

**CGCE0516**

**Demonstrate knowledge of the effects of climate change**

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| **Level** | 1 |
| **Credit** | 3 |
| **Unit Descriptor** | This unit describes the performance outcomes, skills and knowledge required to identify and explain the main effects of climate change on the atmosphere and oceans. |
| **Pre-requisite** | CGHR0116, CGCK0216, CGCV0316, CGCC0416 |
| **Co – requisite** | Nil |
| **ELEMENT**1. Demonstrate the links between greenhouse gases, global warming and climate change.
2. Provide reasons for rising sea levels and ***oceanic acidification***.
3. Provide an overview of future climate change projections
 | **PERFORMANCE CRITERIA*** 1. The impact of increased levels of ***greenhouse gases*** on ***global warming*** is demonstrated.
	2. The impact of rising global air and sea surface temperatures on ***other aspects of climate*** is demonstrated.
	3. The effect of increasing levels of greenhouse gases on rising sea levels is demonstrated.
	4. Links are demonstrated between increased greenhouse gases, warmer sea-surface temperatures, ***oceanic acidification*** and the ***degradation of coral reefs.***
	5. Future ***projections*** of climate change in Vanuatu are outlined.
	6. The likely effects of climate change on islands and seas are clarified.
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| **KEY COMPETENCIES/EMPLOYABILITY SKILLS AND EXAMPLES OF APPLICATION**

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| **Required skills\*** | **Example of application** |
| **Initiative** | Adapting to new situations • developing a strategic long-term vision • being creative • identifying opportunities not obvious to others • translating ideas into action • generating a range of options • initiating innovative solutions* *Initiate and carry out experiments and independent research into the impacts of increasing levels of greenhouse gases on oceans and reefs.*
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| **Communication** | Verbal or non-verbal that includes: • speaking clearly and directly • writing to the needs of the audience • understanding the needs of internal and external parties • persuading effectively • establishing and using networks* *Present information both visually (using hand-drawn illustrations and technology) and verbally to explain problems that people in Vanuatu are going face in the future because of climate change.*
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| **Teamwork** | Working with people of different ages, gender, race, religion or political persuasion • working as an individual and as a member of a team • knowing how to define a role as part of a team • applying teamwork skills to a range of situations* *Undertake discussions and activities in pairs and groups regarding findings related to learning on the effects of climate change.*
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| **Information & Communication Technology** | Having a range of basic IT skills • applying IT as a management tool • using IT to organise data • being willing to learn new IT skills • having the occupational health and safety knowledge to apply technology • having the appropriate physical capacity* *Use the internet and print materials to find examples of the impacts of climate change in Vanuatu and the Pacific region.*
* *Use phones, email and social media to access information on local impacts of climate change.*
* *Use computer applications to construct climatic graphs, maps and diagrams.*
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| **Problem solving** | Developing creative, innovative solutions • developing practical solutions • showing independence and initiative in identifying problems solving problems in teams • applying a range of strategies to problem solving • applying problem-solving strategies across a range of areas* *Determine the likely consequences of increasing atmospheric and ocean temperatures for the world, for Vanuatu and for the local area.*
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| **Self-management**  | Having a personal vision and goals • evaluating and monitoring own performance • having knowledge and confidence in own ideas and vision • articulating own ideas and vision • taking responsibility* *Reflect on knowledge and understanding of climate change and its effects on communities in the local region.*
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| **Planning**  | Managing time and priorities – setting timelines, coordinating tasks • being resourceful • taking initiative and making decisions • establishing clear project goals and deliverables • allocating people and resources to tasks • participating in continuous improvement and planning • developing a vision and a proactive plan to accompany it* *Plan, collect and collate information from documents and oral discussions in order to make decisions about the effects of climate change on islands and oceans.*
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| **Learning (gaining new skills and knowledge**) | Managing your own learning using a range of learning options suited to the individual learning style– mentoring, peer support, networking; • having enthusiasm for ongoing learning; • being willing to learn in any setting• being open to new ideas and techniques • being prepared to invest time and effort in learning new skills* *Participate in group discussions to share knowledge and gain new skills and learning on the effects of climate change*
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| **GESI (Gender Equity and Social Inclusion)** | Valuing and supporting women and disadvantaged persons and equal opportunity for all in workplaces and communities • mentoring younger people • valuing and respecting older people • having respect for different cultural, social, religious and political values* *Ensure that discussions in the communities are inclusive of both male and female perspectives on the effects of climate change.*
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\* as per Provincial Skills Plan**Required knowledge**

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|  | * Knowledge and experience of local climate, climatic variations and factors that influence climate change (e.g. deforestation, volcanic eruptions, burning of fossil fuels) and of the links between atmosphere and oceans.
* First-hand knowledge of a local village or community.
* Knowledge of local traditional wisdom and cultural practices.
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| **RANGE STATEMENT**

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| 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.  |

**Degradation of coral reefs** refers to:* the way in which coral reefs are being damaged or reduced in quality and quantity.

**Global warming** refers to:* the rise in atmospheric and oceanic temperatures as a result of the enhanced greenhouse effect.

**Greenhouse gases (GHGs)** are:* gases present in the atmosphere that can absorb the outgoing heat radiation and send it back to the earth. Examples are carbon dioxide, methane, nitrous oxide and water vapour.

**Oceanic acidification** refers to:* the way in which increasing quantities of carbon dioxide are being absorbed by the oceans. This results in more carbonic acid and less calcium carbonate in the sea water. When there is not enough calcium carbonate in the sea water, corals and molluscs cannot build their skeletons and shells.

**Other aspects of climate** include:* changing rainfall patterns, more frequent extreme events, humidity, atmospheric circulation and oceanic circulation.

**Projections** are:* estimations of what is going to happen in the future.
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| **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.Critical aspects for assessment and evidence required to demonstrate competency in this unitEvidence of the following knowledge, skills and attributes is essential:* Understanding of the effects of climate change
* Communication skills to develop individual and community awareness of the effects of climate change.
* Application of concepts of climate change to the local environment, for example by finding out its effects on land and sea.
* Ability to interpret and construct diagrams, graphs and simple maps
 | **Context of Assessment** * Assessment of underpinning knowledge and communication of ideas can be done in the classroom through observation and discussion.
* Assessment of awareness talks on the effects of climate change in Vanuatu can be done in the field or in the classroom.

**Resource Implications**Assessment process and resources must ensure:* Physical access to communities to observe communications and/or collection of information and data
* Checklists for the learner and assessor to guide community activities, communications and observations
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| **Assessment Methods**Assessment methods must be chosen to ensure that knowledge of the effects of climate change can be practically demonstrated. Methods must include assessment of knowledge as well as assessment of practical skills, and may be done in conjunction with assessment of other units of competency. Allowance should be made for participants with disabilities. Some of the following examples are appropriate:* Direct oral questioning combined with third party workplace or community reports of knowledge and performance by the learner
* Direct observation during community contact (may be undertaken during field visits and/or using technology such as phone/video)
* Review of any written documentation evidencing knowledge and skills (maps, workbook activities)
* Oral and/or written reflections by learners
* Written holistic/summative assessment.
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