# Annex C

# GLOSSARY

Selected important wildland fire management terms are given in the following. Some of them are taken from the United Nations Wildland Fire Management Terminology (FAO 1986) and has been modified for this document (see also Pyne et al. (1996) and Goldammer et al. (1998))

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| Adiabatic lapse rate | Theoretical temperature lapse rate of a parcel of air, which moves adiabatically in the vertical (WMO, 1992). |
| Adverse effect | Change in morphology, physiology, growth, development or life span of an organism which results in impairment of functional capacity or impairment of capacity to compensate for additional stress or increase in susceptibility to the harmful effects of other environmental influences (WHO, 1994) |
| Aerial fuels | The standing and supported forest combustibles not in direct contact with the ground and consisting mainly of foliage, twigs, branches, stems, bark, lianas and other vines. In general they easily dry out and may carry surface fires into the canopy (FAO, 1986; ITTO, 1997). |
| Aerosol | A suspension in a gaseous medium of solid particles, liquid particles or solid and liquid particles having a negligible falling velocity (ISO, 1994). |
| Asthma | A disease caused by increased responsiveness of the tracheobronchial tree to various stimuli, which results in paroxysmal constriction of the bronchial airways (CMD, 1997) Also see paroxysm. |
| Biomarker | Any parameter that can be used to measure an interaction between a biological system and an environment agent, which may be chemical, physical or biological (WHO, 1993). |
| Biomass | Organic substance of biotic origin: either living organisms or dead substances such as wood, crop residues, or animal dung. |
| Biomass smoke | Term used for convenience for the smoke generated by burning biomass. |
| Biotic | Of or relating to life (Webster, 1994). |

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| Broadcast burning | Allowing a prescribed fire to burn over a designated area within well defined boundaries for reduction of fuel hazard, as a silvicultural treatment, or both (FAO, 1986; ITTO, 1997). |
| Bronchi | The two main branches leading from the trachea to the lungs, providing a passageway for air (CMD, 1997). |
| Bronchial tube | One of the smaller subdivisions of the bronchi (CMD, 1997). |
| Bronchiole | One of the smaller subdivisions of the bronchial tube (CMD, 1997). |
| Bronchiolitis | Inflammation of the bronchioles (CMD, 1997). |
| Bronchitis | Inflammation of the mucous membrane of the bronchial airways (CMD, 1997) |
| Bronchodilator | A drug that expands the bronchial tubes by relaxing bronchial muscle (CMD, 1997). |
| Carbon dioxide | A colourless, odourless, noncombustible gas, formula $CO_2$. It is approximately 50% heavier than air, of which it is a normal constituent It is formed by certain natural processes (see carbon cycle) and by the combustion of fuels containing carbon, and it has been estimated that the amount in the air is increasing by 0.27% annually. Only in the most exceptional circumstances do local concentrations of carbon dioxide in air rise to levels that are dangerous to health, but it plays a significant role in the decay of building stones and in corrosion (WHO, 1980). |
| Carbon monoxide | A colourless, almost odourless, tasteless, flammable gas, formula CO. It is produced, *inter alia*, by the incomplete combustion of organic materials (e.g. in automobile engines) and normally occurs in trace amounts in the atmosphere. At concentrations exceeding about 100 $cm^3/m^3$ (0.01%) it is highly toxic. Its affinity for haemoglobin (with which it forms carboxyhaemoglobin) is between 200 and 300 times that of oxygen, and it has the effect of reducing the oxygen-transport capacity of haemoglobin and leading to death by asphyxiation. Concentrations of carbon monoxide in city streets (arising mainly from motor vehicle exhausts) can be sufficiently high to cause concern, as can those resulting from tobacco smoking in unventilated rooms (WHO, 1980) |
| Cardiovascular | Pertaining to the heart and blood vessels (CMD, 1997). |

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| Chlorofluorocarbon(s) | Organic compound(s) derived from the complete substitution of the hydrogen atoms in methane and ethane with both fluorine and chlorine atoms. They are colourless, odourless gas (es) containing carbon, chlorine and fluorine, acronym CFC; extremely stable in the troposphere, but unstable in the stratosphere. Some of them are known to contribute to the depletion of ozone in the stratosphere (WHO, 1990). |
| Chronic obstructive Pulmonary disease (COPD) | A disease process that decreases the ability of the lungs to perform ventilation. Diagnostic criteria include a history of persistent dyspnea on exertion, with or without chronic cough, and less than half of normal predicted maximum breathing capacity. Diseases that cause this condition are chronic bronchitis, pulmonary emphysema, chronic asthma, and chronic bronchiolitis (CMD, 1997). |
| Climate | Synthesis of weather conditions in a given area, characterised by long-term statistics (mean values, variances, probabilities of extreme values, etc.) of the meteorological elements in that area (WMO, 1992). |
| Climate forcing | A power exerting a perturbation of the climate. |
| Combustion | A chemical reaction in which a material combines with oxygen with the evolution of heat: "burning". The combustion of fuels containing carbon and hydrogen is said to be complete when these two elements are all oxidised to carbon dioxide and water. Incomplete combustion may lead to (1) appreciable amounts of carbon remaining in the ash; (2) emission of some of the carbon as carbon monoxide; and (3) reaction of the fuel molecules to give a range of products of greater complexity than that of the fuel molecules themselves (if these products escape combustion they are emitted as smoke) (WHO, 1980). |
| Condensation | 1. The transition from the gaseous to the liquid state.<br>2 The physical process by which water vapour is transformed into dew, fog or cloud droplets (WMO, 1992) |
| Condensation nucleus | Nucleus on which water vapour can condense (WMO, 1992) |
| Coning | Formation of a pollution plume which trails downwind of a source in the form of a cone. This normally occurs when the environment has near-neutral stability (WMO, 1992). |

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| Control a Fire | To complete a control line around a fire, any spot fires therefrom, and any interior islands to be saved, and cool down all hot spots that are immediate threats to the control line, until the line can reasonably be expected to hold under foreseeable conditions (ITTO, 1997). |
| Convection | Organised internal motions within a layer or air, leading to vertical transport of heat, momentum, etc. (WMO, 1992). In air, the convection most commonly occurs as the result of the buoyancy of a mass of air in contact with a hot surface, which leads to a vertical current of air above that surface. Convection may also occur by means of air currents and eddies that are set up mechanically, as when air passes over high ground. |
| Convective storm | Storm with strong vertical air mass movements (FAO, 1986). |
| Counter fire | Fire set between main fire and backfire to hasten spread of backfire. Also called draft fire. The act of setting counter fires is sometimes called front firing or strip firing (FAO, 1986; ITTO, 1997). |
| Crown fire | A fire that advances from top to top of trees or shrubs more or less independently of the surface fire (FAO, 1986; ITTO, 1997). |
| Deposition | Removal of contents of air masses onto a substrate, usually the surface. |
| Diameter, equivalent | The diameter of a spherical particle of the same density that, relative to a given phenomenon or property (e.g., free-falling velocity; surface area; volume; and aerodynamic properties) would behave as the particle under investigation (Willeke, 1993). |
| Disease | A pathological condition of the body that presents a group of clinical signs, symptoms, and laboratory findings peculiar to it and setting the condition apart as an abnormal entity differing from other normal or pathological condition (CMD, 1997) |
| Drought | Prolonged absence or marked deficiency of precipitation (WMO, 1992) |
| Dry adiabatic lapse rate | Adiabatic lapse rate of dry air, and also, very closely, of moist unsaturated air. Its value is about $10^0$C/km (ISO, 1994; WMO, 1992). |
| Dry deposition | Removal of contaminants of air onto a substrate without involvement of rain, clouds or fog. |

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| Dust | Small solid particles, conventionally taken as those particles below 75 m in diameter, which settle out under their own weight but which may remain suspended for some time (ISO, 1994). National standards may be more specific and include particle diameters or a definition in terms of a sieve of specified aperture Dust occurs in the atmosphere both naturally and as a result of the activities of man (Willeke, 1993). |
| Dyspnea | Air hunger resulting in labored or difficult breathing, sometimes accompanied by pain (CMD, 1997). |
| Early burning | Prescribed burning early in the dry season before grass, tree leaves and undergrowth are completely dry or before the leaves are shed, as an insurance against more severe fire damage later on (ITTO, 1997). |
| Emergency Department | The portion of a hospital that treats patients experiencing an emergency (CMD, 1997). |
| Emergency room | A seldom used term for Emergency Department (CMD, 1997). |
| Emphysema | A chronic pulmonary disease marked by an abnormal increase in the size of air spaces distal (farthest from the centre) to the terminal bronchioles with destructive changes in their walls (CMD, 1997) |
| Expiration | Expulsion of air from the lungs in breathing. Normally the duration of expiration is shorter than that of inspiration In general, if expiration lasts longer than inspiration, a pathological condition such as emphysema or asthma is present (CMD, 1997). |
| Exposure | Exposure to a chemical is the contact of that chemical with the outer boundary of the human body. The outer boundary of the human body is the skin and the openings into the body such as the mouth, the nostrils, and punctures and lesions in the skin (WHO, 1999). |
| Exposure assessment | Quantitative or qualitative evaluation of the contact of a chemical with the outer boundary of the human body, which includes consideration of the intensity, frequency and duration of contact, the route of exposure (e g. dermal, oral or respiratory), rates (chemical intake or uptake rates), the resulting amount that actually crosses the boundary (a dose), and the amount absorbed (internal dose) (WHO, 1999). |

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| Fanning | Formation of a pollution plume that expands sideways much more than in the vertical. The sideways spread is often caused by a change of wind direction with height while the vertical spread is inhibited by thermal stability (WMO, 1992). |
| Fine particles | Particles with aerodynamic diameters below 2.5 micrometer. |
| Firebreak | Any natural or constructed discontinuity in a fuel-bed utilised to segregate, stop, and control the spread of fire or to provide a control line from which to suppress a fire; characterised by complete lack of combustibles down to mineral soil (as distinguished from fuelbreak) (FAO, 1986; ITTO, 1997). |
| Fire danger rating | A component of a fire management system that integrates the effects of selected fire danger factors into one or more qualitative or numerical indices of current protection needs (ITTO, 1997). |
| Fire hazard | A fuel complex, defined by volume, type, condition, arrangement, and location, that determines the degree both of ease of ignition and of fire suppression difficulty (FAO, 1986; ITTO, 1997). |
| Fire intelligence | All infrastructures, communication, base data and other hard- and software that provide the inputs to an information and decision-support system in fire management (ITTO, 1997). |
| Fire management | All activities required for the protection of forest values from fire and the use of fire to meet land management goals and objectives (FAO, 1986; ITTO, 1997). |
| Fire prevention | All measures in fire management, forest management, forest utilisation and concerning the land users and the general public that may result in the prevention of outbreak of fires or the reduction of fire severity and spread (ITTO, 1997). |
| Fire retardant | Any substance except plain water that by chemical or physical action reduces the flammability of fuels or slows their rate of combustion, e.g . a liquid or slurry applied aerially or from the ground during a fire suppression operation (FAO, 1986; ITTO, 1997). |
| Fog | As international standard fog is a general term applied to a suspension of droplets in a gas. In meteorology, it refers to a suspension of water droplets resulting in a visibility of less than 1 km (ISO, 1994). WMO defines fog as a suspension of very small, usually microscopic water droplets in the air, generally reducing the horizontal visibility at the earth's surface too less than 1 km (WMO, 1992) |

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| Forced expiratory Volume (FEV) | The volume of air that can be expired after a full inspiration. The expiration is done as quickly as possible and the volume measured at precise times; at ½, 1, 2 and 3 seconds. This provides valuable information concerning the ability to expel air from the lungs (CMD, 1997). |
| Forest residue | The accumulation in the forest of living or dead, mostly woody material that is added to and rearranged by human activities such as forest harvest, cultural operations, and land clearing (FAO, 1986; ITTO, 1997). |
| Fuel | All combustible organic material in forests and other vegetation types, including agricultural systems (ITTO, 1997). |
| Fuelbreak | Generally wide (20 - 300 meters) strips of land on which either less flammable native vegetation is maintained and integrated into fire management planning, or vegetation has been permanently modified so that fires burning into them can be more readily controlled (as distinguished from firebreak). Some fuelbreaks contain narrow firebreaks which may be roads or narrower hand-constructed lines. During fires, these firebreaks can quickly be widened either with hand tools or by firing out. Fuelbreaks have the advantages of preventing erosion, offering a safe place for fire fighters to work, low maintenance, and a pleasing appearance. |
| Fume | Aerosol of solid particles, usually from metallurgical processes, generated by condensation from the gaseous state, generally after volatilisation from melted substances and often accompanied by chemical reactions such as oxidation (ISO, 1994). By extension, also the gases charged by particles resulting from a chemical process or a metallurgical operation (WHO, 1980). Often used in the plural, *fumes* for visible clouds of gases, vapours, or aerosols that have an unpleasant and malodorous smell (WHO, 1980; ISO, 1994). |
| Function | The act of carrying on or performing a special activity. Normal function is the normal action of an organ Abnormal activity or the failure of an organ to perform its activity is the basis of disease or disease processes (CMD, 1997) |
| Ground fire | A fire burning in organic terrain, e.g. dried tropical swamps and peat layers (ITTO, 1997). |

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| Haze | A suspension in the atmosphere of extremely small (dry) particles, individually invisible to the naked eye, but which are numerous enough to give the atmosphere an appearance of opalescence together with reduced visibility (ISO, 1994, WMO 1992). |
| Heat | Means both thermal energy and thermal energy transfer. |
| Hydrocarbon | An organic compound containing only the elements carbon and hydrogen. The carbon atoms may be arranged either in open-ended chains, which may or may not be branched or in closed rings. There are two types of ring hydrocarbons: *alicyclic compounds*, consisting of three or more carbon atoms arranged in a closed ring (and whose properties are similar to those of the open-chain compounds of the same molecular mass), and aromatic compounds. The molecular structure of aromatic compounds is based on that of benzene, the simplest member of the class, which contains six carbon atoms joined by three single and three double carbon-carbon bonds. Such compounds are described as *polycyclic* if they contain two or more rings; the term "polynuclear" (as in "polynuclear aromatic hydrocarbon", frequently abbreviated as PAH) is also used. The major constituents of gasoline and other petroleum fuels are hydrocarbons of the open-chain type. These compounds are not considered to be a hazard to health even at the concentrations at which they are encountered in city air. Many aromatic hydrocarbons, on the other hand, are highly toxic (WHO, 1980; WHO, 1997). Well known examples of polycyclic aromatic hydrocarbons are anthracene, naphthalene, and benzo[a]pyrene (WHO, 1980). |
| Hydrogen | A colourless, odourless, inflammable gas, which combines chemically with oxygen to form water; formed also in combustion plumes (WHO, 1980). |
| Hydroxyl radical | Univalent radical containing hydrogen and oxygen, OH, extremely effective oxidant in the atmosphere |
| Illness | The state of being sick (CMD, 1997). |
| Infrared light | Invisible rays of the spectrum lying outside the red end of the visible spectrum, radiated by heat |
| Inversion layer | Atmospheric layer in which the temperature increases or remains constant with height (WMO, 1992). |

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| Ladder fuels | Fuels, which provide vertical continuity between strata. Fire is able to carry from surface fuels into the crowns of trees or shrubs with relative ease and help assure initiation and continuation of crown fires (FAO, 1986; ITTO, 1997). |
| Lapse rate | The rate of change of any meteorological element with height (WMO, 1992). |
| Lofting | A pollution plume with a flat base but appreciable vertical spread indicative of an atmosphere which is statically stable up to the base of the plume and unstable above (WMO, 1992) |
| Looping | Formation of a pollution plume which is distorted by large vertical eddies in an unstable atmosphere (WMO, 1992) |
| Low birth weight | Abnormally low weight of a newborn, usually below 2000 g (CMD, 1997). |
| Lower respiratory symptom | Symptom in the lower respiratory tract (i e. the respiratory tract from trachea to bronchioles). |
| Lung cancer | Cancer that may appear in the trachea, air sacs and other lung tubes. It may appear as an ulcer in the windpipe, as a nodule or small flattened lump, or on the surface blocking air tubes. It may extend into the lymphatics and blood vessels (CMD, 1997). |
| Mass fire | A fire resulting from many simultaneous ignitions. These fires generate high levels of energy output (FAO, 1986; ITTO, 1997). |
| Methane | A colourless, odourless gas, formula $CH_4$. It is flammable and forms explosive mixtures with air. Methane is the principal constituent of most natural gas and a major constituent of coal gas. It is formed in the decomposition of organic matter, e.g. in marshes, and a common term for it is "marsh gas" (WHO, 1980). |
| Mist | Loose term applied to a suspension of droplets in a gas. In meteorology it relates to visibility of less than 2 km but greater than 1 km (ISO, 1994). See also fog |
| Mixed layer | Layer adjacent to the earth's surface which is mixed by convection or frictionally-induced turbulence or both (WMO, 1992) |
| Morbidity | The number of sick persons or cases of disease in relationship to a specific population (CMD, 1997). |

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| Mortality | The death rate; the ratio of the number of deaths to a given population (CMD, 1997). |
| Nitrate | See *nitric acid*. |
| Nitric acid | A colourless or yellowish fuming liquid, formula $HNO_3$. It is highly corrosive and the vapour is very hazardous. Nitric acid and nitrates (mainly ammonium nitrate) occur in the atmosphere in the form of aerosols: the acid is formed from oxides of nitrogen and then reacts with ammonia to form ammonium nitrate (WHO, 1997) |
| Nitric oxide | See *nitrogen oxides*. |
| Nitrogen | A gaseous element, atomic number 7, relative atomic mass 14.0067, symbol N. It is the principal constituent of air (78% by volume). |
| Nitrogen dioxide | See *nitrogen oxides*. |
| Nitrogen oxides | A series of seven compounds, of which only three are of any significance in the atmosphere *Dinitrogen oxide* (nitrous oxide), formula $N_2O$, is a colourless gas that is believed to play an important role in the nitrogen cycle. It is the most abundant atmospheric nitrogen compound and a greenhouse gas but is of no significance as a pollutant. *Nitrogen oxide* (nitric oxide), formula NO, is a colourless poisonous gas that reacts readily with oxygen (and very rapidly with ozone) to form the dioxide. It is formed in combustion processes, e.g., in furnaces and internal combustion engines. NO is an active participant in the atmospheric reactions that lead to the production of *photochemical smog*. Nitrogen dioxide, formula $NO_2$, is a reddish-brown poisonous gas At ordinary temperatures the vapour is an equilibrium mixture of $NO_2$ and the dimer $N_2O_4$ (dinitrogen tetroxide); on heating, the latter dissociates and the $NO_2$ content increases. Above $140^0$C, the $NO_2$ dissociates into NO and oxygen (WHO, 1997).<br>In the air pollution literature, the term "nitrogen oxides" and the formula $NO_x$ are used for the mixture of NO and $NO_2$ in the air (WHO, 1997). |
| Nucleus | A particle of any nature upon which molecules of water or ice accumulate as a result of a phase change to a more condensed state (WMO, 1992). |
| Outpatient | One who receives treatment at a hospital, clinic, or dispensary but is not hospitalised (CMD, 1997) |

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| Oxidation | A transformation of an organic substrate that can be rationally dissected into steps or primitive changes. The latter consist in removal of one or several electrons from the substrate followed or preceded by gain or loss of water and/or hydrons or hydroxide ions, or by nucleophilic substitution by water or its reverse and/or by an intramolecular molecular rearrangement (IUPAC, 1997). |
| Oxidant (in atmospheric chemistry) | A very qualitative term which includes any and all trace gases which have a greater oxidation potential than oxygen (for example ozone, peroxyacetyl nitrate, hydrogen peroxide, organic peroxides, $NO_3$, etc.). It is recommended that alternative, more definitive terms be used which define the specific oxidant of interest whenever possible (IUPAC, 1997). |
| Oxygen | A gaseous element, atomic number 8, relative atomic mass 15.9994, symbol O. Oxygen is a colourless, odourless gas which supports combustion in air. Molecular oxygen ($O_2$) constitutes 20.95% by volume of dry air in the lower part of the atmosphere. $O_2$ is essential for the maintenance of almost all forms of life. Above an altitude of 20 km atomic oxygen appears in significant amounts and at 100 km it is in the predominant form. For the tri-atomic form of oxygen, see *ozone*. |
| Ozone | The tri-atomic allotrope of oxygen; a pale blue gas with a distinctive pungent odour, formula $O_3$ It is a highly reactive oxidising agent and is very poisonous, and is considered a serious pollutant at concentrations much in excess of 125 $g/m^3$ (WHO, 1980). It is naturally occurring in the atmosphere. It occurs at large concentrations in the upper atmosphere, where it is formed by the action of solar ultraviolet radiation. In the troposphere, ozone is mostly formed by photochemical reactions involving hydrocarbons and nitrogen oxides. |
| Ozone layer | An atmospheric layer lying between about 10 and 50 km (above the surface of the earth), in which the percentage of ozone is relatively high. The maximum concentration generally occurs about 20 or 25 km (WMO); it acts as an effective shield for the solar ultraviolet rays (WHO, 1980). |
| Paroxysm | A sudden, periodic attack or recurrence of symptoms of a disease; an exacerbation of the symptoms of a disease (CMD, 1997) |
| Particle | Small discrete mass of solid or liquid matter (ISO, 1994). |

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| Particle aerodynamic diameter | Diameter of a sphere of density 1 g/cm$^3$ with the same terminal velocity due to gravitational force in calm air as the particle, under the prevailing conditions of temperature, pressure and relative humidity (ISO, 1995). |
| Particle size analysis | The science, which deals with the measurement of the dimensions and the determination of the shape of particles; the whole of the operations by which a particle size distribution can be obtained (Willeke, 1993). |
| Particle size distribution | The distribution of equivalent diameters of particles in a sample or the proportion of particles for which the equivalent diameter lies between defined limits (Willeke, 1993). |
| Particulate matter, suspended | All solid and liquid particles in the air that are small enough not to settle out on to the earth's surface under the influence of gravity; also defined as the material that can be removed from the air by passing it through a suitable filter (Willeke, 1993). See also: *aerosol, dust*. |
| Peak expiratory flow rate | See rate. |
| Photochemical smog | Result of reactions in the atmosphere between nitrogen oxides, organic compounds and oxidants under the influence of sunlight, leading to the formation of oxidising compounds or possibly causing poor visibility, eye irritation or damage to material and vegetation if sufficiently concentrated (ISO, 1994). |
| Plume | Identifiable stream of air with a temperature or composition different from that of its environment. Examples are the smoke plume from a chimney and a buoyant plume rising by convection from heated ground (WMO, 1992) |
| Plume rise | Height of the centreline of a plume above the level it was emitted to the atmosphere (ISO, 1994). |
| Polycyclic aromatic Hydrocarbon | See hydrocarbon |
| Polynuclear aromatic hydrocarbon | See hydrocarbon |
| Precipitation | Hydrometeor consisting of a fall of an ensemble of particles. The forms of precipitation are: rain, snow, snow grains, snow pellets, diamond dust, hail and ice pellets (WMO, 1992) |

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| Pre-attack planning | Fire planning within designated blocks of land, covering the following items: locations of fire lines, base camps, water sources, helispots, transportation systems, probable rates of travel, constraints of travel on various types of attack units, determining of construction of particular fire lines, the probable rate of line construction, topographic constraints on line construction, etc (ITTO, 1997). |
| Prescribed burning | Controlled application of fire to vegetation in either their natural or modified state, under specified environmental conditions which allow the fire to be confined to a predetermined area and at the same time to produce the intensity of heat and rate of spread required to attain planned resource management objectives (FAO, 1986; ITTO, 1997). |
| Prescribed fire | A fire burning within prescription. The fire may result from either planned or unplanned ignitions |
| Pre-suppression planning | All measures of fire intelligence and preparedness for fire suppression actions (ITTO, 1997). |
| Rain | Precipitation of liquid water particles, either in the form of drops of more than 0.5 mm in diameter, or of smaller widely scattered drops (WMO, 1992). |
| Rate | The speed or frequency of occurrence of an event, usually expressed with respect to time or some other known standard (CMD, 1997). *Death rate* or *mortality rate* is the number of deaths in a specified population, usually expressed per 100 000 population, over a given period, usually 1 year *Morbidity rate* is the number of cases per year of certain diseases in relation to the population in which they occur. *Infant mortality rate* is the number of deaths per year of live-born infants less than 1 year of age divided by the number of live births in the same year. *Peak expiratory flow rate* is the maximum rate of exhalation during forced expiration, measured in litres per second or litres per minute. |
| Relative humidity of moist Air with respect to water | The ratio of the mole fraction of the water vapour in the air to the corresponding mole fraction if the air were saturated with respect to water at a particular pressure and temperature (WMO, 1992) Also see *humidity*. |

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| Remote sensing | Determination of substances in the atmosphere, or of emissions, or of meteorological parameters in the atmosphere, by means of instruments not in immediate physical contact with the sample being examined (ISO, 1994). According to WMO, remote sensing is defined as the collection and recording of data from a distant point, e.g. radar and satellite-based observations of the atmosphere as opposed to on-site (in situ) sensing (WMO, 1992). |
| Residence time (atmospheric) | The average time a molecule or aerosol spends in the atmosphere after it is released or generated there. For compounds with well defined sources and emission rates, this is estimated by the ratio of the average global concentration of a substance to its production rate on a global scale. It is a function of not only the emission rates but the loss rates by chemical and physical removal processes. (IUPAC, 1997). |
| Respiration | The act of breathing (i.e. inhaling and exhaling) during which the lungs are provided with air through inhaling and carbon dioxide is removed through exhaling (CMD, 1997). |
| Respirator | Special masks designed for the protection of workers exposed to occupational health hazards. |
| Respiratory | Pertaining to respiration (CMD, 1997). |
| Sampling | The collection of a representative portion for analysis and testing (WHO, 1980). *Continuous sampling* is sampling, without interruptions, throughout an operation or for a predetermined time *Grab sampling* or *spot sampling* is the taking of a sample in a very short time (ISO, 1994). |
| Smog | Fog having a high pollution content (WMO, 1992). Also see *photochemical smog*. |
| Smoke | An aerosol originating from combustion, thermal decomposition or thermal evaporation. Its particles may be solid (magnesium oxide smoke) or liquid (tobacco smoke) (IUPAC, 1997). The International Standard definition of smoke is that of a visible aerosol usually resulting from combustion (ISO, 1994). WMO defines smoke as a suspension in the atmosphere of small particles produced by combustion (WMO, 1992). |
| Smoke abatement | Legal measures that may be taken on community, regional, or national level to control smoke emissions and thus reduce pollution by smoke ((FAO, 1986; ITTO, 1997). |
| Smoke control | See *smoke abatement*. |

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| Smoke management | The application of knowledge of fire behaviour and meteorological processes to minimise air quality degradation during prescribed fires. |
| Soot | A randomly formed carbonaceous particulate matter that may be coarse, fine and/or colloidal in proportions depending on its origin. Soot consists of variable quantities of carbonaceous and inorganic solids together with absorbed and occluded tars and resins.<br>Notes: An unwanted by-product of incomplete combustion or pyrolysis. Soot generated within flames consists essentially of aggregates of spheres of carbon. Soot found in domestic fireplaces chimneys contains few aggregates but may contain substantial amounts of particulate fragments of coke or char. Soot from diesel engines consists essentially of aggregates together with tars and resins. |
| Spirometry | Measurement of the air capacity of the lungs (CMD, 1997). |
| Surface fire | Fire that burns only surface litter, other loose debris of the forest floor, and small vegetation (FAO, 1986; ITTO, 1997). |
| Symptom | Any perceptible change in the body or its functions that indicates disease or the kind or phases of disease (CMD, 1997). |
| Temperature inversion | Vertical temperature distribution such that temperature increases with height (WMO, 1992). |
| Trachea | A cylindrical tube from the larynx to the primary bronchi (CMD, 1997). |
| Tropical dry forest | Open forest with continuous grass cover, distinguished from other tropical forests by distinct seasonality and low rainfall. Includes woody/tree savannahs. |
| Tropical moist forest | Forest biome situated in areas receiving not less than 100 mm of rain in any month for two out of three years, with a mean annual temperature of 24°C or higher; mostly low-lying, generally closed Subdivided into tropical rain forest and tropical moist deciduous forest (ITTO, 1997). |
| Ultra-fine particles | Particles with aerodynamic diameters below 0.1 micrometer. |
| Upper respiratory symptom | Symptom in the upper respiratory tract (i.e. the respiratory tract from nose to larynx). |
| Values-at-risk | Any or all of the natural resources or improvements which may be jeopardised if a fire occurs (FAO, 1986; ITTO, 1997). |

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| Visibility | Greatest distance at which a black object of suitable dimensions can be seen and recognised against the horizon sky during daylight or could be seen and recognised during the night if the general illumination were raised to the normal daylight level (WMO, 1992). |
| Wet deposition | Removal of pollutants from the air through the processes of wash-out, rain-out , fog, and dew |
| Wildfire | Any fire occurring on wildland except a fire under prescription (FAO, 1986; ITTO, 1997). |
| Wildland | An area in which development is essentially non-existent, except for roads, power lines, and similar transportation facilities. Structures, if any, are widely scattered and are primarily for recreation purposes (FAO, 1986; ITTO, 1997). |
| Wildland Fire | In contemporary thinking there are two categories of wildland fire: wildfire and prescribed fire. A wildfire is an unwanted fire and requires that measures be taken to control it. A prescribed fire is wanted, or at least serves management goals, and is thereby promoted. Escaped fire is the transitional state between prescribed fire and wildfire (FAO, 1986; ITTO, 1997). |
| Wildland/Residential Interface | That line, area, or zone where structures and other human development meets or intermingles with undeveloped wildland or vegetative fuels (ITTO, 1997). |

**References:**

CMD (1997) Taber's Cyclopedic Medical Dictionary, edition 18, FA Davis Company, Philadelphia.

FAO (1986) Wildland fire management terminology, FAO Forestry Paper 30, Food and Agriculture Organization, Rome.

FAO (1999) Draft Update of the FAO Wildland Fire Management Terminology. FAO and Global Fire Monitoring Center, Food and Agriculture Organization, Rome (in preparation).

Goldammer JG (1999) The Contribution of the Global Fire Monitoring Center (GFMC) for Early Warning and Management of Wildfires. Paper presented at the UNESCO International Scientific Conference on Fires in the Mediterranean Forests, Athens, 3-6 February 1999.

ITTO (1997) Guidelines on Fire Management in Tropical Forests. ITTO Policy Development Series No. 6. International Tropical Timber Organization, Yokohama, Japan.

IUPAC (1997) Compendium of Chemical Terminology – IUPAC Recommendations, compiled by A.D. McNaught and A. Wilson, 2nd edition, 1997, International Union of Pure and Applied Chemistry, Blackwell Science Ltd, Oxford.

Webster (1994) Webster's New Encyclopedic Dictionary, Könemann, Cologne, Germany

WHO (1980) Glossary on Air Pollution, WHO Regional Publications, European Series No. 9, World Health Organization, Regional Office for Europe, Copenhagen.

WHO (1990) Biomarkers and Risk Assessment: Concepts and Principles, Environmental Health Criteria 155, World Health Organization, Geneva.

WHO (1993) Fully Halogenated Chlorofluorocarbons, Environmental Health Criteria 113, World Health Organization, Geneva.

WHO (1994) Assessing Human Health Risks of Chemicals: Derivation of Guidance Values for Health-based Exposure Limits, Environmental Health Criteria 170, World Health Organization, Geneva.

WHO (1997) Nitrogen Oxides, Environmental Health Criteria 188, World Health Organization, Geneva.

WHO (1998) Selected Non-herocyclic Polycyclic Aromatic Hydrocarbons, Environmental Health Criteria 202, World Health Organization, Geneva.

WHO (1999) Principles for the Assessment of Risks to Human Health from Exposure to Chemicals, Environmental Health Criteria 210, World Health Organization, Geneva.

Willeke K and Baron PA (1993) Aerosol measurement: Principles, Techniques,and Applications, New York : Van Nostrand Reinhold

WMO (1992) International Meteorological Vocabulary. WMO-No. 182, Secretariat of the World Meteorological Organization, Geneva, Switzerland.