

# Annex II

## Glossary



**Active (or live) storage.** Volume or cubic capacity of a lake or reservoir between the maximum and minimum operating levels.

**Adversely affected people.** Populations who suffer negative effects during water and energy development interventions. In the case of dam projects, this includes people whose economic, social and cultural lives are negatively affected by construction works, impoundment, alteration of river flows and any ecological consequences. The term includes displaced people, host communities, and downstream and upstream populations. It may also include groups affected by the construction of transmission lines or the development of irrigation schemes, water transfer canals, sanctuaries, and so on.

**Aquifer.** An underground water-bearing layer of permeable rock, sand or gravel that is capable of yielding exploitable quantities of water.

**Barrage (gate-structure dam).** A structure built across a river consisting of a series of gates that when fully open allow the flood to pass without appreciably increasing the water level upstream of the barrage, and that when closed raise water levels upstream to facilitate diversion of water to a canal for irrigation or to a powerhouse for the generation of electricity.

**Baseline assessment.** The collection and analysis of data that describe prevailing social and environmental conditions and are used in the design of project activities and as a benchmark for future monitoring studies.

**Benefit sharing.** Transfer of a share of the benefits generated by a project, such as a dam, to local communities or authorities. Mechanisms for benefit sharing include preferential rates (for example, of electricity generated), revenue sharing or royalties, and equity sharing (through which local populations or authorities own all or part of the project).

**Catchment.** The area that drains into a river system; in relation to a dam, the area upstream from the dam from which the reservoir receives water. (The term 'watershed' has been used in this document to convey the same meaning.)

**Civil society.** Non-governmental organisations, community based organisations, professional associations from all disciplines and other sectors of society that are neither government bodies nor the private sector.

**Compensation measures.** Alternative resources (land, property or money) provided to displaced people or others adversely affected by a project as mitigation for losses suffered.

**Conjunctive water use.** The co-ordinated use of surface water and groundwater resources.

**Cropping intensity.** The extent of land use in a year, which reflects the degree of multiple cropping. It is the ratio of the total area cropped per year to the irrigation command area.

**Cultural heritage.** The cultural practices and resources of current populations (religions; languages; ideas; social; political and economic organisations) and their material expressions in the forms of sacred elements of natural sites or artefacts and buildings; landscapes resulting from cultural practices over historical and prehistoric times; and archaeological resources; including artefacts, plant and animal remains associated with human activities, burial sites and architectural elements.

**Dead storage.** Storage below the lowest outlet that cannot be released under normal conditions.

**Decommissioning.** Removing a dam from service and, where appropriate, physically dismantling it.

**Demand-side management.** Reducing use of water or electricity by improving the efficiency of use by the transmission system or the consumer, whether in the residential, industrial, commercial, agricultural or government sector.

**Developer.** The organisation (private or public sector) responsible for promoting and implementing a project, as distinct from the contractor who constructs the project.

**Discounting.** The process of applying a rate of interest to cost and benefit flows that is used to find the equivalent value today of sums receivable or payable in the future.

**Displaced people.** Communities required (often involuntarily) to abandon their

settlements (homes, agricultural land, commons, forests and so on) or suffering loss of livelihood due to construction of a dam, submergence of the reservoir area, downstream impacts, building of dam-related infrastructure such as roads, and so on.

**Ecosystem.** An interacting system formed by living organisms and their abiotic environment regulating itself to a certain degree and explicitly includes the human social system.

**Environmental flow.** The specific release of water from a dam to ensure the maintenance of downstream aquatic ecosystems and key species. The flows may include seasonal or annual flows and/or regular or irregular pulses to meet ecosystem needs. They may also be linked to livelihood needs of downstream affected people.

**Environmental management system.** The processes by which an organisation identifies and assesses environmental problems, sets goals to address the problems, and measures and verifies progress in solving the problems.

**Ethnic minorities.** Social groups with a social and cultural identity distinct from the dominant society. They have been historically disadvantaged; come from non-dominant sectors of society; have low social, economic and political status; and are determined to preserve, develop and transmit to future generations their ethnic identity as the basis of their continued existence as people.

**Export credit agency.** A government agency that helps finance the overseas sales of a nation's goods and services, generally by providing guarantees of working capital loans for exporters, guaranteeing the repayment of loans, or making loans to foreign purchasers of the nation's goods and services. The agency may also provide credit insurance that protects exporters against the risks of non-payment by foreign buyers for political or commercial reasons.

**Externalities or External Impacts.** Costs and benefits that are external to the financial aspect of decision-making, and thus do not accrue to project developers and operators.

**Flood control.** In relation to dams, the intention to reduce flood peaks in the river and to minimise the impact of flood events on human activities, including loss of life, social disruption, health impacts, and property and economic losses.

**Flood management.** A broad concept that focuses on reducing flood hazards through a combination of policy, institutional, regulatory and project measures (such as replanting catchment areas), while recognising that they can never be fully controlled. This takes into account the beneficial uses of natural floods, which are more difficult to quantify in human and economic terms but which sustain natural systems that also have economic, social, cultural and ecosystem values and functions.

**Greenhouse gases.** Gases that accumulate in Earth's atmosphere and trap heat. Some are naturally occurring gases, like carbon dioxide and methane; others are made by humans, such as halocarbons.

**Groundwater.** Water that flows or seeps downward and saturates soil or rock, is stored underground and supplies springs and wells. The upper level of the saturated zone is called the water table. Generally, all subsurface water, as distinct from surface water.

**Impoundment.** Body of water formed by collecting water, as by dam.

**Indigenous and tribal peoples.** At its broadest, the adjective 'indigenous' is applied to any person, community or being that has inhabited a particular region or place prior to colonisation. However, the term 'indigenous peoples' has gained currency internationally to refer more specifically to long-resident peoples, with strong cus-

tomary ties to their lands, who are dominated by other elements of the national society.

**Integrity pacts.** Voluntary undertakings related to the procurement of goods and services that are used to reduce corruption, and that are of particular use in situations where regulatory systems and institutional capacity are weak, although they have universal application. The concept was first developed by Transparency International.

**Large dam.** A dam with a height of 15m or more from the foundation. If dams are between 5-15m high and have a reservoir volume of more than 3 million m<sup>3</sup>, they are also classified as large by the International Commission on Large Dams. In this report, everything else is considered a small dam.

**Life-cycle assessment.** An options assessment procedure at the front end of the planning cycle used in the energy sector to compare 'cradle-to-grave' performance, environmental impacts, and market barriers and incentives for different demand and supply options.

**Main-stem.** The main course of a river, characterised by its middle and lower reaches.

**Major dams.** The *World Atlas & Industry Guide* of the International Journal on Hydropower & Dams defines a 'major dam' as a project meeting one of the following criteria: dam height over 150 meters; dam volume over 15 million cubic meters; reservoir volume over 25 billion cubic meters; installed capacity over 1 000 megawatts.

**Mitigation measures.** The reduction of potentially significant adverse impacts.

**Multi-criteria analysis.** An analytical process that uses a mix of qualitative and quantitative criteria to assess and compare options, which may be policies, programmes or projects.

**Multipliers.** The amount by which equilibrium output of the economy changes when aggregate demand - as caused for example by the expenditure by a development project - increases by one unit. As those receiving the initial round of income generated are likely to consume a portion of the additional income, this subsequent expenditure will lead to additional ripple effects of rounds of income and consumption through the economy. The net effect of these increases in output is the multiplier effect of the initial expenditure, measured as a proportion of the initial expenditure.

**Multi-purpose dam.** A dam that meets two or more objectives (such as irrigation, flood control, water supply, power generation, recreation, navigation or fish and wildlife enhancement).

**Performance bonds.** Bonds supported by financial guarantees to provide a secure way of ensuring compliance with commitments and obligations. The bond is called upon in part, or in full, to meet unfulfilled obligations and commitments or is repaid when commitments are met, either in whole or in part, depending upon the circumstances.

**Precautionary approach.** According to the Rio Declaration on Environment and Development, signed in 1992, where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

**Political Economy.** Political economy is the analysis and explanation of the ways in which governments affect the allocation of scarce resources in society through their laws and policies as well as the ways in which the nature of the economic system and the behaviour of people acting on their economic interests affects the form of government and the kinds of laws and policies that get made.

**Recession agriculture.** A system of agriculture that depends on the moisture of the soil as the flood recedes. Recession agriculture takes place in the floodplain, which is the area subject to seasonal flooding by the river.

**Rehabilitation.** The physical or social restoration of an ecosystem or a community after a dam construction project has been completed, or the process of renovating a facility or system that has deteriorated and whose performance is failing to meet the original criteria and needs of the project.

**Reservoir.** Any natural or artificial holding area used to store, regulate or control water.

**Reservoir drawdown.** The extent to which the water level in the reservoir changes on a daily or seasonal basis due to release of water from the reservoir for operations (such as irrigation or daily peaking for power generation). Emergency drawdown may be for safety reasons, or in anticipation of a major flood event.

**Resettlement.** Physical relocation of people whose homes, land or common property resources are affected by a development, such as dam building.

**Retention.** Temporary storage provided by a dam. Even when a reservoir is full, the outflow may be smaller than the inflow as a result of the retention effect.

**Riparian.** Lying on or adjacent to a river or lake. Used to denote people, plants or wildlife living along the water's edge.

**Riparian State.** Any State through which a transboundary river flows or forms part of its boundary, or that includes part of the catchment basin of a transboundary river.

**River.** Large stream that serves as the natural drainage channel for a drainage basin. In terms of transboundary rivers, the

term relates equally to all types of waters that are or might be affected by dams.

**River basin.** The area from which the river system under consideration naturally receives its drainage water; may encompass a series of tributary rivers and their sub-basins.

**Riverine.** Features or habitats relating to, formed by, or lying within a river; living along the banks of a river.

**Run-of-river dams.** Dams that create an hydraulic head in the river to divert some portion of the river flows. They have no storage reservoir or limited daily pondage. Included in this category are weirs and barrages.

**Surface water.** Water that flows or lies on the ground surface.

**Tailwater.** The water in the natural stream immediately downstream from a dam. Applied irrigation water that runs off the lower end of a field.

**Water table.** The level of groundwater; the boundary between ground that is saturated with water (the zone of saturation) and ground that is unsaturated or filled with water and air (the zone of aeration).

**WCD Forum.** A body with some 68 members affiliated to the broad range of

stakeholders and interest groups involved in the dams debate. The Forum is partly composed of members of the Reference Group from the 1997 meeting in Gland that recommended the establishment of WCD. It also has new members subsequently invited to participate by WCD. The Forum is a consultative body.

**WCD Global Review.** An assessment of the performance and impacts of large dams and of alternatives for water resources and energy development, based on the WCD Knowledge Base.

**WCD Knowledge Base.** Materials commissioned, organised or accepted by the WCD to inform its work: in-depth Case Studies of eight large dams on four continents, together with two country review studies; a Cross-Check Survey of large dams located in 52 countries across the globe; 17 Thematic Reviews grouped along five dimensions of the debate; four regional consultations; and 947 submissions from interested individuals, groups and institutions. These materials are available at [www.dams.org](http://www.dams.org).

**Weir.** A structure built across an open channel to raise the upstream water level or to measure the flow of water. Weirs tend to be smaller than barrages and are not generally gated.

