduction.

• Transfer of environmentally specific innovations or technologies from customers to suppliers.

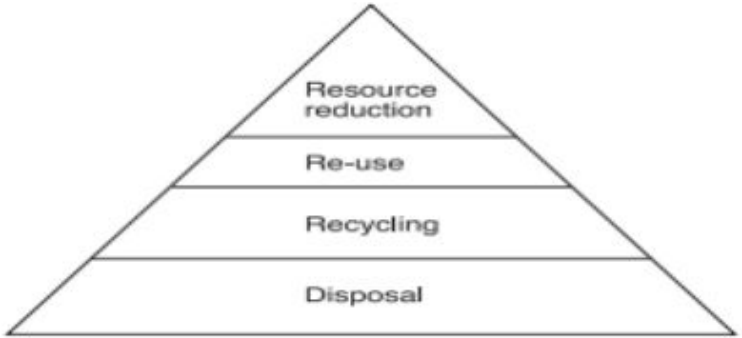
• Collaboration, competition or co-opetition between firms to develop re-manufacturing or closed-loop recycling systems.

The EU Environmental Protection Agency

Steps to implement GSCM are:

- Identifying costs
- Determine opportunities (for reducing costs, creating competitive advantages)
- Calculate benefits
- Decide, implement and monitor

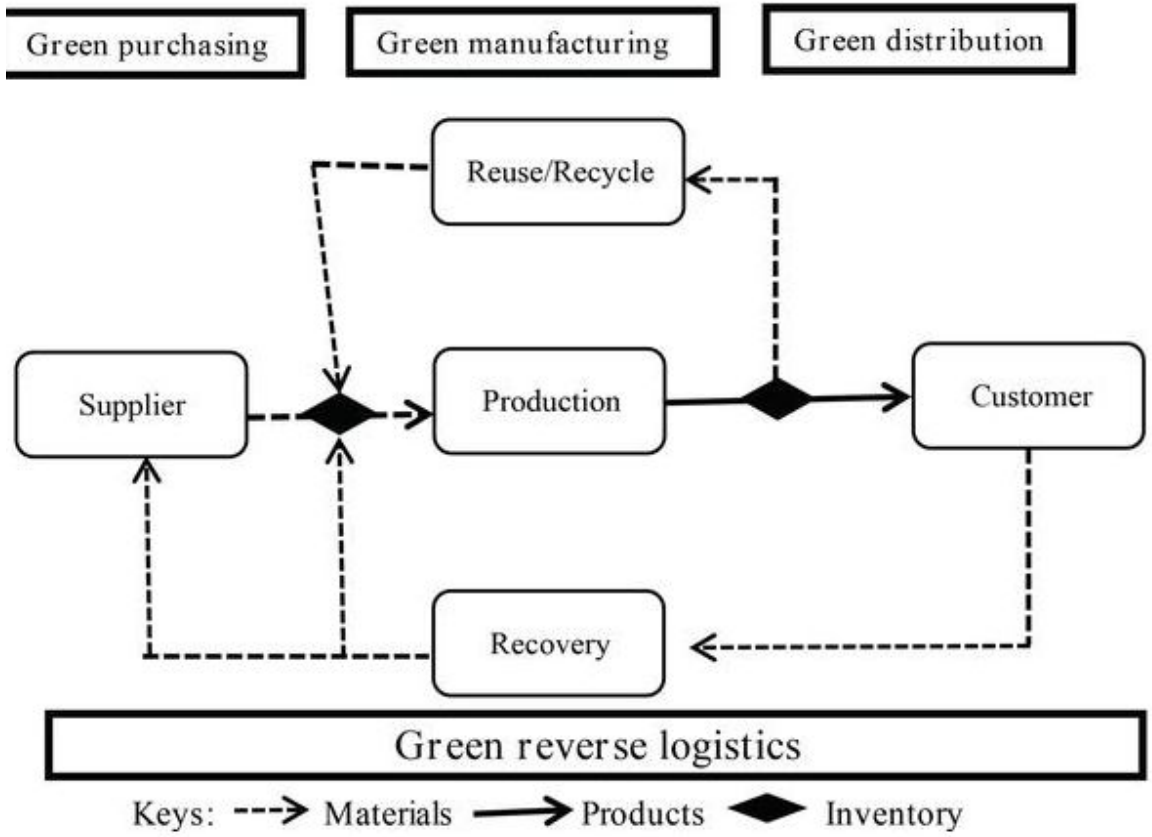
Changes needed in the evolution of green supply chains



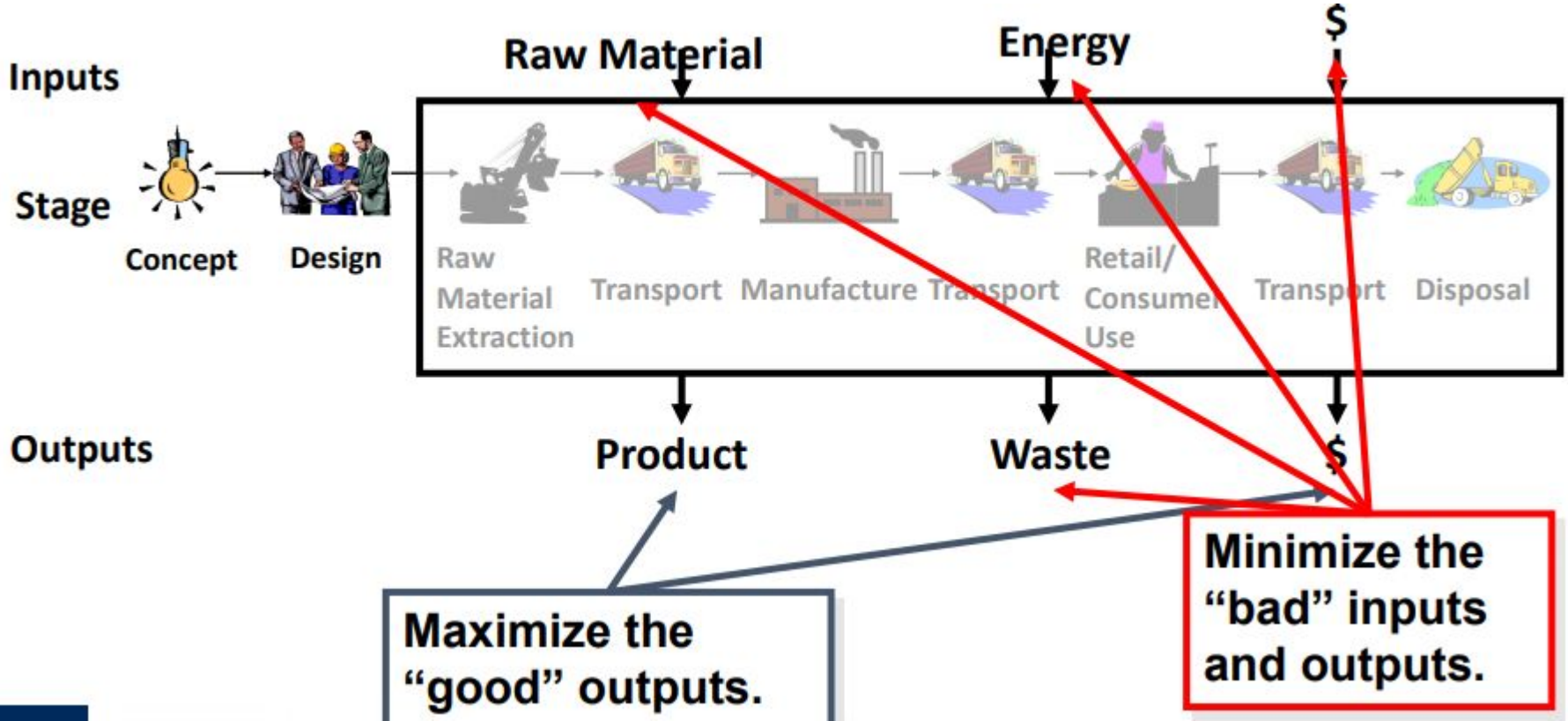
- ➔ Proactive environmental strategies are required to promote improved performance.
- ➔ There have been identified multiple links of mechanism between environmental performance and firm performance.
- ➔ System View of Environmental Life Cycle
- ➔ Expand the scope of actions beyond its initial life into a second and third life- more reduce & re-use initiatives than end of the pipeline solutions

GSCM

The green logistics system must include green management, green information system, green supply, green production, green transportation, green distribution, green packaging, green distribution processing and waste recycling. In other words the whole supply chain needs to be green.



Evaluating the SC leads to life cycle optimization.



Taxonomy of green logistics practices

- Greening initiatives require measures to be undertaken in every step of the supply chain.
- The main elements could be classified :
    - Green Product development
    - Green Transportation and Distribution
    - Green facilities
    - Reverse Logistics issues

Green Product issues

Green product related issues involve:

(i) green product design

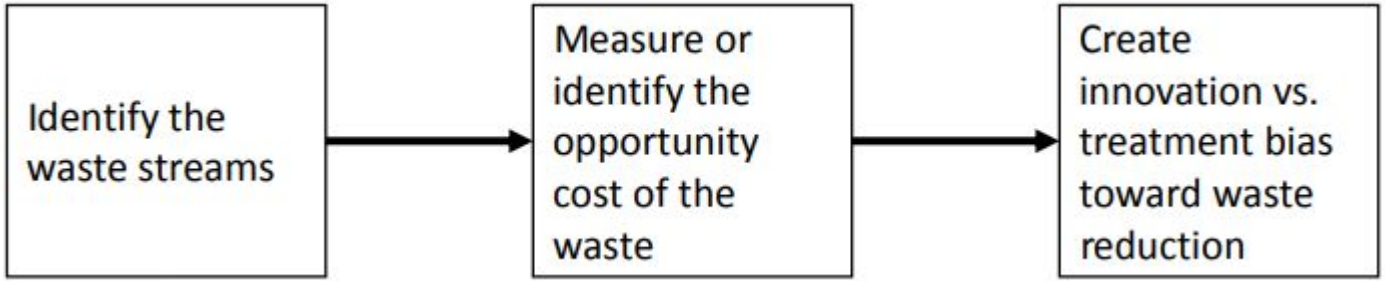
(ii) green purchasing and

(iii) green manufacturing.

GSCM is a driver for process improvements.

Green supply chain analysis targets:

- Wasted material
- Wasted energy or effort
- Under-utilized resources



Green Transportation and Distribution Issues

Green transportation and distribution practices involve:

- green network design
- utilization of fuel efficient transport fleets and equipments as also, the application of improved aerodynamics in vehicles
- increase of vehicle utilization rates and reduction of empty returns
- application of vehicle routing and scheduling software and
- fuel- efficient driving.

Green facilities issues

Green facilities incorporate practices that aim to minimize the environmental impact resulting from operations.

It incorporates practices that:

- maintain the facility’s energy efficiency
- improve the energy efficiency of mechanical handling operations

Fuel, oil or gas is the primary source for heating a facility while electricity for cooling.

Energy Efficiency of handling equipment

Reverse logistics issues

All logistic activities related to the recovery of value in discarded or returned products is essential for e-commerce companies.

Several logistic service providers now offer good solutions and best practices.

Recycling end-of-life products can yield valuable material shortages, esp. in case of scarce precious metals

Reverse logistics issues

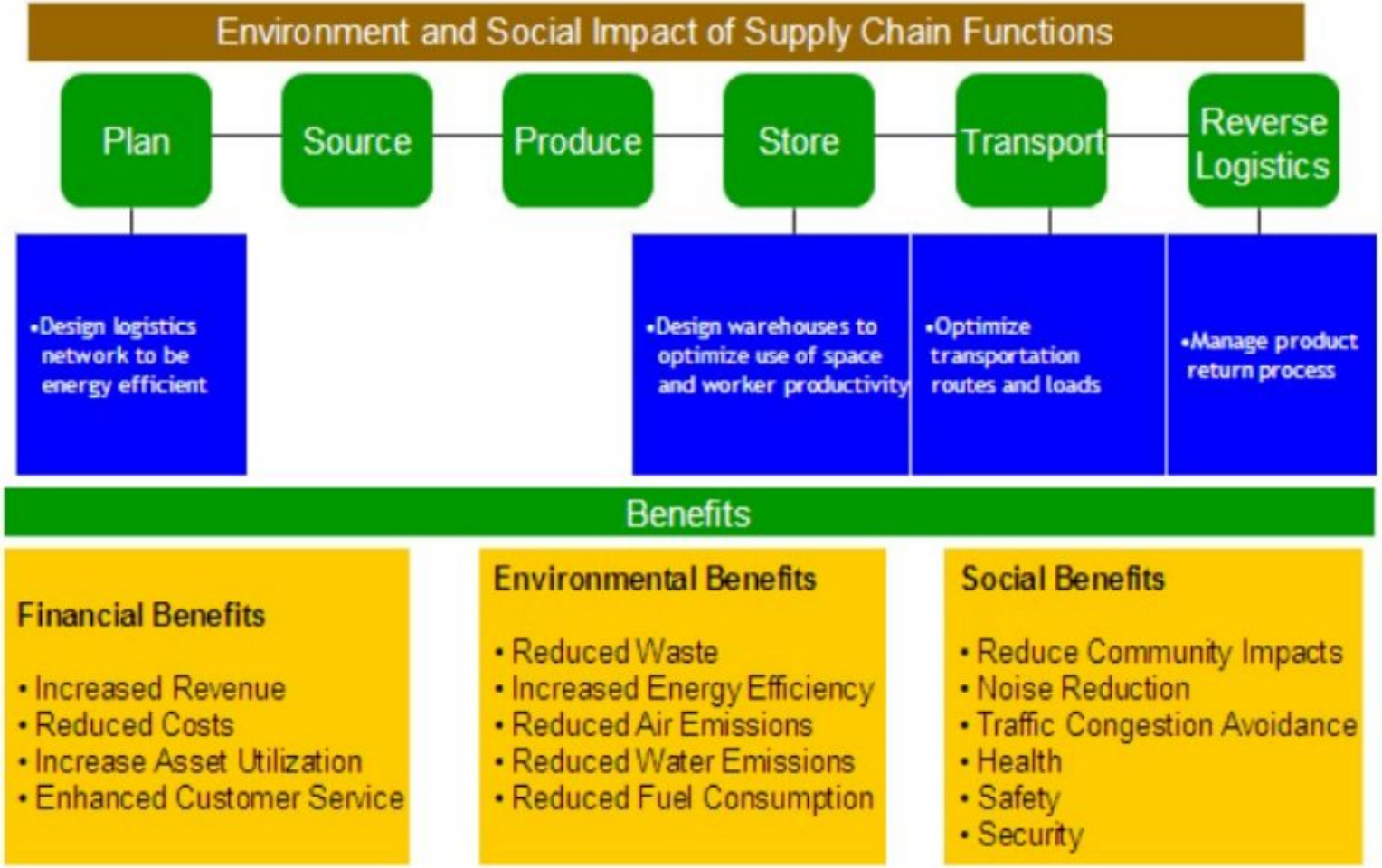
- ➔ Product recovery
  - repair,
  - refurbishing,
  - remanufacturing,
  - cannibalization
  - recycling
- ➔ Waste Management
  - Waste management involves pre treatment of waste.

Factors for success of GSCM

- ➔ Ethical leadership/internal management
- ➔ Customer management
- ➔ Supplier management
- ➔ Competitiveness
- ➔ Social
- ➔ Regulatory

Green Practices

- ➔ Green material sourcing
- ➔ Green marketing
- ➔ Green management
- ➔ Green distribution and warehousing
- ➔ Green manufacturing
- ➔ Ecological design
- ➔ Green transportation and reverse logistics
- ➔ Renewable energy and biofuels


Environment and Social Impact of Supply Chain Functions
Plan
Source
Produce
Store
Transport
Reverse Logistics
•Design logistics network to be energy efficient
•Design warehouses to optimize use of space and worker productivity
•Optimize transportation routes and loads
•Manage product return process
Benefits
Financial Benefits
• Increased Revenue
• Reduced Costs
• Increase Asset Utilization
• Enhanced Customer Service
Environmental Benefits
• Reduced Waste
• Increased Energy Efficiency
• Reduced Air Emissions
• Reduced Water Emissions
• Reduced Fuel Consumption
Social Benefits
• Reduce Community Impacts
• Noise Reduction
• Traffic Congestion Avoidance
• Health
• Safety
• Security

Improvements By Green SCM

- Improves operations by employing an environmental solution
- Improves Agility: Green supply chain management help mitigate risks and speed innovations
- Increases Adaptability: Green supply chain analysis often leads to innovative processes and continuous improvements
- Promotes Alignment: involves negotiating policies with suppliers and customers, which results in better alignment of business processes and principles.

Effects of greening the supply chain

Conclusions

- Green logistics concepts manage environmental impacts where they occur—ideally before they occur.
- The integration of environmental concerns in supply chain network design is now a reality for numerous businesses worldwide. The adoption of green practices will not only affect the business that adopts the policy but also the customers and suppliers.
- The new global trend towards the holistic tackling of supply chain costs and its environmental performance is becoming a top priority practice of corporations in order to achieve a competitive advantage in an increasingly environmentally sensitive market.

Thank you for your attention!