



Australian Government

Department of Education, Employment and Workplace Relations

AHCORG506A Manage an agro-ecology production system

Release 1

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Modification History

Release	TP Version	Comments
1	AHC10v4	Initial release

Unit Descriptor

This Unit of Competency defines the standard required to implement agro-ecology principles in managing the soil ecosystem, pests and diseases, the overall health of the farm ecosystem and farm production.

Application of the Unit

Managing and agro-ecology production system is likely to be undertaken alone with input from advisors or other stakeholders in the business.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Nil.

Employability Skills Information

This Unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a Unit of Competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify the farm agro ecosystem functions at a systems level	1.1 Identify and map energy flows through a farm agro ecosystem. 1.2 Identify and map nutrient cycles through different parts of a farm ecosystem. 1.3 Identify disturbance points in the farm ecosystem succession. 1.4 Develop a model of the farm ecosystem. 1.5 Identify areas of complexity and simplicity within the farm ecosystem. 1.6 Identify interactions between elements of farm ecosystem. 1.7 Assess health of existing farm ecosystems.
2. Develop plans to enhance farm agro ecosystem	2.1 Identify areas within the agro ecosystem that require enhancement. 2.2 Identify methods that encourage niche development, increase complexity in the farm agro ecosystem and improve interactions between different components of farm agro ecosystem. 2.3 Document the implementation plan.
3. Manage farm agro ecosystems	3.1 Identify and monitor appropriate parts of the ecosystem. 3.2 Set up monitoring system. 3.3 Comply with requirements for monitoring determined by organic standards and legislative. 3.4 Review measured ecosystem and farm production performance with expected performance and adjust plan in response to differences.

Required Skills and Knowledge

This section describes the skills and knowledge required for this Unit.

Required skills include:

Ability to:

- identify ecosystem elements and map energy water and nutrient flows through ecosystems
- perform ecosystem monitoring
- plan using ecosystem process knowledge
- apply ecosystem processes to farm production system
- use literacy skills to interpret, analyse and extract information from a range sources such as professional literature, legal documents, discussions and workshops and to converse and liaise with industry contacts, colleagues and family regarding the ecosystem function
- use interpersonal techniques to identify, build and use network and support groups
- use numeracy skills to estimate and monitor ecosystem processes
- use problem-solving skills to enhance farm agro ecosystem.

Required knowledge includes:

Knowledge of:

- advantages of ecological agriculture
- ecosystem processes, energy flows, nutrient cycles, biological succession, predator/prey relationships, ecological niche
- relationships between ecosystems and agricultural production
- application of ecosystem processes to a production system.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this Unit must be able to provide evidence that they can manage an Agro-ecology production system
Critical aspects for assessment and evidence required to demonstrate competency in this Unit	The evidence required to demonstrate competency in this Unit must be relevant to workplace operations and satisfy holistically all of the requirements of the performance criteria and required skills and knowledge and include achievement of the following: • identify the farm agro ecosystem functions at a systems level • assess the health of existing farm ecosystems • develop plans to enhance farm agro ecosystem • manage and monitor the development of a farm ecosystem • review ecosystem and farm production performance.
Context of and specific resources for assessment	Competency requires the application of work practices under work conditions. Selection and use of resources for some worksites may differ due to the regional or enterprise circumstances.
Method of assessment	• Assessment methods must satisfy the endorsed Assessment Guidelines of the AHC10 Training Package and can be assessed holistically with other Units. • Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of required knowledge. • Assessment must be by direct observation of tasks, with questioning on required knowledge and it must also reinforce the integration of employability skills. • Assessment methods must confirm the ability to access, interpret and apply the required knowledge. • Assessment may be applied under project-related conditions (real or simulated) and require evidence of process.

	• Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. • Assessment may be in conjunction with assessment of other Units of Competency. • The assessment environment should not disadvantage the candidate. • Assessment practices should take into account any relevant language or cultural issues related to Aboriginality, gender or language backgrounds other than English. • Where the participant has a disability, reasonable adjustment may be applied during assessment. • Language and literacy demands of the assessment task should not be higher than those of the work role.
Guidance information for assessment	To ensure consistency of performance, competency should be demonstrated on more than one occasion over a period of time in order to cover a variety of circumstances, cases and responsibilities, and where possible, over a number of assessment activities.

Range Statement

The range statement relates to the Unit of Competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<i>Energy flows</i> may include:	• primary production of the system • imported energy • energy moving to and from production parts of the farm agro system • movement to entropy.
<i>Nutrient cycles</i> may include:	• existing nutrients • imported nutrients • movement to and from production parts of the farm agro ecosystem.
<i>Disturbance points</i>	These are points in the ecosystem succession where the ecosystem processes are disturbed and move the system back to the start of the succession. These points may include: • cultivation • heavy or crash grazing • herbicides • fire • slashing • invasion.
<i>Interactions between elements</i> may include:	• predator – prey relationships • movement of energy, nutrients water between elements • symbiotic relationships • neutral relationships • one way relationships.
<i>Health of existing farm ecosystems</i> could be measured by:	• biodiversity • identifying indicators • niche development.
<i>Methods that encourage niche development</i> may include:	• increasing diversity of abiotic elements within a system • increasing biodiversity • increasing energy and nutrient flow through system • poly-cultures

	• multiple animal/plant relationships • succession as a management tool.
<i>Appropriate parts</i> of the ecosystem may include:	• biological diversity • plant succession • water cycle processes • nutrient cycles • energy capture and use • soil health.

Unit Sector(s)

Organic Production