

Glossary



The Energy & Biodiversity Initiative

ADAPTIVE MANAGEMENT: A continuous spiral where objectives are set, actions to manage natural resources are taken, monitoring and evaluation of the affected ecosystem and human responses are assessed, results are compared against expectations, and future actions are adjusted, with each iteration of activity based on past experience. Such management is adaptive, because lessons learned are put in practice in the next cycle.

APPRAISAL WELL: A well or wells drilled to follow up a hydrocarbon discovery and evaluate its extent and commercial potential.

BARREL (BBL): Measure of crude oil equal to 42 U.S. gallons, 35 Imperial gallons, 159 liters or 5.615 cubic feet.

BARREL OF OIL EQUIVALENT (BOE): For liquids, one BOE equals one barrel of oil or liquefied natural gas (LNG). For gases, one BOE equals approximately 6,000 standard cubic feet (MSCF) of gas. One BOE of gas or liquid equals about 6 million Btu.

BASE CAMP: Area that houses workers while in the field, including kitchen facilities, medical clinic, sanitary facilities, water treatment and supply, warehouse and equipment maintenance areas and other infrastructure.

BENCHMARKING: Measuring something (e.g. performance or a product) according to specified standards in order to compare it with similar items and improve one's own product or performance.

BIOLOGICAL COMMUNITY: The group of animals or plants living together in the same environment.

BIOLOGICAL DIVERSITY (often shortened as Biodiversity): The variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity

within species, between species, and of ecosystems (*U.N. Convention on Biological Diversity, Article 2*).

BIOLOGICAL INTEGRITY: The capacity to support and maintain an integrated, adaptive community with a biological composition and functional organization comparable to those of the natural systems of the region. Also, the measure of a system's wholeness, including presence of all appropriate elements and occurrence of all processes at appropriate rates. Unlike diversity, which can be expressed simply as the number of kinds of items, integrity refers to conditions under little or no influence from human actions; a biota with high integrity reflects natural evolutionary and biogeographic processes.

BIOLOGICAL RESOURCES: Genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity. Unlike non-living resources, biological resources are renewable if conserved and destructible if not conserved.

BIOREGION: A part of the Earth's surface whose rough boundaries are determined by natural rather than human dictates, distinguishable from other areas by attributes of flora, fauna, water, climate, soils, and land-forms, and the human settlements and cultures those attributes have nurtured.

BIOTECHNOLOGY: Any technological application that uses biological systems, living organisms or derivatives thereof, to make or modify products or processes for specific use.

BLOCK: A designated area of land or offshore acreage leased to a company for oil or gas exploitation. Blocks are typically granted to companies after a competitive bidding process for a limited period of time (e.g. five years) in which a work program must be carried out or the rights to the block will be lost.

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BTU: British thermal unit. The quantity of heat required to raise the temperature of one pound of water from 60° to 61°F at a constant pressure of one atmosphere.

BUFFER ZONE: An area that surrounds a protected area and either serves to provide benefits to nearby human communities or to mitigate adverse effects from human activities outside the area.

CIVIL SOCIETY: The realm of public participation in voluntary associations, mass media, professional associations, trade unions, etc.

CLOSED-LOOP MUD SYSTEM: A series of above-ground tanks used to store, process, and recycle drilling mud, cuttings and other fluids. This system is used in place of the traditional earthen pits at a drilling operation.

CLUSTER PLATFORM: A solitary platform (offshore) or drilling site (onshore) designed to allow the drilling of multiple wells that are directionally angled to reach neighboring oil or gas reservoirs.

CONDENSATE: Hydrocarbons which are gaseous in a reservoir, but which condense to form a liquid as they rise to the surface, where the pressure is much lower.

CONNECTIVITY: A measure of how connected or spatially continuous a corridor, network or matrix is.

CONSERVATION: The rational and prudent management of biological resources to achieve the greatest sustainable current benefit while maintaining the potential of the resources to meet the needs of future generations. Conservation includes preservation, maintenance, sustainable utilization, restoration and enhancement of the natural environment.

CONTAMINANT: Any substance present at a concentration above that found naturally, which may or may not cause harm.

CORRIDOR: A strip of land that differs from the adjacent land on both sides and which may serve as habitat to at least some species of wildlife. Corridors may connect larger areas of habitat at a local, regional, national or trans-boundary scale.

CUTTINGS: The fragments of rock dislodged by the drill bit during drilling and brought to the surface suspended in the drilling fluid.

ACRONYMS

CBD: Convention on Biological Diversity

EBI: Energy and Biodiversity Initiative

EIA: Environmental Impact Assessment

EHS: Environment, Health and Safety

EMS: Environmental Management System

ESIA: Environmental and Social Impact Assessment

HSEMS: Health, Safety and Environmental Management System

IFC: International Finance Corporation

PIECA: International Petroleum Industry Environmental Conservation Association

ISO: International Organization for Standardization

MDB: Multilateral Development Bank

NBSAP: National Biodiversity Strategy and Action Plan

NGO: Non-governmental Organization

OGP: International Association of Oil and Gas Producers

OPIC: Overseas Private Investment Corporation

SIA: Social Impact Assessment

WCPA: World Commission on Protected Areas

DEVELOPMENT WELL: Also called production well. A well drilled specifically into a previously discovered and appraised field for the purpose of producing oil and/or gas.

DIRECTIONAL OR DEVIATED DRILLING:

Intentional deviation of a well from the vertical to obtain greater reach from the same surface location. This can include directional drilling underneath an area, such as a river, to install a pipeline.

DOWNSTREAM OPERATIONS:

All operations occurring after the oil or gas is either shipped away from the production unit or delivered to a terminal through a pipeline. Includes refining, marketing, supply and transportation of oil or gas.

DRILL BIT: The cutting part of the drilling equipment.

DRILL SITE: The location of a drilling rig.

DRILLING MUD OR FLUID: A specially compounded mixture of minerals and chemicals in oil or water, which is circulated through the well during drilling operations. Drilling mud cools and lubricates the bit, carries cuttings to the surface and maintains pressure within the well bore.

DRILLING RIG: The physical structure that supports and encompasses the machinery and equipment for drilling a well.

DRY HOLE: A well drilled without finding oil or gas in commercial quantities.

ECOLOGICAL FOOTPRINT: The area of direct environmental impact of an industrial operation on the land.

ECOREGION: A relatively large unit of land or water containing a geographically distinct assemblage of natural communities that share a large majority of their species, dynamics and environmental conditions.

ECOSYSTEM: A dynamic complex of plant, animal and microorganism communities and their non-living environment interacting as a functional unit in a specific place.

EFFLUENT: Liquid waste material discharged from drilling and production operations.

ENDANGERED SPECIES: A species facing a very high risk of extinction in the wild in the near future.

ENDEMIC: Native to, and restricted to, a particular geographical region. Highly endemic species, those with very restricted natural ranges, are especially vulnerable to extinction if their natural habitat is eliminated or significantly disturbed.

ENVIRONMENTAL RESOURCES: Resources such as clean air, clean water, sensitive habitats and scenic values.

ENVIRONMENTAL/ECOSYSTEM SERVICES: Beneficial functions that are performed by natural ecosystems, such as maintenance of hydrological systems, protection of the soil, breakdown of pollutants, recycling of wastes, support for economically important living resources and regulation of climate.

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA): A process for predicting

and assessing the potential environmental and social impacts of a proposed project, evaluating alternatives and designing appropriate mitigation, management and monitoring measures.

ENVIRONMENTAL MANAGEMENT SYSTEM: The system of organizational capacity, plans, procedures, resources, policies and standards used by energy and other companies to manage their environmental programs.

EX-SITU PRESERVATION: The preservation of biological resources outside their natural habitats, as in zoos, aquaria and botanical gardens, as well as tissue cultures and seed banks.

EXTINCTION: An irreversible process whereby a species or distinct biological population forever ceases to exist.

EXTIRPATION: The elimination of a species or subspecies from a specific area, but not from its entire range.

FAUNA: All of the animals found in a given area.

FLARING: The practice of burning off waste gas or oil in a controlled manner during a test or production cycle; often as a safety measure to protect people and facilities.

FLORA: All of the plants found in a given area.

FORMATION WATER: A mixture of oily and salty (typically) water that is usually present in the hydrocarbon reservoir and is produced from the well during drilling and production operations.

FRAGMENTATION: The breaking up of a habitat, ecosystem or land-use type into smaller, often isolated, parcels, thereby reducing the number of species that the habitat, ecosystem or land-use type can support.

GENES: Elements in all living things that carry hereditary characteristics, which, when expressed, make each individual different from all others.

GENETIC DIVERSITY: The full range of species, subspecies and distinct biological populations of plants, animals and microorganisms; within a species or population, the full range of genes contained by the species or population. Also, the amount of genetic information among and within individuals of a population, species, assemblage or community.

GENETIC MATERIAL: Any material of plant, animal, microbial or other origin containing functional units of heredity.

GENETIC RESOURCES: Species, subspecies or genetic varieties of plants, animals and microorganisms that currently provide important goods and services or may be capable of providing them at some time in the future. Given the rapid increase in biotechnology and limitations of current knowledge, virtually all plants, animals and microorganisms qualify as genetic resources.

HABITAT: The physical and biological environment on which a given species depends for its survival; the place or type of site where an organism or population naturally occurs.

HORIZONTAL DRILLING: Deviation of the borehole at least 80 degrees from vertical so that the borehole penetrates a productive formation parallel to the formation.

HYDROCARBONS: Organic compounds of hydrogen and carbon whose densities, boiling points and freezing points increase as their molecular weights increase. Although composed of only two elements, hydrocarbons exist in a variety of compounds, because of the strong affinity of the carbon atom for other atoms and for itself. Petroleum is a mixture of many different hydrocarbons.

HYDROCARBON RESERVE: The portion of an oil or gas reservoir that has been proven to exist and can be profitably extracted. Use of this term implies a detailed knowledge of the geological, engineering, economic and environmental parameters that might affect the profitability of an operation.

HYDROCARBON RESERVOIR: A subsurface, porous, permeable rock body in which oil and/or gas has accumulated.

INDIGENOUS PEOPLE: No definition of indigenous people has been agreed upon internationally, but the principle of self-identification has been broadly accepted. For purposes of its operations, the World Bank treats as indigenous people “those social groups with a social and cultural identity distinct from the dominant society, which makes them vulnerable to being disadvantaged in the development process.” They are distinctive from other vulnerable social groups insofar as they are recognized by international law and by some

states as autonomous seats of power within the state, and exercise collective rights as groups.

IN-SITU CONSERVATION: The conservation of ecosystems and natural habitats and the maintenance or recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties.

INTRODUCTION (OF SPECIES): The movement, by human agency, of a species, subspecies, or lower taxon (including any parts, gametes, seeds, eggs or propagules that might survive and subsequently reproduce) outside its natural range (past or present). This movement can be either within a country or between countries.

INVASIVE ALIEN SPECIES: A non-native species whose establishment and spread threaten ecosystems, habitats or species with economic or environmental harm.

JOINT VENTURE: A group of companies that share the cost and rewards of exploring for and producing oil or gas from a concession.

KEystone SPECIES (OR UMBRELLA SPECIES): A species of plant or animal that has impacts on the community or ecosystem that are disproportionately large relative to its abundance.

LIFECYCLE (INDUSTRIAL): The entire sequence of activity relating to an industrial operation, from beginning to end.

LITTER: The surface layer of a forest or crop field, in which the leaves and other organic material are in the process of decomposition.

LIQUEFIED PETROLEUM GAS (LPG): A mixture of light hydrocarbons (propane and butane) derived from gas production, which is gaseous at normal temperatures, but which has been liquefied by refrigeration or pressure in order to facilitate storage or transportation.

LOCAL COMMUNITY: Any community that is adjacent to and/or impacted by oil and gas development and transmission.

MICROORGANISMS: Organisms of microscopic or ultra-microscopic size, including bacteria, blue-green algae, yeast, protists, viroids and viruses.

MITIGATION: Measures and actions taken to avoid, minimize, reduce, remedy and/or compensate for the adverse impacts of development. In general, a hierarchy of “avoid – reduce – remedy – compensate” is used to establish an order of preference (beginning with avoid) for mitigation measures.

MULTILATERAL WELL: Multiple wells drilled from a single wellbore at various angles to reach neighboring oil or gas reservoirs.

NATIVE SPECIES (INDIGENOUS SPECIES): A species, subspecies or lower taxon living within its natural range (past or present), including the area which it can reach and occupy using its own legs, wings, wind/water-borne or other dispersal systems, even if it is seldom found there.

NATURAL RESOURCES: Resources produced by nature, commonly subdivided into non-renewable resources, such as minerals and fossil fuels, and renewable natural resources that propagate or sustain life and are naturally self-renewing when properly managed, including plants and animals as well as soil and water.

NON-NATIVE SPECIES: A species, subspecies or lower taxon introduced outside its normal past or present distribution; includes any parts, gametes, seeds, eggs or propagules of such species that might survive and subsequently reproduce.

OPERATOR: The company that has the right to apply its own technical policies in conducting exploration and production programs in a concession on behalf of the other equity holders.

OVER-EXPLOITATION: Unsustainable use of a natural resource leading to the depletion or degradation of the resource and consequent loss of its productivity.

PARTICIPATION: Active involvement in decision-making of those with an interest in or affected by important decisions.

POLLUTION: The contamination of an ecosystem, especially with reference to human activities.

POPULATION: A group of individuals living in a particular geographical space and sharing common ancestry who are much more likely to mate with one another than with individuals from another such group. When the population has observable characteristics that distinguish it from other populations, it is sometimes

called a subspecies. Also, a group of organisms of a species, occupying a defined area and usually isolated to some extent from other similar groups or geographically-defined subdivisions of a species that form a group whose members differ genetically from other members of the species.

PROTECTED AREA: A geographically defined area that is designated or regulated and managed to achieve specific conservation objectives (*U.N. Convention on Biological Diversity, Article 2*). An area of land or sea especially dedicated to the protection and maintenance of biological diversity and of natural and associated cultural resources, and managed through legal or other effective means (*1992 World Congress on National Parks and Protected Areas*).

RESERVE PITS: Also called waste pits. Open pits designed to store drilling wastes, primarily drilling mud, which contain water, solids and possibly chemical additives.

SEISMIC LINES: Narrow lanes cleared of vegetation in preparation for a seismic survey.

SEISMIC SURVEY: An exploration method in which low frequency sound waves are generated on the surface or in the water to find subsurface rock structures that may contain hydrocarbons. Interpretation of the record can reveal possible hydrocarbon-bearing formations.

SLIM HOLE TECHNOLOGY: A drilling technology that allows drilling of narrower wells using less materials and equipment. This style of drilling has the potential to reduce environmental impacts and save costs on equipment, materials and waste disposal.

SLURRIED WASTE: A mixture of rock fragments, mud, oil and water produced from the drilling process.

SPECIES: A group of inter-breeding organisms that seldom or never interbreed with individuals in other such groups, under natural conditions; most species are made up of subspecies or populations.

SPECIES DIVERSITY: The number and frequency of species in a biological assemblage or community.

SPECIES RICHNESS: The number of species in a given site.

STAKEHOLDER: An individual or institution that can affect or is affected by an operation. Stakeholders

include, but are not limited to, local communities, advocacy groups, development agencies, governments, customers, shareholders, management, employees and suppliers.

SUSTAINABLE DEVELOPMENT: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

SUSTAINABLE USE: The use of biological resources in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs of present and future generations.

TAXON: (plural: taxa). A taxonomic group, such as a species, genus or family, in a formal system of classification.

UPSTREAM OPERATIONS: Includes oil and gas exploration and production (E&P) and gas processing activities.

WATERSHED CATCHMENT AREA: The upper area drained by a river basin, where the natural vegetation helps to ensure that the hydrological systems function appropriately.

WETLANDS: Transitional areas between terrestrial and aquatic systems in which the water table is usually at or near the surface or the land is covered by shallow water. Under the Ramsar Convention, wetlands can include tidal mudflats, natural ponds, marshes, potholes, wet meadows, bogs, peatlands, freshwater swamps, mangroves, lakes, rivers and even some coral reefs.

WILDLIFE: Living things that are neither human nor domesticated.