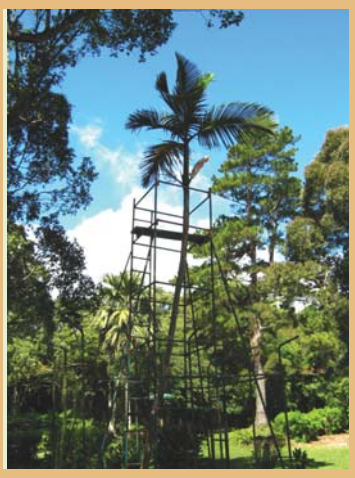
SADC Plant Genetic Resources Centre

Glossary of Terminologies



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Preface

This glossary of terms and definitions used by the SADC Plant Genetic Resources Centre (SPGRC) network scientists and other stakeholders was deemed necessary in order to have a common, standardized terminology for plant genetic resources conservation in the SADC region.

Many of the terms have been adopted, at times with slight modifications, from different sources including the Internet, books and through consultations with scientists and other users of plant genetic resources across the SADC region.

The terms and definitions listed in this document relate to the theory and practice of plant genetic resources conservation and sustainable utilization within the region and globally. The terms are used by the SPGRC network scientists and stakeholders in expressions, documentation and communication with others.

Whilst we have attempted to include all terms reflecting current thinking in biodiversity conservation, we welcome inputs from users of this glossary in form of comments and suggestions for its further improvement.

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1000 seed weight:	Seed weight determination carried out on 1000 seeds from the pure seed component of the purity test, without replication.
Abiotic:	Non-living; devoid of life.
Abnormal seed:	Seed that is irregular, often produce unhealthy seedling or none.
Abnormal seedling:	Seedlings not showing the potential to develop into a normal plant when growing in good quality soil and under favourable conditions of moisture, temperature and light.
Absolute humidity:	The amount of water vapour present in a unit volume of air, usually expressed in kilograms per cubic meter.
Accession:	A distinct, uniquely identifiable sample of seeds representing a cultivar, breeding line or a population, which is maintained in storage for conservation and use.
Accession number:	A unique identifier that is assigned by the Curator when an accession is entered into a collection. This number should never be assigned to another accession.
Achene:	A one-seeded dry indehiscent fruit with the seed attached to the pericarp at only one point.
Active collection:	A germplasm accession that is used for regeneration, multiplication, distribution, characterization and evaluation. Active collections are maintained in short- to medium-term storage and usually duplicated in a base collection.
Adaptation:	The evolutionary process by which species change over time in response to their environment.
Advanced cultivar:	See *variety*.
Agrobiodiversity:	The elements of biodiversity – including plants, animals and micro-organisms – that benefit people.
Agroecosystem:	A site of agricultural production, including all organisms and environmental factors within it, which functions with human assistance as a stable system with circular flows of material and energy.

Agroforestry:	The integration of trees and shrubs into agricultural practices
Agromorphological characteristic:	A phenotypic trait of a plant, which may be morphological, agronomic or use-related, used by farmers or scientists to identify a crop variety.
Alien species:	A species occurring in an area outside of its historically known natural range as a result of intentional or accidental dispersal by human activities. Also known as introduced species.
Bar-coding:	A computerized coding system that uses a printed pattern or bars on labels to identify germplasm accessions. Barcodes are read by optically scanning the printed pattern and using a computer program to decode the pattern.
Base collection:	A set of accessions, each of which should be distinct and, in terms of genetic integrity, as close as possible to the sample provided originally, which is preserved for the long-term future.
Base unit (for registration):	The minimum number of seeds for registration estimated from the standard sample size used for regeneration and sample viability.
Batch:	A group of seeds or plants dealt with or treated together as one.
Biodiversity:	The total variability between and within species of all living organisms.
Bioinformatics:	A scientific discipline that comprises all aspects of the gathering, storing, handling, analysing, interpreting and spreading of biological information. Involves powerful computers and innovative programmes which handle vast amounts of coding information on genes and proteins from genomics programmes. Comprises the development and application of computational algorithms for the purpose of analysis, interpretation, and prediction of data for the design of experiments in the biosciences.
Bioprospecting:	Regarded as the perpetuation of the colonial habit of plundering other countries' biological resources without fair and equitable compensation, resulting in environmental, economic and social detriment.
Biotechnology:	Is any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use.

Biotic:	Pertaining to any aspect of life, especially to characteristics of entire populations or ecosystems.
Breeding line:	A group of identical pure-breeding diploid or polyploid organisms that are distinguished from other individuals of the same species by a unique phenotype and genotype.
Bt or *Bacillus thuringiensis:*	A soil bacterium that makes proteins, which are toxic to insects; a major component on microbial GM pesticide industry.
Biodiversity:	The total variability within and among species of all living organisms and their habitats.
Bulk bag:	A seed storage container from which smaller distribution bags are drawn.
Capsule:	A dry dehiscent fruit derived from an ovary with two or more carpels that splits partly open at maturity.
Carton:	Any of various containers made from cardboard or coated paper where germplasm is put and placed in freezers for preservation.
Centre of origin (endemism):	A geographical area where a plant species, either domesticated or wild, first developed its distinctive properties.
Centre of crop diversity:	A geographic area containing a high level of genetic diversity for crop species in in situ conditions.
CGIAR:	The Consultative Group on International Agricultural Research, a strategic alliance of countries, international and regional organizations and private foundations supporting 15 international agricultural research centres.
Character:	The phenotypic expression, as a structural or functional attribute of an organism, resulting from the interaction of a gene or group of genes with the environment.
Characterisation:	The assessment and recording of highly heritable plant traits and characters that are highly heritable and can be easily seen and are expressed in all environments.

Climate change:	A change in climate that can be directly or indirectly attributed to human activity and that is in addition to natural climate variability over comparable time periods. Any long-term significant change in the "average weather" of a region or the earth as a whole. Average weather may include average temperature, precipitation and wind patterns.
Collection:	A group of germplasm accessions maintained for a specific purpose under defined conditions.
Collection number:	An indentifier assigned to each collected sample by the collectors. It is assigned right in the field where and when collection is going on.
Community:	An integrated group of species inhabiting a given area; the organisms within a community influence one another's distribution, abundance, and evolution. (A Human Community is a social group of any size whose members reside in a specific locality.)
Conservation of biodiversity:	The management of human interactions with genes, species, and eco systems so as to provide the maximum benefit to the present generation while maintaining their potential to meet the needs and aspirations of future generations; encompasses elements of saving, studying, and using biodiversity.
Cryogenics:	The branch of physics relating to the effects and production of very low temperatures; as applied to living organisms, preservation in a dormant state by freezing, drying, or both.
Cryopreservation:	The storage of plant material at very low temperatures (-196°C) in liquid nitrogen.
Cultigen:	Cultivated plant, such as the banana, not known to have a wild or un cultivated counterpart.
Cultivar:	A crop variety produced by scientific breeding or farmer selection methods. A cultivated variety of a domesticated crop plant, synonymous with variety.
Cultivated species:	Species in which the evolutionary process has been influenced by humans to meet their needs (synonymous with cultivated species). Also called 'domesticated species'.
Curator:	One who has the care and superintendence of the genebank.

Damaged seedlings:	Seedlings with any of the essential structures missing or so badly and irrepably damaged that balanced development cannot be expected.
Database:	An organized set of interrelated data assembled for a specific purpose and held in one or more storage media.
Database management system:	A piece of software that controls the organization, storage, retrieval, security and integrity of data in a database—it accepts requests from the application and instructs the operating system to transfer the appropriate data. The major vendors are Oracle, IBM, Microsoft and Sybase. MySQL is a very popular open-source product.
Dead seeds:	Seeds which at the end of the germination test period are neither hard nor fresh nor have produced any part of a seedling.
Decayed seedlings:	Seedlings with any of their essential structures so diseased or decayed as a result of primary (i.e. from the parent seed) infection that normal development is prevented.
Deformed seedlings:	Seedlings with weak development or physiological disturbances or in which essential structures are deformed or out of proportion.
Dehiscent fruits:	Fruits that open at maturity to shed their seeds (see follicle, capsule).
Depositor:	An individual or institution that provides plant material to the genebank for conservation.
Descriptor:	An identifiable and measurable trait, characteristic or attribute ob served in an accession that is used to facilitate data classification, storage, retrieval and use.
Descriptor list:	A collection of all individual descriptors of a particular crop or species.
Desertification:	Land degradation in arid, semi-arid and dry subhumid areas resulting from various factors including climatic variability and human actions.
Desiccator:	A short glass jar fitted with an air-tight cover and containing a desiccating agent such as silica gel or calcium chloride, above which the material to be dried is supported on a perforated platform.
Disease- indexing:	Disease indexed plants have been assayed for the presence of known disease according to a standard testing procedure.

Disease-free:	This should be interpreted to mean ´free from any known disease`, as ´new` diseases may yet be discovered present.
DNA – (Deoxyribonucleic Acid):	Genetic material in most living organisms (plants, animals, microbes) that acts as carrier of genetic information. It is the hereditary material in humans and almost all other organisms.
Distribution:	The process of supplying samples of germplasm accessions to breeders and other users.
Distribution bag:	Aluminium foil bag used to keep small amounts of seeds for distribution to users (farmers, researchers, academicians, breeders, *etc*.).
Documentation:	The organized collection of records that describe structure, purpose, operation, maintenance, and data requirements.
Donor:	An institution or individual responsible for donating germplasm.
Dormancy:	The state in which certain live seeds do not germinate, even under normally suitable conditions for adequate moisture, optimal temperature and adequate aeration.
Drier:	An appliance that removes moisture by heating or another process such as blowing air for drying plant samples.
Ecosystem:	An ecological system formed by the interaction of a community of organisms with its physical environment. The organisms of a particular habitat, such as a pond or forest, together with the physical environment in which they live; a dynamic complex of plant, animal, fungal, and microorganism communities and their associated non-living environment interacting as an ecological unit.
Endangered species:	A species likely to become extinct unless the circumstances and factors threatening its abundance and survival cease to operate, or its numbers have been reduced to such a critical level or its habitats have been so drastically reduced that it is in immediate danger of extinction. Animals, birds, fish, plants, or other living organisms threatened with extinction by man-made or natural changes in their environment. A species in danger of extinction and whose survival is unlikely if the causal factors continue. Included are species whose numbers have declined to a critical level, or whose habitats have been so reduced that the species are considered to be in danger of extinction.

Endospermic seeds:	Seeds with the endosperm present in the mature seed and serves as food storage organ. Testa and endosperm are the covering layers of the embryo.
Equilibrium moisture content:	The moisture content at which a seed is in equilibrium with the relative humidity of the surrounding air.
Evaluation:	Assessment and recording of plant characters, such as yield, agronomic performance, abiotic and biotic stress susceptibility, and biochemical and cytological traits, whose expression may be affected by environmental factors; contrasted with characterisation.
***Ex situ* conservation:**	The conservation of biological diversity outside its natural habitat—*in* the case of plant genetic resources, this may be in seed genebanks, in *vitro* genebanks or as live collections in field genebanks, botanical gardens.
Extinction:	The evolutionary termination of a species caused by the failure to reproduce and the death of all remaining members of the species; the natural failure to adapt to environmental change.
Family of species:	It is an official botanical classification like "Genus" or "Species," The botanical families do have common features, but they're much more esoteric that the way the crop plants look. Family names end with the suffix "*-aceae*", which means, "of the family of".
Farming system:	A complex inter-related matrix of soils, plants, animals, implements, labour and capital, inter-dependent farming enterprises. The farm is viewed in a holistic manner (multi-disciplinary approach).
Farmland:	Arable land that is worked by ploughing and sowing and raising crops and animals.
Fauna:	All of the animals found in a given area.
Field collection:	A collection of germplasm maintained as living plants—germplasm that would otherwise be difficult to maintain as seed is commonly maintained in field collections.
Flora:	All of the plants found in a given area.
Follicle:	A dry, single-celled, many-seeded fruit consisting of a single carpel, dehiscing by the ventral suture.

Funicle:	A stalk by which an ovule or seed attaches itself to the fruit wall.
Field genebank:	It is one of the techniques in the strategy for plant genetic conservation. It is an ex situ method where genetic variation is maintained away from its origin allocation and samples of a species, subspecies or variety are transferred and conserved as living collections. Conservation in field genebank is necessary because some species have short-lived seeds (recalcitrant), e.g. cocoa, coconut, oil palm, rubber and many tropical fruits like mango, mangosteen, jackfruit, durian and rambutan. Seeds of some recalcitrant species can only be stored without desiccation for a few days, weeks or months.
Fresh seeds:	Seeds, other than hard seeds, which have failed to germinate under the conditions of the germination test, but which remain clean and firm and have the potential to develop into a normal seedling.
Gene:	The functional unit of heredity. A gene is a section of DNA that codes for a specific biochemical function in a living organism in a laboratory.
Genebank:	A facility where crop diversity is stored under suitable conditions to prolong their lives in the form of seeds, pollen, in-vitro culture or DNA or in the case of a field genebank as plants growing in the field. Genebanks can also be used to store the genetic resourcesof animals, microbes and other elements of agricultural biodiversity.
Geneflow:	The exchange of genetic material between populations. This may be used in the sense of plant reproduction (i.e. due to the dispersal of gametes and zygotes) or due to human influences, such as the introduction of new crop varieties by farmers.
Genepool:	The total amount of genetic diversity present in a particular population.
Genetic diversity:	The genetic variation present in a population or species or the variety of genetic traits that result in differing characteristics.
Genetic drift:	The unpredictable changes in allele frequency which occur in populations of small size; Changes in the genetic composition of a population when the number of individuals is reduced below the frequency of certain alleles within it.
Genetic engineering:	According to the Cartagena Protocol on Biosafety, genetic engineering is the application of *in vitro* nucleic acid techniques, including recombinant deoxyribonucleic acid (DNA), and direct injection of

	nucleic acid into cells or organelles or fusion of cells beyond taxonomic family.
Genetically Modified Organism (GMO):	Any organism whose genetic material has been deliberately altered or modified through the use of modern biotechnology.
Genetic material:	Any material of plant origin, including reproductive and vegetative propagating material, containing functional units of heredity.
Genetic erosion:	Loss of genetic diversity between and within populations of the same species over time, or reduction of the genetic base of a species.
Genetic resources:	Germplasm of plants, animals or other organisms containing useful characters of actual or potential value.
Genotype:	The genetic composition of an organism comprised of heritable traits. A group of organisms with similar genetic constitutions.
Genus:	A taxonomic category ranking below a family and above a species and generally consisting of a group of species exhibiting similar characteristics. In taxonomic nomenclature the genus name is used, either alone or followed by a Latin adjective or epithet, to form the name of a species.
Germination:	The biological process that leads to the development of a seedling from a seed. Radicle emergence is the first visible sign of germination, but may be followed by no further growth or by abnormal development. Only seedlings showing normal morphology should be considered to have germinated.
Germination test:	A procedure to determine the percentage of seeds that are capable of germinating under a given set of conditions.
Germplasm:	The genetic material which forms the physical basis of heredity and which is transmitted from one generation to the next by means of the germ cells.
Germplasm acquisition:	Obtaining genetic material of a species mandated for conservation of genetic resourcers in genebank.
Germplasm distribution:	National Plant Genetic Resource Centres (NPGRCs) from SADC Member States distribute seeds or other plant materials from the genebank to users including farmers, researchers, academicians, *etc*. NPGRC material depository to SPGRC is also considered and

must be registered as distribution.

Germplasm registration: Assigning a unique number (accession number) for tracking each seed sample received by the genebank.

GIS - Geographic Information System: A system that enables envision of the geographic aspects of a body of data. It enhances query or analyze of a database and receive the results in the form of some kind of map. Since many kinds of data have important geographic aspects, a GIS can have many uses: weather forecasting, sales analysis, population forecasting, and land use planning, to name a few. In a GIS, geographic information is described explicitly in terms of geographic coordinates (latitude and longitude or some national grid coordinates) or implicitly in terms of a street address, postal code, or forest stand identifier.

Global warming: Increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century and its projected continuation. An increase in the earth's atmospheric and oceanic temperatures widely predicted to occur due to an increase in the greenhouse effect resulting especially from pollution.

GPS - Global: Positioning System: A "constellation" of 24 well-spaced satellites that orbit the Earth and make it possible for people with ground receivers to pinpoint their geographic location. The location accuracy is anywhere from 100 to 10 meters for most equipment. Accuracy can be pinpointed to within one (1) meter with special military-approved equipment.

Habitat: The environment in which an organism lives. Habitat can also refer to the organisms and physical environment in a particular place.

Hard seeds: Seeds that fail to imbibe and germinate when placed in a moist medium because they are impermeable to water.

Herbarium: A collection of dried plants mounted, labelled, and systematically arranged for use in scientific study.

High-Yielding Variety (HYV): A crop variety developed by modern plant breeders, designed to maximize yields (often in high-input conditions) at the expense of diversity or local environmental adaptation. HYVs are commonly promoted by agricultural development projects, and are often seen as threats to locally developed landraces of the same species.

Hotspot: An area on earth with an unusual concentration of species, many of which are often endemic to the area.

Humidification:	The process in which the moisture content of very dry seeds is raised by placing them in a humid environment; humidification helps to prevent damage to seeds from rapid uptake of water.
Hybridization:	Crossing of individuals from genetically different strains, populations, or species.
Imbibition damage:	Damage caused by rapid uptake of water in very dry seeds.
Improved germplasm:	Any plant material containing one or more traits of interest that have been incorporated by scientific selection or planned crossing.
***In situ* conservation:**	Conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated plant species, in the surroundings where they have developed their distinctive properties.
In-vivo:	Taking place in a living organism.
***In vitro* collection:**	A germplasm collection maintained as plant tissue ranging from protoplast and cell suspensions to callus cultures, meristems and embryos. In vitro means in an artificial environment, literally in glass, in a test tube, bottle, *etc*.
Inbreeder:	A plant with a self-compatible reproductive biology; opposite of out breeder.
Inbreeding:	A mating system involving the mating or breeding of closely related individuals, the most extreme form of which is self-fertilization. It is used to "fix" economically useful genetic traits in genetically improved populations; however, it also can result in fixation of deleterious recessive alleles.
Inbreeding depression:	A reduction in fitness or vigor as a result of fixation of deleterious, recessive alleles from consistent inbreeding in a normally outbreeding population.
Indehiscent fruit:	Fruit that does not open at maturity.
Indicator species:	A species whose status provides information on the overall condition of the ecosystem and of other species in that ecosystem.

Indigenous Knowledge (IK):	The understandings/traditions that exist in a local community.
Intellectual Property Right (IPR):	A right enabling an inventor to exclude imitators from the market for a limited time.
Intermediate seeds:	Seeds more tolerant of desiccation than recalcitrant seeds, tolerating drying to around 8%mc. They generally lose viability more rapidly at low temperature and do not withstand storage at -20°C.
Invasive species:	An introduced species which invades natural habitats.
Inventory:	On-site collection of data on natural resources and their properties. It makes a list of samples (and their characteristics) that is stored in a genebank or occuring at a particular site.
Isotherm:	A graph showing the relationship between seed moisture content and percentage relative humidity.
Justification for genebank decision:	Brief explanation for the action taken by the genebank Curator on the sample. Decision may be accepting, temporal, pending or rejection.
Keystone species:	A species whose loss from an ecosystem would cause a greater than average change in other species populations or ecosystem processes.
Laminated aluminium foil packets:	Packets constructed of a laminate consisting of an inner layer of polyethylene, a middle layer of aluminium foil and an outer layer of polyester.
Landrace:	A crop cultivar that has evolved through many years of farmer-directed selection and that is specifically adapted to local environmental conditions; landraces are usually genetically heterogeneous.
Long-term storage:	The storage of germplasm for a long period, such as in base collections and duplicate Stores operated at sub-zero temperatures recommended at -180C or less in air-tight containers at a seed moisture content of 5±1%. The management of human use of the biosphere so that it may yield the greatest sustainable benefit to current generations while maintaining its potential to meet the needs and aspirations of future generations.
Management data:	Data concerning the storage location, amount and quality of the seed, distribution, *etc*.

Mass maturity:	The stage in development at which seeds attain maximum dry weight.
Medium-term conservation:	The storage of germplasm in the medium-term such as in active and working collections; it is generally assumed that little loss of viability will occur for approximately ten years. Medium-term conservation takes place at temperatures between 0°C and 10°C.
Micronutrient:	A dietary element such as vitamin or mineral, that is required in minute amounts for the proper growth and metabolism of a living organism.
Micropropagation:	Vegetative propagation/multiplication of plants in vitro. The use of biotechnological methods to grow large numbers of plants from very small pieces of plants, often from single cells using tissue culture methods.
Micropylar region:	The point on a seed that was the orifice (pore) of the ovule.
Modern Variety (MV):	A crop variety developed by modern plant breeders; synonymous with high-yielding variety.
Molecular marker:	A molecular selection technique of DNA signposts which allows the identification of differences in the nucleotide sequences of the DNA in different individuals. a tool which allows crop geneticists and breeders to locate on a plant chromosome the genes for a trait of interest. It is considered more efficient than conventional breeding as it has the potential to greatly reduce development times and substitutes laboratory selection for much of the fieldwork.
Moisture content (wet-weight basis):	The weight of free moisture divided by the weight of water plus dry matter, expressed as a percentage. It is expressed as weight of water removed divided by either the fresh weight or the dry weight of seeds × 100.
Monitoring:	The periodic checking of accessions for viability and quantity.
Monitoring bag:	By the size, is equivalent to distribution bag but is meant for periodic testing/monitoring the seed viability.
Monitoring interval:	The period of storage between two viability tests to ascertain whether to continue storing the accession or to produce a fesh stock by regeneration or replacement from another source.
Most original sample (MOS):	A sample of seeds that have undergone the lowest number of regenerations since the material was acquired by the genebank, as

	recommended for storage as a base collection. It may be a sub-sample of the original seed lot or a seed sample from the first regeneration cycle if the original seed lot required regeneration before storage.
Multilateral System for Access and Benefit-Sharing:	Through the Treaty, countries agree to establish an efficient, effective and transparent Multilateral System to facilitate access to plant genetic resources for food and agriculture, and to share the benefits in a fair and equitable way. The Multilateral System applies to over 64 major crops and forages. The Governing Body of the Treaty, which will be composed of the countries that have ratified it, will set out the conditions for access and benefit-sharing in a "Material Transfer Agreement".
Multiplication:	The representative sample of an accession grown to multiply the quantity of conserved material for distribution.
Native species:	Plants, animals, fungi, and microorganisms that occur naturally in a given area or region.
Natural selection:	Is selection exerted by biotic and abiotic environmental factors and is the principal mechanism of evolution. It may act at the level of the gene, cell, clone, individual, population of species.
Non-endospermic seeds:	Are seeds with cotyledons serving as sole food storage organs. During embryo development, the cotyledons absorb the food reserves from the endosperm. The endosperm is almost degraded in the mature seed and the embryo is enclosed by the testa.
Normal germination:	Germination in which seedlings show all essential root and shoot structures and are capable of developing into mature plants given favourable conditions.
Normal seedling:	Seedlings that show the potential for continued development ino satis factor plants when grown in good quality soil and under favourable conditions of moisture, temperature and light.
NPGRC:	National Plant Genetic Resource Centres, established in every SADC Member State, working with SPGRC in PGR conservation.
Obsolete variety:	A plant variety that is no longer grown commercially.
On-farm conservation:	One approach to in situ conservation of genetic resources, focusing on conserving cultivated plant species in farmers' fields.

Outbreeder:	A plant with a self-incompatible reproductive biology; opposite of in breeder.
Out breeding:	Controlled or natural matings among unrelated individuals. Out-breeding may also refer to a species that has specific barriers to selfing or exhibits such inbreeding depression that inbred individuals never reach maturity.
Orthodox seeds:	Seeds that can be dried to low moisture content (moisture levels between 4 - 6 %) and stored at low temperatures without damage to increase seed longevity. They can be dried, without damage, to low moisture contents, usually much lower than those they would normally achieve in nature. Over a wide range of storage environments their longevity increases with reductions in both moisture content and temperature, in a quantifiable and predictable way.
Parataxonomists:	Field trained biodiversity collection and inventory specialists recruited from local areas.
Passport data:	Basic information about the origin of an accession, such as details recorded at the collecting site, pedigree or other relevant information that assists in the identification of an accession. It provides the identity (name, origin, *etc.*).
Patent:	A government grant of temporary monopoly rights on innovative processes or products.
Pathogen:	A living micro-organism such as a virus, bacterium or fungus that causes disease in another organism.
PDA:	Personal Data Assistant
Pedigree:	The record of the ancestry of a genetic line or variety.
Pest:	An organism regarded as injurious or harmful.
PGRFA:	Plant Genetic Resources for Food and Agriculture - Any genetic material of plant origin of actual or potential value for food and agriculture.
Phenotype:	The external appearance of a plant that results from the interaction of its genetic composition (genotype) with the environment. A plant phenotype is the result of the interaction between genotypic traits and

	environmental conditions. This process is summarized by term GxE interaction (i.e. Genotype X Environment= Phenotype)
Phytosanitary certificate:	A certificate provided by government plant health personnel to verify that seed material is substantially free from pests and diseases.
Pollination:	The process in which pollen is transferred from an anther to a receptive stigma by pollinating agents such as wind, insects, birds, bats, or the opening of the flower itself.
Population:	A group of individual plants or animals that share a geographic area or region and have common traits.
Primitive cultivar:	Crop forms developed from landraces. Improvement through selection restricted to a few specific characteristics and often more uniform in nature than a landrace.
Propagule:	Any structure with the capacity to give rise to a new plant, whether through sexual or asexual (vegetative) reproduction. This includes seeds, spores, and any part of the vegetative body capable of independent growth if detached from the parent.
Propagation:	Production or multiplication of more plants by seeds, cuttings, grafting or other methods, usually natural reproduction means.
Protected area:	A legally established land or water area under either public or private ownership that is regulated and managed to achieve specific m conservation objectives.
Psychrometric chart:	A graph of the physical properties of moist air at a constant pressure (often equated to an elevation relative to sea level). The chart graphically expresses how various properties relate to each other, and is thus a graphical equation of state.
Quarantine:	The official confinement of introduced germplasm subject to phytosanitary regulations to ensure that it does not carry diseases or pests injurious to the importing country.
Random sample:	A sample drawn at random from a larger group.
Recalcitrant seeds:	Seed that does not survive drying and freezing. Seeds that loose vi ability when dried or stored at low temperatures. These seeds do not survive drying to any large degree, and are thus not amenable to

	long term storage, although the critical moisture level for survival varies among species.
Regeneration:	The renewal of germplasm accession by sowing and harvesting seeds that possess the same characteristics as the original sample. Germplasm regeneration is one of the most critical operations in genebank management.
Regeneration standard:	The percentage viability of an accession usually estimated by germi nation tests, which indicates that it is no longer suitable for genetic conservation and should be replaced by regeneration or obtaining similar seeds from another source. Loss of viability during storage results in genetic changes through associated mutation and, in the case of genetically heterogenous accessions, through genetic erosion because of genetic selection against genotypes of shorter longevity.
Relative humidity:	A measure of the amount of water present in the air compared to the greatest amount possible for the air to hold at a given temperature, expressed as a percentage. It differs from absolute humidity, which is the amount of water vapour present in a unit volume of air, usually expressed in kilograms per cubic meter.
Rehabilitation:	The recovery of specific ecosystem services in a degraded ecosystem or habitat.
Restoration:	The return of an ecosystem or habitat to its original community structure, natural complement of species, and natural functions.
Safe transfer:	Transfer that completely eliminates any adverse effect on the conservation and sustainable use of biological diversity.
Safety duplication:	A duplicate of a base collection stored under similar conditions for long-term conservation, but at a different location to insure against accidental loss of material from the base collection.
Sample:	A part of a population used to estimate the characteristics of the whole.
Sample status:	Wild relative, cultivated, primitive cultivar.
SDIS:	SPGRC Documentation and Information System.

Seed dormancy:	It is the failure of viable seeds to germinate under favourable conditions. It has evolved to synchronise germination with climatic/ environmental conditions, to ensure a high probability of seedling establishment and development of the plant to reproductive maturity.
Seed drying:	Reduction of moisture content to recommended levels for storage using techniques that are not detrimental to seed viability.
Seed health:	Refers to the disease status of a seed sample and the presence or absence of disease-causing organisms and pests.
Seed longevity:	Storage of crop plants inevitably leads to seed deterioration. This is first evidenced by reduced seed vigour followed by a loss of viability. Longevity is mainly influenced by biochemical changes that determine seed deterioration under various storage environments.
Seed packaging:	Involves placing a counted or weighed sample of seeds into a container which is then thermetically sealed for subsequent storage.
Seed scarifying:	Piercing, nicking, chipping or filling the seed coat with knife, needle or sandpaper to overcome seed coat dormancy.
Seed storage:	The preservation of seeds under controlled environmental conditions that maintain sedd viability for long periods.
Seed viability:	A measure of how many seeds in a lot are alive and could develop into plants that will reproduce under appropriate field conditions.
Selection:	Any process, natural or artificial, which permits an increase in the proportion of certain genotypes or groups of genotypes in succeeding generations, usually at the expense of other genotypes.
Self incompatibility:	The failure of gametes from the same plant to form a viable embryo.
Self pollination:	Transfer of pollen from the anthers to the stigma of the same plant.
Sequential germination test:	A series of discrete seed tests in which the decisions to further test seeds or stop the test depends upon the cumulative result.
Shelf:	Forms part of an upright, cupboard-like repository known as cabinet. It is in the shelves that objects are kept safely or displayed.

Sibling species:	Species so similar to each other as to be difficult to distinguish by human observers.
Silica gel:	An inert chemical that absorbs water from its surroundings and will give up this water by evaporation when heated.
Silique:	A dry, dehiscent, elongate fruit composed of two carpels separated by a seed-bearing partition.
Solarization:	A non-toxic method of killing weeds and insect pests by covering the ground with layers of clear plastic and allowing the sun to create enough heat.
Sorption isotherm:	An analytical technique to estimate the concentration of labile phosphorus in a soil sample by successive desorption assays and measurement of soluble reactive P in the aqueous fraction.
Species:	A group of actually or potentially interbreeding natural populations which are reproductively isolated from other such groups.
SPGRC:	SADC Plant Genetic Resources Centre.
SPM:	Senior Programme Manager.
Storage life:	The number of years that a seed can be stored before seed death occurs.
Strain:	A population of cells all descended from a single cell; also called a clone. A group of organisms within a species or variety distinguished by one or more minor characteristics; a variety of bacterium or fungus used for culturing. The term is mostly associated with cells, bacteria, fungi and viruses, but is sometimes applied to plants.
Sustainable development:	Development that meets the needs and aspirations of the current generation without compromising the ability to meet those of future generations.
Taxon:	A group or category, at any level, in a system for classifying plants, animals or other organisms.
Taxonomy:	The naming and assignment of organisms to taxa.

Tetrazolium test:	A test for viability in which moist seeds are soaked in a solution of triphenyl tetrazolium chloride.
Tissue culture:	Is the cultivation/culture of protoplast cells, tissues, organs, embryos or seeds on specially formulated nutrient media under asceptic conditions *in vitro*.
Threatened species:	Species that is likely to become endangered within the foreseeable future, throughout all or a significant portion of its range. These species are defined as vulnerable taxa.
Threshing:	The process of beating plants with a machine or by hand to separate the seeds.
Technical Officers:	For: *ex-situ* conservation, *in-situ* conservation, and Documenation & Information) under SPGRC establishment.
Trait:	A recognizable quality or attribute resulting from interaction of a gene or a group of genes with the environment.
Transformation:	Genetic alteration of a cell resulting from the introduction, uptake and expression of foreign DNA.
Transgene:	A gene used in transformation.
Transgenic plants:	Plants that have been genetically engineered using recombinant DNA techniques for new characteristics. Transgenic plants are produced by adding one or more genes to a plant genome using a process called transformation.
Treaty protection Farmers' Rights:	The Treaty recognizes the enormous contribution that farmers and **of** their communities have made and continue to make to the conservation and development of plant genetic resources. This is the basis for Farmers' Rights, which include the protection of traditional knowledge, and the right to participate equitably in benefit-sharing and in national decision-making about plant genetic resources. It gives governments the responsibility for implementing these rights.

Trip (Expedition) code: A unique identifier assigned to each collection mission.

Type of collection:	Brief description of the purpose of the collection mission based on the trigger for undertaking the mission. It could be routine, rescue, emergency, targeted, mixed, etc.

Variety:	A plant grouping, within a single botanical taxon of the lowest known rank, defined by the reproducible expression of its distinguishing and other genetic characteris tics. It is distinguishable by characteristics such as flower colour, leaf colour and size of mature plant. The term is considered to be synonymous with cultivar.
Vegetative propagation:	Vegetative reproduction is a type of asexual reproduction found in plants, and is also called vegetative propagation or vegetative multiplication. Asexual reproduction in plants that produces new plants from roots, leaves, or stems.
Viability:	The possession in a seed of those processes essential for a seed to germinate. Thus a viable seed is alive; but this does not ensure that the seed such as dormant, will germinate. Within an accession, percentage viability is the proportion of seeds which are viable; it is estimated from the result of a viability test.
Viability test:	A test on a sample of seeds from an accession that is designed to estimate the viability of the entire accession.
Virus-free:	Plant, cell, tissue or meristem that exhibits no viral symptoms or contains no identifiable virus particles.
Voucher specimens:	Collections of organisms that are maintained to provide permanent, physical documentation of species identifications and associated data resulting from inventories.
Water potential:	The chemical potential of water for reaction or movement. Water potential is important for seed drying because it measures the ability of water to move. Water always moves from areas of high water potential to areas of low water potential.
Water sensitivity:	This is when seeds 'drown' because excess water impairs respiration. Low temperatures tend to exacerbate this because the whole process of germination is slowed down and therefore the seeds are stressed for longer.
Wild relative:	A non-cultivated species which is more or less closely related to a crop species (usually in the same genus); it is not normally used for agriculture but can occur in agro-ecosystems (e.g. as a weed or a component of pasture or grazing lands).
Wild species:	Organisms captive or living in the wild that have not been subject to breeding to alter them from their native state.

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