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Postgraduate Certificate in Infrastructure Financing for Water Projects

## Environmental and Social Impact Assessment in Water Projects

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**Acid Rain:** A type of precipitation with pH levels below 5.6, caused by emissions of sulfur dioxide and nitrogen oxides, which can have harmful effects on the environment, including surface waters and aquatic life.

**Biodiversity:** The variety of plant and animal life in a particular habitat or ecosystem. Biodiversity is important for maintaining the stability and health of aquatic ecosystems, and can be impacted by water projects.

**Carbon Footprint:** The total amount of greenhouse gases produced to directly and indirectly support human activities, usually expressed in equivalent tons of carbon dioxide (CO<sub>2</sub>). Water projects can contribute to reducing carbon footprints by promoting more sustainable and energy-efficient practices.

**Community Engagement:** The process of involving and consulting with local communities in the planning, implementation, and monitoring of water projects. Community engagement can help ensure that projects are culturally appropriate, sustainable, and have the support of the communities they serve.

**Dams:** Large artificial structures built across rivers or streams to store and regulate water flows. Dams can have significant environmental and social impacts, including changes to water quality, habitat destruction, and displacement of local communities.

**Desalination:** The process of removing salt and other minerals from seawater or brackish water to produce freshwater. Desalination can be an important source of water in arid regions, but can also have significant environmental and social impacts, including energy consumption, discharge of brine, and impacts on marine life.

**Drinking Water Quality Standards:** The minimum levels of water quality required for human consumption, as set by national and international regulations. Drinking water quality standards can be impacted by water projects, and must be considered in the planning and implementation of such projects.

**Ecosystem Services:** The benefits that humans derive from natural ecosystems, including provisioning services (such as food and water), regulating services (such as flood control and water purification), cultural services (such as recreation and spiritual fulfillment), and supporting services (such as nutrient cycling and biodiversity).

**Environmental Flows:** The quantity, timing, and quality of water flows required to maintain the ecological integrity of a river or aquatic ecosystem. Environmental flows can be affected by water projects, and must be considered in their planning and implementation.

**Environmental Impact Assessment (EIA):** A systematic process for identifying, evaluating, and mitigating the environmental impacts of a proposed project or activity. EIAs are required for many water projects, and can help ensure that they are environmentally sustainable.

**Equator Principles:** A set of voluntary guidelines for the financing of projects that have potential environmental and social impacts. The Equator Principles are used by many financial institutions as a framework for assessing and managing environmental and social risks in their lending activities.

**Greenhouse Gases:** Gases that trap heat in the atmosphere, contributing to global warming and climate change. The most common greenhouse gases are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O).

**Hydropower:** The use of water flow to generate electricity. Hydropower is a renewable energy source, but can have significant environmental and social impacts, including changes to water quality, habitat destruction, and displacement of local communities.

**Infrastructure Financing:** The provision of funding for the planning, construction, and maintenance of infrastructure projects, including water projects. Infrastructure financing can come from a variety of sources, including governments, private companies, and multilateral development banks.

**Integrated Water Resources Management (IWRM):** A holistic approach to water management that takes into account the social, economic, and environmental dimensions of water use. IWRM aims to balance the needs of different water users and to ensure the sustainability of water resources.

**Life Cycle Assessment (LCA):** A method for evaluating the environmental impacts of a product or service over its entire life cycle, from raw material extraction to end-of-life disposal. LCAs can be used to identify areas for improvement in the environmental performance of water projects.

**Non-Revenue Water:** Water that is lost or unaccounted for in the distribution system, including leakage, theft, and metering inaccuracies. Non-revenue water can be a significant problem in water systems, and can lead to increased costs and reduced water availability.

**Public-Private Partnerships (PPPs):** Collaborative arrangements between governments and private companies for the financing, construction, and operation of infrastructure projects, including water projects. PPPs can help leverage private sector expertise and financing, but can also present challenges in terms of governance, transparency, and accountability.

**Renewable Energy:** Energy sources that are replenished naturally and sustainably, including solar, wind, hydro, and geothermal energy. Renewable energy can help reduce greenhouse gas emissions and contribute to energy security.

**Resettlement:** The process of relocating people from their homes and communities as a result of water projects, including dams, reservoirs, and other infrastructure. Resettlement can have significant social and economic impacts, and must be managed carefully to ensure that the rights and well-being of affected communities are protected.

**Riparian Zones:** The areas adjacent to rivers, streams, and other bodies of water, which are important for water quality, habitat, and biodiversity. Riparian zones can be impacted by water projects, and must be considered in their planning and implementation.

**Stakeholder Engagement:** The process of involving and consulting with stakeholders, including local communities, governments, and private companies, in the planning, implementation, and monitoring of water projects. Stakeholder engagement can help ensure that projects are socially sustainable and have the support of the communities they serve.

**Sustainable Development Goals (SDGs):** A set of 17 global goals adopted by the United Nations in 2015, which aim to end poverty, protect the planet, and promote prosperity for all. SDG 6 focuses specifically on ensuring access to water and sanitation for all, and is closely related to the objectives of the Postgraduate Certificate in Infrastructure Financing for Water Projects.

**Transboundary Water Management:** The management of water resources that cross national boundaries, including rivers, lakes, and aquifers. Transboundary water management can be complex, and requires cooperation and coordination between different countries and stakeholders.

**Water Conservation:** The practice of reducing water use and waste, in order to protect water resources and ensure their sustainability. Water conservation can be achieved through a variety of measures, including efficient irrigation, rainwater harvesting, and water-saving technologies.

**Water Footprint:** The total amount of water used to produce a product or service, including direct and indirect use. Water footprints can be used to identify areas for improvement in the water efficiency of water projects.

**Water Pollution:** The contamination of water resources with harmful substances, including chemicals, heavy metals, and pathogens. Water pollution can have significant environmental and health impacts, and must be addressed through appropriate management practices.

**Water Quality Standards:** The minimum levels of water quality required for different uses, including drinking, irrigation, and recreation. Water quality standards can be impacted by water projects, and must be considered in their planning and implementation.

**Water Rights:** The legal rights to use and access water resources, which can be owned, allocated, and transferred between different users and stakeholders. Water rights can be complex, and must be managed carefully to ensure equitable access and sustainable use.

**Water Scarcity:** The lack of sufficient water resources to meet the needs of human populations and ecosystems. Water scarcity can be caused by physical shortages (e.g., drought), economic factors (e.g., lack of infrastructure), or social and political factors (e.g., inequitable distribution).

**Water Security:** The availability and accessibility of sufficient water resources to meet the needs of human populations and ecosystems, in a sustainable and equitable manner. Water security is closely related to the objectives of the Postgraduate Certificate in Infrastructure Financing for Water Projects.

**Water Stress:** The imbalance between water demand and water availability, which can lead to water scarcity, competition, and conflict. Water stress can be caused by a variety of factors, including climate change, population growth, and unsustainable water use.

**Water Supply and Sanitation:** The provision of