Companion Volume User Guide:

Permaculture

Version 1.0

Supporting the

AHC Agriculture, Horticulture and Conservation and Land Management Training Package

Version 9.0

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Contents

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Introduction

About this Guide

This Companion Volume User Guide (User Guide) supports the delivery and assessment of the Permaculture units of competency in the *AHC Agriculture, Horticulture and Conservation and Land Management Training Package Version 9.0*.

The User Guide is an additional companion volume developed by Skills Impact to support good practice implementation of the Permaculture components. It is not endorsed in the same way as units of competency and qualifications, and as such, it can be updated at any time. In time, it will provide an opportunity to showcase best practice from Registered Training Organisations (RTOs) and provide a forum for sharing information and resources. If you have any ideas, resources, case studies or feedback to contribute to this guide, please provide your feedback via the Skills Impact Continuous Improvement Feedback Register at https://www.skillsimpact.com.au/contact/.

This User Guide should be read in conjunction with the **Companion Volume Implementation Guides** for the *AHC Agriculture, Horticulture and Conservation and Land Management Training Package Version 9.0.*

Structure of this Guide

This User Guide contains several sections to assist in the implementation of Permaculture training and assessment.

1. **Permaculture Definition**
2. **List of products produced in permaculture systems**
3. **Definition of Appropriate Technology in Permaculture**
4. **Additional Knowledge Evidence Listings**
5. **Permaculture Plant Propagation Units**
6. **Units of competency and assessment requirements**
7. **Industry Recommendations for Permaculture Trainers and Assessors**
8. **Permaculture Occupational Outcomes**

1. Permaculture Definition

Permaculture is a multi-disciplinary ecological design science focussed on care for the earth, care for community and all species, sharing of surpluses and setting limits to industrial and exploitative growth and consumption. It is based on the premise that the planet is a finite ecological system with limited energy and material resources to be shared and managed in a manner inspired by nature.

2. List of products produced in permaculture systems

This list describes the wide range of products produced in permaculture systems listed under various categories. Note: This table lists examples for reference and is not exhaustive. This is relevant to AHCPER-coded units of competency where knowledge of permaculture products is required.

Category	**Sample Products**
Plant-based	• fruits, nuts, and vegetables • live plants and plant parts for planting • seeds • compost and soil additives • firewood and wood products • fibre crops • medicinal crops • craft crops • algae • moss and lichen • ferns
Animal-based	• fish and roe • eggs for eating and for incubating • feathers, chickens, and other poultry • leather and hides • bone • milk and milk products • meat and animals and their young
Invertebrates	• honey and bees • insects - live • prepared edible insects • worms • worm castings • shellfish • molluscs • crustaceans
Fungi and Allied	• mushrooms and mycelium • yeasts • bread starters, and other live cultures

3. Definition of Appropriate Technology in Permaculture

'Appropriate Technology' is used by the permaculture industry as a noun for specific types of technology options. These technology options aim to meet the criteria of small scale operations, promote autonomy, and are sustainable for a permaculture system within a geographic area.

Appropriate Technology Definitions:

- https://www.lawinsider.com/dictionary/appropriate-technology
- https://www.merriam-webster.com/dictionary/appropriate%20technology.

4. Additional Knowledge Evidence Listings

This information provides examples where energy and building technologies can be applied in permaculture systems and are often grouped as “appropriate technologies” (see definition of ‘Appropriate Technology’ in Section 3 above). These technologies include:

Energy technologies:

- solar, wind, wood, biomass, biogas, and water driven equipment for generating power, performing pumping duties, heating hot water and biochar production, using low energy devices and solar powered street lighting.

Alternative and resource conserving technologies:

- rainwater collection, wastewater treatment, composting toilets, cooking stoves, cob ovens, space heating and cooling, household appliances, pedal-powered appliances, enterprise plant and equipment.

Building technologies:

- natural and resource conserving building materials and techniques including passive solar design strategies and features.

Tools and implements employed in gardening and farming operations:

- electric fencing, hand vs. power tools, shredders, mulching machines, and use of animal power.

Smaller scale and lower cost solutions:

- maintaining and riding a bicycle, using a refillable pen, using a razor with replaceable blades, and substituting other non-disposable items where disposables are normally used (re-purpose/re-creating technologies from recycled materials).

5. Permaculture Plant Propagation Units

Propagation units in the permaculture sector refer to small scale in-house propagation specific to a permaculture environment. Permaculture practitioners wishing to embark on commercial production of plants for broad scale systems should complete a nursery production qualification that addresses all aspects of plant propagation and growing.

AHCPER407 Design harvesting and storage systems for permaculture products

The following lists provide additional information about harvest and storage systems related to permaculture products and is supplementary for the unit *AHCPER407 Design harvesting and storage systems for permaculture products.*

Products from a permaculture system commonly harvested and stored, can include:

- vegetables where the whole plant is harvested
- vegetables where part of the plant is harvested
- perennial plants where fruit/nuts are harvested
- forests where timber, fuel and fibre crops are selectively removed
- forests where a range of other medicinal and craft crops are harvested
- harvest from wild systems including, fruit, nuts, fungi, and seeds, where an abundance of product has been identified
- animal products including eggs, feathers, hides, bone, milk, and meat
- products may also include those derived from insects, including honey
- fish and roe, and other organisms, including fungi, algae, and moss.

Preservation methods and processes for produce, can include:

- drying and dehydrating
- bottling
- cheese-making
- extraction (honey, cold-pressed and distilled oils)
- culturing or fermenting
- preserving with vinegar, oil, brine, sugar, salt, and other natural agents
- air exclusion (sealing with fats, wax, vacuum seal)
- cellaring and root-cellaring
- other processes that use minimal fossil fuel energy while maintaining the integrity of the harvested crop.

Design of storage areas can include:

- buildings such as sheds
- cupboards
- shelving and racks
- work benches
- storerooms
- pantry
- cool store
- cellar
- root cellar
- bins and containers.

AHCPER508 Manage a permaculture aid and development project

The following lists provide additional information about managing a permaculture aid and development project and is supplementary for the unit *AHCPER508 Manage a permaculture aid and development project*

Examples of permaculture aid and development projects may include:

- disaster response and recovery

- disaster planning
- community and educational projects in remote communities
- community and educational projects with refugees and marginalised communities
- overseas aid and development projects
- social and economic development projects
- health and wellbeing projects
- resource management projects
- sustainable farming projects
- regional autonomy projects.

AHCPER602 Plan community governance and decision-making processes

The following list provides additional information about planning community governance and decision-making processes and is supplementary for the unit *AHCPER602 Plan community governance and decision-making processes.*

There are a wide range of assessment tools that can be used to determine community needs, perceptions, attitudes, governance and decision-making processes. The following list provides some examples that are known to be applied with a permaculture focus:

- SWOT (Strengths Weaknesses Opportunities Threats) analysis
- 6 thinking hats (de Bono)
- PNI/PMI (Positive Negative Interesting /Plus Minus Interesting)
- T.O.A.S.T. Process
- L.O.V.E. Process
- World Café Process.

AHCPER416 Manage a seed bank

The following information is supplementary to the unit *AHCPER416 Manage a seed bank.*

For information about collecting and utilising native seed, types of seed banks and their structure, refer to:

Flora Bank Guidelines – best practice guidelines for native seed collection and use
https://www.anpc.asn.au/florabank/

6. Units of competency and assessment requirements

The units of competency in the *AHC Agriculture, Horticulture and Conservation and Land Management Training Package*, are presented in the template from the *2012 Standards for Training Packages.* The information is organised into two main parts:

- unit of competency
- assessment requirements.

Below is a unit of competency that was developed as part of the Permaculture project, with the associated assessment requirements, with the template fields explained.

Units of competency

AHCPER407	**Design harvesting and storage systems for permaculture products**
Application	This unit of competency describes the skills and knowledge required to determine requirements for optimum conditions and plan for harvesting and storage of produce to meet year round supply of fresh and stored products from a permaculture system. The unit applies to individuals who take responsibility for their own work and for the quality of the work of others. They use discretion and judgement in the selection, allocation and use of available resources. Licensing, legislative or certification requirements may apply to this unit where handling, processing and distribution of permaculture produce are used for human consumption. Users are advised to check with the relevant regulatory authority.

Identifies the work context and who the unit applies to.

A statement in the application field identifies important licensing/regulatory requirements.

Elements	**Performance Criteria**
Elements describe the essential outcomes.	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
1. Determine harvesting and storage system requirements	1.1 Determine range and type of produce to be harvested and stored with stakeholders 1.2 Determine seasonal requirements for produce 1.3 Define optimum harvesting, processing and storage techniques for produce 1.4 Determine resource requirements for harvesting and storage system
...entify requirements for ...taining optimum ...n of permaculture ...s	2.1 Determine maintenance requirements of stored produce 2.2 Identify treatment requirements for produce 2.3 Determine preservation techniques and processes for produce 2.4 Identify preparation requirements for storage of produce
...are harvesting and ... plan	3.1 Estimate volumes of produce to be harvested and stored 3.2 Prepare a seasonal schedule of produce to be harvested and stored 3.3 Select treatment, preparation and preservation methods for produce 3.4 Design method and layout of storage area for produce 3.5 Document a harvesting and storage...
...ent harvesting and ...ge system to stakeholders	4.1 Assess and plan training needs for harvest... stakeholders 4.2 Compile plans, designs and schedules into a harvesting... system 4.3 Present the harvesting and storage system to stakeholder...

Elements define the essential outcome of the job task covered in the unit.

Performance criteria specify the performance needed to demonstrate achievement of the element.

Assessment requirements

The assessment requirements included in the updated templates place an increased focus on assessment and include:

- Performance evidence– includes information about the frequency and volume of the tasks to be performed for assessment
- Knowledge evidence– what individuals need to know to be able to perform the task effectively
- Assessment conditions– specify physical conditions, resources, specifications, and relationships that must be in place for the assessment to take place.

TITLE	**Assessment requirements for AHCPER407 Design harvesting and storage systems for permaculture products**
Performance Evidence	

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.
There must be evidence that the individual has on at least one occasion, designed a harvesting and storage system for produce harvested from a permaculture system and has:
• determined harvesting, post-harvest and storage system requirements with stakeholders
• identified requirements for maintaining optimum condition of produce from a permaculture system
• identified resource requirements which must include:
  • location
  • materials and layout
  • budget
• prepared a harvesting and storage plan
• assessed training needs
• documented harvesting and storage system
• communicated harvesting and storage system to stakeholders.	

Performance evidence describes the practical tasks that must be demonstrated for assessment.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- products commonly harvested and stored from a permaculture system
- design systems for meeting year-round supplies of fresh and stored produce, including:
  - growing requirements and crop regulation strategies calendar or seasonal chart with planting times of crops
  - selection of early, mid- and late season varieties to extend harvest
  - number of plants and area to be planted
  - crop regulation and maintenance program involving tipping, mounding, thinning, staking
  - sequential planting and/or harvesting schedules
  - climatic conditions for harvesting crop including appropriate time of day
- harvest and post-harvest factors influencing plant metabolism and quality
- post-harvest treatment and preparation, including:
  - flow chart of harvest, treatment, preservation and storage process
  - harvest and post-harvest treatment timelines and schedules
  - design or plans of processing and storage area
  - design of processing technology or equipment including solar food dryer
  - materials, tools, equipment and ingredients
  - manuals and operating instructions for equipment
  - recipes and instructions
  - anticipated shelf-life of product
  - labelling and recording systems
  - work health and safety, food safety, hygiene and other relevant enterprise and work practices
- preservation methods and processes for produce
- technologies used in crop processing, treatment, preservation and storage systems
- design of storage areas

Knowledge evidence is what learners need to know to be able to perform the job task effectively.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:
  - skills must be demonstrated in a polycropping system or an environment that accurately represents workplace conditions
- resources, equipment and materials:
  - access to crops, preservation treatments and storage information
- specifications:
  - access to safety data sheets
  - use of stakeholder specifications
  - access to specific legislation, regulations and codes of practice for foodhandling and storage
- relationships:
  - stakeholders
- timeframes:
  - according to timeframes specified for starage system.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational edu
training legislation, frameworks and/or standards.

The assessment conditions specify the mandatory conditions for assessment, the conditions under which the evidence must be gathered, and the mandatory assessor requirements.

7. Industry Recommendations for Permaculture Trainers and Assessors

Training Package Delivery and Assessment states that:

- RTOs must ensure that both training and assessment complies with the relevant standards. In general terms, training and assessment must be conducted by individuals who:
    - have the necessary training and assessment competencies
    - have the relevant vocational competencies at least to the level being delivered or assessed
    - can demonstrate current industry skills directly relevant to the training/assessment being delivered
    - continue to develop their VET knowledge and skills, industry currency and trainer/assessor competence.

Permaculture as a discipline is characterised by some general characteristics, including the Ethics and Principles.
The three key ethical principles identified as underpinning permaculture are:

- Earth Care
- People Care
- Fair Share (set limits and redistribute).

These principles align with rejection of exploitation of the planet, ethical growing and harvesting of production and regenerative production beyond the principles of organic sustainability.

The Permaculture approach is based on the understanding that everything is inter-related and inter-dependent. A system is composed of related and dependent elements which when in interaction, form a unitary whole. A system is simply an assemblage or combination of things or parts forming a complex whole and inspired by nature.

Permaculture addresses all aspects of human culture, not only food production but how we build, how we organise ourselves and how we utilise all our resources, including human resources.

It is important that these fundamental principles and understandings are applied across all levels of training in permaculture as they are key to understanding and applying permaculture for targeted work outcomes and social development.

Training and assessment in permaculture must be conducted by individuals who understand and live by permaculture ethics and principles, and integrate them into their training and assessment practices.

Types of relevant experience and background for permaculture trainers and assessors can include (but is not limited to):

- Permaculture Design Course (PDC) - a globally recognised training course sometimes called a ‘certificate’, although not accredited as such in Australia. PDCs vary substantially, but a good course would normally furnish participants with a syllabus or topic list that would correspond to the knowledge criteria of units of competency in permaculture. A good example can be found by clicking this link A Syllabus For Permaculture design in South Eastern Australia
- Experience working on permaculture-based projects
- Permaculture Internships
- Other permaculture qualifications and courses including Advanced Permaculture Courses, Permaculture Teacher Training Courses and other specialist training offered by several permaculture training providers
- Nationally accredited permaculture qualifications.

For further information, please go to the Permaculture Australia website www.permacultureaustralia.org.au or email hello@permacultureaustralia.org.au or education@permacultureaustralia.org.au.

8. Permaculture Occupational Outcomes

Qualification	Typical occupational outcomes
AHC10422 Certificate I in Permaculture	▪ Permaculture Assistants: o permaculture farm hand o nursery worker in a community nursery o recycling centre helper o helper in a community or school garden o teacher's assistant.
AHC21722 Certificate II in Permaculture	▪ Permaculture Support Workers: o urban food growing assistant o permaculture farmworker/field worker o community nursery worker o waste management worker o school garden assistant.
AHC33822 Certificate III in Permaculture	▪ Permaculture System Coordinators: o permaculture urban garden worker o permaculture farm worker o worker in a permaculture enterprise o small business owner/operator o community support.
AHC42122 Certificate IV in Permaculture	▪ Permaculture Project Supervisors and/or Designers: o supervisor of a food growing enterprise o school or community garden supervisor o developer and supervisor of sustainability projects including overseas aid projects o permaculture trainers o community support o small business owner/operator.
AHC5212 Diploma of Permaculture	▪ Permaculture Project Managers, Consultants and Designers: o sustainability officer in an organisation, school, local government office or NGO o sustainable education manager o design manager on large permaculture projects or developments o designer or manager of a local government sustainability projects o designer or manager of workplace change for sustainability o trainer in permaculture or sustainability o overseas aid and development officer.