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**ONLINE TRAINING BY KRISHNAJI PAWAR**

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MODULE

**4**

# The DNA of Whole School Sustainability

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# **SUSTAINABLE CLASSROOM SPECIALIST SCS CERTIFICATE**

Whole School Sustainability (WSS) is a comprehensive educational approach that integrates sustainable practices across all aspects of a school's functioning, focusing on vision, leadership, curriculum integration, community engagement, resource management, and cultural change.

# Learning Objectives

- Introduction
- Getting Started with Sustainable Building
- What Does a Successful Green School Look Like?
- **The DNA of Whole School Sustainability**
- Teaching projects and problem-based learning
- Green School Management, Aesthetics, and Efficiency
- Design Principles for Whole School Sustainability
- Policy, Safety, and Diversity, Equity, and Inclusion in Green Schools
- Green Building Basics and Cost Benefits
- Healthy Ecosystems for Learning



# INTRODUCTION

- Holistic approach to education integrating sustainable practices.
- Systems-thinking approach, integrating sustainability as a foundational component.
- Visualized as a DNA helix, each strand representing a critical component.
- Centered on a clear vision and strong leadership committed to sustainable values.
- Integrates sustainability concepts into the educational framework.
- Fosters community engagement for enhanced learning and shared responsibility for sustainable practices.
- Involves strategic resource management to minimize waste and maximize efficiency.
- Promotes a school culture that values sustainability, influencing behaviors and attitudes.

# WHOLE SCHOOL SUSTAINABILITY: THE DNA OF THE CONCEPT



- Core Principles of Whole School Sustainability
- Interconnectedness: The principle of interconnectedness suggests that environmental, economic, and social systems are interrelated.
- Systems Thinking: This approach encourages educators and students to view challenges through a multifaceted lens.
- Lifelong Learning: Whole school sustainability promotes lifelong learning by fostering an environment where students engage in inquiry-based learning about sustainability issues.

# STRUCTURAL COMPONENTS OF WHOLE SCHOOL SUSTAINABILITY

- Curriculum Integration: Integrating sustainability into the curriculum through interdisciplinary approaches enriches the learning experience.
- Facility Management: Sustainable facility management includes energy-efficient buildings, water conservation systems, and sustainable landscaping practices.
- Community Engagement: Schools can serve as community hubs for sustainability initiatives, fostering partnerships with local organizations and promoting a culture of sustainability.





# STRATEGIES FOR IMPLEMENTATION



- Leadership and Governance: Establishing a sustainability committee that includes students, teachers, administrators, and community members oversees the development and implementation of sustainability initiatives.
- Professional Development for Educators: Providing ongoing professional development equips teachers with the necessary skills and resources to incorporate sustainability concepts into their lessons.
- Monitoring and Evaluation: Establishing metrics for monitoring and evaluating sustainability efforts is essential for long-term success.

# IMPACT OF WHOLE SCHOOL SUSTAINABILITY

- Student Outcomes: Implementation of WSS has been associated with numerous positive outcomes for students, including enhanced academic performance, improved health and well-being, and increased civic engagement.
- Community Benefits: WSS initiatives contribute to broader community resilience and sustainability, serving as models for local businesses and organizations.

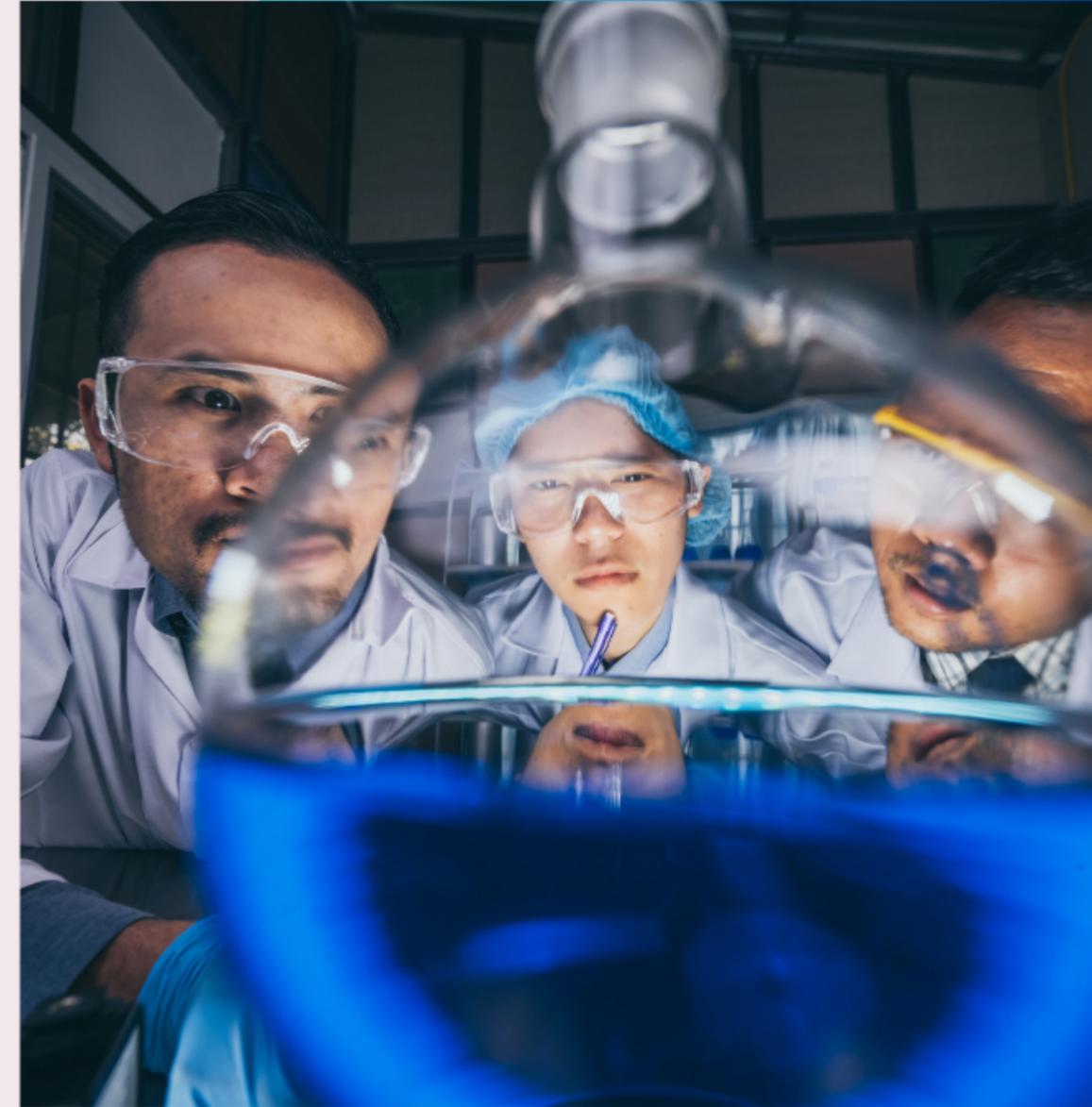


A hand holding a glowing lightbulb, symbolizing an idea or innovation. The lightbulb is surrounded by several white gears of various sizes, some of which contain icons like a lightbulb, a globe, and a wrench. The background is a blurred cityscape at night, with a network of white lines and dots overlaid, suggesting a smart city or digital infrastructure.

**HOW SUSTAINABILITY EVOLVED**

# EVOLUTION OF SUSTAINABILITY

- Forces responsible for sustainability include social issues, economic concerns, resource allocation, environmental damage, population growth, access to potable water, health, and energy usage.
- Sustainable development is a priority of a new world agenda.
- Examines causes and effects of global problems like urban development, population growth, and energy use.
- Examines the nature and scope of policies supporting sustainable development.





# MAJOR UNDERLYING CAUSE:

- POPULATION GROWTH
- A SECOND MAJOR UNDERLYING CAUSE: URBAN DEVELOPMENT
- A THIRD UNDERLYING CAUSE: INCREASING ENERGY USAGE



ENERGY: SOCIETY'S MOST CRITICAL RESOURCE

# POPULATION GROWTH

- Population growth, with the world's population more than doubled in the past 50 years, has increased consumption of resources, contributing to environmental degradation and climate change.
- Sustainable practices must be integrated to address challenges posed by population growth, including promoting renewable energy, water conservation, biodiversity protection, and waste reduction.
- Education and awareness are essential to foster a culture of sustainability and encourage responsible consumption and production.
- Prioritizing sustainable practices is crucial for a healthy planet for current and future generations.



# URBAN DEVELOPMENT

- Urban development refers to the growth and expansion of cities through the construction of buildings, roads, and infrastructure.
- It is driven by factors such as population growth, economic development, and changes in land use patterns.
- Urban development contributes to environmental degradation through the loss of natural habitats, leading to ecosystem destruction and displacement of wildlife.
- Urban development also leads to increased pollution and waste generation due to the demand for resources like water, energy, and raw materials.
- Urban development can exacerbate climate change by releasing greenhouse gases, contributing to global warming and causing environmental changes.
- Policymakers, planners, and developers should consider the environmental consequences of urban growth and implement sustainable practices to mitigate these impacts.



# INCREASING ENERGY USAGE

- Population growth: Increased population necessitates more energy for powering homes, schools, and businesses.
- Technological advancements: New technologies like electric vehicles and electronic devices require more energy for efficient operation.
- Industrialization: As industries expand and modernize, their energy requirements also increase.
- Lifestyle changes: Increased travel, air conditioning, and electronic devices increase energy consumption and usage.
- Solutions: Countries may need to increase energy production and distribution capabilities, build new power plants, expand renewable energy sources, and improve energy efficiency.
- Balancing benefits with environmental and social impacts is crucial.
- Sustainable ways to meet energy demand while minimizing negative consequences are essential.

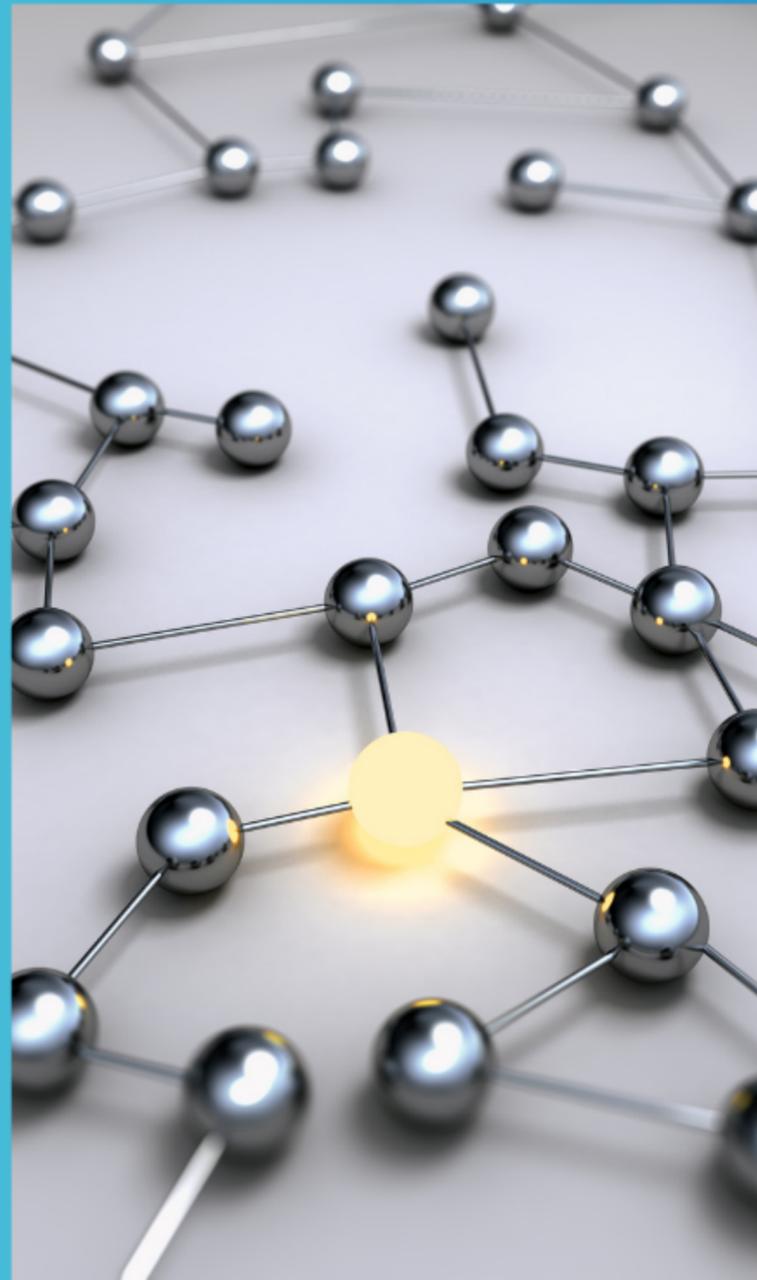


# ENERGY: SOCIETY'S MOST CRITICAL RESOURCE



- Energy production is centralized, while energy utilization is decentralized.
- External costs include environmental and air pollution, cap-financial accessibility, and social fairness.
- Companies are increasingly absorbing these costs due to circumstances.
- Energy-efficient use can greatly benefit the built environment.
- This includes supporting urban growth while minimizing environmental impact and avoiding the need for new power plants.
- Technologies are available for more efficient energy use.
- The global energy production and transmission efficiency index shows a 70% recovery rate, indicating potential for further energy efficiency advancements.

# ENERGY: SOCIETY'S MOST CRITICAL RESOURCE



## Sources of Energy

- Fossil Fuels: Non-renewable resources from ancient organic matter, primary energy source for many countries.
- Renewable Energy: Natural, replenishable sources like solar, wind, hydroelectric, and geothermal energy.
- Nuclear Energy: Controversial due to safety and waste disposal concerns.

## Energy Consumption

- Rapid increase in energy demand due to societal growth and development.
- Need to reduce energy consumption and transition to cleaner, more sustainable energy sources.

## Conclusion

- Energy is society's most critical resource, enabling comfortable and productive lives.
- Prioritizing energy efficiency, conservation, and renewable energy development is crucial for a sustainable future.



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