**NZQA**

**Approved**

Achievement standard: 91302 Version 2

Standard title: Evaluate sustainable food related practices

Level: 2

Credits: 5

Resource title: Pack a punch with plants

Resource reference: Home Economics VP-2.4 v2

Vocational pathway: Services Industries

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| Quality assurance status | These materials have been quality assured by NZQA. NZQA Approved number A-A-02-2015-91302-02-8187 |
| Authenticity of evidence | Assessors/educators must manage authenticity for any assessment from a public source, because learners may have access to the assessment schedule or exemplar material.Using this assessment resource without modification may mean that learners’ work is not authentic. Assessors/ educators may need to change figures, measurements or data sources or set a different context or topic to be investigated or a different text to read or perform. |

Vocational Pathway Assessment Resource

Achievement standard: 91302

Standard title: Evaluate sustainable food related practices

Level: 2

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Resource title: Pack a punch with plants

Resource reference: Home Economics VP-2.4 v2

Vocational pathway: Services Industries

Learner instructions

# Introduction

This assessment activity requires you to evaluate the sustainable practice of using more plant-based protein meals in a restaurant in New Zealand by considering the social, economic and environmental implications of this practice.

You are going to be assessed on how comprehensively you evaluate the social, economic and environmental implications of using more plant-based protein meals, and draw justified conclusions.

The following instructions provide you with a way to structure your work so you can demonstrate what you have learnt and achieve success in this standard.

Assessor/educator note: It is expected that the assessor/educator will read the learner instructions and modify them if necessary to suit their learners.

# Task

*‘In a 2006 report, the U.N. Food and Agriculture Organization (FAO) concluded that worldwide livestock farming generates 18% of the planet's greenhouse gas emissions – by comparison, all the world's cars, trains, planes and boats account for a combined 13% of greenhouse gas emissions.’*

[http://www.time.com/time/health/article/0,8599,1839995,00.html](http://www.time.com/time/health/article/0%2C8599%2C1839995%2C00.html)

The restaurant industry is aware of a growing interest by people to limit the amount of animal protein they consume and, instead, increase the quantity and quality of plant-based-protein in their daily meals.

The restaurant that you are working in has received comments from diners and requests for ‘meat-free’ meals. The owner has asked you to investigate the sustainability of meals that use more plant-based protein and rely less on animal products.

Consider the following questions:

* What are the benefits and limitations of this practice?
* What are the opportunities and challenges presented by this practice?
* What are the social, economic and environmental implications of this practice at local and national level?

Present your conclusions in a report.

## Step 1: Developing questions

Develop some questions to help you focus on the social, economic and environmental implications of sustainable food practices related to using more plant-based protein meals in a restaurant. As you need to evaluate the social, economic and environmental implications of more plant-based protein meals, it is a good idea to use these headings for your investigation. See Resource A for some sample broad questions to get you started.

## Step 2: Investigating

Look in a range of places to get your information, for example talking to people, the internet. See Resource B for some suggestions.

Investigate how much protein is in plant foods that are commonly available in New Zealand and compare this to the amount available from animal foods.

Think about the reasons people choose a diet that is more reliant on plant rather than animal protein. Consider the implications and consequences of the diet.

Prepare a range of plant-based protein foods suitable for the restaurant. Consider the preparation time involved and skills required. Complete a sensory evaluation.

Before starting your report, it might be useful to organise your information under headings, using a SWOT (strengths, weaknesses, opportunities and threats) chart. This will help you sort the information so you can justify your conclusions about the sustainability of including more plant-based protein meals.

Remember to focus on the food practices and include connections to well-being.

## Step 3: Completing your evaluation and drawing conclusions

You need to present your evaluation as a report. Your report needs to evaluate the:

* benefits and limitations, opportunities and challenges arising from the sustainable food practice of using more plant-based protein meals in the restaurant
* social, economic and environmental implications of consuming more plant-based meals for society. Consider the implications at a local and national level. Provide evidence to support your evaluation
* significance of more plant protein-based meals in the restaurant. Show how you weighed up all your gathered evidence and came to the decision about the sustainability of using more plant-based protein meals in the restaurant. Consider the values and attitudes of households, businesses and communities when making decisions about sustainability.

Include a reference list that acknowledges the books, internet sites, people and other sources you used to find information.

# Resources

## Resource A: Sample questions

Social implications:

* How much protein does the average person need each day?
* What is the nutritional value of plant-based protein foods and are they sufficient for a person to remain healthy?
* Which groups are most in need of high quality, protein foods?
* What are the effects of having too much animal protein?
* How would using more plant-based protein food help with New Zealand’s health issues?
* What would be the effect on restaurant diners if more plant-based protein diets were offered? Would the nutritional and personal needs of all family members be met?
* Do restaurant chefs have the necessary skills to prepare protein-based plant foods in interesting ways? Are there risks involved in preparing these foods?
* Are thereany traditional and cultural food customs and practices that restaurant owners and diners need to consider when considering a choice between plant or animal-based protein meals? How do these customs and practices relate to well-being?
* How important is lifestyle when choosing between plant or animal-based protein meals? For example, would a person’s social, cultural or religious beliefs and values be a significant factor?

Economic implications:

* Taking all costs into account, is a meal based on plant protein cheaper than one based on animal protein?
* If people ate less meat, how would this affect meat retailers, such as butchers (both independent and supermarket chains)?
* What would be the impact on the restaurant, if people were offered more plant-based protein meals?
* What costs are involved in maintaining animal health, for example antibiotics, feed, veterinary fees?
* What would be the costs for farmers moving from animal-based products to crops?

Environmental implications:

* How much land is needed to produce the same amount of plant and animal protein?
* How much pollution (animal waste, fertilisers and chemicals) is created by animal production?
* How much pollution (pesticides and chemicals) is produced by growing crops and is it likely to increase if there was a greater demand for plant protein?
* How much more land could be used for crops than can currently be used for animal production? What issues are there related to soil nutrition and water supply?
* What are the global environmental advantages of people eating less meat?

## Resource B: Useful information

Remember to check and verify that your information is from a reliable source and is credible.

Here are some potential sources of information:

<http://gentleworld.org/10-protein-packed-plants/>

[www.mindbodygreen.com/0-4491/My-Top-7-Sources-of-PlantBased-Protein.html](http://www.mindbodygreen.com/0-4491/My-Top-7-Sources-of-PlantBased-Protein.html)

[www.sanitarium.co.nz/health-and-wellbeing/vegetarians-need-protein](http://www.sanitarium.co.nz/health-and-wellbeing/vegetarians-need-protein)

[www.nutritionfoundation.org.nz/nutrition-facts/protein](http://www.nutritionfoundation.org.nz/nutrition-facts/protein)

[www.healthyfood.co.nz/](http://www.healthyfood.co.nz/)

[www.sustainableliving.org.nz](http://www.sustainableliving.org.nz)

[www.nourishlife.org/videos-all](http://www.nourishlife.org/videos-all)

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Assessor/Educator guidelines

# Introduction

The following guidelines are supplied to enable assessors/educators to carry out valid and consistent assessment using this internal assessment resource.

As with all assessment resources, education providers will need to follow their own quality control processes. Assessors/educators must manage authenticity for any assessment from a public source, because learners may have access to the assessment schedule or exemplar material. Using this assessment resource without modification may mean that learners' work is not authentic. The assessor/educator may need to change figures, measurements or data sources or set a different context or topic. Assessors/educators need to consider the local context in which learning is taking place and its relevance for learners.

Assessors/educators need to be very familiar with the outcome being assessed by the achievement standard. The achievement criteria and the explanatory notes contain information, definitions, and requirements that are crucial when interpreting the standard and assessing learners against it.

# Context/setting

This activity requires learners to comprehensively evaluate the sustainability of using more plant-based protein meals in restaurants. Learners will present their evaluation in a report.

# Conditions

The research can be completed as a group but the evaluation must be completed individually.

# Resource requirements

Learners need access to the internet.

It is preferable that learners have access to appropriate facilities for preparing plant-based protein food safely and hygienically.

# Additional information

## Presentation suggestions

Learners could complete a written report or a visual or multimedia presentation. The format should be agreed to before the report is started.

If learners select a format (for example PowerPoint) where the information is presented in a brief way, it is recommended that they include additional evidence (written and/or oral) to enable them to comprehensively evaluate the sustainable practice/s.

## Other possible contexts for this vocational pathway

Food worker, baker, butcher, café manager, caterer, chef, fast food manager, hostel manager, hunter/trapper, outdoor recreation guide or instructor, restaurant manager could investigate the sustainability of:

* a lacto-ovo vegetarian diet (i.e. without meat or fish but including animal products, such as milk, cheese and eggs)
* a vegan diet (i.e. no animal or fish products)
* eating only organically produced foods
* eating only foods containing no genetically modified materials
* buying locally produced food (farmers markets, pick-your-own and on-site farm stands or stores)
* growing your own vegetables (i.e. only eating what you can grow)
* eating seasonally (i.e. only eating what is seasonal)
* preserving food (for example freezing, drying, pickling, jam making) to use up excess food for later and/or when not in season
* foraging for food, such as in public parks (for example figs, olives, etc), the bush (for example puha) or roadsides (for example blackberries).

# Assessment schedule: Home Economics 91302 – Pack a punch with plants

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| Evidence/Judgements for Achievement | Evidence/Judgements for Achievement with Merit | Evidence/Judgements for Achievement with Excellence |
| The learner evaluates sustainable food-related practices by:* determining the value of using more plant-based protein meals in a restaurant by considering the social, economic and environmental implications of those practices

For example: The learner provides a detailed account of the benefits and limitations, with examples of the social, economic and environmental implications.The learner makes connections to well-being.*Restaurants are aware they need to provide balanced meals that cater for people’s nutritional requirements. It would be expected that any main meal would include some protein base. This is needed for growth and repair of all body tissue. It can be sourced from both animal and plant sources. These plant-based protein sources need to be readily available, economically priced and appeal to the restaurant’s diners.**From a social perspective, buying high protein plant foods that are grown by local producers links us to our community. These can be sourced at local roadside stalls, farmers markets, and community gardens or even at the local stores – you just need to check where the produce comes from. Foods such as nuts and vegetables supply protein; however, it does depend on which part of the country you live in as some require warmer temperatures to grow. Sourcing our food from a local supplier means there is more opportunity to find out what sprays might have been used. We know the money is going back into our local community rather than contributing to importing costs.**The above expected learner responses are indicative only and relate to just part of what is required.* | The learner evaluates, in-depth, sustainable food-related practices by:* determining the value of using more plant-based protein meals in a restaurant by considering the social, economic and environmental implications of those practices

For example:The learner provides a detailed account of the benefits and limitations, with examples of the social, economic and environmental implications.The learner makes connections to well-being.* providing evidence of the social, economic and environmental implications

For example:*Restaurants are aware they need to provide balanced meals that cater for people’s nutritional requirements. It would be expected that any main meal would include some protein base. This is needed for growth and repair of all body tissue. It can be sourced from both animal and plant sources. These plant-based protein sources need to be readily available, economically priced and appeal to the restaurant’s diners.**From a social perspective, buying high protein plant foods that are grown by local producers links us to our community. These can be sourced at local roadside stalls, farmers markets, and community gardens or even at the local stores – you just need to check where the produce comes from. Foods such as nuts and vegetables supply protein; however, it does depend on which part of the country you live in as some require warmer temperatures to grow. We are fortunate to have nut orchards in our district. Less than 10 km from the restaurant is an orchard that sells hazelnuts and walnuts direct to the public. Buying these nuts is a good sustainable practice. The orchard employs local people and buys supplies locally – contributing to the local economy. The nuts are also cheaper and fresher than those from our local wholesaler. (On May 30, a 160 gram bag of hazelnuts cost $4.95 from our wholesaler, with the orchard selling 250 gram bags for $5.00.) These are packaged in recycled brown paper bags which mean waste paper has been reused and also when we are finished with the wrapping we can also recycle it again.**The nuts have minimal food miles and transportation costs are further minimised as people often stop at the orchard shop when they happen to be passing. Reducing packaging and transportation reduces the environmental impact of the food.**The above expected learner responses are indicative only and relate to just part of what is required.* | The learner comprehensively evaluates sustainable food-related practices by:* determining the value of using more plant-based protein meals in a restaurant by considering the social, economic and environmental implications of those practices

For example:The learner provides a detailed account of the benefits and limitations, with examples of the social, economic and environmental implications.The learner makes connections to well-being.* providing evidence of the social, economic and environmental implications

For example:*Restaurants are aware they need to provide balanced meals that cater for people’s nutritional requirements. It would be expected that any main meal would include some protein base. This is needed for growth and repair of all body tissue. It can be sourced from both animal and plant sources. These plant-based protein sources need to be readily available, economically priced and appeal to the restaurant’s diners.**From a social perspective, buying high protein plant foods that are grown by local producers links us to our community. These can be sourced at local roadside stalls, farmers markets, and community gardens or even at the local stores – you just need to check where the produce comes from. Foods such as nuts and vegetables supply protein; however, it does depend on which part of the country you live in as some require warmer temperatures to grow. We are fortunate to have nut orchards in our district. Less than 10 km from the restaurant is an orchard that sells hazelnuts and walnuts direct to the public. Buying these nuts is a good sustainable practice. The orchard employs local people and buys supplies locally – contributing to the local economy. The nuts are also cheaper and fresher than those from our local wholesaler. (On May 30, a 160 gram bag of hazelnuts cost $4.95 from our wholesaler, with the orchard selling 250 gram bags for $5.00.) These are packaged in recycled brown paper bags which mean waste paper has been reused and also when we are finished with the wrapping we can also recycle it again.* *The nuts have minimal food miles and transportation costs are further minimised as people often stop at the orchard shop when they happen to be passing. Reducing packaging and transportation reduces the environmental impact of the food.”** drawing justified conclusions explaining the significance of the social, economic and/or environmental factors – related to how sustainable the learner determines the practices to be

For example:The learner’s conclusion could include:* + balancing restaurant and social needs
	+ economic concerns
	+ maintaining or improving food skills
	+ improving healthy options
	+ the impact on the wider environment.

*I discovered that eating more plant-based protein meals was not just about eating differently, but it involved a whole different way of thinking about what went into your body, why you were eating and what well-being actually meant. It wasn’t just about individual well-being but that of our families, our communities and also globally as we need to find ways to feed the world’s population.**The economic advantages were far reaching: From the individual, who bought local produce, to the farmer who had converted his animal paddocks, to growing a sustainable crop. According to the Vegetarian Society website – ‘The vast amount of land used to raise animals is causing environmental problems such as habitat destruction and deforestation. Going vegetarian will halve the land-use of your diet.’ One hectare of land could feed up to 30 people with fruit, vegetables and cereals whereas the same land used for animal production would feed between 5–10 people.**The above expected learner responses are indicative only and relate to just part of what is required*. |

Final grades will be decided using professional judgement based on an examination of the evidence provided against the criteria in the Achievement Standard. Judgements should be holistic, rather than based on a checklist approach.