Sustainability & the Agricultural Industry

– Student Notes

Directions:
Fill in the blanks.

Sustainability Segment

1. Sustainability

- Stems from the idea of sustainable _____
  - the ability to preserve or sustain resources without compromising the needs of _____generations

2. Sustainability

- Focuses on the future of society to ensure the basic quality of life can be achieved through _____of both natural and human resources

Stewardship – the responsible planning and management of resources

3. Sustainability

- May be achieved by balancing what is known as the three pillars of sustainability:
  - _____development
  - social development
  - _____protection

4. Social Sustainability

- Is the capability of social systems to function and work together _____
  - countries, families, organizations, etc.
- Involves understanding impacts on people and society, assessing potential harms, needs and desires as well as providing _____contributions toward human development and well-being

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5. Social Sustainability

- In agriculture refers to the qualities of an agricultural business required to be successful, such as:
  - goals
  - _____
  - life style
  - income
- Is closely related to the well-being of producers and _____communities
  - poor social conditions can lead to poverty and reduced production

6. Social Sustainability

- Focuses on many factors including:
  - social _____
    - administrating laws fairly and properly
  - equity
    - being fair and impartial
  - religious _____
    - having sensitivity towards the religious practices and beliefs of individuals
  - labor standards
    - giving structure to the workplace and defining the responsibilities of employees and employers

7. Social Sustainability

- Focuses on many factors including:
  - _____rights
    - allowing rights to individuals who have social, cultural, economic and political characteristics different from those of the dominant societies in which they live
  - _____
    - being easily reached or approached

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8. Social Sustainability

- Focuses on many factors including:
  - _____
    - valuing practices or characteristics passed down through the years, from one generation to the next
  - civil _____
    - allowing freedom to exercise customary rights without government interference

9. Environmental Sustainability

- Refers to the ability to conserve and support a _____level of quality of the environment and natural resources
- Involves responsibly interacting with the environment to avoid depletion or _____of natural resources
- Is the largest world concern due to the growing population and expanding human development

10. Environmental Sustainability

- Focuses on many factors including:
  - resource utilization
    - using limited resources in a conservative manner
  - _____choice
    - obtaining materials by socially sustainable means and with lower environmental impact
  - resource conservation
    - managing human use of natural resources
  - _____efficiency
    - managing growth in energy consumption

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11. Environmental Sustainability

- Focuses on many factors including:
  - emissions reduction
    - reducing the amount of harmful gases released
  - _____and nature preservation
    - encouraging diversity among plant and animal species in an environment
  - water pollution
    - eliminating the addition of harmful _____into natural water
  - air pollution
    - limiting the release of harmful substances into the air

12. Economic Sustainability

- Refers to the ability of an economy to support a defined level of economic production over a _____period of time
- Involves using available resources efficiently, allowing for continued _____and growth

13. Economic Sustainability

- Focuses on many factors including:
  - return on investment
    - maximizing returns on investments
      - returns refers to the _____
  - market
    - maximizing the flow of goods and services within the country and internationally
  - innovation
    - developing new, more efficient and more productive ideas or methods
  - _____
    - reducing the amount of debt

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14. Economic Sustainability

- Focuses on many factors including:
  - fair trade
    - encouraging trade in which fair prices are paid to _____
  - _____ sharing
    - allowing employees to receive a direct share of business profits
  - business performance
    - ensuring businesses are profitable

15. Sustainability

- Is important to address because humans cannot maintain their quality of life and the ecosystem if the natural resources needed to do so are _____
- Develops global goals which include:
  - ending poverty
  - combating _____change
  - fighting against injustice and inequality

16. Ecological Footprint

- Is an estimate which measures the impact an _____is leaving on the environment based on his or her lifestyle and income
  - similar to the _____footprint, but is based on more detailed information
- Can be seen as a measure of sustainable use of natural resources

Carbon Footprint – the measure of the environmental impact of an individual, measured in units of carbon dioxide

17. Ecological Footprint

- Is designed to highlight environmental impacts beyond the _____footprint
- Is measured to estimate the _____needed to sustain Earth's population

The average American has an ecological footprint of 23 acres which is equivalent to the size of 17.5 football fields.

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18. Environmental Resources Management (ERM)

- Works with clients around the world to effectively manage and develop strategies to overcome _____challenges
- Offers many services, including:
  - air quality and climate change
  - corporate sustainability strategy
  - information solutions
  - sustainable _____
  - contaminated site management
  - risk management

19. Environmental Resources Management (ERM)

- Assists clients in _____in a more sustainable way in various industries including:
  - oil and gas
  - _____
  - power
  - manufacturing
  - technology

Agricultural Industry Segment

1. Industrial Agriculture

- Is a modern farming method, involving a mass production of livestock, poultry, fish and crops
- Works to:
  - develop _____agriculture machinery
  - achieve economies of _____
  - establish new markets

2. Industrial Agriculture

- Occurred due to the following:
  - the quick rise in _____
  - the greater need for production
  - the increase in urbanism
  - wide-spread ecological impacts
- Has various benefits, including:
  - higher _____of crops
  - lower purchasing cost
  - improved produce

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3. Industrial Agriculture

- Has many negative impacts, including:
  - reduced _____
  - habitat destruction
  - water, air and soil pollution
  - decline in water resources
  - farm land _____
  - damage to soil fertility

4. Sustainable Agriculture

- Is the manufacturing of food, fiber or other plant or animal products which incorporate _____friendly farming techniques

5. Sustainable Agriculture

- Was addressed by Congress in the Food, Agriculture, Conservation, and Trade Act of _____in order to:
  - satisfy human food and fiber needs
  - enhance environmental quality and the natural resources on which the agricultural economy depends
  - make the most of non-renewable resources
  - sustain the economic _____of farming operations
  - enhance the quality of life for farmers and society as a whole

6. Sustainable Agriculture

- Strives to minimize adverse impacts to farm environments while providing a sustained level of _____and profit
- Empowers farmers to supply food using techniques which do not cause harm to the environment or _____future generations' ability to do the same

7. Sustainable Agriculture

- Includes:
  - producing food and fiber
  - protecting the environment
  - _____land and resources
  - developing rural _____
  - maintaining agricultural heritage

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8. Sustainable Agriculture

- Includes the following farming practices:
  - crop rotation
  - _____pest management
  - increased mechanical or biological weed control
  - soil and water conservation practices
  - strategic use of animal and _____manures
  - sustainable livestock production

9. Crop Rotation

- Refers to _____crops between fields to manage the fertility of the soil
- Benefits include:
  - reduces weeds, diseases, insects and other pest problems
  - provides alternative sources of soil nitrogen
  - reduces soil erosion
  - reduces risk of water _____by agricultural chemicals

10. Sustainable Pest Management

- Refers to controlling pests to _____sustainable crop production
  - with minimal risks to human health and the environment
- Benefits include:
  - controls pests without harming the environment
  - decreases worker and public _____to pesticides
  - maintains or increases the cost-effectiveness of pest management programs

11. Mechanical or Biological Weed Control

- Attempts to discourage the growth of unwanted and _____plants using mechanical or biological means, such as:
  - using grass-fed livestock as a control method
  - hand-pulling, hoeing, mowing, etc.
- Benefits include:
  - aerates the soil
  - considered _____by being affordable
  - eliminates the use of harmful chemicals

Aerate – involves introducing or reintroducing air into the soil

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12. Soil & Water Conservation Practices

- Are utilized in order to preserve, protect or restore the natural environment
- May include:
  - _____crops
  - terrace farming
  - rainwater harvesting
  - drip irrigation
- Benefits include:
  - prevents soil erosion
  - promotes soil _____
  - maintains soil pH
  - reduces water contamination

13. Animal & Green Manures

- Are used to create more productive soil for the growth of plants
- Benefits include:
  - fertilizing large areas of land in a cost-effective manner
  - adding _____to the soil
  - protecting the soil _____during periods of erosion
  - conserving soil nutrients

14. Sustainable Livestock Production

- Aims to ensure the _____of animals while protecting their environments and maintaining economic stability
- May involve raising livestock on pastures to ensure animals are able to roam freely
- Benefits include:
  - reducing the amount of _____gas emissions
  - increasing animals quality of life
  - reducing the risk of animal illnesses and diseases

15. Sustainable Agriculture

- Drawbacks include:
  - reduces _____per acre
  - requires _____initial investment
  - requires more knowledge on how to be successful

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16. Positive Economic Impact

- Of sustainable farming includes:
  - incentives may be used to encourage the use of more environmentally friendly farming techniques and _____
  - sustainable practices can save farmers money due to the reduced need to buy pesticides, _____, fertilizers, etc.
  - sustainable farms tend to have multiple crops leading to both financial security and subsistence for farmers

17. Negative Economic Impacts

- Of sustainable farming include:
  - sustainable development is controlled by _____growth
  - transitioning from conventional to sustainable farming can be _____