Advanced Certificate in Biopharmaceutical Packaging

Environmental Impact and Sustainability in Packaging

Acid Rain: Refers to precipitation with high levels of acidity, typically caused by the emission of sulfur dioxide and nitrogen oxides from industrial processes and vehicles. Acid rain can have negative impacts on the environment, including damage to forests, lakes, and buildings.

Biodegradable: Describes a material that can be broken down by microorganisms into simpler substances, such as water, carbon dioxide, and biomass. Biodegradable materials are often used in packaging to reduce their environmental impact.

Carbon Footprint: The total amount of greenhouse gases, such as carbon dioxide, that are emitted as a result of a product, process, or organization's activities. A smaller carbon footprint is generally considered more sustainable.

Circular Economy: A model of economic development that aims to eliminate waste and the continual use of resources. In a circular economy, products and materials are kept in use for as long as possible, and waste is minimized through reuse, repair, and recycling.

Climate Change: A long-term change in the average weather patterns that have come to define Earth's local and regional climates. Climate change is primarily caused by human activities, such as the burning of fossil fuels, that release greenhouse gases into the atmosphere.

Corporate Social Responsibility (CSR): A self-regulating business model that helps a company be socially accountable to itself, its stakeholders, and the public. CSR can involve a company taking steps to reduce its environmental impact and contribute to sustainable development.

Downgauging: The process of reducing the thickness or weight of a packaging material while maintaining its performance and functionality. Downgauging can help reduce the environmental impact of packaging by using less material.

Eco-Design: The process of designing products, services, and systems with the goal of minimizing their environmental impact. Eco-design can involve considering the entire lifecycle of a product, from raw material extraction to disposal.

Ecolabel: A label or symbol that indicates a product has been certified as meeting certain environmental standards. Ecolabels can help consumers make more sustainable choices when purchasing products.

Energy Efficiency: The use of less energy to perform the same task or function. Energy efficiency can help reduce greenhouse gas emissions and save money on energy costs.

Environmental Impact Assessment (EIA): A process used to evaluate the potential environmental impacts of a proposed project or development. EIAs are used to identify and mitigate potential negative impacts and ensure that projects are in compliance with environmental regulations.

Extended Producer Responsibility (EPR): A policy approach that holds manufacturers and producers responsible for the entire lifecycle of their products, including disposal. EPR can help encourage the design of more sustainable products and reduce the amount of waste generated.

Greenhouse Gases (GHGs): Gases in Earth's atmosphere that trap heat and contribute to climate change. The most common greenhouse gases are carbon dioxide, methane, and nitrous oxide.

Life Cycle Assessment (LCA): A method used to evaluate the environmental impact of a product, process, or service throughout its entire lifecycle, from raw material extraction to disposal. LCAs can help identify areas for improvement and inform more sustainable decision-making.

Natural Capital: The stock of natural resources, such as water, air, and soil, that provide benefits and value to society. Natural capital can be depleted or degraded, leading to negative impacts on the environment and society.

Packaging Waste: The waste generated from the production, use, and disposal of packaging materials. Packaging waste can have negative impacts on the environment, including the depletion of natural resources and the generation of greenhouse gases.

Renewable Energy: Energy generated from sources that can be replenished naturally, such as solar, wind, and hydro power. Renewable energy can help reduce greenhouse gas emissions and dependence on fossil fuels.

Recycling: The process of converting waste materials into new products or materials. Recycling can help reduce the amount of waste sent to landfills and conserve natural resources.

Sustainability: The ability to meet the needs of the present without compromising the ability of future generations to meet their own needs. Sustainability can involve considerations of environmental, social, and economic factors.

Sustainable Packaging: Packaging that is designed to be environmentally friendly, socially responsible, and economically viable throughout its entire lifecycle. Sustainable packaging can involve considerations of materials, design, manufacturing, use, and disposal.

Upcycling: The process of transforming waste materials into new products of higher value or quality. Upcycling can help reduce waste and conserve natural resources.

Waste Hierarchy: A framework that prioritizes waste management strategies in the following order: prevention, reuse, recycling, recovery, and disposal. The waste hierarchy aims to reduce the amount of waste generated and promote more sustainable waste management practices.

Water Footprint: The total amount of fresh water used to produce a product, process, or organization's

activities. A smaller water footprint is generally considered more sustainable.