

Social and Economic Challenges of Implementing Sustainable Materials on Buildings in Kuwait

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Presentation Outline

Introduction to LEED

LEED EB O&M in Kuwait

Materials & Resources

Implementation of Sustainable
Purchasing in Kuwait

Implementation of Waste
Management in Kuwait

USGBC and LEED



- LEED- Leadership in Energy and Environmental Design
- LEED was established in 1998 by the US Green Building Council (USGBC)
- USGBC administers the development and ongoing improvement of the LEED rating system
- USGBC is the primary source for LEED and green building education and resources for project teams
- USGBC's mission is to promote the design and construction of buildings that are environmentally responsible, profitable and healthy places to live and work

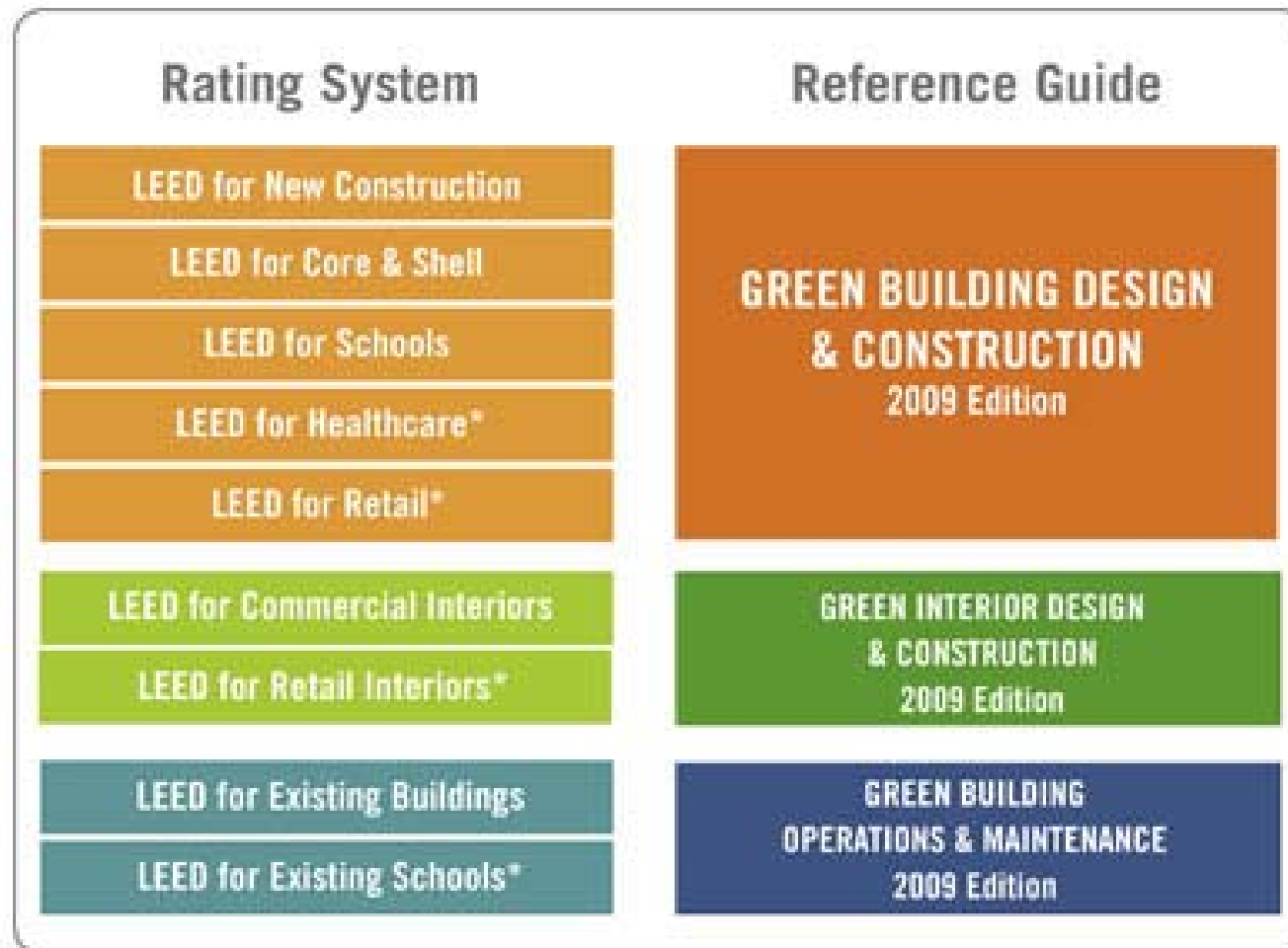


GBCI and LEED



- The Green Building Certification Institute was established in 2008
- Its administers and awards LEED certification to all commercial and industrial projects registered under any LEED rating system
- LEED certification is granted to projects by GBCI when sufficient documentation proves compliance with the required number of prerequisites and optional credits
- Currently there are 2,476 LEED certified projects and 19,524 registered projects over 90 countries
- Commercial building space with LEED certification amounts to more than 50 billion square feet

LEED Rating Systems



* These rating systems are under development or in pilot. Once they are available supplements will be sold for the new LEED 2009 Reference Guides.

Ref: LEED for Existing Buildings: Operations and Maintenance (LEED-EBOM 2009)

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LEED EB O&M in Kuwait



- LEED is a relatively new practice in Kuwait
- It has only been adopted during the past few years
- Implementing LEED on new and existing buildings in Kuwait is extremely challenging
- Obstacles and challenges faced both economically and socially during the implementation period for the materials and resources credit for an existing building in Kuwait will be highlighted

LEED EB O&M Points Scale



Building Owners and Decision Makers in Kuwait have to Understand the Benefits of Implementing LEED



A green building will reduce the negative impacts of different materials brought into the building

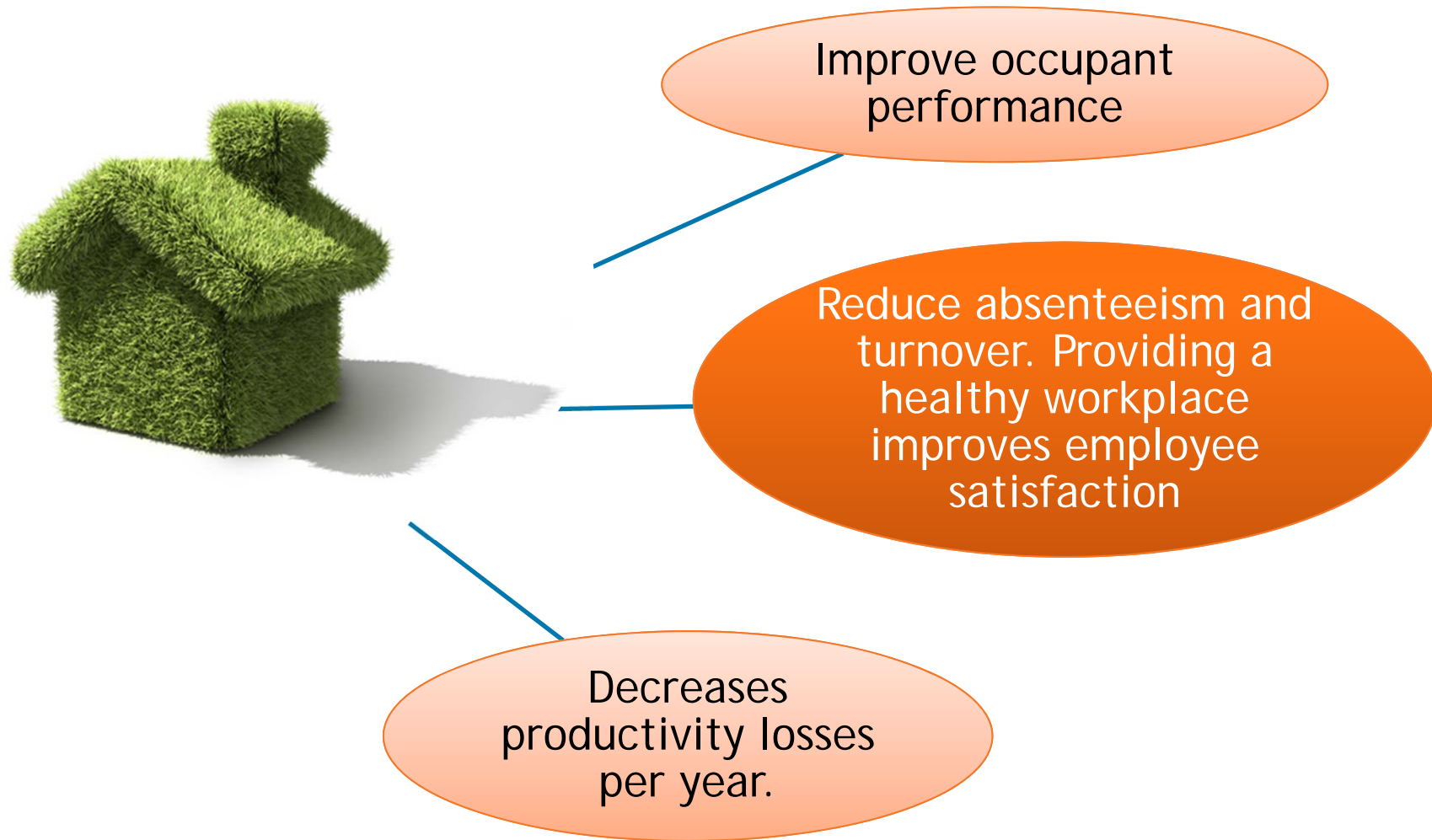
It will reduce the impacts of consumption of electricity and water (peak load 11,850MW in 2012 and each person in Kuwait consumes 600L of water a day)



By implementing LEED we hope to achieve a significant decrease in water and electricity consumption in Kuwait



Productivity Benefits



LEED for Existing Buildings addresses whole-building cleaning and maintenance issues (including chemical use), recycling programs, exterior maintenance programs, and systems upgrades.

- There is currently no LEED EB O&M certified building in Kuwait, there are two LEED EB O&M registered buildings.
- There is currently one LEED EB O&M certified building in Dubai, which is also the only one in the Arab World.
- There are only 12 LEED EB O&M certified buildings outside of the USA (based on 2010/2011 studies).
- LEED EB O&M will transform the way buildings are operated enabling an environmentally and socially responsible, healthy and prosperous environment that improves the quality of life.



LEED EB O&M Distribution Points

Sustainable Category	Prerequisites	Points
Sustainable Sites	0	26
Water Efficiency	1	14
Energy and Efficiency	3	35
Materials and Resources	2	10
Indoor Environmental Quality	3	15
Innovation in Operation	0	6
Regional Priority	0	4

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Materials and Resources Credit

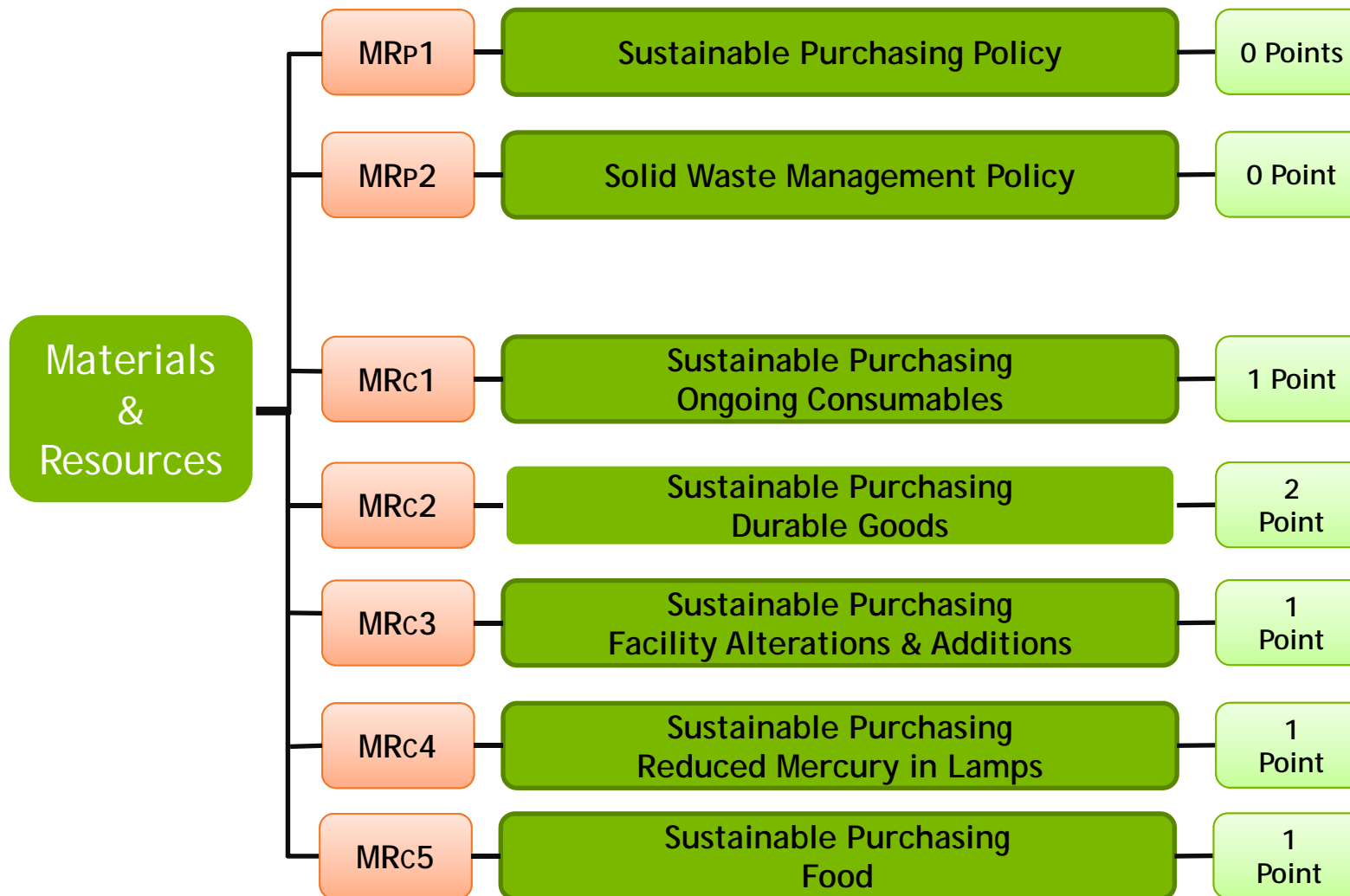


- To reduce the environmental and air quality impacts of the materials acquired for use in the operations maintenance of buildings

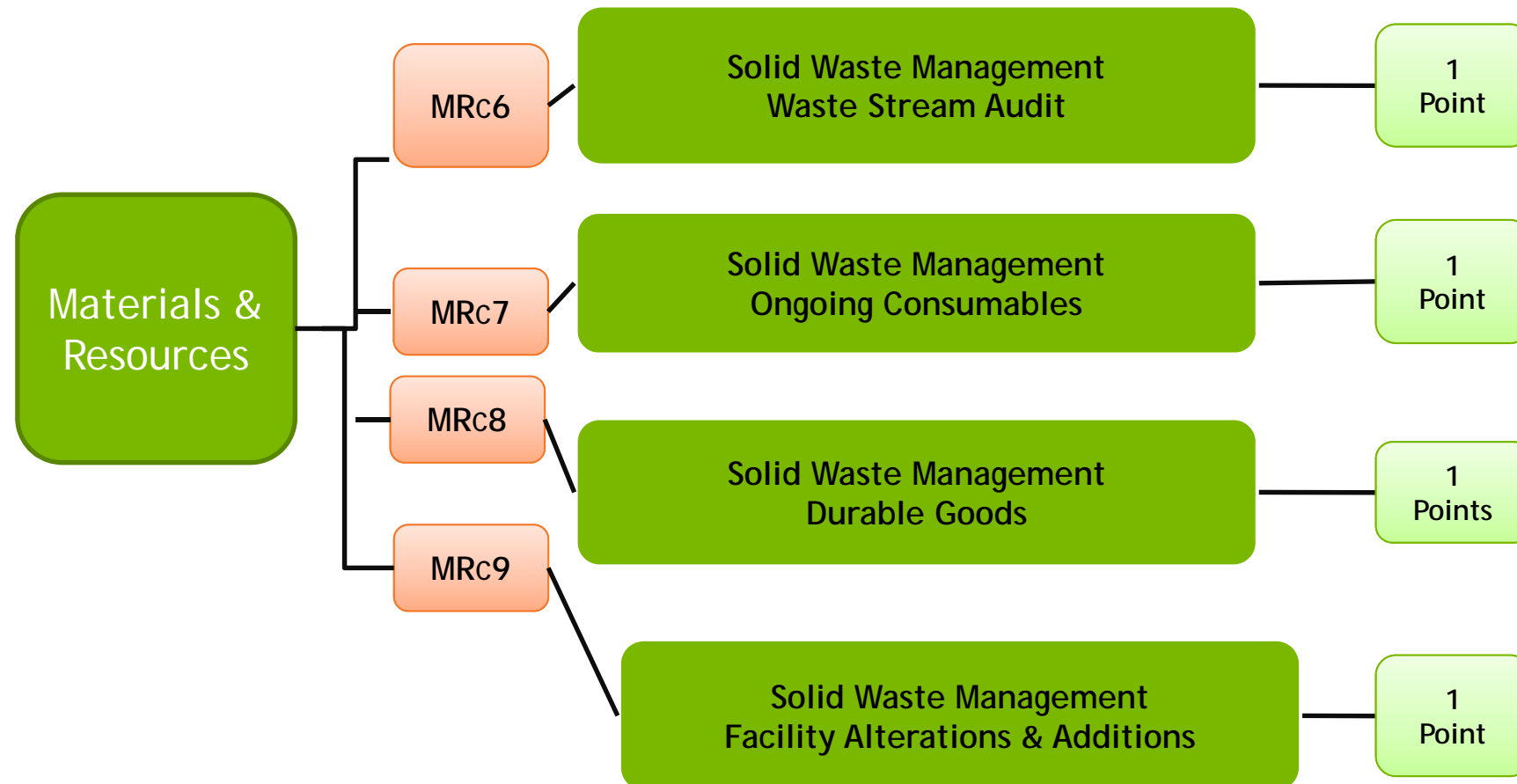


- To reduce the negative impacts of different materials brought into the building and to minimize the landfill and disposal of different materials brought out of the building

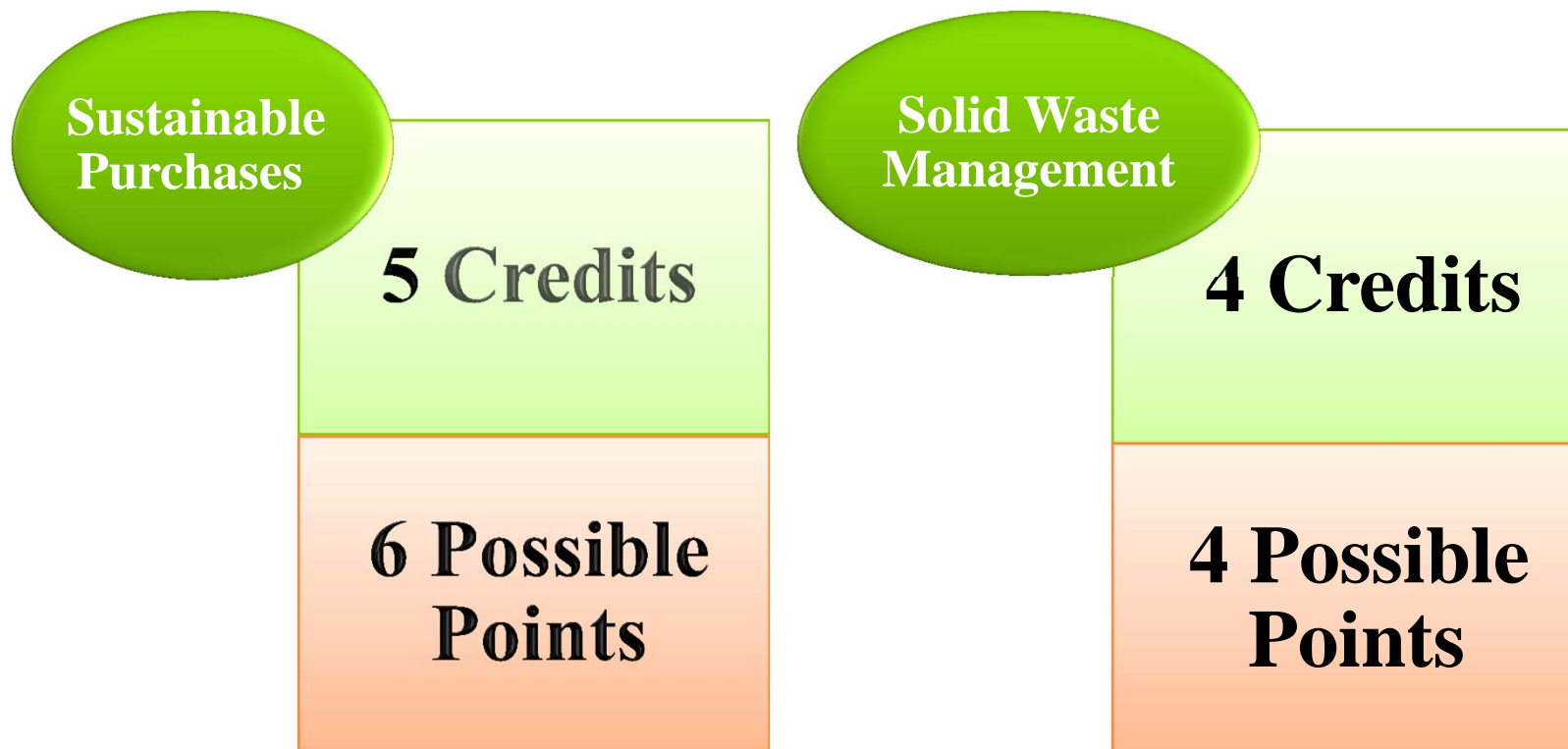
Materials & Resources Distribution Points



Materials & Resources Distribution Points



Materials & Resources Credits



MR Role Towards Sustainable Building



Selecting green sustainable materials by adopting sustainable purchasing program.

Reducing waste by managing waste solids.

Focusing on reusing and recycling materials whenever possible.

Reducing mercury pollution generated in the building

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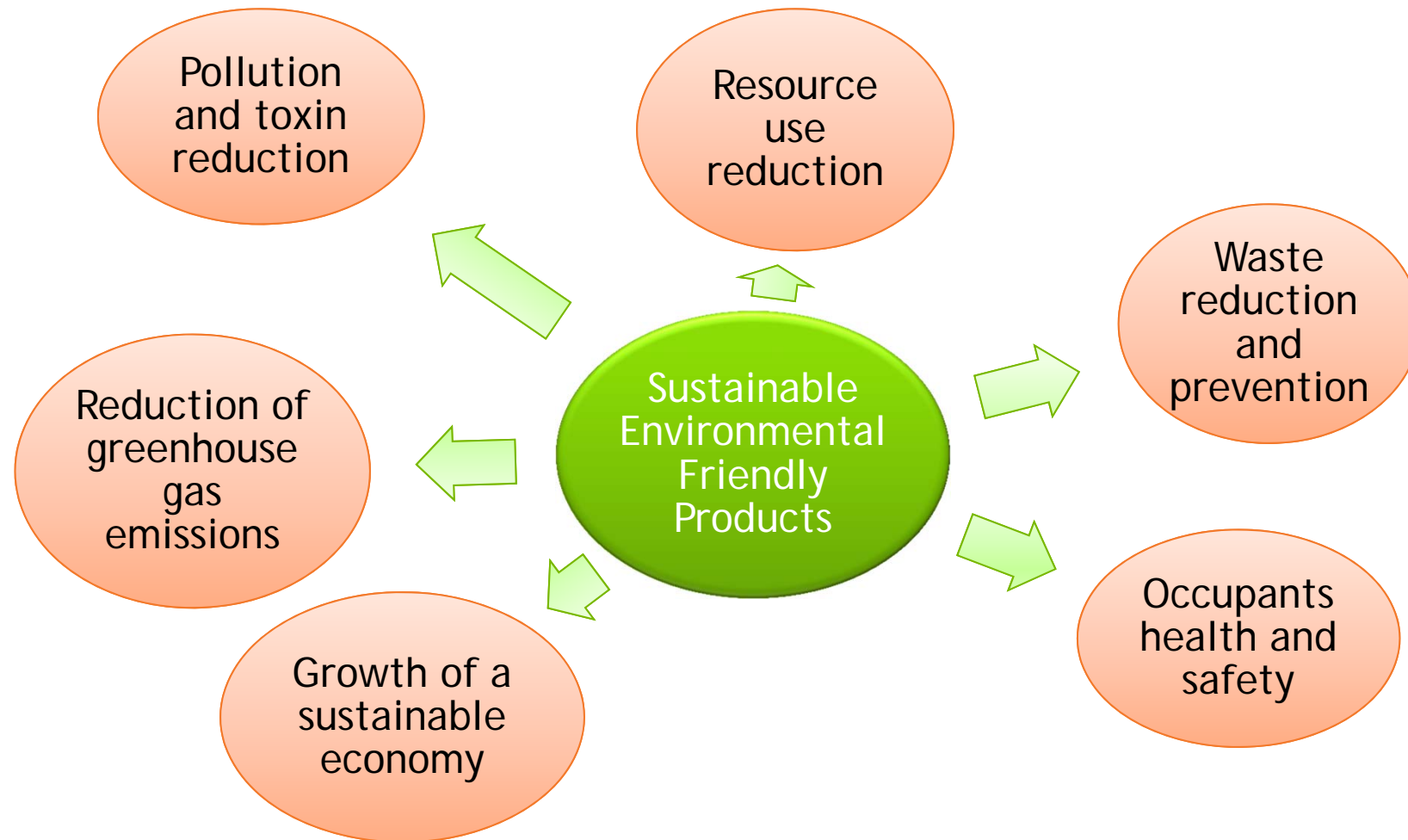
LEED EB O&M in Kuwait

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Issues to Consider while Purchasing Sustainable Environmentally Friendly Products



Challenges Faced In Kuwait

Limited choices of sustainable materials in the local market

Limited number of vendors locally or in the Gulf region

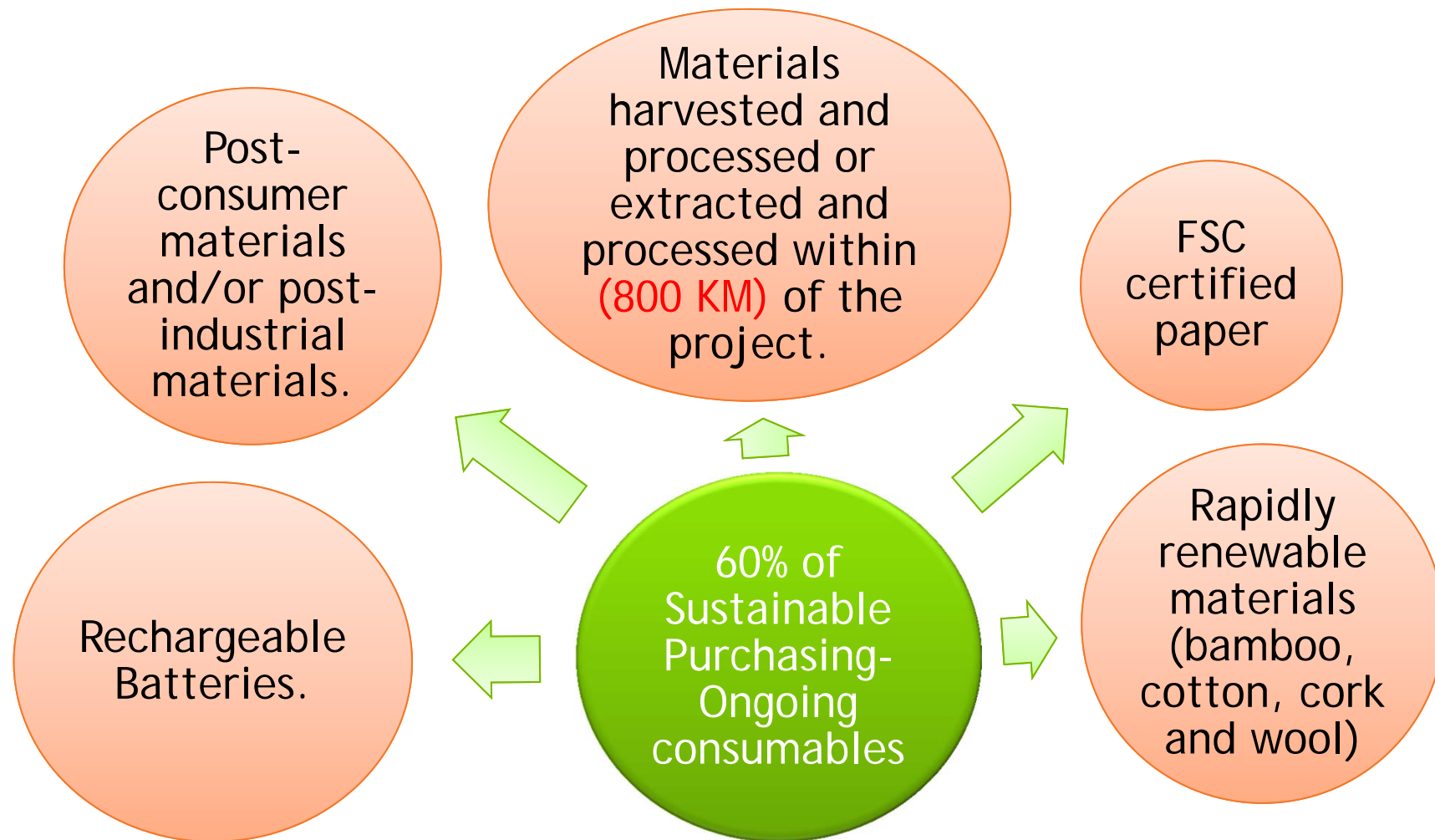
Lack of cooperation with vendors

The available sustainable materials are higher in cost

MRC1: Sustainable Purchasing- Ongoing Consumables

Aim to maintain a sustainable purchasing program covering consumable materials (papers, notebooks, envelopes, toner cartridges, batteries and desk accessories) where sustainable purchases are of at least 60% of the total purchases.

60% of Sustainable Purchases for Ongoing Consumables (MRC1) should be



Challenges Faced while Attempting to Achieve this

Limited (if none) availability of locally produced sustainable ongoing consumables

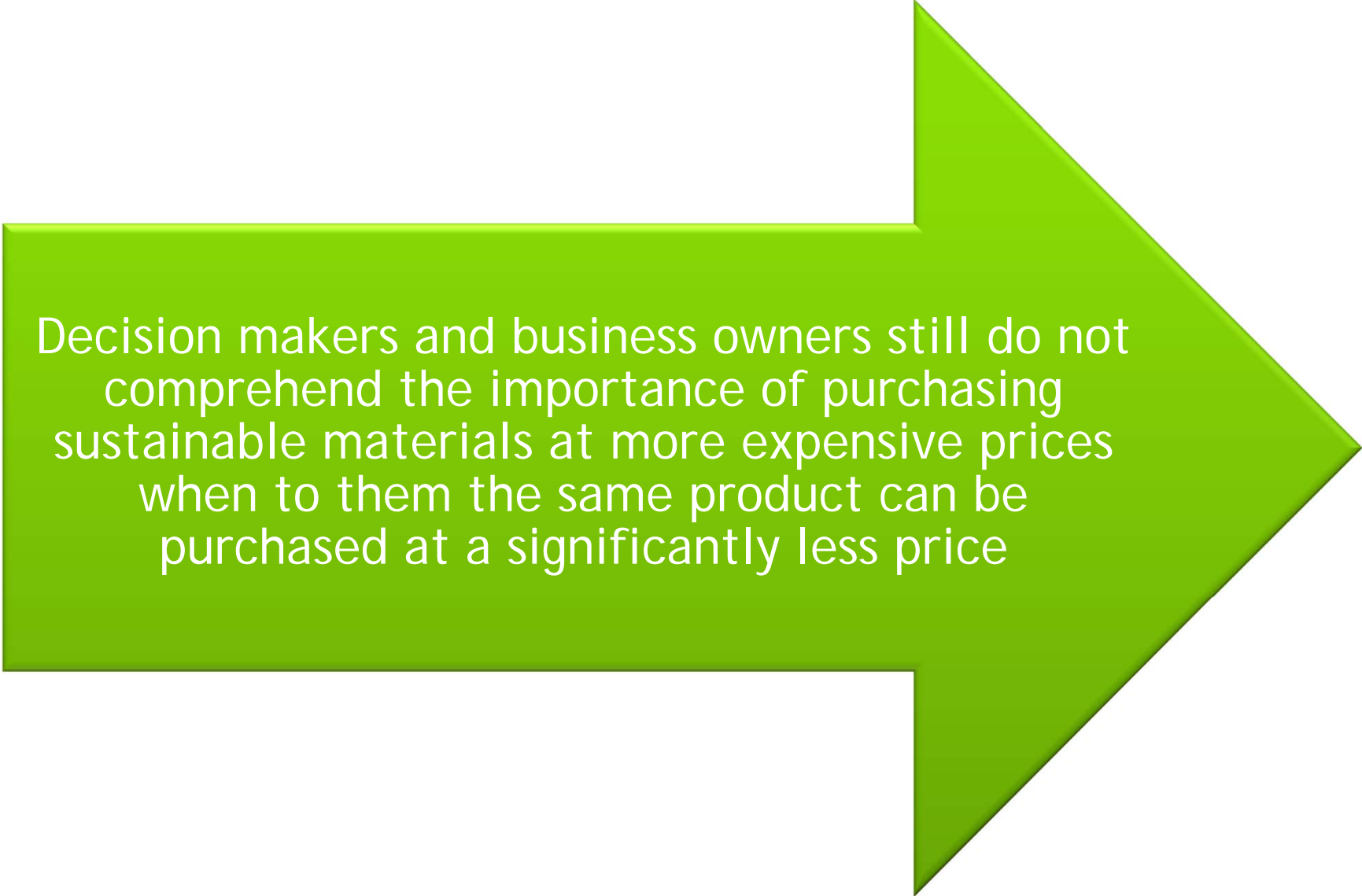
Limited number of vendors supplying sustainable consumable goods in the local market

Possibility to obtain materials containing pre or post consumer materials but not with the specified percentages mentioned in LEED

FSC paper is very difficult to find, and if found is extremely expensive when compared to the price of regular paper

Lack of cooperation with some potential suppliers of sustainable consumable goods

Building owners are unable to comprehend the importance of purchasing sustainable materials such as FSC paper at high prices



Decision makers and business owners still do not comprehend the importance of purchasing sustainable materials at more expensive prices when to them the same product can be purchased at a significantly less price

Challenges Faced while Attempting to Achieve Sustainable Purchases of 40% of Durable Goods (Electrical Equipment) for MRC2

Although energy star qualified equipment are available in the local market, not all the types of electrical equipment used are energy star qualified

Energy star equipment is higher in cost



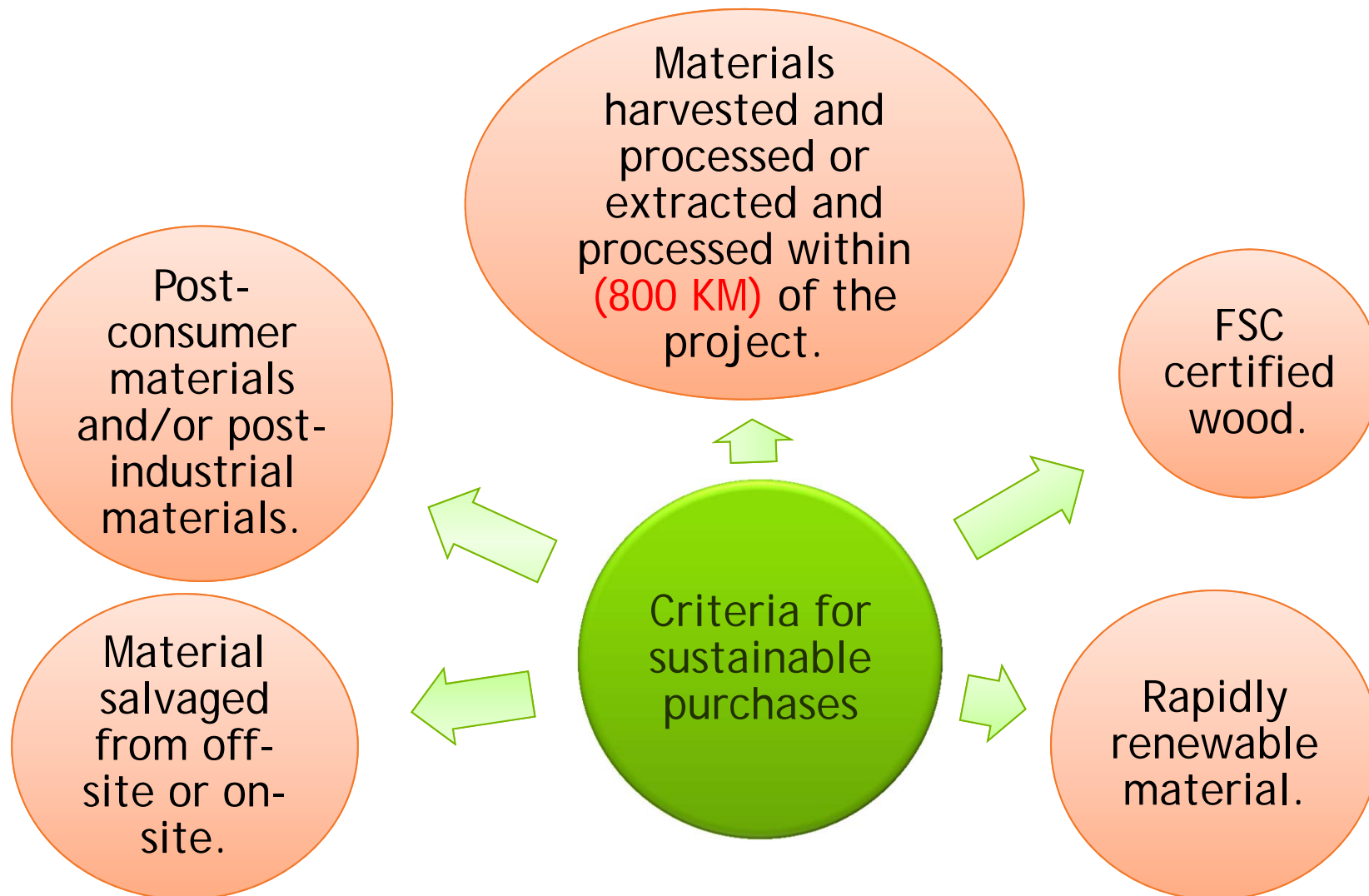


Employees are not cooperative about sharing printers minimizing the amount of printers and copiers in the building. The culture is to have a printer at each desk which they are not dedicated to change



Decreasing the number of printers will reduce VOC's in the building and provide a healthy working environment

40% of Sustainable Purchases for Furniture (MRC2.2) should be



Challenges Faced while Attempting to Achieve Sustainable Purchases of 40% for Furniture

Very limited number of vendors supplying such sustainable furniture

Need to request relatively large quantities of furniture to be able to order the furniture from reliable vendors located out of Kuwait

High cost of sustainable furniture, which needs cooperation and dedication of the building owner to purchase at high costs

Limited number of designs and colors

Challenges Faced when Implementing Sustainable Purchasing-Facility Alterations and Additions (MRC3)

Kuwait is a relative new market for LEED certified materials, therefore difficulty is faced locating LEED materials required for this credit available locally

LEED certified materials will be more expensive therefore difficulty is faced is persuading upper management to purchase the more expensive item

Many LEED certified materials do not have a local supplier, problems are faced with upper management acceptance when requesting items with no locally supplier

If and when the material is located locally, there will be a limited variety of designs and colors

Health Effects of VOC Exposure



Key signs or symptoms associated with exposure to VOCs include

Conjunctival irritation (Pinkeye)

Nose and throat discomfort

Headache

Allergic skin reaction

Shortness of breath which may lead to asthma & cardiac disorders

Nausea

Fatigue

Dizziness

Psychologically, staff will not be comfortable working in an environment that may cause any of these symptoms and productivity will be low.



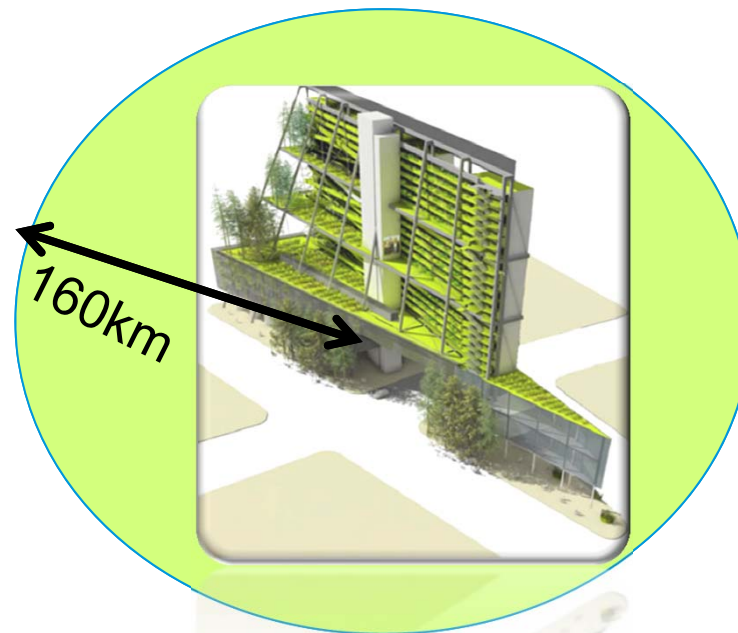
Challenges Faced while Implementing Sustainable Purchasing-Food

Difficult to find available in Kuwait foods and beverages that bear one or more of the following certifications, and if found they will be very expensive.

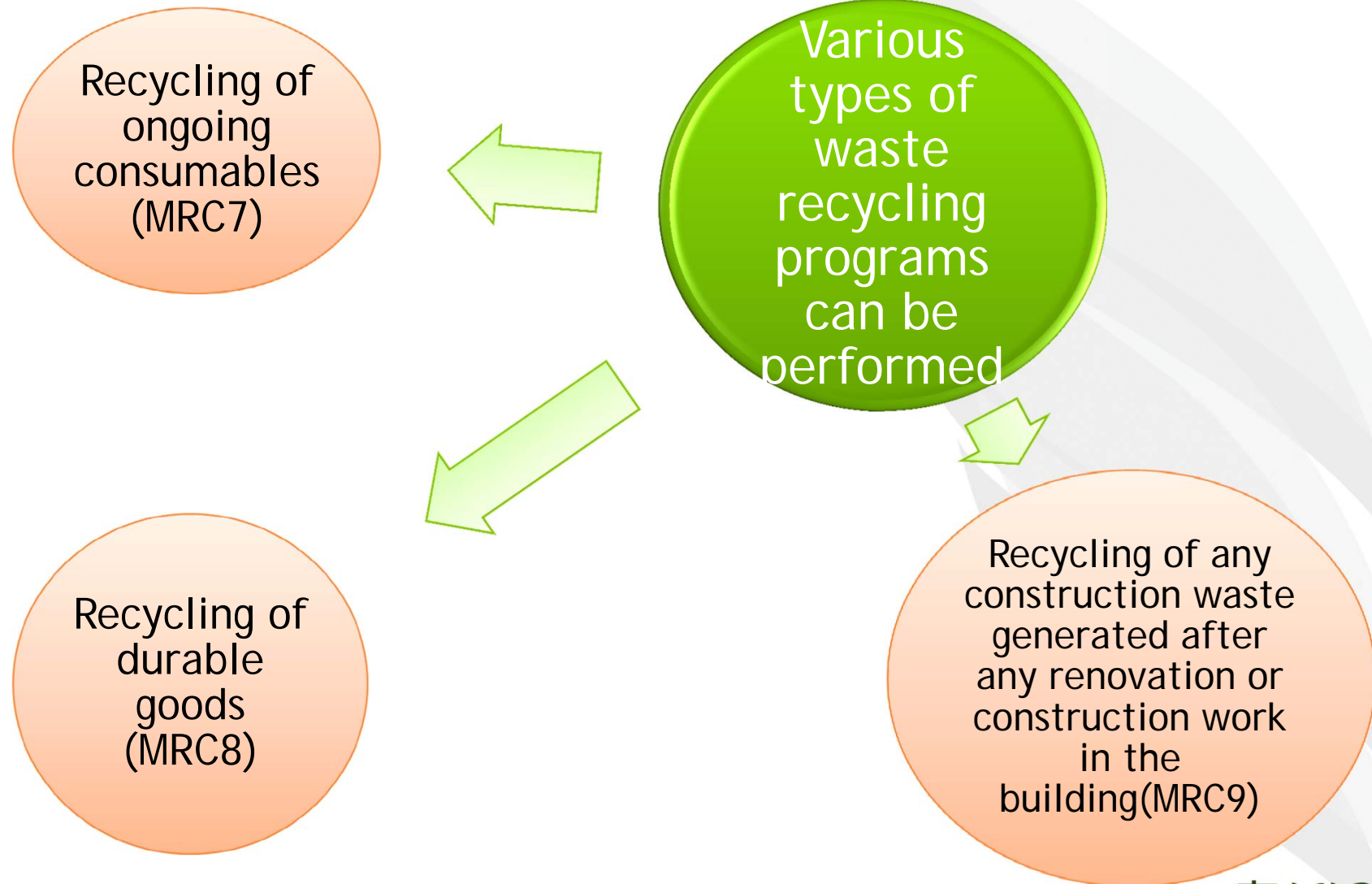
- United States Department of Agriculture (USDA) Organic
- Food Alliance Certified
- Rainforest Alliance Certified
- Protected Harvest Certified
- Fair Trade
- Marine Stewardship Council's Blue Eco- Label



Due to Kuwait covering a small area, the requirement that at least 25% food and beverages purchases by cost are produced within a 100 miles radius(160 km) can be easily achieved, therefore this point is gained easily by using food and beverages produced locally.



Waste Management



Challenges Faced in Kuwait for Waste Audit and Recycling Waste



Difficulty in gaining cooperation from building occupants in sorting waste and disposing of it in the allocated waste bins and to commit to it

Challenging to gain cleaning staff commitment to transfer waste continuously from collection points in the building to the recycling area

Difficulty to persuade building occupants to minimize waste as possible, as well as work or use recycled materials

Convincing occupants and staff to set up a formal reuse program for furniture and electronics

There is no batteries recycling program in Kuwait

Challenges Faced in Kuwait for Recycling Construction Waste in Kuwait

Gaining complete cooperation from contractors

Finding and working with a waste hauler who is willing to establish a system for managing and tracking construction waste

For LEED to Be Implemented Successfully in Kuwait

- There has to be complete building management and building occupant cooperation.
- All people involved with the building have to be dedicated to making a change.
- The general mindset, awareness and dedication of the public should be changed to make more people care.
- Company employers and building owners could provide mandatory workshop to new employees and new building tenants to educate them on the benefits of sustainable practices to their self, their families and the environment
- The Kuwaiti government could encourage vendors in the local market to provide good quality environmentally friendly goods that satisfy green building requirements by providing them with extra privileges and incentives which will ease and smoothen importing of such goods to Kuwait
- More attention should be given to the recycling issues in Kuwait by enforcing properties owners to sort the waste to be recycled.

On a Final Note

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- The Kuwait Green Building Council was established in March 2012. One of their main objectives is working to ensure Green certified materials and products will be readily available in the Kuwaiti market.
 - Their vision is to encourage and engage both public and private sectors to adopt sustainable measures in the development sector in Kuwait.
 - They are currently working on making green cleaning products available in the local market.
 - Hopefully they will be able to make LEED or any equivalent green certification easier to achieve in the future.
 - We applaud their efforts and hard work.

**If you think in terms of a year,
plant a seed;
if in terms of ten years,
plant trees;
if in terms of 100 years,
teach the people.**

Confucius

Chinese Ethical Teacher, Philosopher