

MODULE 5: ENVIRONMENTAL PROTECTION AND MANAGEMENT

Overview

Environmental education helps people understand how the environment works and how to manage it responsibly. The module emphasizes the environmental problems in the Philippines, including environmental degradation caused by increasing population and human activities.

Its main goal is to develop responsible citizens, especially the youth, who actively participate in protecting and conserving natural resources for present and future generations.

INPUT NO. 1: Basic Concepts and Laws Governing Environmental Education, Protection and Management

Basic Concepts

- Environmental Education – A learning process that develops knowledge, awareness, skills, attitudes, and commitment to address environmental problems and make responsible decisions. It takes place in schools and through public information campaigns, websites, media, and other educational activities.
- Environmental Protection – Actions taken by individuals, organizations, and the government to conserve natural resources, protect the existing environment, and repair environmental damage.
- Environmental Protection and Management – Sustainable management of natural resources that balances their use and conservation to meet the needs of present and future generations.

Importance of Environmental Education, Protection and Management

1. Natural resources are in danger of serious and potentially irreversible damage.
2. Society depends on natural resources and ecosystem services, particularly food and water.
3. Young people must become aware of their responsibility to protect the environment they will inherit.
4. Science and technology can help, but they cannot solve environmental problems alone.
5. Environmental education promotes moral and ethical responsibility toward nature.
6. It helps prevent harmful exposure among children living in polluted areas.
7. It encourages the protection of water supplies, ecosystem moisture conditions, and soil against erosion.
8. It promotes citizen participation, particularly among the youth, in addressing climate change.

Related Laws and Directives

Law or directive	Main purpose
CHED Memorandum Order No. 33, s. 2009	Integrates environmental education into tertiary education, particularly the NSTP-CWTS component.
RA 9512 (2008) – National Environmental Awareness and Education Act	Promotes environmental awareness through education and encourages conservation and ecological balance.
RA 9275 (2004) – Philippine Clean Water Act	Protects, preserves, and restores the quality of freshwater, brackish water, and marine waters.
RA 9175 (2002) – Chainsaw Act	Regulates the ownership, possession, sale, importation, and use of chainsaws.

Environmental Protection and Management Act (No. 10 of 2019)	Integrated environmental decision-making, pollution prevention, remedial measures, and environmental information.
RA 9147 (2001) – Wildlife Resources Conservation and Protection Act	Protects wildlife resources and their habitats.
RA 9003 (2000) – Ecological Solid Waste Management Act	Establishes an ecological solid waste management program, institutional mechanisms, incentives, and penalties.
RA 8749 (1999) – Philippine Clean Air Act	Establishes a comprehensive policy for controlling air pollution.

INPUT NO. 2: Climate Change

What Is Climate Change?

Climate change refers to changes in climate over time caused by natural processes or human activities. It also presents the UNFCCC definition, which emphasizes changes attributed directly or indirectly to human activities that alter the global atmosphere, in addition to natural climate variability.

How Does Climate Change Occur?

It explains that increasing greenhouse gases in the atmosphere contribute to global warming and climate change.

Greenhouse gases (GHGs) absorb and re-emit infrared radiation, trapping heat and warming the Earth's surface. These are:

- Water vapor
- Methane
- Carbon dioxide
- Nitrous oxide
- Ozone
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF₆)

Greenhouse effect – The process through which greenhouse gases trap heat in the atmosphere.

Global warming – The increase in the average temperature of the Earth's near-surface air and oceans associated with increasing greenhouse gas concentrations.

Global warming contributes to climate change, but climate change includes other changes in weather patterns and environmental conditions as well.

Human Activities That Accelerate Climate Change

Although climate can change naturally, human activities accelerate warming through increased greenhouse gas emissions and environmental destruction.

It identifies the following contributors:

1. Burning wood and wood products.
2. Producing and using fossil fuels such as oil, coal, and natural gas.
3. Rapid population growth and increased resource consumption.

4. Decomposition of organic waste, which releases carbon and methane.
5. Massive deforestation.
6. Mining and other forms of land conversion.
7. Industrial processes that produce human-made greenhouse gases.

Effects of Climate Change

Several environmental effects:

- Melting snow cover and glaciers.
- Rising sea levels.
- Shorter winters, earlier springs, hotter summers, and delayed autumns.
- Changes in forest productivity and composition.
- Shifts in animal habitats and changes in the behavior of plants and animals.
- Spread of diseases.
- Stronger and more frequent typhoons.
- Increased flooding, severe droughts, stronger heat waves, and heavier rainfall.

Effects on people and society:

- Reduced agricultural productivity because of droughts and flooding.
- Threats to food security, health, livelihoods, and property.
- Greater socioeconomic difficulties, particularly among poor communities.
- Increased pressure on governments to respond to climate-related problems.

What Can Be Done Locally?

1. Mitigation – Reduce greenhouse gas emissions or increase their capture.
2. Adaptation – Reduce harmful impacts and adjust to changing environmental conditions.
3. Awareness raising – Educate communities using language and explanations they understand.
4. Capacity building – Train residents in first aid, risk mapping, shelter management, fire prevention, tree planting, early warning, and disaster management.
5. Institutional planning – Integrate climate change mitigation and adaptation into school, organizational, and institutional plans.
6. Policy development – Support climate-responsive policies and local ordinances.
7. Cooperation among stakeholders – Coordinate individuals, groups, communities, and government institutions.
8. Resource mobilization – Establish reliable financial and technical support for local programs.

INPUT NO. 3: Ecological Solid Waste Management

Meaning and Importance

Solid waste management is the supervised handling of waste from its generation at the source through recovery processes and final disposal.

It also discusses the worsening waste problem, especially in urban areas. It presents an estimate of 0.5 kg of waste per person per day and historical Metro Manila waste figures to demonstrate the scale of the problem.

Improper waste disposal contributes to:

- Pollution of canals, rivers, streets, and vacant spaces.
- Unhealthy surroundings and disease transmission.
- The accumulation of garbage in communities.
- Dangers associated with dumpsites and unstable garbage piles.
- Difficulties in locating suitable landfill sites.

Republic Act No. 9003

RA 9003, or the Ecological Solid Waste Management Act of 2000, provides the legal framework for a systematic, comprehensive, and ecological solid waste management program to protect public health and the environment.

Its important provisions include:

- Creation of the National Solid Waste Management Commission (NSWMC).
- Establishment of the National Ecology Center (NEC).
- Establishment of Solid Waste Management Boards in local government units.
- Preparation of ten-year local solid waste management plans.
- Primary responsibility of LGUs for implementing solid waste management services.
- Authority to establish solid waste management funds and impose applicable service fees.

Material Recovery Facility (MRF) – A facility where waste is received, sorted, processed, and stored for appropriate composting and recycling.

Sanitary landfill – An engineered waste-disposal facility intended to manage residual waste more safely than an open dumpsite.

The 3Rs of Ecological Waste Management

- Reduce – Minimize waste generation and the consumption of new raw materials.
- Reuse – Use materials again for the same or another purpose.
- Recycle – Process used materials into new products.

These practices conserve resources, reduce pollution, limit the need for conventional disposal, and can lower greenhouse gas emissions.

Prohibited Acts Under RA 9003

The following prohibited activities:

1. Littering, throwing, or dumping waste in public places.
2. Open burning of solid waste.
3. Collecting unsorted or non-segregated waste.
4. Squatting in open dumps and landfills.
5. Open dumping or burying waste in flood-prone areas.
6. Unauthorized removal of recyclable materials intended for authorized collection.
7. Mixing segregated recyclables with other waste during collection or disposal.
8. Manufacturing, distributing, or using non-environmentally acceptable packaging.
9. Establishing or operating open dumps.
10. Importing consumer products packaged in non-environmentally acceptable materials.

Hazardous Waste

Hazardous waste is waste whose physical, chemical, or infectious characteristics can cause serious illness, increase mortality, or create substantial hazards to human health and the environment when improperly treated, stored, or transported.

Four characteristics of hazardous waste:

1. Ignitable – Can cause or intensify fires.
2. Corrosive – Can destroy tissues or metals.
3. Reactive – Can react with other substances and potentially explode.
4. Toxic – Can harm health and contaminate water, food, or air.

Hazardous Waste Management involves an integrated approach to toxic substances and hazardous waste through source reduction, recycling, treatment, and safe disposal.

Three main goals of hazardous waste management:

1. Protect the environment.
2. Improve public health.
3. Conserve energy.

INPUT NO. 4: Air Pollution Awareness and Prevention

Nature and Sources of Air Pollution

Air pollution is the presence of substances in the air in amounts harmful to humans, animals, or plants.

Two main categories of pollution sources:

- Mobile sources – Vehicles that emit pollutants from fuel combustion.
- Stationary sources – Factories, power plants, cement plants, oil refineries, crematoriums, incinerators, garbage dumps, and construction sites.

Major pollutants include particulates, carbon monoxide, nitrogen oxides, sulfur oxides, volatile organic compounds (VOCs), and ozone.

The Clean Air Act of 1999

RA 8749, or the Philippine Clean Air Act of 1999, establishes a comprehensive air pollution control policy.

It highlights these provisions:

- General principles and the State's responsibilities.
- Recognition of citizens' rights related to air quality.
- Air Quality Management Systems, including airsheds and non-attainment areas.
- Identification of hazardous air pollutants and ambient air quality guidelines.
- Regulation of ozone-depleting substances and certain fluorinated greenhouse gases.
- Preparation of plans to reduce greenhouse gas emissions.
- Inventory and elimination programs for persistent organic pollutants.
- Regulation of projects involving radioactive substances.

- Prohibition of smoking in enclosed public spaces, as described in the book.
- Prohibition of the manufacture, importation, sale, and disposal of leaded gasoline and engines requiring leaded gasoline.

Climate Change Adaptation and Institutional Cooperation

It emphasizes cooperation among national agencies, the legislative branch, academic institutions, businesses, and civil society.

Eight technical working groups are identified for these sectors:

1. Agriculture
2. Biodiversity
3. Coastal and Marine
4. Forestry
5. Water
6. Health
7. Energy
8. Infrastructure

The purpose is to coordinate efforts and address climate change impacts across different sectors.

INPUT NO. 5: Water Sanitation and Conservation

Philippine Clean Water Act

RA 9275, or the Philippine Clean Water Act of 2004, aims to protect the country's water bodies from pollution originating from population-related activities and land-based sources. It provides a comprehensive framework for water quality management.

Water Conservation

Water conservation means using water wisely and responsibly while keeping it safe and clean for present and future generations. Water sanitation and recycling help conserve resources, save energy, and meet current and future water demands.

Ways to Conserve Water

1. Repair leaking faucets.
2. Turn off water while brushing your teeth or washing clothes.
3. Avoid leaving running water unattended.
4. Turn off faucets when not in use.
5. Reuse water when appropriate.
6. Take shorter showers.
7. Use only the amount of water needed for washing and cooking, and run full loads of dishes and laundry.

MODULE 6: NATIONAL SECURITY CONCERNS AND PEACE EDUCATION

Overview

Traditionally, security focused on protecting a state from organized violence. It explains that the concept has expanded to include economic, political, social, environmental, and human development.

According to the discussion of the 1992 UNDP Human Development Report, security must consider the safety of people in their homes, workplaces, streets, communities, and environment.

INPUT NO. 1: Concept of National Security

The Changing Concept of Security

It identifies three important changes in the modern understanding of security:

1. Security of people, not just territory.
2. Security of individuals, not just nations.
3. Security through development, not just through arms.

National security is a condition in which the Filipino people's values, way of life, institutions, welfare, sovereignty, and strategic interests are protected and enhanced.

The State is responsible for safeguarding its people and maintaining the peaceful existence of the nation.

Threats to National Security

It describes a threat to national security as either:

1. An action or sequence of events that threatens to drastically and quickly reduce people's quality of life.
2. A development that significantly limits the policy choices available to the government or other groups within the state.

Definition of Terms

- Subversion – An attempt by an individual or group to change or overthrow an existing system or government through deceitful or unlawful means.
- Communism – A political and economic theory advocating the elimination of private ownership and envisioning a classless society; the book also describes it as tending toward a stateless society.
- Agitation – A technique intended to arouse anger, hatred, or dissatisfaction among people.
- Propaganda – Communication intended to influence the beliefs, emotions, behavior, attitudes, or opinions of a target audience.
- Infiltration – Using deception or covert entry to gain influence over a group and potentially take control of it.
- Politics – The art or science concerned with gaining and exercising control over government.

Concept of Human Security

Human security, as discussed through the UNDP Human Development Report of 1994 and the work of Kofi Annan and the UN Commission on Human Security, focuses on protecting people's essential well-being, freedom, and dignity.

It involves:

1. Protecting the vital core of human life while enhancing freedom and fulfillment.
2. Protecting people from serious and widespread threats.
3. Empowering people to take charge of their own lives.
4. Combining protection and empowerment because they reinforce one another.
5. Developing comprehensive, integrated, people-centered solutions that support survival, livelihood, and dignity.

The 1994 UNDP discussion identifies two aspects of human security:

- Freedom from chronic threats, such as hunger, disease, and repression.
- Protection from sudden disruptions in daily life, including threats to homes, jobs, and communities.

Seven Categories of Human Security

Category	Main concern
Economic security	Reliable means of livelihood and economic stability
Food security	Access to adequate food
Health security	Protection from disease and threats to health
Environmental security	Protection from environmental hazards and degradation
Personal security	Safety from physical threats and violence
Community security	Protection of communities, identities, and social relationships
Political security	Protection from political repression and violations of fundamental rights

Human Security and Human Development

Human security is broader than the absence of violent conflict. It includes human rights, good governance, education, healthcare, and opportunities for individuals to develop their potential.

The book connects human and national security with three important ideas:

- Freedom from want.
- Freedom from fear.
- Freedom for future generations to inherit a healthy natural environment.

These ideas are interconnected with poverty reduction, economic growth, and conflict prevention.

Human and Ecological Security

Human and ecological security represents a shift from viewing security primarily as a military concern to recognizing poverty, environmental degradation, and rapid demographic change as security issues.

This means that protecting people also requires attention to their social conditions and the environment in which they live.

National Security in the Philippines

It identifies Commonwealth Act No. 1, or the National Defense Act of 1935, as the original policy basis of the Philippine national security program.

The 1987 Constitution establishes civilian control of the military and designates the President as Commander-in-Chief of the Armed Forces of the Philippines (AFP).

It also discusses:

- The reestablishment of the National Security Council (NSC) in 1986 through Executive Order No. 115 under President Corazon Aquino.
- The NSC's role in advising the President on national security.
- The Department of National Defense's responsibility for defense policy and protection against internal and external threats.
- The National Security Advisor's advisory role.
- The NSC's responsibility for coordinating domestic, foreign, and military policies concerning national security.

It describes national security as an expanded concept that considers the interdependence of security, development, and governance.

Seven Fundamental Elements of National Security

1. Socio-political stability – Stability in political and social institutions.
2. Territorial integrity – Protection of the country's territory.
3. Economic solidarity and strength – Economic stability and the capacity to support national development.
4. Ecological balance – Protection of environmental systems and resources.
5. Cultural cohesiveness – Recognition of shared identity and social unity.
6. Moral-spiritual consensus – Shared moral and spiritual values that support social cohesion.
7. External peace or international harmony – Peaceful relations with other countries.

Threats to National Security

It explains that threats can be military or non-military, including terrorism, poverty, environmental degradation, corruption, and cybercrime.

A. Internal threats

Internal threats arise from domestic forces or conditions that challenge the government or the existing political and socioeconomic order.

The book lists:

1. Moro Islamic Liberation Front (MILF) and Abu Sayyaf Group (ASG).
2. Communist Party of the Philippines/New People's Army/National Democratic Front (CPP/NPA/NDF).
3. Organized crime.
4. Severe poverty.
5. Economic sabotage.
6. Graft and corruption.
7. Severe calamities.

8. Persistent environmental degradation.

B. External threats

External threats involve foreign forces, pressures, or influences that may undermine the country's sovereignty or place it under foreign control.

The book lists:

1. Multilateral disputes over the Spratly Islands.
2. Smuggling of firearms and contraband, illegal migration, and the movement of foreign terrorists across vulnerable borders.
3. Lingering effects of currency crises affecting ASEAN countries.
4. Serious economic disparity between rich and poor nations.
5. Ethnic, religious, and cultural conflicts.
6. Proliferation of weapons of mass destruction (WMD).
7. Transnational organized crime.
8. Natural disasters and environmental issues.
9. Cybercrime.

Types of Security Threats

- Rebellion or insurrection – Resistance against established authority, ranging from nonviolent resistance to organized attempts to overthrow a government.
- Terrorism – The use or threat of violence intended to create fear, commonly associated with ideological or political goals and harm to civilians.
- Murder – The unlawful killing of another person with intent or malice aforethought.
- Kidnapping and serious illegal detention – Taking or confining someone against their will without lawful authority, sometimes for ransom or another criminal purpose.
- Hijacking/highway robbery – Taking or attempting to take property through force, threats, or intimidation.
- Crimes involving destruction – Acts causing serious damage or rendering property or structures unusable.

It emphasizes that proper civic values, responsible participation, and commitment to a peaceful environment can help reduce security threats.

INPUT NO. 2: Understanding Values of Peace

Meaning of Peace

Peace is not simply the absence of war or violence. It also means the presence of harmony, understanding, tranquility, social justice, respect, and tolerance.

Two important views:

- Mindanao Church Peace Congress (1996): Peace means a life in which every person can live with dignity.
- Pope Paul VI (1967): Peace is closely connected with development.

Peace therefore includes the overall well-being of individuals and society.

Levels of Peace

A. Personal Level

Personal peace refers to inner harmony and the ability to manage one's emotions and attitudes.

It includes:

- Self-respect and self-confidence.
- Ability to cope with fear, anger, insecurity, and shame.
- Positive attitudes, cheerfulness, and optimism.

B. Interpersonal Level

Interpersonal peace concerns relationships between individuals.

Its important values are:

1. Assertiveness – Expressing one's views and exercising one's rights without violating the rights of others or denying one's own rights.
2. Respect – Recognizing the worth of others regardless of differences in social position, culture, origin, ethnicity, or gender.
3. Concern for others – Understanding and considering the needs, feelings, and conditions of other people.
4. Cooperation – Willingness and ability to work with others toward a common goal.
5. Open-mindedness – Approaching information, people, and events with a critical but open mind.
6. Humility – Recognizing others' abilities and accepting one's own limitations.

C. Social/National Level

Social or national peace addresses problems affecting society's social, political, and economic systems.

Examples include land grabbing, forest degradation, and water pollution.

Its important values are:

- Social responsibility – Recognizing one's duty to contribute to the common welfare.
- Interdependence – Understanding how the decisions and actions of individuals and groups affect one another.
- Social justice – Recognizing and defending civil, political, economic, social, and cultural rights, especially those of marginalized sectors.

D. Global Level

Global peace addresses issues that affect the international community, including unfair trade relations, racial discrimination, terrorism, militarization, environmental degradation, and xenophobia.

Its important values are:

1. Respect for the environment – Preserving, conserving, and protecting environmental resources.
2. Unity in the oneness of humankind – Recognizing the equal importance and worth of all people.
3. Religious appreciation – Respecting people with different religious beliefs.

4. Cultural appreciation – Recognizing cultural differences as opportunities to learn from one another.

INPUT NO. 3: Creating a Culture of Peace

Martin Luther King Jr. and Equality

Martin Luther King Jr. campaigned against racial discrimination and advocated equality regardless of skin color. His famous speech, “I Have a Dream,” expressed his vision of a world in which Black and white children could live together in brotherhood.

His example demonstrates the importance of equality, respect, and nonviolent action in building peace.

Peace Education

Peace education is a holistic approach that addresses militarization, structural violence, human rights, cultural solidarity, environmental care, and personal peace.

It connects knowledge and practice and promotes the development of human personality, respect for human rights, fundamental freedoms, understanding, tolerance, and friendship among nations and groups.

Its common concerns include:

1. Addressing violence at all levels.
2. Helping individuals understand forces and factors within social systems.
3. Building a future that is less violent, more just, and secure.
4. Promoting the relationship between humans and nature.
5. Eliminating threats of war, violence, and environmental destruction.
6. Working toward a peaceful, equitable, and ecologically sustainable future.

Values Developed Through Peace Education

Peace education seeks to develop:

1. Understanding of multicultural societies.
2. Peace among young people and nations.
3. Peaceful conflict resolution.
4. Love for other people.
5. Self-esteem, cooperation, communication, environmental concern, and multicultural and global awareness.
6. Inner peace.

Culture of Peace

A culture of peace (COP) exists when people understand global problems, resolve conflicts nonviolently, work for justice, respect human rights and equity, appreciate cultural diversity, and respect the Earth and one another.

Culture has two aspects:

- Spiritual aspect – Values, meanings, and worldviews.
- Material aspect – Language, gestures, symbols, rituals, and styles.

It presents culture as the knowledge, beliefs, art, morals, laws, customs, and habits people acquire as members of society.

Developing a culture of peace means establishing practical ways of handling conflict so that violence and oppression become unnecessary or unacceptable.

Challenges in Peace Education

Three major challenges:

1. Peace education requires not only understanding but also empowerment and action. Schools, institutions, and peace advocates must transform their practices and relationships to support peace, justice, sustainability, democracy, and compassion.
2. Peace education must promote critical thinking and problem-solving concerning national development, human rights, environmental resources, democracy, and cultural relationships.
3. Social and global conditions can continue to produce conflict and prevent peace.

Strategies for Promoting Peace Education

1. Maintaining dialogue among sectors, institutions, agencies, NGOs, and community organizations.
2. Providing appropriate training and orientation for decision-makers, administrators, citizens, and educators.
3. Improving coordination among government agencies, NGOs, and other institutions.
4. Creating opportunities for advocates and educators to discuss how peace education applies to their respective fields.

Steps in Nonviolent Actions

Five steps:

1. Information Gathering – Conduct well-informed research.
2. Education – Share the information gathered with others.
3. Personal Commitment – Commit oneself to a cause and to working for change.
4. Negotiation – Be willing to discuss differences and seek solutions.
5. Reconciliation and Healing – Work toward truces, settlements, and the restoration of relationships.

Role of Schools in Promoting Values of Peace

Schools can promote peace by:

1. Using peaceful teaching methods and strategies.
2. Promoting disarmament education and discouraging war toys.
3. Avoiding sexist education and sexist language in the curriculum.
4. Encouraging cooperative and collaborative student activities instead of focusing only on competition.
5. Helping students understand the roots of conflict and identify peaceful alternatives.
6. Encouraging intercultural dialogue to develop understanding and tolerance among different cultures.