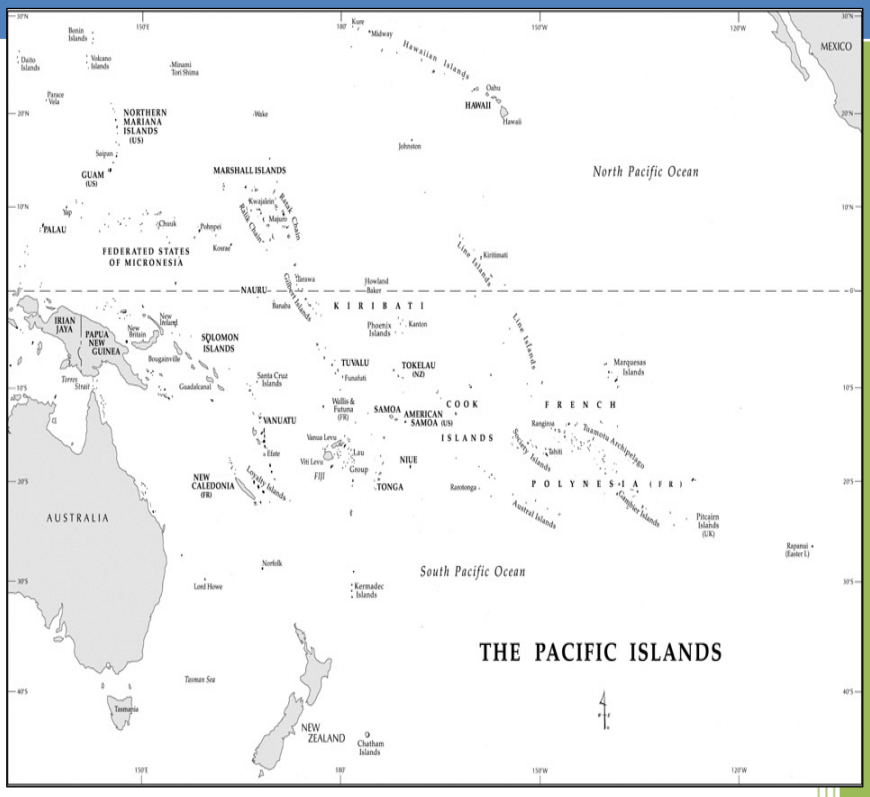
2008

Pacific Organic Standard



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The Pacific Organic Story

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1 Pacific Organic Standards

1.1 The Pacific

People and Places

The Pacific Islands region is characterised by island nations with small populations scattered across an ocean area of approximately 36 million square kilometres. Less than 2 percent of this area is land. The region has a total population of around 8.5 million people.

The 22 countries and territories of the Pacific include a mixture of continental islands, volcanic islands and low and raised coral atolls. These countries and territories have traditionally been divided into three groups – Melanesia (west), Polynesia (southeast) and Micronesia (north).

The countries of Melanesia – Papua New Guinea, Fiji, New Caledonia, Solomon Islands and Vanuatu – are the largest of the Pacific Island countries, with over 90% of the land mass and 85% of the population. The islands in this group are relatively large and predominantly mountainous, but all of these countries have atoll islands. They have fertile soils and much higher levels of natural resources than other Pacific Islands, including exploitable mineral wealth. The economies of Papua New Guinea, Solomon Islands and Vanuatu are mainly based on agriculture, with a high proportion of the population engaged in subsistence agriculture. Fiji and New Caledonia both support commercially focused agriculture, but subsistence agriculture is also an important activity.

The Polynesian countries of Samoa, Tonga and French Polynesia are considerably smaller than the Melanesian countries, but have relatively strong economies. Samoa consists of two large islands and a number of smaller ones, with the two main islands being 'high' islands of volcanic origin with fertile soils. Tonga is a much larger archipelago with a mixture of atoll and 'high' islands. Both have generally agricultural economies and cash cropping for export is important. Their economies also benefit significantly from remittances from expatriate family members living in USA, Canada, Australia and New Zealand.

The predominantly atoll countries and territories of American Samoa, Commonwealth of the Northern Mariana Islands, Cook Islands, Federated States of Micronesia, Guam, Kiribati, Marshall Islands, Nauru, Niue, Palau, Pitcairn Islands, Tokelau, Tuvalu, and Wallis and Futuna have small land areas, but they vary from single small islands to archipelagos spread over enormous areas of ocean. All of them fall into the category of 'small island states'[1]. These islands have mainly sandy soils with limited fertility able to support a restricted range of vegetation. Some grow specialised export crops and others have developing tourism industries, but all of their economies depend to some extent on expatriate remittances and many rely on external aid. Many of these countries and territories are vulnerable to water

[1] Small island states (SIS) are categorised by factors such as land area, total population and the size of the economy. Although there is no internationally accepted definition of SIS, they were given an international political identity when the Alliance of Small Island States was established in 1991.

shortages and water contamination, sea level rise, coastal erosion and increasingly regular natural disasters.

Based on present trends, the total population of the Pacific Islands is predicted to increase by 50% by 2030. Most of this increase will occur in Melanesia, while the population of some islands will continue to fall, largely as a result of emigration. Nearly all the countries and territories of the Pacific are experiencing increasing rural to urban drift and governments are seeking to reverse this trend through policies for improving rural infrastructure and promoting employment opportunities in agriculture.

Issues

The islands that make up the Pacific are geographically and culturally diverse both within and across nations, a characteristic of the Pacific region that plays an important role in shaping livelihood choices. Recognition of this diversity is fundamental to any approach that seeks to support the livelihoods of Pacific people. But despite differences in their environments and cultures, PICTs share many common challenges.

Most have limited natural resources and fragile environments that are vulnerable to natural disasters. The islands of the Pacific are particularly at risk in the face of the predicted effects of climate change, with some low-lying atolls expected to be underwater in the future.

PICT economies tend to be uncertain and slow growing and domestic markets are small and poorly integrated. In addition, international markets are often difficult to access because of high freight costs due to the remoteness of many islands. A feature of most PICT economies is a large dependence on the public sector and limited private sector development, which in some countries contributes to increased social and political instability.

Farming is predominantly small scale, low in productivity and based mainly on family labour with limited adoption of modern technology. Produce is mainly consumed on farm, although some is marketed. Root crops, such as taro, yams and cassava, are the main staple, along with coconuts, breadfruit and bananas.

Typical constraints faced by agricultural producers in the region include difficulties in obtaining good-quality planting material, lack of efficient pest control and monitoring programmes, high post-harvest losses and inadequate agro-processing facilities. Poor animal health, the high cost of feed and poorly developed domestic and export markets are also constraints.

In contrast to the picture for agriculture, Pacific Island countries and territories (PICTs) have substantial marine resources, with fish providing an important source of food and revenue. There is also considerable potential for inshore aquaculture. New Caledonia and French Polynesia have significant aquaculture enterprises. Fiji also has some commercial activity. In other islands, aquaculture is as yet mostly in the early stages of development, though several ventures are being initiated.

While acknowledging these constraints, there is growing awareness amongst PICTs that appropriate investment and action are urgently required to ensure their food security and the sustainability of their resources. Agriculture has a critical role to play in meeting these objectives in terms of both production and trade and PICTs are beginning to address the present constraints to agricultural development by implementing strategies to increase

productivity and food self-sufficiency, and reduce dependence on food imports. These strategies include developing human capacity, diversifying production, improving marketing and export performance, and using agricultural initiatives to improve the quality of life of poor and vulnerable groups.

Organic farming

Organic farming has the potential to play a huge role in addressing many of the issues facing the Pacific. To facilitate its development in the region, SPC is co-ordinating the development and implementation of the Pacific Organic Regional Development Strategy. The vision of this strategy is:

Pacific Organics – the key contributor to sustaining our cultures and improving farmer livelihoods, communities, people's health and the environment in the Pacific

It is anticipated that implementation of the strategy will assist in the development of organics in the Pacific and contribute to improvements in:

- local and regional food security;
- farmer livelihoods, by enabling farmers to trade, with access to both domestic and export markets, and by reducing their dependence on expensive, imported production inputs;
- human health, by providing better access to high-quality, clean and nutritious food;
- the environment, by encouraging the use of environmentally friendly management practices;
- the well-being of people and communities, by promoting the adoption of ethical labour and social justice principles.

It is expected that the potential benefits associated with the development of organics in the Pacific will be recognised by government and development agencies, which are welcome to use this standard as a reference for their initiatives. The future for organics in the Pacific is bright and it is hoped that it will contribute strongly to the return of the Pacific to a region of peace and plenty.

1.2 Pacific Organic Standard - Introduction

This Pacific Organic Standard describes the requirements for organic production. It covers plant production, animal husbandry, bee-keeping, collection of wild products and aquaculture, and also the processing and labelling of products derived from these activities. This standard provides a mechanism to define the expectations for organic production. When complied with, it also enables producers to label their products as organic. The standard does not cover procedures for verification, such as inspection or certification of products.

The aims of this standard are:

- to ensure that sustainable production systems are developed and maintained
- to protect consumers against deception and fraud in the market-place and against unsubstantiated claims
- to protect producers of organic produce against misrepresentation of other agricultural produce as organic
- to ensure that all stages of production, processing, storage, transport and marketing are subject to inspection and comply with this standard
- to assist in informing consumers about the character of organic production in the Pacific

Pacific organic principles

Organic agriculture, whether in farming, processing, distribution, or consumption, is aimed at sustaining and enhancing the health of ecosystems and organisms, from the smallest living entity in the soil to human beings. It is guided by the following principles:

- **Health** – organic agriculture sustains and enhances the health of the soil, which enables the production of healthy plants and animals to enhance the lives of people and their environment, as one and indivisible.
- **Ecology** – organic agriculture is based on living ecological systems and cycles, works with them, emulates them and helps to sustain them.
- **Fairness** – organic agriculture builds on relationships that ensure fairness with regard to the common environment and life opportunities. The key role of farmers and rural communities are recognised and benefits shared equitably with them.
- **Care** – organic agriculture is managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.
- **Culture and traditions** – Pacific organic agriculture recognises the value of contributions from traditional agriculture and Pacific cultures.

The aims of Pacific organic agriculture are:

1) to produce optimal quantities of food and fibre compatible with human and environmental needs, thus addressing food security risks, reducing reliance on imported inputs, and lessening the impact of negative external economic events;
2) to produce food of high nutritional value that will help address local human health issues;
3) to work within natural systems in ways that enhance those systems, thus enabling effective management of pests, diseases, weeds and other risks to production;
4) to maintain and increase the long-term productivity of soil, that is, to stop land degradation and erosion;
5) to promote wise use of land, water and vegetation and minimise the off-farm effects of agriculture on aquatic and terrestrial systems;
6) to foster local and regional production and distribution;
7) to use renewable resources as much as possible;
8) to maintain and increase the long-term fertility and biological activity of soils using locally adapted cultural, biological and mechanical methods as opposed to relying on inputs;
9) to maintain and encourage agricultural and natural biodiversity on the farm and surrounds through sustainable production systems and protection of plant and wildlife habitats;
10) to provide balanced nutrients, optimise opportunities to cycle nutrients within the farm, and recycle nutrients and energy that leave the farm or other farms in food and fibre products that are not consumed (that is, organic waste containing energy and nutrients), with the aim of feeding the soil ecosystem;
11) to provide livestock with conditions that satisfy their behavioural and physiological needs;
12) to maintain, or increase as appropriate, the genetic diversity of domesticated and native plants, animals and other organisms on the farm (this precludes the use of genetic engineering);
13) to ensure that everyone involved in organic production has a quality of life that covers their basic needs and provides adequate return and satisfaction from their work, including a safe working environment and protection from the negative impacts of chemicals;
14) to progress towards an entire organic production chain, which is both socially just and ecologically responsible, and in which farmers are treated fairly and with equity;

15) to recognise the importance of, and protect and learn from, indigenous knowledge and traditional farming systems;
16) to mitigate the adverse impacts of farming in relation to climate change and provide strategies for the adaption of production systems to the effects of climate change;
17) to protect the region from the introduction of genetically modified organisms by providing a viable alternative to the use of inputs and practices based on genetic engineering.

1.3 Normative references

This Pacific Organic Standard incorporates provisions from other publications. Undated references refer to the latest edition of the following publications:

- IFOAM Basic standards for organic production and processing. Version 2005.
- CAC/GL 32, Codex Alimentarius – Guidelines for the production, processing, labelling, and marketing of organically produced foods.

It should be noted that compliance with all relevant national and regional regulations takes precedence over the requirements of these organic standards.

1.4 Terms and definitions

For the purposes of this standard, the following definitions apply:
Accreditation: Procedure by which an authoritative body gives formal recognition that a body or person is competent to carry out specific tasks.
Agroforestry: Combines agriculture and forestry techniques to create more permanent, integrated, diverse, productive, profitable, healthy and sustainable land-use systems designed to mimic the structure and function of natural systems.
Annual plant: Plant that completes its life cycle (from seed to seed) within a single growing season.
Aquaculture: Managed production of aquatic plants and/or animals in fresh, brackish or salt water in a circumscribed environment.
Biodiversity: Natural variety and variability of life forms and their environment; it includes genetic diversity (diversity within and among species), species diversity (number and variety of species), and ecosystem diversity (total number of ecosystem types).
Breeding: Selection of plants or animals to reproduce or further develop desired characteristics in succeeding generations.
Broad-acre farming: Type of farming that uses extensive parcels of land to produce crops and/or graze livestock on a large scale.
Buffer zone: Clearly defined and identifiable boundary area, bordering an organic production site and adjacent areas, which is established to avoid contact with substances that must not be used according to this standard.
Cage: Enclosure made of mesh, bars or wire, used to confine or contain an animal.
Certification: Procedure by which a third party gives written assurance that a clearly identified process has been methodically assessed, such that there can be adequate confidence that specified products conform to specified requirements.
Certification body: Body that conducts certification procedures, as distinct from standard-setting and inspection.
Certification mark: Sign, symbol or logo of a certification body that identifies product(s) as being certified according to the rules of a programme operated by that body.
Certification programme: System operated by a certification body with its own rules, procedures and management for carrying out certification of conformity.
Child: Person under a specific age according to the national legislation of the state she/he lives in. In cases involving employment in hazardous sectors, *child* denotes a person under the age of 18 years.

Child labour: Any employment that interferes with the legal rights of a child and his/her culturally appropriate educational needs.
Contamination: Pollution of organic product or land or contact with any material that would render the product unsuitable for organic production or being represented as an organic product.
Conventional: Any material, production, or processing practice that is not organic or organic 'in-conversion'.
Conversion period: Duration of time from the start of organic management until crops and animal products qualify as organic.
Crop rotation: Practice of alternating the species or families of annual and/or biennial crops grown in a field in a pattern or sequence so as to break weed, pest and disease cycles and maintain or improve soil fertility and organic matter content.
Exception: Permission given by a certification body that exempts an operator from the need to comply with the normal requirements of the standard. Exceptions are granted on the basis of clear criteria, with clear justification and for a limited time period only.
Extended family: Core functional family unit in the Pacific; it includes blood relatives, and relatives by marriage and adoption, extending to grandparents, aunts, uncles and cousins.
Farm: Total area of land under the control of one farmer or collective of farmers, including all related farming activities or enterprises.
Farm unit: Subset of a farm holding, including parcels of land or blocks or other subdivision.
Food additive: Substance added to a processed product for technological reasons which becomes a component of the final product and/or affects its characteristics.
Food fortification: Addition of one or more essential nutrients to a food, whether or not the nutrient is normally contained in the food, for the purpose of preventing or correcting a demonstrated deficiency of one or more nutrients in the population or specific population groups.
Genetic engineering: Set of techniques used in molecular biology by which the genetic material of plants, animals, microorganisms, cells and other biological units are altered in ways, or with results, that could not be obtained by methods of natural mating and reproduction or natural recombination. Techniques used in genetic modification include, but are not limited to, creation of recombinant DNA, cell fusion, micro and macro injection, encapsulation, and gene deletion and doubling. Genetically engineered organisms do not include organisms that result from techniques such as conjugation, transduction and natural hybridisation
Genetically modified organism (GMO): Plant, animal or microbe that has been transformed using genetic engineering techniques.
Genetic resources: Genetic material of actual or potential value.
Greenhouse gases: Gases that increase the temperature of the earth's surface. They include water vapour, tropospheric ozone, chlorofluorocarbons, carbon dioxide, carbon monoxide, methane and nitrous oxide.
Green manure: Crop that is incorporated into the soil to improve it. Green manure may include spontaneous crops, plants or weeds.
Habitat: Area in which a plant or animal species naturally exists, or the area where a species occurs. The term is also used to indicate specific types of areas, e.g., seashore, riverbank, woodland and grassland.
Homeopathic treatment: Treatment of disease based on administration of remedies prepared through successive dilutions of a substance that in larger amounts produces symptoms in healthy subjects similar to those of the disease itself.
In-conversion: Crop that is grown both organically and non-organically (conventional or in-conversion production) on the same farm.

Ingredient: Any substance, including a food additive, used in the manufacture or preparation of food and non-food products and present in the final product (although possibly in a modified form).

Ionizing radiation: Processing of food products by gamma rays, X-rays or accelerated electrons capable of altering a food's molecular structure for the purpose of controlling microbial contaminants, pathogens, parasites and pests in food, preserving food or inhibiting physiological processes such as sprouting or ripening.

Label: Any written, printed or graphic representation that is present on a product, accompanies the product or is displayed near the product.

Multiplication: Growing on of seed stock or plant material to increase supply for future planting.

Natural fibre: Non-synthetic filament of plant or animal origin.

Operator: Individual or organisation responsible for ensuring that the production system and resulting products meet this standard.

Organic: Refers to the farming system and products described in this standard. Organic does not refer to organic chemistry.

Organic agriculture: Farming system that complies with this standard.

Organic management plan: Plan developed and documented by operators that identifies how they will maintain the integrity of their operation in accordance with this standard; the plan includes a map or floor plan of the production or processing unit.

Organic product: Product that has been produced, processed and handled in compliance with this standard.

Organic seed and planting material: Seed and planting material that is produced by organic agriculture.

Parallel production: Any production system in which the same unit is growing, breeding, handling or processing the same products using both organic and non-organic methods. A system that includes organic and in-conversion production of the same product is also parallel production.

Perennial: Plant that lives more than two years.

Pests: Insect, rodent, nematode, fungus, weed or other form of terrestrial or aquatic animal or plant life that is injurious to health or the environment.

Polyculture: Intensive growing of two or more crops either simultaneously or in sequence on the same piece of land**.**

Primary ecosystems: Forest or other habitat that has not been subject to any past human-induced disturbance, e.g. logging or burning.

Processing aid: Any substance (not including apparatus or utensils), not consumed as a food itself, that is used in the processing of raw materials, foods, or ingredients to achieve a technical purpose during treatment or processing and that may result in the presence of residues or derivatives in the final product.

Propagation: Reproduction of plants either sexually (i.e., seed) or asexually (i.e., cuttings, root division).

Sanitize: Treat produce or food-contact surfaces by a process that is effective in destroying or substantially reducing the numbers of vegetative cells of microorganisms of public health concern, and other undesirable microorganisms; the treatment must not adversely affect the product or its safety for the consumer.

Shall: Denotes required state or action.

Should: Denotes recommended, desirable or expected state or action.

Synthetic: Manufactured by chemical and industrial processes. Includes products not found in nature or simulation of products from natural sources (but not extracted from natural raw materials).

Synthetic pesticide: Synthetic product intended to prevent, eliminate or control a pest.

Taboo: Prohibition, especially in Polynesia and other South Pacific islands, that excludes something from use, approach, or mention because of its sacred and inviolable nature.
Traceability: Ability to follow the movement of a food through specified stage(s) of production, processing and distribution.
Traditional agriculture: Indigenous form of ecologically based agriculture.

1.5 Acronyms

ILO – International Labour Organization
PICT – Pacific Island countries and territories
SPC – Secretariat of the Pacific Community
SPREP – Secretariat of the Pacific Regional Environment Programme
USP – University of the South Pacific

2 General Requirements

2.1 Ecosystem Management

Outline and General Principle

Agriculture in the Pacific is undertaken in a diverse range of environments and landscapes that host a high level of biodiversity. However, many Pacific Island ecosystems are vulnerable and are under pressure from increasing population and pollution. Traditional farming and fishing practices, many based on mixed agro-forestry approaches, actively as well as intuitively acted to protect and enhance biodiversity as a basis for stimulating the overall performance of a farm or marine environment. These practices also protected less tangible intrinsic values reflecting the intimate relationship between people, land and sea. Contemporary strategies, such as the `Pacific Plan`, have now been developed in the Pacific to protect the environment and its biodiversity. Pacific organic farming will incorporate these strategies to ensure that organic farming systems can be tailored to different locations and that appropriate approaches to farm management, such as the use of polyculture production systems, are practised to protect and enhance the quality of the environment, ecosystems and biodiversity.

Standard

2.1.1 Operators shall take measures to identify, maintain, protect and enhance biodiversity, which includes maintaining a significant portion of their farms to protect landscape and biodiversity values.

2.1.2 Primary ecosystems shall not be cleared or altered. If this has occurred recently (i.e. since the establishment of this standard) then this shall restrict access to certification. An exemption to this requirement may be considered where development is associated with agroforestry enhancement, i.e. supplementary planting of trees in a primary ecosystem.

Appropriate areas of a farm should be designated a wildlife refuge habitat. For broad-acre properties over 5 ha, a minimum of 5 per cent of the certified area should be reserved as wildlife refuges unless the property is following a traditional polyculture or agroforestry approach.

Options for creating wildlife refuges include:

- creating natural boundaries such as hedges, paths and ditches – these can act as important wildlife corridors through agricultural land, help to maintain a diverse ecology, and provide a habitat for beneficial animals, birds and insects and shelter for livestock;
- maintaining areas that are not under rotation and are not heavily manured, such as extensive pastures, orchards, hedges, edges between agriculture and forest land, groups of trees and/or bushes, and forest and woodland;
- maintaining waterways, pools, springs, ditches, floodplains, wetlands, swamps and other water-rich areas that are not used for intensive agriculture or aquaculture production

2.1.3 The operator shall take measures to limit the incursion of preventable pests, diseases and weeds onto the property.

2.2 Soil and Water Conservation

Outline and General Principle

Pacific islands are made up of many different landscapes with a wide range of climates, soil types, slope and land uses, resulting in different risks to soil quality and quantity. Traditional

farmers developed a wide range of locally appropriate strategies within their capacities to sustainably manage their soil reserves and ensure that they could obtain a sustainable supply of food. Some of these practices, such as slash and burn cultivation, are now discouraged due to their impact on soil quality and biodiversity, and with the introduction of a broader range of organic practices they are no longer required.

Many islands have very limited water resources, often located as a thin lens under the island. Harvesting of rainwater is also an important source of water, though not always a reliable one. Traditions evolved to protect these water resources from overuse and contamination. However, on many islands there is increasing pressure on water resources as a result of higher population, intensification of production, and events such as sea level rise.

The Pacific Organic Standard approach to soil and water conservation incorporates traditional best practices alongside organic farming methods to conserve and build up soil, maintain water quality and ensure water is efficiently and responsibly used. This approach will help ensure the protection of soil resources, and water quality and quantity at the catchment level. It will also contribute to the protection of sensitive downstream coastal aquatic ecosystems, such as mangroves and coral reefs.

Standard

2.2.1 The protection and enhancement of soil resources is an integral part of organic farming. Operators shall minimise loss of topsoil and prevent erosion by taking measures that are appropriate to local climatic conditions and soil, slope and land use.

Examples of these practices include:

- maintaining adequate soil plant cover
- establishing trees and windbreaks
- returning plant materials to the soil, e.g. by atoll pit farming or composting
- cultivating steep slopes appropriately or deciding not to cultivate them
- using minimum tillage, multi-cropping systems
- using ground cover mulches

2.2.2 Land preparation by burning shall be restricted and only permitted where it is part of an unbroken traditional farming system, e.g. for the control of invasive species, and then only under strict controls so as to protect soil (topsoil and humus) and biodiversity. This does not restrict the use of cooking fires or controlled fires for pest control.

2.2.3 Crop production, processing and handling systems shall return soil nutrients, organic matter and other resources removed through harvesting back to the soil by means of recycling, regeneration, and addition of organic materials and nutrients.

2.2.4 Grazing management shall not degrade land or pollute water resources.

2.2.5 Relevant measures shall be taken to prevent or remedy soil and water salinisation.

2.2.6 Operators shall not deplete or excessively exploit water resources, and shall take action to preserve water quality. Where possible, they shall recycle rainwater and monitor water extraction.

To demonstrate action in this area, operators can prepare an Organic Management Plan that identifies potential impacts on water resources and describes how negative impacts can be mitigated. These impacts may include risks to water quality associated with:

- application of manures and soluble fertilisers
- animal stocking densities
- use of effluent from processing and handling facilities

2.2.7 Operators shall apply water and inputs in a way that does not pollute water through runoff to surface water or leaching into ground water.
2.2.8 Operators shall use techniques that conserve water.

Examples of practices include:

- increasing the organic matter content of soil through mulching and maintaining ground covers;
- selecting crops adapted to the conditions, e.g. drought-tolerant plants;
- timing the planting of crops to periods of reliable rainfall;
- designing and operating irrigation systems to ensure the efficient use of water;
- designing and using techniques tailored to specific site conditions, e.g. land contour

2.2.9 Organic processors and handlers shall, where relevant, install systems that permit the responsible use and recycling of water without pollution or contamination either by chemicals, or by animal or human pathogens.

A water recycling system may not be required when processing is on a very small scale, e.g. processing fibre by soaking it in seawater, as occurs in the production of some woven items.

2.3 Genetic Engineering

Outline and General Principle

PICTs have a range of regulatory approaches to the use of genetically modified organisms. Some countries, e.g. Samoa, ban their use, while others permit limited use. Pacific organic stakeholders have and strongly support the exclusion of genetic engineering from organic production and processing.

Standard

2.3.1 The use of genetically engineered organisms and their derivatives including animals, seed, propagation material and farm inputs, such as fertilisers, soil conditioners, vaccines or crop materials, is prohibited from organic production and processing. Contamination of organic products by GMOs will mean a loss of certification.
2.3.2 Organic processed products shall not use ingredients, additives or processing aids derived from GMOs.
2.3.3 Inputs, processing aids and ingredients shall be traced back one step in the biological chain to the direct source organism *(see definition) from which they are produced to verify that they are not derived from GMOs.
2.3.4 On farms with split (including parallel) production, the use of genetically engineered organisms is not permitted in any production activity on the farm.

2.4 Wild Harvested Products and Common/Public Land Management

Outline and General Principle

In some countries of the Pacific, wild or common places including marine and freshwater areas have been traditionally important as a source of food and fibre. There are a wide range of tenure/ownership models in place. Generally, a high proportion of land and some aquatic

areas are still under customary ownership. The management of resources in these areas is typically subject to local controls and oversight that have developed to protect the resources located there as well as the broader integrity of these sites. These traditional approaches to the sustainable management of products harvested from common or wild land align well with organic management principles, which aim to sustain and prevent degradation of common biotic and abiotic resources, including areas used for rangeland, fisheries, forests, and forage for bees, and neighboring land, air, and water. The Pacific Organic Standard reflects this fusion of organic and Pacific approaches.

Standard

2.4.1 Wild harvested products shall only be certified organic if they are derived from a stable and sustainable growing environment. The people who harvest/ gather (or any other people) shall not take any products at a rate that exceeds the sustainable yield of the ecosystem or threatens the existence of plant, fungal, micro-organism or animal species (including marine species), including those not directly exploited. The methods used for harvesting shall also not impact on the sustainability of the targeted product.

2.4.2 Operators shall harvest products only from a clearly defined area where prohibited substances (those not listed in Appendix 1 – Tables 1 and 2) have not been applied for at least 3 years prior to harvest.

2.4.3 The collection or harvest areas shall be at an appropriate distance from conventional farming areas, and potential sources of pollution and contamination. The size of buffer zones between wild and conventional farming areas shall depend on the character of the potential risks and the products harvested as well as on local conditions.

2.4.4 Only organisms that live their whole life exclusively in the wild/common area can obtain organic certification.

2.4.5 The wild harvest area must not be grazed by conventional livestock unless the livestock conform to the quarantine and other relevant requirements of Section 5 of this standard.

2.4.6 The operator who manages the harvesting or gathering of products from wild/common resources shall be familiar with the defined collecting or harvesting area.

2.4.7 Operators shall identify any appropriate authority that may have a landholding right, governance or oversight role over the area and obtain permission to access the area and undertake any harvesting or gathering. They shall work with a positive intent with these authorities and where appropriate provide payments for harvesting/access rights.

2.4.8 Operators shall identify any regulations and traditional rules/controls/taboos that have been established that relate to the access, management and harvesting/gathering activity in the area and comply with these.

2.4.9 Operators shall take measures to ensure that wild, sedentary aquatic species are collected only from areas where the water is not contaminated by substances prohibited in these standards

2.5 Mitigation of and Adaptation to Climate Change Effects

Outline and General Principles

The effects of climate change pose a serious threat to PICTs and place significant pressure on local farming systems. Although Pacific islands produce very small amounts of greenhouse gases, in some cases they have the potential to be among the countries most affected by climate change effects, with whole islands under threat from sea-level rise. Organic farming has significant potential to avoid or reduce the production of greenhouse gases through the following mechanisms:

- Lower use of fossil fuels – organic farming does not use energy-demanding synthetic fertilisers as it focuses on maintaining soil fertility through the use of internal farm inputs.
- Reduction in the production of nitrous oxides – organic farming does not use synthetic nitrogen fertiliser.

- Reduction in methane production by promoting soil aerobic micro-organisms and high levels of soil biological activity.

In addition organic practices encourage the sequestration of carbon by:

- maintaining tight nutrient and energy cycles through organic management of soils;
- systematic recycling of organic waste, often by means of composting;
- encouraging agroforestry farming systems;
- protecting soil from erosion and associated loss of soil organic matter.

The adoption of these and other practices will assist in addressing factors that may contribute to climate change.

Organic farming also provides strategies that will assist farmers to adapt to the potential impacts of climate change, such as the establishment of agroforestry systems that are:

- more resistant to the impacts of wind, e.g. shelter for land, farms and people;
- drought resistant and support the conservation of water resources;
- tolerant of higher temperatures and fluctuations in temperature.

Standard

2.5.1 The use of renewable forms of energy, e.g. wind and solar power, shall be considered for meeting the energy supply requirements of organic farms, processing units and other activities.

2.5.2 Operators shall identify sources of greenhouse gas emissions from their farming operations and aim to minimise these where practical. In ruminant production systems, active efforts shall be made to offset methane emissions.

> Possibly strategies to offset methane emissions could include:
>
> - planting trees
> - enhancing levels of soil organic matter through appropriate pasture management.

2.5.3 In selecting crops and animals, their suitability for dealing with and adapting to climate change effects shall be considered.

> An example is the planting of drought-resistant and salt-tolerant varieties such as Pandanus species, especially in atoll countries and coastal environments.

2.5.4 In recognition of the energy inputs and greenhouse gas emissions associated with the production of resources used in the production and processing of organic products, operators shall reduce, recycle or re-use resources used in producing and processing organic products to increase the efficiency of resource use.

3.0 General Requirements for Crop Production and Animal Husbandry

3.1 Conversion Requirements

Outline and General Principle
Organic agriculture develops viable and sustainable agro-ecosystems by using methods that are compatible with natural living systems and cycles. In some areas of the Pacific, traditional farming practices that have evolved over a long period of time are still being used and these align well with organic principles. However, in many other areas, farms will need to enter a conversion period to align them with organic practices.

Standard
3.1.1 There shall be a period of at least 12 months organic management for annuals and at least 18 months for perennials that meets all the requirements of these standards before the resulting product can be considered organic. An exemption to this requirement may be approved where there is a verifiable record of the unbroken use of traditional practices with no inclusion of non-permitted inputs or activities.
3.1.2 For certified organic production, the start of the conversion period shall be calculated from the date of application to the certification body. For non-certified production, the start of the conversion period shall be calculated from the time that organic management started and that the last use of non-permitted substances occurred.
3.1.3. A period of at least 3 years must elapse since the last application of non-permitted inputs before full certification status can be attained.

3.2 Split and Parallel Production

General Principle
The whole farm, including livestock, is converted to organic management practices, according to the standards, over a period of time. Many Pacific farms are very small and it is considered impractical to carry out split or parallel production on these farms.

Standard
3.2.1 Split production – if the whole farm is not converted, the organic, in-conversion and conventional parts of the farm shall be clearly and continuously separated. Properties under 4 ha are not permitted to have split production and are permitted to have only one level of organic certification status. An exemption to this requirement may be permitted to allow for the continued ownership and management of non-organic animals on a property, if these are for the operator's own use.
3.2.2 Parallel production – simultaneous production of the same organic and non-organic crops or animal products can be a useful process to build experience and confidence in the conversion process. However, it will only be permitted where such production is undertaken in a way that allows clear and continuous separation of all products claimed to be certifiable as organic. All cases of this production shall be documented.
3.2.3 Prohibited materials shall be stored in separate locations from those where organic products are handled.

3.3 Maintenance of Organic Management

General Principle
Organic production systems require an ongoing commitment to the use of effective organic production practices.

Standard
3.3.1. Land converted to organic production shall not be alternated (switched back and forth) between organic and conventional production.

4 Crop Production

4.1 Choice of Crops and Varieties

Outline and General Principle
Pacific farmers have a long tradition of selecting and growing crops that are adapted to local conditions and uses, including the management of climatic and other risks. This is reflected in the large number and variety of internationally important crops that are grown by Pacific farmers, including taro, coconut, yam, sweet potato, banana and cassava. Traditional practices align well with optimal modern organic practices and are supported by regional breeding programmes and other programmes provided by regional agencies.

Standard
4.1.1 Seeds and planting materials shall be propagated under organic management for one generation in the case of annuals, and for two growing periods, or 12 months, for perennials, whichever is longer, before being certified as organic seed and planting material.
4.1.2 Operators shall use organic seed and planting material of appropriate varieties and quality. The following exemption will apply until 2013: if organic seeds, seedlings and planting materials are not commercially available, then conventional seed (not chemically treated), seedlings and planting material may be used. Seeds treated with chemicals shall be used only as a last resort and shall be cleaned of any chemicals before they are brought on to the property.

4.2 Length of Conversion Period (Plant Production)

General Principle
A conversion period enables the establishment of an organic management system and the build-up of soil fertility.

Standard
4.2.1 Plant products from annual production shall only be considered organic when a conversion period of at least 12 months has elapsed prior to the start of the production cycle. In the case of perennials (excluding pastures and meadows), a period of at least 18 months prior to harvest is required.
4.2.2 There shall be at least a 12-month conversion period before pastures, meadows and products harvested from them can be considered organic.
4.2.3 The conversion period may be extended depending on past land use, management capacity of the operator and environmental factors.

4.3 Diversity in Crop Production

Outline and General Principle
Traditional agriculture in the Pacific is characterised by the broad use of polyculture production systems in which a diverse range and variety of crops are grown. These systems are often multi-storied and, based on many years experience, have evolved to become sustainable and resilient under local conditions. In some locations, e.g. atoll countries, there are limited soil reserves and specialised management practices have evolved to enhance and protect soil. These traditional practices align well with organic management principles, which recognise soil and soil management as the foundation for organic growing systems. These systems emphasise care of the soil and surrounding ecosystems to provide support for a diversity of species. They also encourage nutrient cycling and the mitigation of soil and

nutrient losses. The use of polyculture production systems is encouraged to create diversity in plant production. Organic farming in the Pacific will actively contribute to national and regional biodiversity and goals for conservation of genetic resources, such as those defined in various strategies for biodiversity conservation.

Standard

4.3.1 Operators shall manage pressure from insects, weeds, diseases and other pests, while maintaining or increasing soil organic matter, fertility, microbial activity and general soil health. For annual crops, intercropping, companion planting or crop rotation shall be practised

4.3.2 For perennial crops that are grown as monocultures, other plants shall be intercropped; where this is not possible, other means of securing diversity shall be applied.

> Organic farmers are encouraged to help conserve native plant species and varieties. Many of these plants are well adapted to organic production.

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4.4 Soil Fertility and Fertilization

General Principle

Organic farming includes returning microbial, plant or animal material to the soil to increase or at least maintain soil fertility and biological activity. The need to maintain optimal levels of fertility to strengthen the health of plants and enhance their resistance to pests and disease is well recognised. Examples of practices to enhance soil fertility include:

- planting green manure crops such as *Mucuna* spp., *Arachis pintoi* and *Desmodium*;
- using animal manure; however, this should be composted rather than being applied directly to plants;
- growing tree legumes such as gliricidia or calliandra in fallow fields and planting climbing beans in taro fields;
- applying locally sourced fertiliser inputs, such as wood ash and seaweed, to sustain the soil – isolated areas are especially dependent on this practice.

Standard

4.4.1 Material of microbial, plant or animal origin shall form the basis of the fertility programme.

4.4.2 Nutrients and fertility products shall be applied in a way that protects the soil, water, and biodiversity. Brought-in manures shall be composted and only applied at rates that do not cause negative environmental impacts.

> If fertilisers are used, it is recommended that small and regular applications are made, rather than infrequent applications of large amounts of fertilisers.

4.4.3 Material applied to the land or crop shall be in accordance with Appendix 1 - Table 1

4.4.4 Manures containing human excrement (feaces and urine) are prohibited for use on crops for human consumption.

4.4.5 Mineral fertilisers shall only be used in a programme to address long-term soil fertility needs together with other techniques such as addition of organic matter, green manures, rotations and nitrogen-fixing plants, e.g. legumes. Fertilisers of mineral origin shall be applied in the form in which they are naturally composed and extracted. They shall not be rendered more soluble by chemical treatment, other than the addition of water.

4.5 Pest, Disease and Weed Management

Outline and General Principle
Traditionally, Pacific farmers used a wide range of strategies to manage pest disease and weed risks. Most of these traditional practices align well with organic principles. They included the use of:

- crops and varieties well-adapted to the environment;
- a balanced fertility programme to maintain fertile soils with high biological activity;
- locally adapted crop rotations;
- companion planting and green manure crops.

Examples of specific practices common throughout the Pacific include the use of wood ash to treat cut planting materials such as yam tubers to discourage fungal rot, hand-harvesting of plants affected by pest and disease, and hand-weeding. These and other recognised organic practices, as described in these standards, are encouraged to support the growth and development of crops in a natural manner. SPC and USP are continuing to refine these methods, for example, by developing predator enhancement strategies.

Standard
4.5.1 Physical, cultural and biological methods may be used for pest management, e.g. production of Pate for the control of army worm in taro.
4.5.2 Pest management products that are prepared at the farm from local plants, animals and micro-organisms are permitted only when the measures in 4.5.1 are not sufficient. If the ecosystem or the quality of the organic products might be jeopardised, the inputs listed in Appendix 1, Table 2 may be used. However, their use is restricted and they can only be applied if there is a risk of serious loss of production or product quality. The ingredients used, including non-active ingredients such as carriers and wetting agents, must not be known carcinogens, teratogens, mutagens, or neurotoxins. Wetting agents shall be from natural sources.
4.5.3 Physical methods for pest, disease and weed management are permitted. Heat can only be used if no other method is effective.

> As an example – in the production of ginger - instead of using steam/flames the use of bacteria or specialist plants for the removal of nematodes prior to planting should be investigated.

4.6 Avoiding Contamination

Outline and General Principle
Many Pacific countries have a relatively low level of general environmental contamination due to their isolation and low levels of industrial activity. There are, however, significant contamination risks and issues in some areas resulting from high population densities and historical activity coupled with often fragile environments. New sources of contamination, often the result of global sources of pollution, are an emerging problem, e.g. increased $C0_2$ emissions with their associated impact on climate. Pacific organic production must take all relevant measures to ensure that organic soil and food is protected from contamination and to minimise broader environmental impacts.

Standard
4.6.1 It is the operator's responsibility to use all measures possible to avoid potential contamination and limit contaminants in organic products. These measures include establishing barriers and buffer zones and advising neighbors of their organic status.
4.6.2 In case of reasonable suspicion of contamination, tests shall be conducted to establish contamination levels. Organic product samples must not contain chemical residues that

exceed 10% of the maximum limit for such residues where historical contamination is present (based on national, regional or Codex chemical residue standards).
4.6.3 For synthetic coverings such as mulches, fleeces, insect netting and silage wrapping, only products based on polyethylene and polypropylene or other polycarbonates are permitted. These shall be removed from the soil after use and shall not be burnt.
4.6.4 All equipment from conventional farming systems shall be thoroughly cleaned of potentially contaminating materials before being used on organically managed areas.

Regulatory Enforcement - where an organic property or product is subject to contamination by a prohibited input as a result of a regulatory biosecurity or other enforcement programme the certification status of the farm and product will be reviewed however it will not necessarily result in the loss of certification. The organic producer should actively liaise with the regulatory agency and try to identify alternative enforcement strategies to minimise contamination.

5.0 Animal Husbandry

5.1 Animal Management

Outline and General Principle

Pacific farmers have long raised pigs and chickens, while other animals are important in some regions. Animals are an important component of the mixed farming systems found throughout the region. They have cultural value, and also contribute to food security and soil fertility. A wider range of animals are now being farmed in he Pacific and these standards have been designed to incorporate the best approaches from traditional experience and organic principles. The adoption of these standards will ensure that livestock husbandry is based on maintaining a harmonious relationship between land, plants and livestock, with minimum disruption to ecosystems. It will also ensure that the physiological and behavioral needs of livestock are respected and they are fed good-quality organically grown feedstuffs.

Scope

This livestock standard covers livestock and livestock products from the following species: bovine (cows/cattle), porcine (pigs), ovine (sheep/goats), deer, poultry; reptiles (crocodiles); and bees.

Standard

5.1.1 Operators shall practise methods of animal management that reduce stress, promote animal health and welfare, prevent disease and parasitism, and avoid the use of chemical allopathic veterinary drugs.

5.1.2 Animals shall be kept in accordance with good animal husbandry practices, with access to sufficient fresh air, and enough clean water and nutritious feed to satisfy their needs. Animals shall have access to protection from sunlight, excessive noise, heat, rain, mud and wind to reduce stress and ensure their well-being.

5.1.3 If animals are housed they shall have:

a. sufficient space to stand naturally, lie down easily, turn around, groom themselves and assume all natural postures and movements, such as stretching or wing flapping;

b. adequate fresh, natural bedding materials, where animals require bedding, and pens that are kept clean;

c. enclosures that are constructed so as to ensure adequate insulation, heating, cooling and ventilation, and that enable dust levels, temperature, relative humidity, and gas concentrations to be kept within levels that are not harmful to the livestock;

e. capacity to maintain social structures, e.g. by ensuring that herd animals are not kept in isolation from other animals of the same species;

e. enclosures, and any associated production equipment, that are constructed of materials that do not harm human or animal health.

5.1.4 Poultry, rabbits and pigs shall not be kept in cages.

5.1.5 Landless animal husbandry systems are prohibited and all animals shall have access to pasture or an open-air exercise area or run, whenever the physiological condition of the animal, the weather and the state of the ground permit. Animals may be fed with harvested fresh fodder where this is a more sustainable way to use land resources than grazing.

5.1.6 The number of animals carried in an area and the flock/herd size must be limited to enable them to freely exhibit their natural behaviour and to ensure that there is no damage to soil and water resources. For pigs – housing areas for pigs over 40 kg shall be a minimum area of 1.1 m^2 per animal, for breeding pigs 3.0 m^2 per animal, and for piglets .6 m^2. For poultry – the housing area for poultry older than 28 days shall be larger than 0.1 m^2 per bird. The stocking density of livestock kept on pasture, grassland, or other natural or semi-natural habitats, must be low enough to prevent degradation of the soil and over-grazing of vegetation.

5.1.7 Animals must be well treated and free from pain, injury or disease. Animals shall be inspected regularly and any apparent ill-health or injury shall be quickly treated. Animals shall be protected from predation by wild, feral and domestic animals such as dogs. Tethering may be practised, provided that it does not affect the well-being of the animal and sufficient food and water is available. The method of tethering shall enable the animal to move freely within the grazing area without getting entangled or choked. The tethering shall not cause wounds or other physical harm to animals.
5.1.8 Waterways and water catchment areas shall be protected from damage by animals, e.g. pig rooting and pollution from animal effluent and associated waste.
5.1.9 In the case of laying hens, when natural day length is prolonged by artificial light, the total length of the lighted period shall be no more than 16 hours a day.

5.2 Length of Conversion Period

Outline and General Principle
The establishment of organic animal husbandry requires an interim period, the conversion period, unless the requirements, as set out in 3.1.1, are complied with for traditional systems. Animal husbandry systems that are changed from conventional to organic production require a conversion period to develop natural behavior, immunity and metabolic functions.

Standard
5.2.1 Livestock and their products can hold no greater status (whether in conversion or organic) than is currently held by the production unit itself. Where a production unit is converted, the rules as outlined in section 3.1 and 4.2 must be complied with.
5.2.2 Where existing animals are converted to organic status on an organic property they shall undergo a one-time minimum conversion period at least according to the following schedule:

- For animals for milk production – 90 days
- For poultry for egg production – 42 days

Note that except for the above situation - only conventionally raised animals, as specified in 5.3.1, can be brought in and that any other livestock cannot be converted to organic status even after the above conversion periods.

5.3 Source or Origin of Animals

Standard
5.3.1 Animals shall be raised organically from birth. However, if such animals are not available, conventional animals may be brought in before they reach the following maximum ages:

- 2-day old chickens for meat production;
- 18-week old hens for egg production;
- 2 weeks for any other poultry;
- Piglets up to 6 weeks and after weaning;
- Dairy calves, deer, sheep and goats – animals up to 4-weeks old that have received colostrum and have been fed a diet consisting mainly of full milk.

Livestock that do not comply with the above conditions can never be converted to organic status.
5.3.2 Breeding stock may be brought in from conventional farms only to a yearly maximum of 10% unless the following occur:

- Unforeseen severe natural or man-made events, e.g. droughts, cyclones;
- Considerable enlargement of the farm;
- Establishment of a new type of animal production on the farm;
- Holdings have less than 10 animals.

Animals brought in from non-organic sources, and their products, may be converted to organic status only within the minimum time frames set out in 5.3.1.

5.4 Breeds and Breeding

Outline and Principles
Pacific livestock farmers traditionally selected livestock that were adapted to local conditions and management systems. This resulted in a great diversity of breeds, e.g. pig breeds, and aligns well with organic livestock breeding principles.

Standard
5.4.1 Breeding systems shall be based on breeds that can breed naturally without human involvement.
5.4.2 Artificial insemination is permitted.
5.4.3 Embryo transfer techniques and cloning are prohibited.
5.4.4 The use of hormones to induce ovulation and birth is prohibited.

5.5 Surgical Treatments

Outline and General Principle
Traditionally, livestock were treated with great care because of their relative rarity, and cultural and intrinsic values. This aligns well with organic farming principles, which respect the welfare of animals and encourage the selection of species and breeds that do not require any sort of mutilation.

Standard
5.5.1 The use of routine surgical treatment for animals is prohibited and may only be used for reasons of safety, to ease suffering, and to sustain the health and welfare of the animal. In such situations, the following treatments are permitted:

- Branding, earmarking or tagging
- Placing rings in pigs' noses
- Castration
- De-horning and de-tusking (only of young animals less than 6-months old)

5.6 Animal Nutrition

Outline and General Principle
Under traditional management, livestock were tightly integrated into the overall farm management system. They obtained a balanced diet of good quality feed from the farm, which was sometimes supplemented with feed from associated activities, e.g. fishing. These practices align well with organic principles for animal nutrition in that organic animals should be fed a balanced diet of good quality organic feed that meets all their nutritional needs.

Standard
5.6.1 Animals shall be fed a balanced diet that provides all of their nutritional needs, with all ruminants having daily access to roughage. Feed is to be made up of 100% organic feedstuffs. Where organic feed of sufficient quantity or quality is not available, the daily maximum percentage of non-organic feed shall be 10% for ruminants and 15% for non-ruminants based on annual dry matter consumed.
5.6.2 Over 50% of feed shall come from the farm itself or be produced in co-operation with other organic farms. The use of appropriate by-products from the organic food processing industry is encouraged.
5.6.3 For the calculation of feeding allowances only, feed produced on the farm unit during the first year of organic management may be classed as organic. This refers only to feed for animals that are being produced within the farm unit. Such feed may not be sold or otherwise marketed as organic.

5.6.4 The following substances are prohibited from use as feed:

- For ruminants, farm animal by-products (e.g. abattoir waste);
- Slaughter products of the same species;
- All types of excrement, including droppings or other manure;
- Feed subjected to solvent extraction (e.g. hexane) or the addition of other chemical agents;
- Synthetic amino acids and amino-acid isolates;
- Urea and other synthetic nitrogen compounds;
- Synthetic growth promoters or stimulants;
- Synthetic appetisers;
- Preservatives, except when used as a processing aid;
- Artificial colouring agents.

5.6.5 Animals may be fed vitamins, trace elements and supplements from natural sources. Synthetic vitamins, minerals and supplements may be used where natural sources are of insufficient quantity or quality; this use will be assessed on a case by case basis.

5.6.6 Only the following feed preservatives can be used:

a. Bacteria, fungi and enzymes (including effective micro-organisms);
b. Food industry by-products (e.g. molasses);
c. Plant-based products.

5.6.7 Young mammalian livestock shall receive colostrum for a minimum of 3 days after birth. They shall receive organic natural milk from their own species until they reach the weight at which they should normally be weaned from their mothers. Exceptions can be made in emergency cases only, and only in agreement with the certifier.

5.7 Disease Prevention and Veterinary Medicine

Outline and General Principle

Under traditional management, a wide range of preventative strategies were developed by Pacific farmers to protect the health of their animals. This included the use of herbs such as `mile a minute' *(Mikania micrantha),* vaivai (*Leucaena leucoephala),* lupus and papaya to treat disorders such as internal parasites, birthing difficulties and other ailments. Many of these practices align well with organic management practices, which promote and maintain the health and well-being of animals through balanced organic nutrition, stress-free living conditions and selection of breeds resistant to diseases, parasites and infections.

Standard

5.7.1 The operator shall take all practical measures to ensure the health and well-being of animals through using preventative animal husbandry practices. These include:

- selection of appropriate breeds or strains of animals;
- adoption of husbandry practices appropriate to the requirements of each species, such as regular exercise and access to pasture and/or open-air runs, to encourage the natural immunological defenses of the animal to stimulate natural immunity and tolerance to diseases;
- provision of good quality organic feed;
- appropriate stocking densities;
- grazing rotation and management.

5.7.2 If an animal becomes sick or injured despite preventive measures, it shall be treated promptly. The initial use of natural, herbal or homeopathic products or practices is recommended in preference to the use of chemically synthesized veterinary products. Producers shall not withhold medication where it will result in unnecessary suffering for livestock, even if the use of such medication will cause the animal to lose its organic status. An operator may use synthetic veterinary drugs or antibiotics only if:

a. preventive and alternative practices are unlikely to be effective in treating sickness or injury;

b. the drugs are used under the supervision of a veterinarian or other suitably qualified supervisor; and
c. withholding periods are not less than double those required by national legislation or where this is not available – as established by other neighbouring countries legislation eg Australia, New Zealand or a minimum of 48 hours, whichever is longer.

All treatments with synthetic veterinary drugs shall be documented.

5.7.3 The use of synthetic growth promotants or suppressants is prohibited.

5.7.4 Vaccinations are permitted in cases when:

a. an endemic disease is known, or expected, to be a problem in the region of the farm and where this disease cannot be controlled by other management techniques; or
b. a vaccination is legally required; and
c. the vaccine is not genetically engineered.

5.8 Transport and Slaughter

Outline and General Principle

In the Pacific, under traditional management, the slaughter of livestock was typically undertaken by the farmer as the need arose or sometimes as part of a cultural event. Animals were typically not transported far for this process for which a range of techniques were used. This standard recognises the traditional norms and aligns these with the organic principles that animals are subjected to minimum stress during transport and slaughter. The latter should include consideration of the specific needs of each animal and the quality and suitability of the mode of transport and handling equipment.

Standard

5.8.1 Animals shall be handled calmly and gently during transport and slaughter. The transport and slaughter of animals shall comply with all relevant national and regional regulations.

5.8.2 During the process of transportation and slaughter, organic animals shall be provided with conditions that reduce, and minimise the potentially adverse effects, of:

a. stress;
b. loading and unloading;
c. mixing different groups of animals or animals of different sex;
d. temperature and relative humidity; and
e. hunger and thirst.

5.8.3 Animals shall not be treated with synthetic tranquilisers or stimulants prior to, or during transport. The use of electric prods and other such instruments is prohibited.

5.8.4 Slaughter shall be carried out quickly and without causing undue stress to the animal. Each animal shall be stunned before being bled to death. Slaughter by bleeding, without stunning, is not permitted unless it is done to meet cultural or religious requirements and the practice is carried out in an appropriate and calm environment.

5.8.5 Each animal or group of animals shall be identifiable at each step in the transport and slaughter process.

5.8.6 Slaughterhouse journey times shall not exceed eight hours. Exceptions to this requirement include cases where:

- there is no certified organic abattoir within eight hours drive;
- there is no abattoir capable of satisfying national or importing country requirements within eight hours drive.

5.9 Bee Keeping

Outline and General Principle

Bee keeping has only recently been adopted by some Pacific farmers. However, it complements and supports Pacific farming systems through promoting pollination and enabling honey production. Organic beekeeping has significant potential, especially because of the disease-free status of many countries and will be managed to ensure that it does not significantly disrupt indigenous insect populations or the pollination requirements of native plants.

Standard

Conversion

5.9.1 Bee colonies may be converted to organic production. Introduced bees shall come from organic production units when available or otherwise from traditional beekeeping. The conversion period for a colony is at least one year.

5.9.2 If the wax is contaminated with pesticides, it shall be replaced by organic wax at the start of the conversion period.

5.9.3 The selection of the breed and type of bee to be used will take into account suitability for local conditions and prevalent diseases.

Location and Construction of Hives

5.9.4 Hives shall be situated in organically managed fields and/or wild natural areas. Hives shall be placed in an area that ensures access to sufficient sources of water, honeydew, nectar and pollen to supply all of the bees' nutritional needs.

5.9.5 The operator shall not place hives within foraging distance of fields or other areas with an identified contamination risk from prohibited substances. If a potential contamination risk is located within 3 km of the apiary site, regular testing of the honey to ensure that it is not contaminated shall be required.

5.9.6 Hives shall be made of materials that present no risk of toxicity for the bees or products produced by the bees.

Feeding

5.9.7 At the end of the production season, hives shall be left with sufficient reserves of honey and pollen to enable the colony to survive the wet season.

5.9.8 Supplementary feeding is permitted only when the survival of the colony is at risk due to adverse weather conditions. Any supplementary feeding shall be carried out only between the last honey harvest and the start of the next nectar or honeydew flow period. In such cases, organic honey or sugar shall be used where available. The use of conventional sugar is only permitted under exceptional cases and then only until 2013.

Husbandry

5.9.9 The health and welfare of the hive shall be primarily managed by maintaining strong healthy bee colonies and applying good preventive management practices, such as;

- using appropriate, hardy breeds;
- maintaining high standards of hygiene;
- regularly inspecting hives and manipulating conditions as appropriate.

5.9.10 Where preventative measures fail, veterinary medicinal products may be used provided that their use is documented, and:

a. preference is given to phytotherapeutic and homeopathic treatment; and

b. when allopathic, chemically synthesised medicinal products are used, the bee products are not sold as organic;

c. treated hives are placed in isolation and undergo a conversion period of one year.

5.9.11 The following inputs are permitted for pest and disease control:

a. lactic, formic, oxalic and acetic acid;

b. sulfur;

c. natural essential oils (e.g. menthol, eucalyptol, camphor, citronella);

d. *Bacillus thuringiensis*;

e. steam, direct flame and caustic soda, sodium hypochlorite (bleach) and sodium bicarbonate (baking soda) may be used for hive disinfection with appropriate post-treatment cleaning.
5.9.12 Veterinary treatments that are compulsory under national or regional legislation are authorized; however, their use may affect the certification status of the animal or property.
5.9.13 The destruction of bees in combs as a method of harvesting bee products is prohibited.
5.9.14 Clipping of the wings of queen bees is prohibited.
5.9.15 Artificial insemination of queen bees is permitted.
5.9.16 The use of chemical synthetic bee repellents is prohibited during honey extraction operations.
5.9.17 The use of smoke shall be kept to a minimum. Smoking materials shall be natural or made from materials that meet the requirements of these standards.

6 Aquaculture Production Standards

6.1 Conversion to Organic Aquaculture

Outline and General Principles
Food from sea and freshwater sources have always been a very important component of the traditional diet for most of the Pacific Island people. A wide range of governance, management and harvesting techniques have been developed eg establishment of community conservation areas that allow for the protection and sustainable management of these diverse marine resources. Pacific organic aquaculture links these traditional approaches with modern aquaculture management techniques to enable the production of a wide range of animal and plant marine products that are farmed in a wide range of systems where there is;

- High quality water is present
- Sound management practices are followed;
- Appropriate stocking rates are maintained;
- Welfare is considered
- Approved inputs are used.

Possible products include;

- Fresh water trout, prawns, shellfish, carp, tilapia, milk fish, crocodiles
- Seaweed, sea cucumber, pearls, algae, azolla

Scope
Aquaculture covered in this standard includes the farming of many different species using diverse forms of production in fresh, brackish and saltwater. This standard covers aquatic plants and fish carnivorous, omnivorous, and herbivorous organisms of all types and at all stages of growth, grown in a variety of enclosures such as earthen ponds, tanks and cages (open and closed systems). Wild, stationary organisms in open collecting areas are covered however this standard excludes organisms that are moving freely in open waters, and/or that are not capable of inspection according to general procedures for organic production.

Standard
6.1.1 Operators must comply with this standard throughout the conversion period and all relevant requirements of section 3 – (General Certification Requirements), section 5 (Animal Husbandry) for fish/shellfish and section 4 (Crop Production) for aquatic plants.
6.1.2 The conversion period shall be at least 12 months or 1 life cycle of the organism, whichever is shorter. Where the entire production unit is not converted, then individual sections of the unit need to fully comply with these production standards before they can

become certified as organic. Conventional production areas need to be physical separated and clearly identifiable from converting areas.
6.1.3 The conversion period will take into account the life cycles, species, environmental factors and past use of the site with respect to waste, sediments and water quality and may be extended in response to these issues.
6.1.4 No conversion period is required for the collection of wild, sedentary organisms where the water is free-flowing and not contaminated by substances prohibited in these standards and where all other relevant sections of these standards are complied with.

6.2 Aquatic Ecosystems

General Principle
Organic aquaculture management maintains the biodiversity of natural aquatic ecosystems, the health of the aquatic environment, and the quality of surrounding aquatic and terrestrial ecosystem.

Standard
6.2.1 Aquatic ecosystems shall be managed to comply with relevant requirements of section 2 (General Requirements).
6.2.2 Operators shall take adequate measures to prevent escapes of introduced or cultivated species and document any that are known to occur. Regional eg SPREP and other invasive aquatic species management guidelines are to be complied with.
6.2.3 Operators shall take verifiable and effective measures to minimize the release of nutrients and waste into the aquatic ecosystem including that resulting from soil erosion
6.2.4 Fertilizers and pesticides are prohibited unless they appear in Appendix 1.
6.2.5 Harvest of aquatic plants shall not disrupt the ecosystem or degrade the collection area or the surrounding aquatic and terrestrial environment

6.3 Breeds and Breeding

General Principle
Animals farmed in organic aquaculture systems should begin life on organic units. They should be adapted to local conditions and reproduced and bred by natural methods. Organic aquaculture systems should not be dependent on conventional raising systems.

Standard
6.3.1 Animals shall be raised organically from birth. If organic animals are not available, brought-in conventional animals shall spend not less than two thirds of their life span in the organic system. When organic stock is not available, conventional sources may be used. Bought in organisms shall meet the following conversion periods as long as they have more than two thirds of their life span in the organic system;

- 12 months in the case of 3 year old fish for meat production or at least three quarters of their lifetime
- 6 months in the case of small fish under 2 years
- Ten weeks for the production of pan size brought in before they are 20grams of weight
- 12 months in the case of caviar production.

The use of non organic sources of animals will be reviewed in 2012 and operators should develop organic sources before then.
6.3.2 Operators shall not utilize artificially polyploided or GMO organisms.

6.4 Aquatic Animal Nutrition

Outline and General Principle
Organic aquatic animals receive their nutritional needs from good quality, organic and wild marine sources. Pacific organic aquaculture will be characterized by the development of

sustainable systems that operate with a minimal reliance on outside inputs and that work in harmony with the wider environment.

Standard

6.4.1 Animals shall be fed rations that supply their nutritional needs from plants and animals appropriate for the digestive system, metabolism and the physiological needs of the species. Animals will be fed 100% organic or feed from wild aquaculture sources. Where the quantity or quality of organic feed from an agricultural origin is not available the daily maximum percentage of non-organic feed from an agricultural origin shall be 10% based on an annual drymatter basis. This will be reviewed in 2012.

6.4.2 Wild feed sources. Operators may use non-organic aquatic animal protein and oil sources provided they:

a. Are harvested from local, independently verified, sustainable sources;

b. Are verified to have contamination levels below limits established by the appropriate national, regional or Codex standards.

6.4.3 Commercial fish meal ie made from fish caught only for the production of fish meal. This feed will not constitute more than 90% of the diet with the balance being from organic sources. This % will decrease to 50% by 2020.

6.4.4 The dietary requirements for aquatic animals shall comply with the requirements of 5.6.4 and 5.6.5.

6.4.5 Operators shall feed animals efficiently, with minimum losses to the environment.

6.4.6 The use of feed produced from the same species that it will be feed too is prohibited.

6.5 Aquatic Animal Health and Welfare

General Principle

Organic management practices promote and maintain the health and well-being of animals through balanced organic nutrition, stress-free living conditions appropriate to the species and breed selection for resistance to diseases, parasites and infections. The health of farmed aquatic animals can often be influenced by the management of adjacent land eg through runoff and erosion impacts, so land management needs to manage these potential risks.

Standard

6.5.1 Ensuring the health and well being of animals will be primarily based on preventing problems through selecting appropriate operating sites and maintaining good levels of nutrition and living conditions so as to enhance the resilience of animals to problems occurring and decrease the risk of these occurring. Operators will comply with the relevant sections of 5.7

6.5.2 The following are prohibited - prophylactic use of veterinary drugs; allopathic veterinary drugs; antibiotics; synthetic hormones; synthetic growth promotents.

6.5.3 Stocking densities will be maintained that do not compromise animal welfare.

6.5.4 Regular monitoring and maintainence of records of the following will be undertaken; water quality, stocking densities; health and behaviour of each production, Regular monitoring and maintainence.

6.6 Aquatic Animal Transport and Harvesting

General Principle

Organic animals are subjected to minimum stress during transport and slaughter.

Standard

6.6.1 Operators shall comply with relevant requirements of section 5.8.

6.6.2 The operator shall handle live organisms in ways that are compatible with their physiological requirements and minimise stress to the organisms.

6.6.3 Operators shall implement defined measures to ensure that organic aquatic animals are provided with conditions during transportation and slaughter that meet animal specific needs and minimize the adverse effects of:

a. Diminishing water quality;
b. Time spent in transport;
c. Stocking density;
d Toxic substances:
e. Escape

6.6.4 A person specifically responsible for the well being of the animals shall be present during transport.

6.6.5 The slaughter of fish and other aquatic organisms shall be managed so as to avoid unnecessary suffering.

> For example – systems should be put in place for the stunning of vertebrate fish from fish farms before they are slaughtered. .

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6.6.6 Each animal or group of animals shall be identifiable at each step in the transport and slaughter process

7 Processing and Handling

7.1 General

General Principle
Organic processing and handling provides consumers with nutritious, high quality supplies of organic products and organic farmers with a market that does not compromise the organic integrity of their products.

Standard
7.1.1 Handlers and processors shall not co-mingle organic products with non-organic products.
7.1.2 All organic products shall be clearly identified as organic and the level of certification. Products shall be handled, stored and transported in a way that prevents contact or mixing with conventional product through the entire process.
7.1.3 The handler and processor shall take all necessary measures to prevent organic products from being contaminated by pollutants and contaminants, including the cleaning, decontamination, or if necessary disinfection of facilities and equipment.

7.2 Ingredients

General Principle
Organic processed products are only made from organic ingredients. Pacific diets have traditionally been free of highly processed food and there is generally a low level of food processing technology available. A continuation of this minimal level of processing of food and its adulteration is encouraged.

Standard
7.2.1 All ingredients used in an organic processed product shall be organically produced except for those additives and processing aids that appear in Appendix 1 – Table 4. If organic ingredients are not available then non-organically produced ingredients of agricultural origin may be used subject to the following conditions;

- When permitted by the certifier and included in Table 4
- Are not genetically engineered (see section 2.3)
- It does not exceed 5% of the content of the agricultural origin component of the product. Water and salt may be used as ingredients in the production of organic products and are not included in the percentage calculations of organic ingredients

7.2.2 Food Fortification - minerals (including trace elements), vitamins, amino acids and similar isolated ingredients shall not be used. unless their use is legally required. .
7.2.3 Preparations of micro-organisms and enzymes commonly used in food processing may be used, with the exception of genetically engineered micro-organisms and their products. If preparations of micro-organisms and enzymes are used they should preferably come from natural sources where these are available. If non natural sources are used then the product could lose organic certification.
Processors shall use micro-organisms grown on substrates that consist entirely of organic ingredients and substances on Appendix 1 - Table 4, if available. This includes cultures that are prepared or multiplied in-house.

7.3 Processing Methods

General Principle
Organic food is processed by biological, mechanical and physical methods in a way that maintains the vital quality of each ingredient and the finished product. In the Pacific food

processing is typically undertaken through simple methods on a small local scale which results in minimal modification of the product or change to its nutritional value.

Standard

7.3.1 Techniques used to process organic food shall be biological eg fermentation, physical eg drying, and mechanical eg pressing in nature.

7.3.2 Any additives, processing aids, or other material that chemically reacts with or modifies the organic food shall be restricted and must appear in Appendix 1 - Table 4.

7.3.3 Only water, ethanol, plant and animal oils, vinegar, carbon dioxide, and nitrogen may be used as solvents for extraction. These shall be of a quality appropriate for their purpose.

7.3.3 Irradiation is not permitted.

7.3.4 Filtration equipment shall not contain asbestos, or utilize techniques or substances that may negatively affect the product.

7.3.5 The following conditions of storage are permitted (for allowed substances in these conditions, see Appendix 1 - Table 4):

a. Controlled atmosphere;
b. Temperature control;
c. Drying;
d. Humidity regulation.

7.3.6 Ethylene gas is permitted for ripening

7.4 Pest and Disease Management

General Principle

Organic food is protected from pests and diseases by the use of good manufacturing practices that include proper cleaning, sanitation and hygiene, without the use of chemical treatment or irradiation.

Standard

7.4.1 Preventative pest management measures shall be established and maintained.

> An example of preventative management is to have high standards of hygiene, cleanliness and sanitation to protect areas used for the storing, handling and processing of organic products.

7.4.2 To manage pests the following methods may be used:

a. Preventative methods such as disruption, elimination of habitat and access to facilities;
b. Mechanical, physical and biological methods;

7.4.3 Where preventative, physical, mechanical or biological methods are not effective then the operator can use substances listed in Appendix 1 – Table 2 and substances (other than pesticides) used in traps.

7.4.4 Prohibited pest control practices include, but are not limited to, the following substances and methods:

a. Pesticides not contained in Appendix 1 - Table 2- `Crop Protectants and Growth Regulators';
b. Fumigation with ethylene oxide, methyl bromide, aluminum phosphide or other substance not contained in Appendix 1 - Table 4. (The use of alternative treatments may be approved under strict controls however need to be first discussed with and approved by the certifier)
c. Ionizing radiation (x-rays of products is permitted)

7.4.5 The direct use or application of a prohibited method or material renders that product no longer organic. The operator shall take necessary precautions to prevent contamination, including the removal of organic product from the storage or processing facility, and measures to decontaminate the equipment or facilities. Application of prohibited substances

to equipment or facilities shall not contaminate organic product handled or processed therein. Application of prohibited substances to equipment or facilities shall not compromise the organic integrity of product handled or processed therein.

7.5 Packaging

General Principle
Organic product packaging has minimal adverse impacts on the product or on the environment. Traditionally and currently there is the extensive use of natural materials for packaging products in the Pacific including leaves, bags, shells eg coconut, seashells, bamboo. This type of packaging aligns with organic principles and is encouraged where feasible.

Standard
7.5.1 Packaging material shall not contaminate organic food.
7.5.2 Packaging materials, and storage containers, or bins that contain a synthetic fungicide, preservative, or fumigant are prohibited.
7.5.3 Organic produce shall not be packaged in reused bags or containers that have been in contact with any substance likely to compromise the organic integrity of product or ingredient placed in those containers.
7.5.4 Processors of organic food shall avoid using unnecessary packaging and use reusable, recycled, recyclable, and biodegradable packaging whenever possible. Reuse of containers that have been used for the holding of prohibited or restricted inputs shall not be used.

7.6 Cleaning, Disinfecting, and Sanitizing of Food and Food Processing Facilities

General Principle
Organic food is safe, of high quality, and free of substances used to clean, disinfect, and sanitize food and food processing facilities.

Standard
7.6.1 Operators shall take all necessary precautions to protect organic food against contamination by substances prohibited in organic farming and handling, pests, disease-causing organisms, and foreign substances. Operators shall identify potential contamination risks and prepare and implement a plan to address these with an emphasis on using preventative approaches and physical and mechanical means to prevent microbiological contamination. All relevant food safety and hygiene regulations shall be complied with.
7.6.2 Only water and substances that appear in Appendix 1- Table 2, as processing aids may be used after harvest as cleaners or disinfectants in direct contact with organic food. Substances other than those appearing on Appendix 1- Table 5 are only allowed if they are legally required. The use of all these substances shall be made with a consideration and commitment to minimising to the environmental impacts from disposal.
7.6.3 Operations that use cleaners, sanitizers, and disinfectants on food contact surfaces shall use them in a way that maintains the food's organic integrity.
7.6.4 The operator shall perform an intervening event between the use of any cleaner, sanitizer, or disinfectant and the contact of organic food with that surface sufficient to prevent residual contamination of that organic food.

7.6.5 Operators shall design facilities, plant layout, install equipment, and devise a cleaning, disinfecting and sanitizing system that prevents the contamination of food and food contact surfaces by prohibited substances, non-organic ingredients, pests, disease-causing organisms, and foreign material.

7.7 Textile Fiber Processing

General Principle

Organic fiber is processed from organic raw materials in an environmentally sound way that considers the entire product life cycle. Pacific people have a long history in the use of plant materials such as Pandanus, tapa, fau, coconut as well as animal skins and bird feathers for clothing and mats which until comparatively recently provided for most of their needs. In many Pacific countries the production and gifting of high quality mats continues to have a significant cultural importance.

Standard

7.7.1 Fiber processing shall comply with the requirements of sections 7.1 and 7.4.
7.7.2 Labeling of textiles shall comply with the requirements of chapter 8, "Labeling."
7.7.3 Operators shall have a management system in place that ensures that any effluents released into the environment resulting from wet processing are properly treated.
7.7.4 Organic fiber processing shall use appropriate techniques that are least damaging to the environment.
7.7.5 Whenever possible, organic fiber products shall be processed using only mechanical and/or physical methods.
7.7.6 Only substances allowed by the certification body based upon the Global Organic Textile Standards (GOTS) shall be used to process fibre products labelled as "organic'.
7.7.7 Operators shall avoid the use of non-biodegradable, bio-accumulating input products and heavy metals. Substances may be allowed in organic textile processing only if they are biodegradable, generally recognized as safe and hypoallergenic. Substances shall be prohibited in organic textile processing if they are carcinogenic, mutagenic, teratogenic, toxic, or produced by genetically modified organisms or ionizing radiation.
7.7.8 Organic textiles shall be used to the maximum extent possible and not blended with nonorganic fibers.
7.7.9 Equipment shall be constructed, maintained, and operated in a way that avoids contamination of fibers and fiber products.
7.7.10 Non-organic, natural or synthetic fibers blended with organic fibers shall not contain toxic substances or fibers produced in a way that is hazardous to consumers, workers or the environment.

8 Labeling

8.1 General

General Principle

Organic products are clearly and accurately labeled as organic and the level of organic status attained eg conversion.

Standard

8.1.1 The name and contact address of the person or company legally responsible for the production or processing of the product and reference to the certification body shall appear on the labelling of the product in its final consumer packaging. National regulatory labelling standards and rules shall be complied with.
8.1.2 A statement that the product is `produced according to the Pacific Organic Standard' may be made on the labels when compliant with the standards and appropriate level of organic certification status.
8.1.3 Mixed products where not all ingredients, including additives, are of organic origin and products that are entirely in compliance with these standards, shall be labeled in the following way (percentages in this section refer to raw material weight):

a. Where a product has 100% of the ingredients of certified organic origin, products may be labeled “100% organic” or equivalent and should carry the certification mark of the certification body;
b. Where a minimum of 95% of the ingredients are of certified organic origin, products may be labeled “certified organic” or equivalent and should carry the certification mark of the certification body;
c. Where less than 95% but not less than 70% of the ingredients are of certified organic origin, products may not be called “organic”. The word “organic” may be used on the principal display in statements like “made with organic ingredients” provided there is a clear statement of the proportion of the organic ingredients. An indication that the product is covered by the certification body may be used, close to the indication of proportion of organic ingredients;
d. Where less than 70% of the ingredients are of certified organic origin, the indication that an ingredient is organic may appear in the ingredient list. Such products may not be called “organic.”

8.1.4 Non organic products must be of agricultural origin and unavailable in sufficient quantities as certified organic products and comply with 7.2.
8.1.5 All ingredients of a multi-ingredient product shall be listed on the product label in order of their weight percentage. It shall be apparent which ingredients are of organic certified origin and which are not. All additives shall be listed with their full name.
8.1.6 If herbs and/or spices constitute less than 2% of the total weight of the product, they may be listed as “spices” or “herbs” without stating the percentage.
8.1.7 Added water and salt shall not be included in the percentage calculations of organic ingredients.
8.1.8 The label for conversion products shall be clearly distinguishable from the label for organic products.
8.1.9 (See also 2.3) Organic products shall not be labeled as GMO-free in the context of these standards. Any reference to genetic engineering on product labels shall be limited to the production and processing methods themselves having not used GMOs.
8.1.10 The use of any label or claim that makes reference to this Pacific Organic Standard shall be first approved by the Regional Organic Task Force which operates under the auspices of the SPC.

8.2 Fiber, Textiles and Apparel

General Principle
Organic fiber, textiles, and apparel are labeled in a way that accurately conveys the organic content of the product.

Standard
8.2.1 Labeling of textiles follows all standards on labeling organic food with the exceptions in this section.
8.2.2 Apparel and other textile products labeled as organic consist of at least 95% by weight organic fiber as described in section 7.7*.
8.2.3 Textiles may be labeled “made with (…%) organically produced fibers” only if at least 70% of the fibers are organic as described in section 7.7*. * (Percentages in 8.2.3 and 8.2.4 refer to the total weight of the fibers, and do not include the weight of the non-textile accessories such as buttons and zippers.)

9 Social Justice

Outline and General Principle

The Pacific has a large number of societies and cultures who have evolved a wide range of social structures and values. There are however some common structures and values – including the importance of land to the people of the Pacific- and is the lifeblood for which people have a spiritual relationship which often includes a recognition of many intangible values. The extended family and village and the obligations and benefits that arise with these are also a key feature of Pacific life. Family and community relationships are strengthened by a communal approach to work and life. Many traditions have been established to protect the interests of individuals and groups and in this Pacific Organic Standard these are incorporated with contemporary approaches to ensure that social justice and social rights are an integral part of organic agriculture and processing in the Pacific. The standard also recognises the need for the establishment of fair and sustainable trading relationships that are based on trust, transparency, equity, accountability and continuity.

Standard

9.1 Employees and workers shall be guaranteed basic human rights and fair working conditions in accordance with national and international conventions and laws eg ILO conventions and the UN Convention for the Rights of the Child.

9.2 An operator who hires more than ten persons for fulltime labor shall have a documented policy covering the aspects of this section 9 – Social Justice.

9.3 Operators will not use forced or involuntary labor and where this occurs or if cases where production is based on the violation of basic human rights and clear cases of social injustice, that product cannot be declared as organic.

9.4 Employees and contractors of organic operations shall have the freedom to associate, the right to organize and the right to bargain collectively. Contracts shall be fair, open to negotiation, and honored in good faith.

9.5 Operators shall provide their employees and contractors equal opportunity and treatment eg wages and shall not act in a discriminatory way regardless of gender, age, colour, ethnicity or religion.

9.6 Operators shall not hire child labor. Children may work on their family's farm or a neighboring farm provided that such work is not dangerous or hazardous to their health and safety it does not jeopardize the children's educational, moral, social, and physical development. This work will be supervised by adults or have authorization from a legal guardian.

9.7 Operators shall respect the rights of indigenous peoples, and shall not use or exploit land whose inhabitants or farmers have been or are being impoverished, dispossessed, colonized, expelled, exiled or killed, or which is currently in dispute regarding legal or customary local rights to its use or ownership.9.8 All employees and their families who live on the organic property should have access to potable water, food, housing, education, transportation and health services.

9.9 Workers shall have adequate protection from noise, dust, land light. Exposure to chemicals shall be within acceptable limits in all production and processing operations.

Additional Social Justice Guidelines

1. Worker Social Security - Operators should provide for the basic social security needs of the employees, including benefits such as maternity, sickness and retirement benefits.

2. Fair trade relationships – operators should aim to establish agreements between them and buyers that ensures mutual benefits but ensures the producer receives a fair price for his/her products and that these should be long term relationships (preferably at least three years).

3. Community relationships – operators should actively participate in, and positively contribute towards, the society and culture of the local and wider community and families.

Examples of contributions could include:

- Training staff in organic and social awareness
- Providing additional on-site services to staff, for example organic food
- Sharing profit or equity interest
- Supporting the organic movement and trade union movement
- Educating the public and providing training within the supply chain
- Organising farm visits and demonstrations or facilitating farm access to the

10 Appendix 1

10.1 Table 1 - List of Substances Which May be Used in Organic Plant Production

The list is indicative, i.e., there may be other substances that may be used in organic production according to this standard as long as they follow the criteria in the IFOAM Basic Standards or CAC/GL 32. Any additives contained in these products also need to comply with these standards as well as any inputs from conventional sources.

Table 1 — Fertilizers and soil conditioners

Description, compositional requirements of substance	Conditions for use
i) Plant and animal origin	
Farmyard manure, slurry, and urine	Applications shall be composted or followed by at least 2 green manure crops in cropping systems
Guano	
Vermicastings	
Blood meal, meat meal, bone, bone meal	
Hoof and horn meal, feather meal, fish and fish products, wool, fur, hair, dairy products	
Biodegradable processing by-products, plant or animal origin (e.g., by-products of food, feed, oilseed, brewery, distillery or textile processing) eg Molasses, mill mud (sugar cane process waste), brewers grain	
Crop and vegetable residues, mulch, green manure, cover crops (leguminous crops such as lablab and mucona), straw	
Wood, bark, sawdust, wood shavings, wood ash, wood charcoal	Only from untreated sources
Seaweed and seaweed products	
Peat (prohibited for soil conditioning)	Excluding synthetic additives; only for inclusion in potting mixes
Plant preparations and extracts	
Compost made from ingredients listed in this Appendix, spent mushroom waste, humus from worms and insects, urban composts from separated sources which are monitored for contamination	

ii) Mineral origin	
Basic slag	
Calcareous and magnesium amendments	
Limestone, gypsum, marl, maerl, chalk, sugar beet lime, calcium chloride	
Magnesium rock, kieserite and Epsom salt (magnesium sulphate)	
Mineral potassium (e.g., sulphate of potash, muriate of potash, kainite, sylvanite, patentkali)	Shall be obtained by physical procedures but not enriched by chemical processes
Natural phosphates	Cadmium levels should not exceed 90 mg/kg P_2O_5
Pulverized rock, stone meal	
Clay (e.g., bentonite, perlite, vermiculite, zeolite)	
Trace elements, micronutrients	
Sulphur	
Humate	
Tin cans (source of iron)	To be only used where there is not a financially viable alternative and iron deficiencies are present. Negative impacts need to be controlled.
iii) Microbiological	
Biodegradable processing by-products of microbial origin (e.g., by-products of brewery or distillery processing)	
Microbiological preparations based on naturally occurring organisms eg mycorrhiza, compost teas, effective micro-organisms.	
iv) Others	
Biodynamic preparations	
Calcium lignosulfonate	
Liquid fertilisers	As long as they comply with the rest of the standards and that they are subject to appropriate treatment to ensure that they are broken down and not too `rich` for plants.

10.2 Table 2 — Crop Protectants and Growth Regulators

Description, Compositional Requirements of Substance	Conditions for use
i) Plant and animal origin	
Algal preparations	
Animal preparations and oils	
Beeswax	
Chitin nematicides (natural origin)	
Coffee grounds	
Corn gluten meal (weed control)	
Dairy products (e.g., milk, casein)	
Gelatine	
Lecithin	
Natural acids (e.g., vinegar)	
Neem (*Azadirachta indica*)	
Plant oils (e.g., castor oil, grapefruit seed extract)	Care should be taken with the use of some of these products as they are very toxic
Plant preparations and plant teas (e.g., chilli, tithonia (Africa sunflower), *Tagetes sp.*, Mexican marigold, Papain from Papaya, *Jatropha*, *Pongamia glabra*	Care should be taken with the use of some of these products as they are very toxic
Plant-based repellents	
Propolis	
Pyrethrum (*Chrysanthemum cinerariaefolium*)	The synergist piperonyl butoxide shall not be used.
Quassia (*Quassia amara*)	
Rotenone (*Derris elliptica*, *Lonchocarpus spp*., *Thephrosia spp*.)	Studies show a link between rotenone and Parkinson's disease; therefore, any use should be limited and include precautionary measures.
Ryania (*Ryania speciosa*)	
Sabadilla	
Seaweed, seaweed meal, and seaweed extracts	
Tobacco tea (pure nicotine shall not be used)	
ii) Mineral Origin	
Chloride of lime	
Clay (e.g., bentonite, perlite, vermiculite, zeolite)	
Copper salts (e.g., sulphate, hydroxide, oxychloride, octanoate	Max 8 kg/ha per year (on a rolling average basis)

Diatomaceous earth	
Light mineral oils (paraffin)	
Lime sulphur (Calcium polysulfide)	
Potassium bicarbonate	
Potassium permanganate	
Quicklime	
Silicates (e.g., sodium silicates, quartz)	
Sodium bicarbonate	
Sulphur	
iii) Micro-organisms	
Fungal preparations	
Bacterial preparations (e.g., *Bacillus thuringiensis*)	
Release of parasites, predators, and sterilized insects	
Viral preparations (e.g., granulosis virus)	
iv) Others	
Biodynamic preparations	
Calcium hydroxide	
Carbon dioxide	
Ethyl alcohol	
Homeopathic and ayurvedic preparations	
Iron phosphates (for use as molluscicide)	
Sea salt and saltwater	
Soda	
Soft soap	
Sulphur dioxide	
v) Traps, barriers, repellents	
Physical methods (e.g., chromatic traps, mechanical traps)	
Mulches, nets eg insect proof nets	
Pheromones (in traps and dispensers only)	Traps for fruit-fly and substances as required by regulations are permitted.

The use of organically certified inputs, where available, is preferred.

10.3 Table 3 List of Natural Substances which may not be used in Organic Plant Production

This list, which is normative, contains natural substances which may not be used in organic production according to this standard.

Description, compositional requirements of substance	Comments
Nicotine (pure)	Tobacco tea is allowed; however; safety measures shall be taken to reduce skin contact
Chilean nitrate	Chilean nitrate (sodium nitrate) may not be used on certified organic farms because it contains sodium which could build up and be harmful to the crop

Chilean nitrate and all synthetic nitrogenous fertilisers, including urea are prohibited.

10.4 Table 4 List of Additives and Processing Aids for Organic Food Processing

The list is indicative, i.e. there may be other substances that may be used in organic production according to this standard as long as they follow the criteria in the IFOAM Basic Standards or CAC/GL 32. Where the substances listed in this Appendix can be found in nature, natural sources are preferred. Substances of certified organic origin are preferred.

International Numbering System (INS)	Product	Additive	Processing aid	Limitation/note
INS 170	Calcium carbonate		X	
INS 181	Tannin		X	Only for wine
INS 184	Tannic acid		X	Filtration aid for wine
INS 220	Sulphur dioxide	X		Only for wine
INS 224	Potassium metabisulphite	X		Only for wine
INS 270	Lactic acid	X	X	
INS 290	Carbon dioxide	X	X	
INS 296	L-malic acid	X	X	
INS 300	Ascorbic acid	X		
INS 306	Tocopherols, mixed natural concentrates	X		
INS 322	Lecithin	X	X	
INS 330	Citric acid	X	X	
INS 331	Sodium citrates	X		
INS 332	Potassium citrates	X		
INS 333	Calcium citrates	X		
INS 334	Tartaric acid and salts	X	X	Only for wine
INS 335	Sodium tartrate	X	X	
INS 336	Potassium tartrate	X	X	
INS 341	Mono calcium phosphate	X		Only for “raising flour”
INS 342	Ammonium phosphate	X		Restricted to 0.3 gm/L in wine
INS 400	Alginic acid	X		
INS 401	Sodium alginate	X		

International Numbering System (INS)	Product	Additive	Processing aid	Limitation/note
INS 402	Potassium alginate	X		
INS 406	Agar	X		
INS 407	Carrageenan	X		
INS 410	Locust bean gum	X		
INS 412	Guar gum	X		
INS 413	Tragacanth gum	X		
INS 414	Arabic gum	X		Only for milk products, fat products, confectionary, sweets, eggs
INS 415	Xanthan gum	X		Only fat, fruit and vegetable products and cakes and biscuits
INS 440	Pectin	X		Unmodified
INS 500	Sodium carbonates	X	X	
INS 501	Potassium carbonates	X	X	
INS 503	Ammonium carbonates	X		Only for cereal products, confectionery, cakes and biscuits
INS 504	Magnesium carbonates	X		
INS 508	Potassium chloride	X		
INS 509	Calcium chloride	X	X	
INS 511	Magnesium chloride	X	X	Only for soybean products
INS 513	Sulphuric acid		X	pH adjustment of water during sugar processing
INS 516	Calcium sulphate	X		For soybean products, confectionery and in bakers' yeast
INS 517	Ammonium sulphate	X		Only for wine, restricted to 0.3 mg/l (check – this should be only the amount used – with nothing left in the wine)
INS 524	Sodium hydroxide	X	X	For sugar processing and for the surface treatment of traditional bakery products
INS 526	Calcium hydroxide	X	X	Food additive for maize and tortilla flour; processing aid for

				sugar
INS 551	Silicon dioxide (amorphous)		X	For wine, fruit and vegetable processing
INS 553	Talc		X	
INS 901	Beeswax		X	
INS 903	Carnauba wax		X	
INS 938	Argon	X		
INS 941	Nitrogen	X	X	
INS 948	Oxygen	X	X	
	Activated carbon		X	
	Bentonite		X	Only for fruit and vegetable products
	Casein		X	Only for wine
	Diatomaceous earth		X	Only for sweeteners and wine
	Egg-white albumen		X	Only for wine
	Ethanol		X	
	Gelatine		X	Only for wine, fruit, and vegetables
	Hazelnut shells		X	
	Isinglass		X	Only for wine
	Kaolin		X	
	Perlite		X	
	Preparations of bark		X	Only for Sugar
	Vegetable oil		X	Greasing or releasing agent
	Water		X	

Flavoring Agents

- Organic flavoring extracts (including volatile oils)
- Volatile (essential) oils produced by means of solvents such as oil, water, ethanol, carbon
- dioxide and mechanical and physical processes
- Natural smoke flavor

Natural flavoring preparations are only to be approved based on the criteria established by the organic certifier.

Preparations of Micro-organisms and Enzymes for use in food processing (see 7.2.3.)

These may be used as ingredient or processing aids with approval based on the criteria established by the organic certifier.

- Organic certified micro-organisms
- Preparations of micro-organisms
- Enzymes and enzyme preparations

10.5 Table 5: Cleansers and Disinfectants in Direct Contact with Food Preparation Surfaces

Product	Limitation/Note
Acetic acid	
Alcohol, ethyl (ethanol)	
Alcohol, isopropyl (isopropanol0	
Calcium hydroxide (slaked lime)	
Calcium hypochlorite	
Calcium oxide (quicklime)	
Chloride of lime (calcium oxychloride, calcium chloride and calcium hydroxide	
Chlorine dioxide	
Citric acid	
Formic acid	
Hydrogen peroxide	
Lactic acid	
Natural essences of plants	
Oxalic acid	
Ozone	
Peracetic acid	
Phosphoric acid	Only for dairy equipment
Plant extracts	
Potassium soap	
Sodium carbonate	
Sodium hydroxide (caustic soda)	
Sodium hypochlorite	Eg as a liquid bleach
Sodium soap	