The Future Face of New Zealand's Rural Industry.

Contents

Abbreviations:

Ag ITO	Agriculture Industry Training Organisation
DOL	Department of Labour
ERO	Education Review Office
Hort ITO	Horticulture Industry Training Organisation
ICT	Information and Communication Technology
INRULED	The International Research and Training Centre for Rural Education
MAF	Ministry of Agriculture and Forestry
MOE	Ministry of Education
NQF	National Qualifications Framework
NZQA	New Zealand Qualifications Authority
REAP	Rural Education Activities Programme
RTH	Rural Tourism Holdings
SBEC	Small Business Enterprise Centre
SMEs	Small and Medium Sized Enterprises
STAR	School Tertiary Alignment Resource
TEC	Tertiary Education Commission ,

Preface

The common cry from many of today's land managers is that the young New Zealanders who are seeking employment on New Zealand rural properties are ill-prepared for the rigors and day to day workload that is being asked of them. And it is not all physical work ethic and commonsense that they apparently lack. Lack of education, basic numeracy and literacy skills are said to be affecting on farm time-management, productivity, rural safety, and potentially the advancement of a tiny export industry competing for a market share in an ever expanding international arena.

Whilst working alongside and educating farmers, their children, farm workers, and possible 'wannabe' entrants into the New Zealand rural industry, I have become increasingly concerned that the future leaders of this industry will lack the basic academic standards required to take on the enormous roles and responsibilities that the New Zealand farming community, the New Zealand rural export markets and all the associated businesses will be placing upon them. Some questions that have concerned me enough to want to study this area further were:

- Is it a very romantic picture and "easy" career choice that agricultural entrant hopefuls see when they consider leaving school and driving off into the great New Zealand horizon – complete with the holden ute, dogs, a gun and a box of Tui or Speights?

- Are these agricultural entrants arriving to a culture shock, because reality is nowhere near their level of expectation and therefore they become disillusioned and leave or be forced to leave the industry that they thought held so much promise for their future?

- What academic and practical standards and requirements are clearly outlined, taught and measured for those keen on "becoming a farmer"?

- What messages (both educational and practical) are being portrayed to those considering a career on the land?

- Who and how is the rural industry being promoted in order to meet the ongoing labour and leadership requirements of the New Zealand farming future?

- How does the rural industry attract the people needed to fill the roles of the future and compete against the multitude of career options that are available to the current and future generations.

- What preparation and support is ready when they do present themselves to the industry and can we assist with life skills, expectations and academic abilities to further advancement of careers and the rural industry.

It is my intention in the presentation of this project for the Kellogg Rural Leaders Project 2010, to evaluate and outline the different levels of academic and practical skills of individuals required to keep the New Zealand rural industry in the forefront of the world export markets and to ensure that there will always be an adequate supply of human resources for every sector of the industries "peoples-skills" future requirements.

Do we have a way of measuring the ongoing and growing number of rural industries human resource replacement needs and is this being constantly monitored. History would suggest not and thus the industry is playing catch-up to attract the desired personal to man the various industry roles. In my opinion the rural industry has relied heavily upon a very reactive way of employment and employment retention.

This project has been designed to give all readers, national and international, an outline of New Zealand's historic and current rural educational and training outlines and to gauge general public conception of the academic and practical requirements to enter and succeed, the reality of a challenging and fulfilling rural career, reality of financial success, and the career conditions compared other career opportunities.

Every effort has been made to ensure the accuracy of the information presented.
The author invites comment on this working paper.

New Zealand Brief:

Geography:

New Zealand lies in the southwestern Pacific Ocean and comprises two main islands and a number of smaller islands. New Zealand's combined area of 270 500sq km is similar to the size of Japan or the British Isles. Mountain ranges and hill country dominate New Zealand's landscape.

Figures 1&2:New Zealand Tourism Guide. New Zealand Tours Guide: Lord of the Rings Tours Retrieved 1, November 2010, from http://www.newzealandtourism.co.nz/tours/lord-of-the-rings-tours/

Climate:

The New Zealand climate is temperate and averages range from 8□C in July to 17□C in January, but summer temperatures occasionally reach 30□C or more in many inland and eastern regions. The mean average rainfall varies widely, from less than 400 mm in Central Otago to over 12 000 mm in the Southern Alps. For most of the North Island and the northern South Island, the driest season is summer. However, for the West Coast of the South Island and much of inland Canterbury, Otago and Southland, rainfall is lower over winter.

The long, narrow nature and relatively small size of New Zealand's two main islands, the North Island and the South Island, means that rural areas are commonly less than two hours' drive from medium sized towns or cities where modern urban services and facilities are available. Well-developed rural roads and electricity supply networks allow most rural people to enjoy a similar living standard to urban dwellers.

There are pockets of rural poverty associated with the loss of rural industries and services in some regions, but, overall, rural New Zealanders enjoy a high living standard when compared to most Asian and Pacific countries.

Infrastructure:

The social welfare system in New Zealand provides entitlements that ensure that people unable to work for any reason receive a level of income that usually prevents homelessness or hunger. For many years, the telecommunications infrastructure based on copper wire networks was adequate for basic telephone communications, but it is now proving inadequate for providing fast and efficient Internet access. The New Zealand Government is currently addressing this problem with the installation of broadband wireless telecommunications networks into rural areas. This follows a government strategy for creating a knowledge-based society accessible to all. Access to the Internet by rural schools and rural dwellers is a key component in rural development. Electronic banking, communications, information, marketing, education and other commercial services are minimising the divide between rural and urban people. The underlying philosophy is that, by providing rural people access to information and communication technology (ICT), entrepreneurial rural people will use these networks to create their own rural enterprises.

An example of this can be seen in the wine industry, where many vineyards now market and sell the wine they produce direct to customers around the world. Remote sheep stations are utilising these ICT tools also to develop niche markets and additional income internationally.

Economy:

New Zealand's small economy is heavily dependent on overseas trade. Traditionally, a large proportion of New Zealand's exports, mainly agricultural products, went to the United Kingdom. In the past 20 years, however, New Zealand has adapted to changing world trade patterns so that Asia is now an important trading block. Our largest merchandise export markets are Australia, USA and Japan. New Zealand has redeveloped its agriculture and manufacturing industries to suit the needs of niche markets. Dairy and meat exports still make a large contribution to New Zealand's economy. However, industries such as forestry, horticulture, fishing, manufacturing and tourism have become increasingly significant.
In New Zealand, nearly 97% of all private enterprises are small and medium sized enterprises (SMEs). SMEs are enterprises that employ 19 or fewer people. New Zealand farms operate as private businesses, usually family-owned SMEs, producing a mix of products such as milk, meat and wool. Farming businesses in the last few years have generally been profitable, and most rural farmers receive an income that enables them to enjoy a high standard of living.

- June 2010 the median income in rural New Zealand was - Weekly Income -$648.00, Annual Income $31,104 up from $19,100 in 2001.
- June 2010 median annual income was $63,867, up 8.5 percent from $58,888 in 2007/081.

Dairy farming is the most profitable type of farming at the present time and the average net trading profit in the 2001 – 02 season was NZ$191,0252.
Sheep and beef farming net trading profit was NZ$112,0062, and there has been some decline since then.
Agricultural, forestry and horticultural products make up 69% of total exports.
In the year ended March 2002, pastoral exports were $13.78 billion, horticultural exports $2.2 billion and forestry exports $3.58 billion. Our reputation for 'quality products from a quality environment' depends on environmentally sustainable land use practices, but sustainable land management in some rural areas is threatened by unsustainable farming practices. The goal of the New Zealand government's Environment 2010 strategy released in October 1994 is to maintain and enhance soil quality and to secure viable land use options and long-term productivity by preventing irreversible land degradation3.

Quick Stats:
At 30 June 2010:

- Total of 11,618 dairy herds in New Zealand. Dairy cattle numbers reached 5.9 million, up 5 percent from 2008. (Extra 295000 cows in 2 years.)
- South Island dairy cattle numbers increased to 2.1 million, up 13 percent from 2008.
- Sheep numbers fell to 32.4 million, down 5 percent from 2008.
- The total area planted in wine grapes rose to 33,400 hectares, up 13 percent from 2007.

During the year ended 30 June 2009:

- 28.0 million lambs were tailed, 10 percent down on the 2008 figure.
- 53,900 hectares of wheat were harvested, up 27 percent from 2008.
- 77,700 hectares of barley were harvested, up 15 percent from 2008.

Consider this scenario:

2010-New Zealand currently requires a minimum 23,600 fulltime labour units to effectively maintain and manage dairy cow numbers.
(@ 1 Fulltime Equivalent Labour Unit (FELU) per 250 cows.)
Should dairy cow numbers continue to expand at a rate of 5% by 2012 to 6,195,000 million , the New Zealand dairy industry alone will require an additional minimum of 590 dairy workers, and additional support personal per annum to meet and sustain growth demands.

The vast and varied New Zealand farming industry requires increasing numbers of skilled, trained, academic, practical, resourceful, and diverse individuals to meet the human resource market.

New Zealand Population Overview

New Zealand currently (2010) has a population of 4,387,377 million.

1 in 7.5 people, live in rural areas, (574,500). This is an approximate 0.5% decrease of rural inhabitants since the last census was taken in 2006. 2011 New Zealand census will be the next national census undertaken and will confirm the actual population shift towards urban centres. Although the proportion of the population working in the primary industries has decreased their productivity has increased. The Ministry of Agriculture and Forestry (MAF) stated that New Zealand farmers are amongst the most efficient in the world and that their efficiency has been increasing. In 1991, the value of gross domestic product per agricultural worker in current terms was $74,000. In 2001, this has risen to $89,000 per employee.

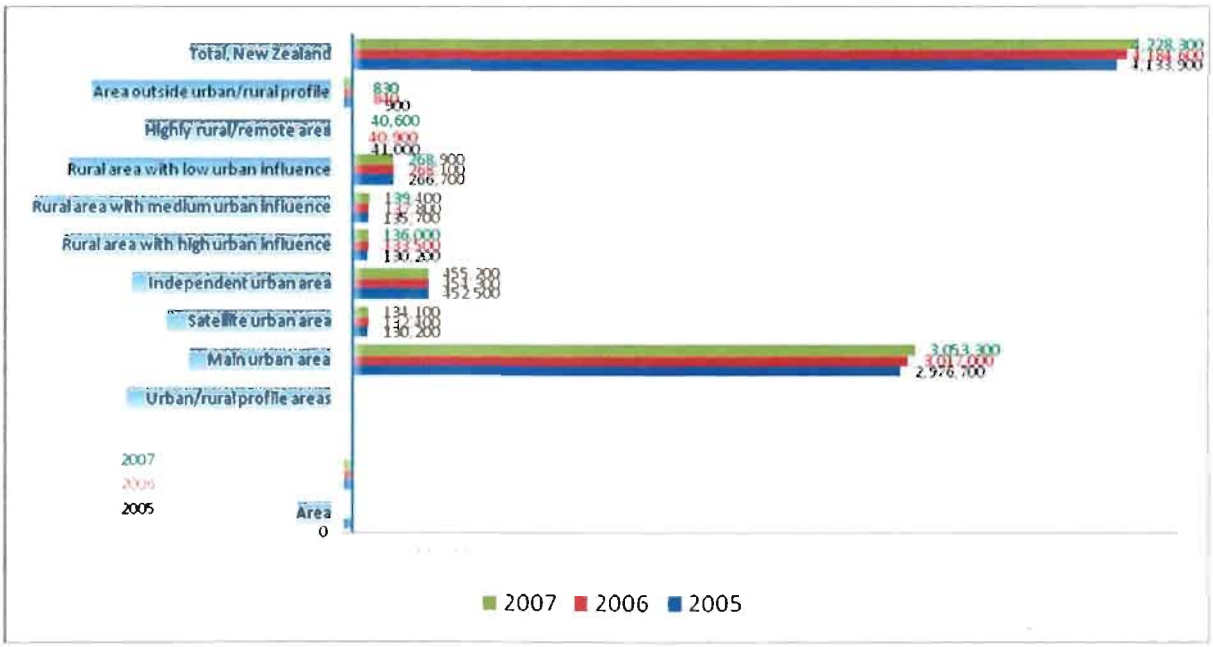

Figure 3.0 - Est. New Zealand population by area 2005, 2006, 2007

New Zealand Rural Education and Human Resource Development.

Current:

In New Zealand, all primary and secondary school children receive education based on the same national curriculum. Children start primary school at age five and generally finish secondary school between 16 and 18 years of age. Schools in rural areas draw much more heavily on rural aspects of this curriculum than urban schools. Some rural schools have a farm associated with the school.
It appears that due mainly to curriculum and school timetable pressures and lack of relevant resources, agriculture as a subject in schools has become an extra and a novelty programme almost.

To address some of the reasons why the bulk of rural industry studies has been reduced and in many instances eliminated from the school curriculum as far as the rural industry is concerned, for the purposes of this project decided further investigation was needed by means of consulting the various target groups that the rural industry would like to engage and promote career opportunities to and those directly responsible for the education and promotion. The intention was to establish initially how the rural industry was perceived and for those who saw a future somewhere within it.

Also for the purposes of my project it was important to try and establish the level of academia perceived by rural entrant prospects, the knowledge and resources available to reach achievement standards, and the support offered and moderated at the qualification levels.

	Average weekly income from:							
	$ Wages and salaries	$ Self-employment	$ Government transfers	$ Investments	$ Other transfers	Average: all sources collected	Median: all sources collected	Number of people (000)
Sex								
Male	573	135	68	38	8	827	675	1,661.9
Female	370	42	105	28	3	554	426	1,759.4
Total	469	88	87	33	5	687	529	3,421.3
Age group (years)								
15–19	94	0	27	0	0	121	0	320.8
20–24	343	11	71	3	0	428	380	311.4
25–29	544	41	69	9	0	664	662	286.0
30–34	640	68	64	14	0	787	730	267.6
35–39	706	98	65	18	0	890	777	300.3
40–44	688	145	56	26	0	916	767	310.6
45–49	707	190	44	27	0	972	767	321.6
50–54	680	171	36	53	0	942	767	289.5
55–59	575	168	40	65	6	853	710	250.0
60–64	470	116	56	64	13	719	566	228.5
65+	73	24	284	72	24	482	354	535.0
Total	469	88	87	33	5	687	529	3,421.3
Ethnic group[1]								
European	494	103	87	40	6	737	575	2,566.5
Māori	400	26	113	5	1	547	458	430.0
Pacific peoples	351	18	102	8	0	482	382	183.6
Asian	392	52	52	13	2	512	363	360.6
MELAA[2]	473	71	71	9	0	629	428	35.4
Other ethnicity[3]	490	73	97	53	7	728	517	67.2
Total[4]	469	88	87	33	5	687	529	3,421.3
Highest qualification								
No qualification	236	45	139	25	3	454	352	861.3
School Cert / NCEA level 1	341	55	77	25	2	504	384	266.0
Sixth form / NCEA level 2	386	61	53	22	4	527	405	197.5
Higher school / NCEA level 3	329	74	61	26	3	496	303	196.8
Other school	313	55	98	17	6	493	360	135.5
Vocational or trade	538	103	84	31	5	766	675	934.0
Bachelor's or higher degree	849	163	41	60	10	1,125	921	593.0
Other post-school	489	87	85	45	8	718	575	156.8
Total[4]	**469**	**88**	**87**	**33**	**5**	**687**	**529**	**3,421.3**

Figure 3. Average and median weekly income
For all New Zealanders aged 15 years and over
June 2010 quarter
Source: *Statistics New Zealand*

Quick Stat:

There are more New Zealanders who have a bachelor's degree or higher in 2008 than in 1990 – (up 13%)

Project Research:

Objective:
To determine the level of academic achievement promoted and measured, the knowledge of the achievement pathway and general attitude and expectations towards entering and pursuing a successful career in any rurally based career by a rurally/ urban balance of New Zealand public.

For the purposes of this project information was gathered from various sources from 4 Taranaki schools, 2 with predominately urban/ rural school zones, and two with predominately urban focus although boarding facilities are available therefore many of the students have rural backgrounds.
For the purposes of this project information was gathered by means of interview or questionnaires aimed at five target groups.
Reasoning behind two different research formats was because in the case of the teachers, questionnaires I felt would have preempted too many answers, as I am unfamiliar with many of the school year timetable, curriculum and qualification restraints and demands.

Target Groups:

1. **Interview: Two rurally proactive, current secondary school teachers and careers advisors.**
   Two teachers from each school involved were asked to participate in the survey. These were selected on their roles in the education, knowledge, and promotion of the rural industry.

2. **Two current rurally unaware secondary school teachers and careers advisors.**
   These teachers were selected for their lack of knowledge/ involvement in teaching and promotion of the rural industry.

3. **Questionnaire: Current secondary school students in the 16-18 year age group.**
   These students were of mixed academic ability and are currently studying in their second senior year in the New Zealand secondary school system.

4. **Questionnaire: Farm employees who have been employed within the dairy industry for a maximum period of 5 years.**
   These employees had entered full time employment within the dairy industry, and were of mixed academic ability.

5. **Questionnaire: Farm owners/ managers who have been operating dairy farms in the farming industry for a minimum of 10 years.**
   Current role/s in the industry.

For each of the five research participants in target groups 3,4,5 were selected in the following three categories.

- Number of years attended primary school institution: min 1 – max 8 years
- Number of years attended secondary school institution: min 1 – max 5 years
- Qualification achieved: School Certificate
  Sixth Form Certificate, University Entrance (prior and inc 2002)
  NCEA Level 1, Level 2, Level 3,
  Tertiary Qualification - Diploma, Degree, or equivalent.
  - Higher academic achievement
- Ongoing academic studies currently being pursued?
- Level of responsibility within current employment role.

Target Project Groups Kellogg Project 2010 Bron Muir		15-18 years still at secondary school	18-23 years and employed within the rural industry	28 years + actively committed to long term career in the rural industry	School teachers -
No qualification		5	5	5	
School Cert / NCEA level 1		5	5	5	
Sixth form / NCEA level 2		5	5	5	
Higher school / NCEA level 3		5	5	5	
Vocational or trade			5	5	
Bachelor's or higher degree				5	
Ongoing studies currently			same 10	same 11	
Total participants	91	20	25	30	16

The project interviews and questioning were carried out through June and July of the 2010 year. This timeframe was chosen for a number of reasons.

- All senior students were committed to their subjects and well through their achievement requirements for the year.
- The majority of the year 13 students had decided on their initial career intentions for their first year post-secondary school.
- Being winter the farmers in Taranaki could commit the time to devote to the project.
- Careers Expos had not yet been undertaken in the Taranaki so many of the students were actively seeking more information post questionnaire.

Project Results:

Target Group 1: Interview summary:
Eight rurally proactive, current secondary school teachers and careers advisors.

Twelve of the sixteen individuals interviewed had a rural connection in their upbringing and or currently. This group of teachers were proactively attempting to promote and include rural references and curriculum components into their classes wherever possible. Many of these teachers were involved in the STAR2. and Gateway3. programs within their schools. They saw the enormous benefits in the inclusion and promotion of agriculture in the curriculum as it catered for all learning styles – especially the kinesthetic. Their frustration with school time restraints and the inability to be able to place many of the students at the coal face of the rural industry due to lack of funding, health and safety, lack of management support and trying to explain to their superiors the importance of getting individual students who had no prior rural experience into a position where they could pass their own judgment was very difficult.
They were very disappointed on the whole with the lack of resources and cohesive support from the rural industries and said the agricultural training schemes on offer were not clearly outlined, did not align with the NCEA qualifications system1. and felt that too many of the provider organisations were in it for financial gain and not for the good of the students.
For the practical sessions the severe lack of quality tutors offered to them was a concern – many of the tutors were ex rural industry themselves, did not know their subject well or had little or no understanding of the NCEA and NZQA qualifications system, spoke on the whole very negatively of the agricultural industry and did not mark to a consistent standard.
Their feedback was positively constructive and many of them would like to be involved with strategic developments from both the rural industries and Ministry of Education (MOE)

Target Group 2: Interview summary:
Eight current, rurally unaware secondary school teachers and careers advisors.

The overriding message received when interviewing this group of teachers was that due to lack of time, knowledge, understanding of the subject on their part and easily accessible training/ teaching materials, this subject would not be included in their classroom study programs.
Two of the teachers had attempted to develop some rurally based resources to align with their subjects but found the information that they sourced was out of date or lacked research support material for student understanding. One of the teachers taught geography and was required to include a dairy farm study in her Year 11 programme. Although she completed this each year she felt it was the weakest aspect to her annual programme and many of the students did not fully appreciate the bigger picture to studying farming. For 80% of her students it was their first farm experience and she felt they needed further field trips and hands-on activities to fully appreciate and gain more knowledge of the career options. Many just treated it as a fun day out. Time restraints did not allow this.
All eight teachers agreed that the study of rural subjects fitted well and could cater for many of their students learning styles and they would encourage some students to explore the options of a career in agriculture but it would be the students that they evaluate as less academically capable.
Five of the teachers would be willing to undergo professional development in the area of rural studies if it followed the following criteria.

- Was delivered professionally and was accompanied with teaching aids, resources and easily accessible up-to-date research sources and one support network for the rural industry.
- Was aligned with their particular subject and therefore could be slotted into their program outline for the year with as little disruption as possible.
- Was recognized by MOE and covered the required criteria for Education Review Office (ERO) inspection purposes.

1. NCEA / NZQA comparison – the New Zealand secondary qualifications system (NCEA) begins, for the bulk of the students, in their third secondary year (year 11 of their schooling) . The system is based on a credit achievement system and in this first year of qualification they are studying towards their Level 1 NCEA qualification. There are NCEA agricultural credits on offer but many of the schools do not have teachers qualified to deliver these subjects and consequently tend to be delivered in conjunction with a large horticulture component. This does not cater for those students who are particularly seeking to study agriculture and so are offered an extramural/ correspondence option (untutored) or the external providers option. These providers are funded through the NZQA system and levels tend to be aligned with what can realistically achieved at school retaining the main courses for post-secondary school. This quite often means that students are offered levels of study the differs with their school year.

2. STAR (Secondary Tertiary Alignment Resource) is a government funded programme introducing senior college students to tertiary education, assisting them in their choice of vocation. STAR programmes offer credits at Level 1 to 4 on the National Qualifications Framework. (NQF) These credits can be used towards an NZQA National Certificate or towards the National Certificate in Educational Achievement.

3. Gateway is available to state and integrated secondary schools, and supports senior secondary students (Year 11 to Year 13+) undertaking structured workplace learning across a range of industries and businesses around New Zealand, while continuing to study at school. Gateway programmes contract external providers to offer credits at Level 1 to 4 on the National Qualifications Framework.(NQF) These credits can be used towards an NZQA National Certificate or towards the National Certificate in Educational Achievement.

Target Group 3: Questionaire Summary:
Current secondary school students in the 16-18 year age group and all students were in their sixth form or Level 2 year at secondary school.

Results from 20 secondary school students.

Question	Response Options	Actual Response
Highest Qualification to date:	**NA NCEA** **NCEA Level 1** **NCEA Level 2**	**8** **10** **6**
Grade Average at school:	**Excellence** **Merit** **Achieved** **Not Achieved**	**4** **8** **4** **4**
Do you intend to continue studies post- secondary school?	**Yes** **No**	**15** **5**
How is/ was the rural industry promoted in your school?	Actively/ positively Negatively Seldom Never	2 5 5 8
Have you initially/ or ever consider a future in the rural industry?	Yes No	5 15
If no please outline why and hand in questionnaire?	Not interested Landownership unachievable Other careers pay more	6 5 4
If yes please continue:	5 students continued the questionnaire 2 students had a grade average of achieved or better. 3 students had not achieved NCEA	
If so what age did you decide you could envisage a possible rural career?	Under 12 year Over 12 year	3 2
What attracted you to consider a career in the rural industry? *All of the five students completed more than one option*	Lifestyle Academic level Finance Challenge passion	2 4 2 3 3
Were you encouraged/ discouraged to pursue your rural career plans? By whom?	Encouraged Discouraged	4 parents 1 teacher/parent
Was a clear career path outlined for you when you enquired about studying towards a rural career?	Yes No	0 5
Where and how did you receive the information to start your rural industry training?	Media/ website Teacher Word of Mouth Careers Expo	3 2
How much money do you envisage making in your first year in the rural industry?	Under $20,000 $20,000-$30,000 $30,000-+	 4 1
Do you think farm ownership is still achievable	Yes No	2 3

Target Group 4: Questionaire Summary:
Farm employees who have been employed within the dairy industry for a maximum period of 5 years.
Target Group 5: Questionaire Summary:
Farm owners/ managers who have been operating dairy farms in the farming industry for a minimum of 10 years.

Results from 25 farm employees

Question	Response Options	Response 25 farm employees	Response 30 farmers
Highest Qualification to date:	**NA NCEA**	**12**	**15**
	NCEA L1/school cert	**5**	**5**
	NCEA L2/ UE	**7**	
	NCEA L3/UE	**1**	**2**
	Higher Qualification		**8**
	Diploma, Degree, etc		
Grade Average at school:	**Excellence**	**4**	**Not relevant**
	Merit	**8**	
	Achieved	**4**	
	Not Achieved	**12**	
Current position held	**Farm worker**	**10**	
	2IC	**10**	
	Manager	**5**	**10**
	Lwr Order Sharemilker		**5**
	50/50 Sharemilker		**5**
	Owner / equity		**10**
Did you intend to continue studies post-secondary school?	Yes	**5**	**0**
	No	**20**	**30**
Do you feel it is important to continue studies now?	Yes	**20**	**30**
	No	**5**	**0**
If yes what time elapsed post-school until you started studying?	0years	**5**	
	1year	**5**	
	2years	**9**	
	3years	**1**	**15**
Why is it important to continue studies?	Career advancement	**20**	**30**
	More money	**20**	**30**
All the participants answered more than one option	More skills and knowledge	**20**	**30**
	Get off the farm	**20**	**30**
On a scale of 1 (easiest) to10 (difficult) How are you/ did you find ongoing study?	1		
	2		
	3		
	4		
	5		
	6		
	7	**8**	
	8	**2**	**1**
	9	**8**	**4**
	10	**2**	**10**

How was the rural industry promoted in your school?	Actively/ positively	0	
	Negatively	5	5
	Seldom	20	25
	Never	0	5
Did you initially leave school and go into another career?	Yes	5	15
	No	20	15
Why did you leave your first career choice?	Achieved qualification	3	15
	Bored/ dissatisfied	2	0
What age did you decide you could envisage a possible rural career?	Under 12 year	10	18
	Over 12 year	10	2
What attracted you to consider a career in the rural industry? *All completed more than one option*	Lifestyle	20	25
	Academic level	20	18
	Finance	2	25
	Challenge	3	10
	passion	10	10
Were you encouraged/ discouraged to pursue your rural career plans? By whom?	Encouraged	10 parents	15
	Discouraged	15 teacher/parent	15
Was a clear career path outlined for you when you enquired about studying towards a rural career?	Yes	0	2
	No	25	28
Where and how did you receive the information to start your rural industry training?	Media/ website	3	
	Teacher		5
	Word of Mouth	12	25
	Careers Expo	10	
How much money did you envisage making in your first year in the rural industry?	Under $20,000	20	30
	$20,000-$30,000	4	
	$30,000-+	1	
Did the workload, level of responsibility, job description, and pay scale meet your expectations?	Yes	10	28
	No	15	2
Do you think farm ownership is still achievable	Yes	20	15
	No	5	15
Are you intending to stay in a career within the rural industries?	Yes	19	25
	No	6	5
Would you advise school leavers to enter the industry with …..	No Qualifications		
	NA NCEA		
	NCEA L1/school cert		
	NCEA L2/ UE	**15**	**3**
	NCEA L3/UE	**2**	
	Higher Qualification		**2**
	Diploma, Degree, etc		
	A Trade	**8**	**25**

Literacy and Numeracy Profiles- a Horticulture ITO Initiative

Why do we need them?

A large percentage of New Zealand's adult population lacks the reading, writing and math skills to function well at work and at home. Many of the industry tutors struggle with the teaching skills required to ensure effective teaching and learning. One way to help remedy this situation is to teach valuable vocational skills and knowledge that adults are motivated to learn, in ways that encourage an improvement in literacy and numeracy skills. This is embedded teaching.

NZHITO has created a system to find out what the literacy and numeracy demands of a trainee's goal occupation are in order to best target teaching for embedding that benefits both the trainee and the industry as a whole.

The NZHITO has been working on a Literacy and Numeracy project with the support of the Tertiary Education Commission (TEC), the Department of Labour (DOL), employers and trainees. As part of this, profiles are being developed for each of the sectors that the NZHITO represents.

Each profile shows a snapshot of the typical literacy and numeracy demands of different positions in the horticulture industry.

What do they do?

The profiles identify and document the reading, writing, listening, speaking and numeracy requirements involved in working in a particular position in typical local business and amenities and map them against the NZ Learning Progressions for Adult Literacy and Numeracy.

These Progressions provide a framework and language for describing the main elements that adults require in order to read with understanding, write to communicate, listen with understanding, speak to communicate, make sense of number to solve problems, measure and interpret shape and space and reason statistically.

The information gathered about the language, literacy and numeracy demands of the position can then be used to:

a) ensure that training programs address the language, literacy and numeracy demands of the job;
b) match the language, literacy and numeracy demands of policies and procedures with the language, literacy and numeracy skills required of employees in carrying out their job; and
c) identify the areas of language, literacy and numeracy required in a position which may need up skilling in an employee in order for the employee to carry out that particular work role.

Each profile contains:

- An introduction
- An explanation of the data collection method
- A position description
- The desirable qualifications for that position
- An analysis for each strand (reading, writing, speaking & listening and numeracy) which contains:
  - a list of the texts or contexts analysed
  - a 'map' of the results showing the step/level of ability required for each skill in the Progressions
  - a discussion of the findings
- A comparison across the strands
- Conclusions
- Recommendations

During May and June of 2010, as part of the on-going work for the NZHITO Literacy and Numeracy project, more than 500 NZHITO trainees have been assessed using an assessment tool developed by TEC.

Trainees were randomly assigned an assessment in one of the following areas: reading, numeracy, or writing. Dependent upon the assessment assigned to the trainee they either completed a written assessment or used an online assessment tool. The reports from these assessments will be linked to the same Learning Progressions used in the Literacy and Numeracy Profiles and will enable us to match what we have learnt about trainees' abilities with the skill levels needed in the industry. This will further assist the NZHITO to target training to be useful to both trainees and the industry as a whole.

A measurable training initiative that will in turn benefit all horticulture trainees and the horticulture industry as a whole if carried out and followed through.

Example 1: NZ HortITO- Literacy and Numeracy Profile - Amenity Gardener

Gardener

Literacy and Numeracy Profile Summary

Many adults in New Zealand would benefit from gaining better reading, writing and maths skills to function productively at work and at home. Every industry is striving to help in achieving this goal and as part of this effort the NZHITO, in association with our main funding body the Tertiary Education Commission (TEC), have been working on a Literacy and Numeracy (LN) project. Our ultimate aim is to increase individuals' literacy and numeracy skills in order to make workplaces safer and more productive, as well as to ensure learners have the skills to succeed in their everyday lives. As part of this project we have completed a Literacy and Numeracy profile for the Amenity gardener industry trainees. The profile:

· Gives those working with trainees an understanding of the skill levels required by their goal occupations, which can be compared with TEC Assessment Tool reports of trainees' levels of ability.

· Gives trainers some guidelines for embedding the teaching of literacy and numeracy skills along with gardening vocational skills and knowledge.

Read with understanding – Step 3

· Texts read in the course of everyday employment averaged step 2 on the Literacy and Numeracy Learning Progressions.

· However, gardeners need to read a range of texts and some complex texts, such as contract specifications, are used from time to time. For this reason, the skill level needed to be a successful gardener is mapped at step 3.

Documents at step 3 would include: some equipment manuals, some policy documents, or a request for equipment service form.

Write to communicate – Step 2

· An amenity gardener only needs basic writing skills.

· Some tasks require step 3 vocabulary, and therefore spelling.

· All tasks mapped for this profile were for 'in-house' uses, not for the general public, and therefore writing is for clarity only, not presentation

Tasks at step 2 would include: common workplace forms.

Listen with understanding and speak to communicate – Step 4

· Gardeners need adequate communication skills in order to work safely and efficiently

Listening and speaking tasks at step 4 would include: Communicating with other staff members, general public, or supervisors.

Numeracy – Step 6

· Gardeners need very good number knowledge and number strategies.

· Proficient measurement skills are important.

Tasks using numeracy at step 6 on the Literacy and Numeracy Learning Progressions include: spraying, rigging, marking sportsfields, or laying gardens from plans etc.

Example 2: NZ Hort ITO Amenity Supervisor

Literacy and Numeracy Profile Summary

Many adults in New Zealand would benefit from gaining better reading, writing and maths skills to function productively at work and at home. Every industry is striving to help in achieving this goal and as part of this effort the NZHITO, in association with our main funding body the Tertiary Education Commission (TEC), have been working on a Literacy and Numeracy (LN) project. Our ultimate aim is to increase individuals' literacy and numeracy skills in order to make workplaces safer and more productive, as well as to ensure learners have the skills to succeed in their everyday lives. As part of this project we have completed a Literacy and Numeracy profile for the Amenity supervisor industry trainees. The profile:

- Gives those working with trainees an understanding of the skill levels required by their goal occupations, which can be compared with TEC Assessment Tool reports of trainees' levels of ability.

- Gives trainers some guidelines for embedding the teaching of literacy and numeracy skills along with Amenity vocational skills and knowledge.

Read with understanding – Step 4

- While the majority of reading tasks an amenity supervisor is faced with are at step 4 or below, some tasks require more sophisticated skills, such as reading contract specifications or hazard risk assessments.

- Decoding and vocabulary skills have the highest consistent demand because of the presence of specialised vocabulary.

Documents at step 4 would include: everyday workplace communication, traffic management plans, motor vehicle policies etc.

Write to communicate – Step 2

- An amenity supervisor doesn't need to write complex documents in the course of everyday work

- The majority of writing tasks consist of checklists and forms, however, some tasks require descriptions and/or explanations, which raises the spelling and vocabulary demands because of the context-specific terms.

Tasks at steps 2 would include: workplace instructions, simple emails, customer service request forms etc.

Listen with understanding and speak to communicate – Step 5

- Amenity supervisors need competent communication skills in order to avoid costly and frustrating miscommunications.

Listening and speaking tasks at step 5 would include: Communicating with management and with supervised employees, participating in group discussions etc.

Numeracy – Step 6

- Amenity supervisors need very good number knowledge and number strategies to carry out everyday tasks.

- Proficient data management skills are important

Tasks using numeracy at step 6 on the Literacy and Numeracy Learning Progressions include:.tracking expenditure, preparing quotes, time allocation etc.

Project Conclusion:

Over the twentieth century, New Zealand has been transformed from a largely agrarian society to a highly urbanised one. The nature of the economy has changed, although approximately half of New Zealand's exports are still of primary produce. Working on the land is no longer the major occupation, with less than 10 percent of the New Zealand workforce (as at the 2001 census) stating agriculture, forestry or fishing as their occupation. Urban and rural areas have blurred, with an increasing number of people living in peri-urban areas around towns and cities. Culturally New Zealand has changed with to become much more ethnically diverse in the latter years of the twentieth century.

Initial project topic brief was to determine the literacy and numeracy levels of individuals choosing to embark on a rurally focused career and whether the current promotion of the industry was attracting secondary school students of a broad academic background and thus meeting all the human resource requirements from the farm gate to the marketing departments and science labs.

Interestingly when I approached schools and stated the project purpose to question an "across-the-board" selection of students as to whether they had considered a rural industry based career, I was offered, in three out of the four schools the opportunity to interview the agriculture/ horticulture class. It took some persuasion to convince the school managers involved that in fact a random selection of students was required from across the school to give the project a balanced result. For the project to carry some worth a broad academic ability base needed to be the focus of the study. The academic ability of each individual is very difficult to ascertain we know with every human being intelligence is near on impossible to measure. Immediately being offered Agriculture / Horticulture class though was disconcerting. Most of the young students in these classes tend to be of lower academic ability and find the reader/ writer style of learning an arduous learning style. The majority of these students would be kinesthetic and visual learners and that's great for a vast amount of the rural industry but we now know they will bring to the industry a challenge in that they tend not to be able to comprehend the written word so well.

Hense this project topic expanded slightly as the research interviews took place with the teachers as it wasn't so much the academic ability of a particular category of individual that was of concern and how the rural industry caters for this, but more the lack of unbiased promotion of all potential careers in the rural sectors, resources and clearly outlined pathway material with the supporting qualifications at the disposal of the NZ secondary teaching staff that appears to be the base of the industry human resource issues. Why are all secondary students not receiving the same information in regards to what the rural industry could perhaps offer them career wise.

After discussing this at length with teachers within the secondary school system there are a number of reasons why the rural industry message is not being received by all students.

Communication & Cohesion:
Schools receive a medley of information from every different sector of the rural industry and from many organisations within these sectors. There is little cohesion or quality control from one united rural industry body that ensures that a positive message is received and heard by every one of the New Zealand secondary school students in order for them to form their own opinions about whether they want to consider the multitude of rural career choices.
Resources:
There are very few up to date rural industry resources that can be aligned with all subjects, (math, english, science, economics) and make what the students are studying for their national qualifications also apply to real life rural New Zealand and the business's and lifestyles that work within it.
Training:
Careful selection of who is going to be the face of our industry as far the students are concerned should be paramount. Who is advising, teaching, moderating and promoting the rural industry. Is it the, dare I say it, broken down farmers of the past. Or the vibrant future leaders that are excelling within the industry and demanding excellance?
The New Zealand teachers are in front of our potential business managers every day – with some upskilling they could be pushing our barrow very effectively.

Literacy and Numeracy within the Rural Industry

The above areas to be rectified are a large part of the reason as to why we are now being forced to manage an enormous number of adults, rural industry personal who struggle with the read it and write it philosophy.
I was present when the questionnaires were completed and for 80% of the individuals who worked through the questionnaires I was asked to give them reasonably basic comprehension, spelling support and advise. This was for Target Groups 3, 4 and 5. These 16 – 50 year olds have predominately been attracted to the rural industry because they envisaged that they wouldn't need to qualify in these skills to succeed. They are now succeeding in their own right and with support could become industry leaders in their chosen fields.

The rural industry needs ban together and follow the likes of the horticulture industries initiative. Be proactive about the way in which we approach every individual who enters the industry. There will always be a component of illiteracy and these individuals will bring other skills to our industry that we need.

Some understanding, communication, and cohesion will go along way to rectifying our human resource areas of concern.

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