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GLOSSARY OF APICULTURE TERMS

Absconding	Absconding occurs when all adult honeybees permanently leave their nest. This usually occurs because the colony is stressed: possible causes are poor ventilation, too much heat, moisture, predators such as mites, moths, ants, or beetles, lack of food, or other intolerable problems.
Acarapis woodi	Causes 'acarine disease' – the problems bees experience when they are infested with these tracheal mites.
Achroia grisella	The lesser wax moth: a serious pest of honeybee colonies in the tropics.
Aethina tumida	Small hive beetle, a natural pest of *Apis mellifera* honeybee colonies in Southern Africa, which is now spreading outside its natural distribution range and is a fatal pest for *Apis mellifera* colonies that have not evolved in its presence.
Africanised	Honeybees descended from those African *Apis mellifera* honeybees introduced to Brazil from Africa in 1956.
American Foulbrood (AFB)	A disease of honeybee brood caused by the bacterium *Paenibacillus larvae larvae*.
Anther	The part of a flower's stamen that produces pollen.
Apiary	The location of a number of colonies.
Apiculture	The science and art of bees and beekeeping.
Apimondia	The World Federation of Beekeepers' Associations.
Apis	The genus to which honeybees belong.
Apis andreniformis	An Asian honeybee, it builds a single combs and is similar in appearance to *Apis florae.*
Apis binghami	An Asian honeybee species, it builds a single comb and is similar in appearance to *Apis dorsata.*
Apis breviligula	An Asian honeybee species, it builds a single comb and is similar in appearance to *Apis dorsata*
Apis cerana	An Asian species of honeybee that builds a series of parallel combs and can be kept inside hives.
Apis dorsata	The giant or rock honeybee, indigenous to Asia. Build a single comb and cannot be kept inside a hive.
Apis florea	An Asian species of honeybee, sometimes called the little honeybee. It has a small colony size and builds a very small, single comb.
Apis koschevnikovi	An Asian species of honeybee that build a series of parallel combs and can be kept inside hives.
Apis laboriosa	An Asian species of honeybee nests on a single comb and is found at high altitude in the Himalayas.
Apis mellifera	The honeybee species indigenous to Africa, Europe and the Middle East. Widely introduced to other areas including the Americas, Asia, Australasia and the Pacific.
Apis nigrocincta	An Asian species of honeybee that build a series of parallel combs and can be kept inside hives.
Apis nuluensis	An Asian species of honeybee that build a series of parallel combs and can be kept inside hives.
Appropriate hive	A hive that is technologically appropriate to the resources available, for example materials, human skills, and bee species.
Bait hive	An empty hive placed so that it will be occupied by a swarm of bees, often baited with beeswax or herbs to attract bees.
Bark hive	A hive made from the bark of trees.
Batik	A technique for producing designs on cloth by covering with wax. During successive dipping, different parts of the cloth are protected from the dye by beeswax.

Bee	An insect belonging to the super-family *Apoidea*. Over 30,000 species of bees have been described.
Bee bread	Pollen collected by bees, that is mixed with other liquid and then stored in cells for later use as a high protein food for larvae.
Bee space	A gap large enough for bees to walk and work, for example the space between two parallel combs or between a comb and the wall of the hive.
Bee veil	Netting usually combined with a hat to protect a beekeeper's face and head from stings.
Beehive	The container provided by the beekeeper for a colony of honeybees to live inside. Only hive-nesting species of honeybee can be kept inside hives.
Beeswax	Wax produced by honeybees (secreted by special glands on the underside of the abdomen) and used to build comb.
Biological diversity	The variability among living organisms from all sources, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part: this includes diversity within species, between species and of ecosystems. It includes cultivated species and varieties and agricultural ecosystems as well as natural ecosystems and their components.
Bottom board	The bottom board of a hive.
Box hive	One of the many types of hives used as houses for bees.
Brace comb	These are the pieces of comb that bees build to connect hive parts together. It can be removed by the beekeeper and the beeswax harvested – it is usually fresh, good quality beeswax.
Braula	Abbreviated name for a species of wingless fly, for example *Braula coeca*, often known as bee louse. Harmless to honeybees.
Brood	All stages of immature honeybees: eggs, larvae and pupae.
Brood chamber	The part of a hive where the queen is laying eggs and brood is being raised.
Brood nest	The area of the colony where brood is being reared.
Burr comb	Any extension pieces of comb built by the bees on to the edges of frames. As with brace comb, these can be removed and the beeswax harvested.
Capital asset (e.g. social, human, financial, physical and natural) assets	People's strengths that can be converted into positive livelihood outcomes. Although the term 'capital' is used, not all assets are capital stocks in the strict economic sense of the term in which capital is the product of financial investments, which yield a flow of benefits over time. Literature on livelihoods sometimes uses a number of different terms inter-changeably, which can be confusing. These terms include asset, capital, endowment and resource.
Capped brood	Cells that have been capped with a wax cover, while the larvae inside spin cocoons and turn into pupae.
Caste	The types of female bees (workers and queens) and male bee (drones).
Cell	A single hexagonal wax compartment, the basic unit of comb. Each honeybee develops within a single cell, and honey and pollen are stored within cells.
Chalkbrood	A disease of honeybee colonies caused by a fungus *Ascosphaera apis*.
Cluster	A mass of bees, such as a swarm, or when bees cluster together to maintain heat during cold weather.
Colony	Honeybees are social insects. Each honeybee can live only as part of a colony and not individually. Each colony of honeybees contains one queen bee who is the female parent of the colony, a few hundred drone bees and thousands of worker bees.
Comb	The wax structure made of hexagonal cells in which honeybees rear young and store food.
Contextual	Data collection methods are contextual when they attempt to understand social issues or poverty within the social, cultural, economic and political environment of a locality.
Corbicula	The pollen basket on each hind leg of the worker honeybee.

Cross-pollination	The transfer of pollen between flowers of different plants of the same species. Plants that are not self-fertile must be cross-pollinated before they can develop seeds. Many crops depend upon cross-pollination by insects.
Crystallization	The process by which honey granulates and becomes a solid – as water crystallizes to ice.
Cut comb honey	Pieces of honey comb containing honey and presented for sale in this way, *i.e.* the honey has not been extracted from the comb.
Dadant hive	A design of American, single wall, movable frame hive.
Dancing	One of the ways that bees communicate – in this case to inform others about sources of forage.
Development	The attainment of sustainable improvements in economic growth and the quality of life that increase the range of choices open to all, achieved by people's own efforts in the private sector or through voluntary activity, supported by government.
Diversity	For beekeeping: the number of species (plant and animal) in any given area. For development: difference at the local level (e.g. in people's livelihood activities, beekeeping practices, etc.).
Drawn comb	A sheet of beeswax foundation upon which the bees have already built up the walls of the cells.
Drifting	Honeybees entering nearby hives instead of their original home – it occurs more if many colonies are placed close together and with few distinguishing features.
Drone	A male honeybee. As far as humans can tell, drones undertake no work within the hive, and their apparent sole function is to fertilise the queen.
Egg	The first stage of a bee, before metamorphosis into a larva.
European foulbrood	A disease of honeybee brood caused by the bacterium *Melissococcus pluton.*
Extension	Providing research findings and instruction to working people.
Extractor	The centrifugal machine in which honey is spun out of cells within comb.
Feeder	A device for giving food in the form of sugar syrup to honeybees.
Feral bee colony	A colony of a species that was previously living inside a hive an managed by a beekeeper, but is now living in the wild – may or may not be of different species or race to local, indigenous honeybee populations
Fixed-comb hive	A hive in which bees build their nests with the combs attached to the wall of the hive, and therefore fixed (the combs cannot be removed from the hive without breaking them from their attachment).
Forage	Flowering plants that provide nectar and/or pollen for bees.
Forager	A worker honeybee that collects pollen, nectar, water or propolis for the colony.
Foulbrood	Bacterial diseases of honeybees. AFB, American foulbrood is caused by *Paenibacillus larvae larvae*; European foulbrood is caused by *Melissococcus pluton.*
Foundation	A thin sheet of beeswax embossed with the hexagonal pattern of comb. In frame hive beekeeping, a sheet of foundation is placed in each wooden frame and this serves as a base upon which honeybees build their comb. This quickens the process of comb construction. Without foundation, honeybees would not necessarily build their comb in the orientation required by the beekeeper.
Frame	A wooden rectangular frame that holds a sheet of wax foundation. A number of frames hang parallel to one another inside the hive.
Frame hive	A hive that contains frames. The honeybees are encouraged to build their comb within these frames. The frames then enable combs to be lifted from the hive for examination, and allows for the recycling of comb.
Galleria mellonella	The greater wax moth, found everywhere that bees are kept. It feeds on comb.

Gender	Sex is the biological difference between men and women; this is a fact of human biology, gender is not. The experience of being male or female differs dramatically from culture to culture. The concept of gender is used by sociologists to describe all the socially given attributes, roles, activities, and responsibilities connected to being male or female in a given society.
Grafting	One of the techniques involved in queen rearing: when a beekeeper moves a worker larva from her cell to a queen cup. Under the right conditions, this larva will develop into a queen bee.
Granulated honey	Honey in which the sugar has formed crystals.
Hive	Any container provided by humans for bees to nest inside.
Hive tool	A piece of strong metal, used by beekeepers to prise apart pieces of beekeeping equipment – that may have been 'glued' together by bees.
Honey	Nectar or plant sap ingested by bees, concentrated by them and stored in combs. See official definitions in Chapter 8.
Honey flow	The time when an abundance of nectar is available to the bees.
Honey hunting	Plundering wild bee colonies for their honey.
Honeybees	Species of bees belonging to the genus *Apis*. All are social bees that store significant quantities of honey.
Honeycomb	Comb full of honey.
Honeydew	Insects such as aphids feed on large quantities of plant sap that they excrete almost unchanged (except for protein content). This sap collects on the leaves of plants and if collected by honeybees is known as honeydew.
Inputs	Refers to items that are needed for beekeeping. The basic inputs (which may be free) are bees, pollen and nectar, water. Other inputs may not be free, for example equipment and transport.
Kenya top-bar hive	One style of top-bar hive, with deeply sloping sides and the entrance in the middle of the long wall, developed in Kenya during the 1960s.
Langstroth hive	A design of frame hive. The inventor, Reverend Lorenzo Langstroth recognised the importance of bee space and this allowed him to design the movable-frame hive.
Larva	The second stage in the development of the bee.
Laying worker	A worker bee that has started to lay eggs. Because these are not fertilised, they always develop into drone bees.
Livelihood	To make a living, way of making a living.
Livelihood strategy	The range and combination of activities and choices that people make/undertake in order to achieve their livelihood goals (including productive activities).
Lost-wax casting	A technique for making a replica of an object by casting it in molten metal. The model is created in wax then covered with a shell of clay. The wax model and its clay coat are then fired to harden the clay and melt the wax. The wax is then poured out and replaced by molten metal.
Low-technology hive	A hive that is simple, cheap, reliable, and mendable.
Mandible	The jaw of an insect.
Meliponinae	The subfamily to which all stingless bees belong.
Migration	Seasonal movements of whole honeybee colonies, leaving no brood behind in the nest. Tropical races of honeybees migrate, and little is known about this aspect of their biology and behaviour. Temperate-zone races of honeybees do not migrate.
Migratory beekeeping	Beekeepers moving colonies of honeybees to take advantage of honey flows in other areas.

Mite	Tiny, eight-legged creatures many species of which have been identified in honeybee colonies. Most of these feed on pollen or hive debris, but some species feed on the bees directly. *Acarapis woodi*, *Varroa destructor* and *Tropilaelaps clareae* are the main problem-causing species.
Morphometry	The measurement of form.
Movable-frame hive	A hive containing frames.
Nasanov pheromone	A substance produced by a bee's Nasanov gland to attract other bees, for example to a source of water.
Nectar	A sweet liquid secreted by flowers, a watery solution of various sugars.
Nectaries	The glands within plants that produce nectar.
Nest	The home of a bee colony where they live on their comb or combs.
Nosema	A disease of honeybees caused by a single cell organism *Nosema* spp. In *Apis mellifera,* the species is *Nosema apis*.
Nucleus	A small colony of bees created by a beekeeper from an existing colony or colonies. Used to increase colony numbers or in queen rearing and bee breeding.
Nuptial flight	The recently emerged virgin queen leaving the nest to mate with one or more drone bees.
Nurse bees	Young adult worker bees who feed the larvae.
Organic honey	Generally taken to mean honey that is free from any residues of pesticides, fertilisers, drug treatments or heavy metals.
Package bees	Supplies of bees produced for sale. Sold by weight, including a caged queen but without combs. Supplied in a box with wire mesh forming two sides.
Parthenocarpic	In fruit: the ability to produce fruit without fertilisation of the flower.
Parthenogenesis	In bees: reproduction in which eggs develop normally but without being fertilised. This is how drones develop.
Participatory approach	Involving both primary and secondary stakeholders in a process that is capable of influencing policy and practice. A distinction can be made between participation as a philosophy (that 'outsiders' need to learn about situations from the 'insiders'), participation as a right (people have the right to be consulted, to make decisions, and to 'own' change that effects their lives), and participation as a series of methods for carrying out participatory research (see PRA).
Participatory Assessment (PRA)	A form of qualitative research used to gain an in-depth understanding of a community or situation.
Participatory Technology Development	Combining local skills and experience with research knowledge from elsewhere to identify, practice and apply new techniques.
Pheromone	A chemical substance produced by a bee (or any animal) to convey a precise message to another of the same species.
Pollen	The fine dust-like substances that are the male reproductive cells of flowering plants. Collected by bees as a food source.
Pollen basket	Areas of stiff hairs on the hind legs of worker honeybees where they carry pollen. See *Corbicula.*
Pollen trap	A device for harvesting pollen from bee hives.
Pollen tube	The tube formed when a pollen grain germinates. The male gametes travel down the tube to the egg.
Pollination	The transfer of pollen from the anther of a flower to the stigma of that or another flower.
Pollination agent	Bees act as pollination agents when they transfer pollen from one flower to another. Apart from insects, other agents that may bring about the transfer of pollen are wind (cereals are pollinated by the wind), gravity, nectar-seeking birds and bats.

Poverty	What is meant by poverty is far from evident and definitions attach different meanings to the concept. One definition is 'the inability to attain a minimal standard of living'. Another definition is 'a state of want and disadvantage'. Both of these definitions indicate that poverty is a relative concept. These definitions associate poverty with deprivation in relation to a norm. They indicate that poverty is relative; the context in which it is being judged then becomes very important. Another way to define poverty is in absolute terms, for instance starvation and hunger relate to an absolute notion of poverty. Understanding poverty, its dimensions and its causes requires a large variety of types of information: economic, cultural, political, and social. This information needs call for different methods of data collection: quantitative and qualitative (including participatory). Quantitative measures (e.g. based on how much people earn or how much they consume) tell us how many people are poor. Qualitative data helps to communicate *what it means* to be poor and why people are poor.
Proboscis	The mouthparts of an insect.
Process approach	In a process approach – where people are the principal agents of development – the products of the project cannot be fully known in advance. This contrasts with a blueprint approach in which the products are clearly defined. E.g. if a beekeeping project took a process approach the emphasis would be on involving people and helping them to identify outputs that would be of value; in contrast, a blueprint approach would start with set outputs such as the need to increase numbers of beehives.
Propolis	Plant resins collected by honeybees and used by them to seal cracks and gaps within the hive. It is also used by bees to line the nest, and line brood cells – it has anti-microbial properties.
Protective clothing	Clothing to protect beekeepers from being stung by bees.
Pupa	The third and final stage in the immature honeybee's metamorphosis before it emerges from the cell as honeybee.
Qualitative research	A flexible, open-ended method of building up an in-depth picture of a situation, community, etc.; methods used include observation and discussion.
Quantitative research	Used to collect data that can be analysed in a numerical form: things are therefore either measured or counted, or questions are asked according to a defined questionnaire so that the answers can be coded and analysed numerically.
Queen	The female parent of the honeybee colony, the only sexually developed female.
Queen cell	The large wax cell containing a developing queen.
Queen cup	This is a descriptive term for the cup-shaped wax structures built by bees. If the queen lays an egg into one of these structures then, once the egg has hatched and the larva is developing, the worker bees extend the cup into the large queen cell in which the larva can develop into a mature queen bee. For royal jelly production, artificial queen cups made of plastic are used.
Queen excluder	A precisely spaced grid. It is used to separate the queen form the area of honey stores, to prevent eggs being laid in honeycomb. The grid is of exactly the right size to allow worker bees to pass through freely, while queen and drones are not able to do so.
Queen rearing	This term is taken to mean the raising of queen bees as a result of management by the beekeeper.
Queen substance	The pheromones secreted by a queen, and passed amongst a colony to keep them informed of the queen's presence or otherwise.
Queenlessness	A colony is queenless when it contains no queen or developing queens or brood from which a queen could be reared.

Rafter beekeeping	*(Tikung in Indonesia)* A wooden board or plank underneath which a colony of the giant honeybee *Apis dorsata* builds its nest. The nest of *Apis dorsata* consists of one single, large comb, within which are stored honey, pollen and brood.
Refractometer	An instrument that can be used to measure the refractive index of honey from which the sugar concentration and water content can be calculated.
Resource	A stock or reserve upon which one can draw when necessary. Natural resource: a resource occurring naturally within the environment.
Risk	Uncertain events that can damage well-being (e.g. the risk to become ill).
Risk exposure	Measures the probability that a certain risk will occur.
Robbing	Stealing of honey by other bees.
Royal jelly	The substance that is secreted from glands of a worker and is used to feed brood. Larger quantities are used to feed developing queen bees.
Scout bees	The worker bees that search for new sources of nectar, pollen or a new nesting place.
Shock	An event that threatens well-being or increases vulnerability.
Small hive beetle (SHB)	See *Aethina tumida.*
Smoker	A tool with bellows and a firebox, used to produce thick, cool smoke. The smoke makes colonies easier to manage.
Social	Capable of being associated with others through particular types of relationships and forms of organization (bees and humans).
Social analysis	Concerned with how people and groups understand order and value their social relationships and systems of social organization. From a development perspective, the purpose of such analysis is to help to ensure that the human and financial commitments, which make up development projects, do actually bring about the intended benefits.
Socially embedded	The way in which a particular form of technology (e.g. type of beehive) and means of production (type of beekeeping) are rooted in local social institutions (e.g. forest beekeeping in Tanzania that is organised according to particular relations of kinship and marriage).
Sting	The barbed, pointed end of the adult female worker bee that, inserted into the victim, pumps out venom and thus delivers the sting.
Supercedure	The natural occurrence of a colony replacing an old queen with a new queen.
Sustainable	Supportable, maintainable.
Sustainable Livelihoods Approach (SLA)	A way of thinking about objectives, scope and priorities for development. It is a process-oriented approach to understanding the nature of poverty and to implementing and assessing poverty reduction interventions. The SLA provides a framework for policy analysis and implementation, which draws on thinking and practice on poverty reduction strategies, sustainable development, participation and empowerment processes. This approach takes a holistic view and starts from the premise that development interventions need to focus on people's livelihoods, rather than on different development sectors, and to build on people's strengths not their needs.
Swarm	Bees and a queen that have left one nest and are in search of a new nesting place. Bees typically leave behind about half of the original colony and the possibility for a new queen, a young queen or queens about to emerge from queen cells.
Swarming	The process by which one colony of bees divides into two or more. This usually happens when the parent colony had become too large for the nesting place (hive), and when the conditions for swarming are favourable – i.e. the swarm has a good chance of survival.

Targeting	The art of structuring the rules of access to project resources so that they reach certain groups rather than others. Designing projects so they respond to the expressed needs of the target group is an effective way of ensuring that those intended to benefit from a project do so. The key is understanding the constraints on a beneficiaries involvement in a project.
Top-bar	The top-bar, one of a series used in a top-bar hive, see above. Also sometimes used to refer to the top-bar of a frame.
Top-bar hive	A hive in which the bees are encouraged to build their comb from the underside of a series of top-bars. Top-bars and the comb attached to them may then be easily lifted form the hive for inspection, management or honey harvest.
Tropilaelaps clareae	A species of mite whose natural host species is *Apis dorsata,* that kills colonies of *Apis mellifera.*
Uncapping knife	A knife used to slice the wax capping off honey comb before the honey is extracted
Varroa destructor	A species of mite whose natural host species is *Apis cerana,* that kills colonies of *Apis mellifera.*
Vulnerability	According to a livelihoods approach, the degree of resilience against a shock, i.e. the likelihood that a decline in well-being will take place as a result of a shock. People's capacity to prevent vulnerability is primarily a function of a household's endowment of capital assets and insurance mechanisms. Vulnerability and poverty are two aspects of deprivation. However, the difference between them is brought out if we consider their opposites. The opposite of poverty is wealth, while the opposite of vulnerability is security. While poverty can be reduced by borrowing and investing, this does not reduce vulnerability. Indeed, borrowing increases vulnerability.
Vulnerability context	The political, social, economic and physical environment in which people live.
Worker bee	The female honeybee that constitutes the majority of the colony's population. Worker bees do most of the chores for the colony (except egg laying which the queen does).