



Report for:

**NATIONAL  
PARKS**

# LANDSCAPE APPRENTICESHIP INTERNATIONAL BENCHMARKING STUDY

Feasibility Study and Framework 3.1  
August 2011



SINGAPORE LANDSCAPE APPRENTICESHIPS FEASIBILITY STUDY AND FRAMEWORK Phase 1(a) 3.1

INTERNATIONAL BENCHMARKING STUDY IN FIVE COUNTRIES

- Singapore
- New Zealand
- United Kingdom
- Germany &
- Australia

August 2011

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for

NATIONAL PARKS BOARD  
OF SINGAPORE

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## TERMINOLOGY

There are two concepts in global Vocational Education and Training (VET) which can muddy the waters in local and international discussions.

The first is due to variability of where training takes place: use of on-the-job training in the workplace which is usually, but not always, in parallel with off-the-job training away from the workplace, often in an educational institution. Not only do the proportions and content of on-the job-training and off-the-job training vary dramatically between countries, but both reduce to the acronym OJT and sometimes can become interchangeable. We use the convention that OJT always means on-the-job training and OWS stands for off-worksite-training or any off the job-training.

The second problematic concept is from the general use of the words dual system. Originating in Germany as Duales Ausbildungssystem, this system of apprenticeship training is practiced in several other countries, notably

- Austria,
- Bosnia and Herzegovina,
- Czech Republic
- Croatia
- Denmark
- Serbia
- Slovakia
- Slovenia
- Macedonia
- Montenegro
- the Netherlands, and
- Switzerland.

For some years, aspects of it also used in

- China and
- other countries in Asia.

Like any OJT + OWS system this ‘dual system’ combines workplace training with time spent in off-worksite training and education. It is the non-vocational OWS general education content, however, that is uniquely a feature of the dual system.

Apart from the concept of streaming 25% of secondary school students into VET from the 1990s, Singapore did not adopt the structural features of the dual system.

Historically, German employers, for example, are not very interested in any training the public Schools might give but in the educational level their apprentices reach. As a base employers expect literacy and numeracy.

Vocational Training Employers want the vocational training to be done and tested by them (or on their behalf), not by a public school.

Vocational Education, the continuing education in the Government funded school part of the dual system provides largely non-vocational education in German, Mathematics and a modern foreign language, usually English, one of the humanities (History, Music, or Art), and social and pre-vocational studies (Arbeitslehre). In some German regions there is even Sport, Religious Education and Domestic Science.

Theory relevant to a particular industry or trade is usually taught by professional teachers of one of the Sciences (Physics, Chemistry, Biology or Geography).

## EXECUTIVE SUMMARY

This first report in the *Landscape Apprenticeship Feasibility Study and Framework* for the National Parks Board of Singapore is the first component, the **International Benchmarking Study** Phase 1(a) 3.1 of the study & framework.

The second component featuring **Industry Assessment & Start-up Landscape Apprenticeship Mentoring Program Singapore** LAMPS Phase 1(a) 3.2&3 is a companion report.

Both reports are submitted for review, validation and presentation to the Singapore Landscape Industry Council SLIC on 12 August 2011.

SLIC will determine whether or not the study proceeds to Phase 1(b) and what level of support can be pledged to the industry-integrated LAMPS. Both reports conclude with suggestions for a sharper supply-side and marketing focus towards Start-up of LAMPS in 2012.

This report reveals specific issues and options for each of the five countries studied. Some of the key findings include:

### Singapore

- An evolving focus on 'train and place' at Institute of Technical Education ITE with no formal mentoring or Training Contracts
- Low community regard for manual trades in general, and landscape work in particular, despite the national priority of moving from Singapore, a Garden City to Singapore, City in a Garden
- Although no prior Landscape Apprenticeships, there is since 2008 a National ITE Certificate NITEC in Facilities Technology - Landscape Services at ITE College East.

### New Zealand

- Pressure on the Apprenticeship system due to poor completion rates and frequent 4-10 year time to complete apprenticeships
- Landscape / Horticulture framework attracting older Apprentices (Average age 36) from allied employments
- Government incentives aimed specifically towards employing and skilling unemployed persons.

### United Kingdom

- New Coalition Government policy toward increasing Apprentice placements, Level 3 completions and "de-bureaucratising"
- LANTRA, National Sector Skills Council oversees all Landscape Apprenticeship standards, arrangements & recruiting
- Complex Government funding model with incentives paid to various parties, dependent on their business size.

### Germany

- Patterns, up to late 1990s of strong cultural and community regard for the importance and status of skilled occupations, are changing post German Re-unification, . European Union entry and associated macro-economic deregulation
- Employer on-the-job-training Landscape Apprenticeship system continues, supported by regional Chambers of Commerce consortia providing technical skills vocational training in parallel with continuing industry theory and continuing general education in dedicated Government schools (the dual system)
- Some Government Schools now also enrol in parallel train-then-place programs
- Apprenticeship completion rates in landscape industry reducing ( from in excess of 80% to 70% in 2010)
- Landscape Training Contracts in the central region down 50% on 2000.

### Australia

- Extensively Government incentivised system, particularly during economic downturns to maintain employer commitment to skills development
- Mature Landscape / Horticulture Apprenticeship framework structured by a National Skills Council
- Completion rates averaging below 50% causing national concern
- A unique 'Group Training' mentored model with higher completion rates.

### Acknowledgments

In Australia we were helped by Mr Michael Hurst, Head of Horticulture, Northern Metropolitan Institute of TAFE, however, for Australian structural and practice information, we relied mainly on WPC Group Ltd staff and on the outcomes of very recent Australian Government Expert Panel and other reviews (eg McDowell, 2011 and NCVET, 2011a b c & d)

Ms Helen van der Werff, Senior Training Advisor with New Zealand Horticulture Industry Training Organisation, Bay of Plenty, supplemented access to her published evaluations (van der Werff, 2009) by detailed recruitment, training and outcome information (van der Werff, 2011).

We record our appreciation for the extensive help and information (Dressler, 2011) given us by Frau Ulla-Britt Dressler, Training Coordinator of the Regional Landscape Industry Chamber of Commerce for the German Federal States of Berlin and Brandenburg (Referentin für Nachwuchs- werbung, Fachverband Garten-, Landschafts und Portplatzbau Berlin und Brandenburg e.V.). In Germany we have also received assistance from Herr Rainer Leimgruber, Headmaster, Peter-Lenné Schule - OSZ Agrarwirtschaft, Berlin and from the State Government (Senatsverwaltung für Bildung, Wissenschaft und Forschung) (Schmidt, 2011).

In the United Kingdom Messrs David Martin and Richard Marsh of the National Apprentice Service, Ms Margaret McNeil of Onsite Training and Mr David Winn of the LANTRA Sector Skills Council have given us or pointed to valued information.

Our requests for historical, throughput, recruitment and structural responsibility information in Singapore were referred to senior Institute of Technical Education management. Eventually Mr Chin Chi Wei, Manager ITE Industry Services 1, on behalf of Mr Aw York Bin, Deputy CEO ITE (Industry), advised that only public information on the ITE web-site could be made available. This was limited to course details and ITE report series which concluded with *Technical education and economic development – the Singapore experience* (Law, 2007).



## COMPARATIVE STUDY OF FIVE COUNTRIES SINGAPORE

### 40 years of growth and change

The Singapore Vocational & Industrial Training Board (1981) VITB studied extensively apprenticeships in Asia and the Pacific with encouragement from the International Labour Organization ILO. The Board recognised traditional apprenticeships in Singapore, then classified as a “Developing country with significant urban-industrial sector” (alongside Indonesia, Malaysia, Pakistan, Phillipines, Sri Lanka and Thailand). These countries were effectively continuing inherited British or Dutch apprenticeship models and were ranked third after “Advanced Countries” (Australia, Japan and New Zealand) and “Developing Industrialized Countries” (Hong Kong, India and South Korea).

The Vocational and Industrial Training Board Act 1979 (repealed in 1992) and Skills Development Levy Act 1979 (continued by the Singapore Workforce Development Agency) were published internationally by ILO (1985,359 -387).

The Institute of Technical Education ITE replaced in 1992 the Singapore Vocational and Industrial Training Board. The statutory roles of the former VITB for: registering indentures or Training Agreements between Apprentices, employers and OWS institutions, and supporting or counselling apprentices; were not transferred to the ITE. There now appears to be no State-wide mechanism in Singapore for the registration and monitoring of Training Agreements. The foundation ITE CEO (Law, 1996) listed 70 Apprenticeships and wrote: “The ITE apprenticeship system is modelled after Germany’s Dual Training System. Introduced as an “Earn-As-You-Learn” scheme to complement the full-time training system, it comprises On-the-Job Training (OJT) and Off-the-Job Training (Off-JT). OJT is provided by the company in which the apprentice is employed. The OJT component, comprising theoretical classroom instruction and workshop practice, is conducted in an ITE institute or an approved industry training centre.”

### Contractual terms and relationships

between stakeholders involved (training organisations, funding bodies, employers, unions, parents, programme administrators, governance & quality assurance)

In the 1990s the uptake of apprenticeships declined as the ITE went through a transformation to attract 25% of the school cohort completing secondary school to Vocational Education. National targets allowed 30% of a school cohort to Universities and 40% to the Singapore Polytechnic.

While the ITE had consultancy and staff exchange arrangements with Vocational Education in the German Federal State of Baden Württemberg, the Singapore system did not adapt the core element of the German dual system of two parallel OWS programs: vocational training by or on behalf of employers and vocational education in public schools as continuing education with a component of industry- relevant theory.

The 1990s system of collateral OJT and OWS in Singapore VET is being overtaken by a train-then-place system embodied in a growing range of National ITE Certificates (NITEC and Higher NITEC) courses.

These are listed in Table 1 (opposite) and annotated by academic entry requirements. Of the 57 1990s apprenticeships courses listed at the time (Sam, 1992)

- 15 continue as ITE Traineeships with OJT plus OWS
- 7 are currently offered as a choice of either ITE Traineeships or NITEC (with a industry attachments)
- 8 are available as NITEC only.

About a half of the original apprenticeships have been discontinued (eg in manufacturing and printing). New options, all in NITEC or Higher NITEC are being added every year.

The fee structure for these courses is diverse, with smallest fees of around \$300pa for Singapore citizens, \$1,800pa for permanent residents and \$3,500pa for International students for higher NITEC courses. NITEC fees are about half of the fees above and traineeships (OWS) fees are paid by the employer, commonly reimbursed by the WDA.

### OJT (On-the-Job Training) and OWS (Off work site) requirements

Any shift from OJT plus OWS to periodic industry attachments in VET changes what is learnt and how effectively theory can be converted to practice. As an example we have focused on the only landscape / horticulture course at the VET level: NITEC in Facility Technology (Landscaping Services) began in 2008 (See Table, 2 p6 overleaf).

The two year NITEC course in its information and marketing material emphasizes “Progression Opportunities” to related Polytechnic Diploma courses (providing a high enough grade point average is achieved). Mentions of industry employment and “advancement to supervisory positions and beyond” are ended by a “challenge [is] for students to upgrade their technical skills by taking up higher level courses.” (Table 2). Indeed, the course leader confirmed to us orally that the post-course destination of the majority of 2009 and 2010 graduates was further and higher education.

A CUGE Manager who took the Landscape Facility Technology course advised: “I was involved in the ITE Industrial Attachment last year and gathered some information as follows:

- Typically an industrial attachment lasts about 8 weeks. Companies paid a range from \$350 to \$550 per month, with the majority paying the recommended (by ITE) monthly allowance of \$440.
- The students on the attachment programme spent about 6 weeks with the companies (OJT) and 2 weeks back in campus (OWS)
- Attrition rate is high. Majority of the landscape companies experienced drop-out rate of at least 50% before the end of the attachment programme.”

Concerned about the impact of these issues on the Workforce Skills Qualifications WSQ system, the Singapore Institute of Adult Learning commissioned a transposition of Australian OJT research (Harris & Simons, 1999) to the Singapore situation (Harris, 2010) and is continuing a study of how workplace learning is understood, valued and assessed (Bound, 2010)

Table 1: Entry Requirements to Higher NITEC, NITEC and ITE Traineeship Studies

ITE HIGHER NITEC Courses	ITE NITEC Courses	ITE Traineeships
<p>Entry requirements for ELIGIBLE GCE 'N' (ACADEMIC) LEVEL SCHOOL LEAVERS to Higher NITEC Courses</p> <p><a href="http://www.ite.edu.sg/wps/wcm/connect/bbda530044dc47aca428af8d3d78253d/JIEH_Entry_Requirements_Jan2011Intake.pdf?MOD=AJPERES">http://www.ite.edu.sg/wps/wcm/connect/bbda530044dc47aca428af8d3d78253d/JIEH_Entry_Requirements_Jan2011Intake.pdf?MOD=AJPERES</a></p> <p><b>SPECIAL ADMISSIONS AVAILABLE FOR SOME COURSES</b></p> <p>Dual Certification Course for Paramedic &amp; Emergency Care and Nursing Beauty &amp; Spa Management Business Studies (Sport Management) Hospitality Operations Leisure &amp; Travel Operations Visual Merchandising</p> <p>Special Admissions Exercise for Higher NITEC and NITEC entry requirements: <a href="http://www.ite.edu.sg/admission/ft/apply.htm#scas">http://www.ite.edu.sg/admission/ft/apply.htm#scas</a></p> <p>The ITE Special College Admissions Scheme (SCAS) provides flexibility for ITE Colleges (ITE College Central, ITE College East and ITE College West) to consider students with special talents and achievements, for direct admission into ITE full-time Nitec and Nitec course admission to courses for year 2011 intakes. This will provide applicants under SCAS, the advantage of admission into an ITE College and course of their choice.</p>	<p>Entry requirements include GPA of 3.5 or above (inclusive of CCA bonus points) applicants must also have sat for the Singapore GCE 'N' or 'O'</p> <p><a href="http://www.polytechnic.edu.sg/jpae/images/NT27.pdf">http://www.polytechnic.edu.sg/jpae/images/NT27.pdf</a></p> <p>Automotive Technology (Heavy Vehicles)* Automotive Technology (Light Vehicles)* Beauty Therapy Electronics (Computer &amp; Networking)* Facility Technology (Airconditioning &amp; Refrigeration) Facility Technology (Mechanical &amp; Electrical Services) Food &amp; Beverage Operations* Info-Communications Technology Mechanical Technology* Pastry &amp; Baking Semiconductor Technology - NEW Service Skills (Office)* Service Skills (Retail)* Service Skills (Tourism) Western Culinary Arts</p> <p>Aerospace Avionics* Aerospace Machining Technology* Aerospace Technology* Applied Food Science Asian Culinary Arts - NEW Chemical Process Technology (4)* Community Care &amp; Social Services Digital Animation Digital Audio &amp; Video Production Electrical Technology (3)* Electronics (3)* Facility Technology (Landscaping Services) Facility Technology (Vertical NEW) Fitness Training Hair Services (2)* Interactive Media Design Laser &amp; Tooling Technology Machine Technology Mechatronics (3) Medical Manufacturing Technology Mobile Systems &amp; Services - NEW Multimedia Technology Nursing* Opticianry - NEW Product Design Rapid Transit Technology - NEW Security Technology Space Design (Architecture) Space Design (Interior &amp; Exhibition) Visual Communication Visual Effects</p>	<p>Entry requirements into NITEC Traineeship Courses requires</p> <p><b>Completion GCE N level</b> or 2O or 3N GCE subjects</p> <p><a href="http://estudent.ite.edu.sg/guest/TRN_Entry_Requirement.pdf">http://estudent.ite.edu.sg/guest/TRN_Entry_Requirement.pdf</a></p> <p><b>Automotive Technology (Heavy Vehicles)*</b> <b>Automotive Technology (Light Vehicles)*</b> Beauty Therapy Electronics (Computer &amp; Networking)* <b>Facility Technology (Airconditioning &amp; Refrigeration)</b> <b>Facility Technology (Mechanical &amp; Electrical Services)</b> Food &amp; Beverage Operations* Info-Communications Technology <b>Mechanical Technology*</b> Pastry &amp; Baking Semiconductor Technology Service Skills (Office)* Service Skills (Retail)* Service Skills (Tourism) Western Culinary Arts</p> <p>Accommodation Operations <b>Aircraft Component Repair &amp; Overhaul (Mechanical)*</b> Building Drafting (Architectural)* Building Drafting (Civil &amp; Structural)* <b>Culinary Skills (Chinese Cuisine)</b> Dental Assisting* Dental Technology* Electrical Technology* <b>Fabrication Technology (Hull &amp; Structures)*</b> <b>Fabrication Technology (Marine Pipe)*</b> <b>Food &amp; Beverage Services (Chinese Restaurant)*</b> <b>ISC in Health Care (Clinic Practice)*</b> <b>ISC in Health Care (Home Care)*</b> <b>ISC in Health Care (In-patient)*</b> <b>ISC in Health Care (Out-patient)*</b> <b>ISC in Logistics Operations</b> <b>Lift &amp; Escalator Technology</b> Marine Electrical Technology* <b>Marine Technology*</b> <b>Mechatronics</b> <b>Welding</b></p>
<p>Integrated Logistics Management Leisure &amp; Travel Operations Marine &amp; Offshore Technology Marine Engineering - NEW Mechanical Engineering Mechatronics Engineering Mobile Unified Communications Network Security Technology Offshore &amp; Marine Engineering Design Paramedic &amp; Emergency Care and Nursing (Dual Certification Course) Process Plant Design Retail Merchandising - NEW Security Systems Integration Visual Merchandising Wireless Technology</p>		<p><b>Legend &amp; Source</b> Green text indicates minimum Institute of Technical Education entry requirements colour coded for ITE traineeships to indicate full completion of GCE N levels. * indicates inclusion in Sam (1992). URL links are given to ITE web pages from which we accumulated Table 1.</p>



## COMPARATIVE STUDY OF FIVE COUNTRIES SINGAPORE

Table 2: NITEC in Facility Technology (Landscaping Services) – established 2008

<p><b>Course Overview</b></p> <p>Are you the outdoor type, and love plants and beauty?</p> <p>Apply for this course and learn to supervise and coordinate the works of landscape implementation and maintenance (hardscapes &amp; softscapes). With your “green fingers,” you may make others green with envy too.</p> <p>Acquire knowledge and skills which are highly relevant to the industry.</p> <p>Install, troubleshoot and carry out simple alteration and amendment work of domestic electrical system.</p> <p>Service and carry out preventive maintenance of machinery components, engines, small diesel-driven generators and pumps.</p> <p>Install and perform routine maintenance and parts replacement of residential air-conditioners.</p> <p>Install, service and repair defective components of water supply and water pumping systems.</p> <p>Prepare building services layout including air-conditioning and electrical system and landscape drawing plans using CAD software.</p> <p>Supervise, co-ordinate and run daily operations of landscaping construction and maintenance inclusive of turf, trees and nursery.</p> <p>Install and maintain landscaped areas such as gardens, golf courses, turf/sport turf, parks and other landscaped environments.</p> <p>Prepare work schedules and implement best work practices.</p> <p>Identify common pests and diseases and perform preventive plant/turf health measures.</p> <p>Install, prune and remove trees, palms and shrubs.</p> <p>Maintain landscape related machinery and equipment.</p> <p>Maintain computerized/manual irrigation systems.</p>	<p>Manage and assess machineries performance in Turf sector only.</p> <p>Manage nursery inventory and procurement in Nursery sector only.</p> <p><b>Entry Requirements</b></p> <p>To apply for the NITEC in Facility Technology (Landscaping Services) course, you need to have completed GCE ‘N’ or GCE ‘O’ Level. Applicants applying for this course must ensure that they do not suffer from colour-appreciation deficiency.</p> <p><b>Duration and Venue</b></p> <p>This is a two-year course and is available at ITE College East.</p> <p><b>Progression Opportunities</b></p> <p>NITEC in Facility Technology (Landscaping Services) graduates with a Grade Point Average (GPA) of 3.5 and above may apply for progression to the first year of a related diploma course at the Polytechnics. NITEC in Facility Technology (Landscaping Services) graduates with a GPA of 2.3 and above may also apply for progression to related Higher NITEC courses offered by ITE.</p> <p><b>Career Prospects</b></p> <p>NITEC in Facility Technology (Landscaping Services) graduates are employed in the landscaping construction and maintenance companies as well as building maintenance companies. Some of the job titles held by graduates may include Park Officers, Senior Floricultural Technicians and Senior Interiorscapes Technicians.</p> <p>There are excellent opportunities for career advancement to supervisory positions and beyond. This challenge is for students to upgrade their technical skills and knowledge by taking up higher-level courses.</p>	<p><b>Videoclip on Learning Environment:</b> No Video clip available.</p> <p><b>Course Structure:</b> Certification requires at least 70 credits</p> <p>Core Modules .....28 Specialisation Modules.....24 Life Skills Modules.....14 Elective Modules .....4 Total .....70</p> <p><b>Core Modules</b></p> <p>Electrical Services .....7 Mechanical Servicing.....7 Residential Air-Conditioning Services .....7 CAD and Pipe Installation .....7</p> <p><b>Specialisation Modules</b></p> <p>Nursery Management and Maintenance.....6 Arboriculture Management &amp; Maintenance 6 Turf Management and Maintenance.....4 Landscape Management and Maintenance 4 Industry Attachment .....4</p> <p><b>Life Skills Modules</b></p> <p>Life Skills for Personal Development .....8 Life Skills at the Workplace.....4 Sports and Wellness   .....1 Sports and Wellness    .....1</p> <p><b>Electives</b></p> <p>Heat Load and ETTV .....2 Cleanroom Technology .....2 Energy Audit .....2 Safety Audit and Risk Assessment.....2</p> <p><b>Inter-disciplinary</b></p> <p>Workplace First Aid and CPR.....2 Business Etiquette and Grooming .....3</p> <p><b>Cross Level</b></p> <p>Project Management .....2 Engineering Mathematics.....3</p> <p><b>Joint ITE-Industry</b></p> <p>Swimming Pool Maintenance .....2</p> <p><b>General</b></p> <p>Communicative English (Level 1 to 8) .....3 English Language ‘O’ I to IV ..... 2 or 3 Mathematics (Levels 1 to 10) .....3 Mathematics ‘O’ I to IV ..... 2 or 3 Overseas Experiential Programme ..... 2 or 3</p> <p>Source: <a href="http://www.ite.edu.sg/ft/nitec_ftcls.htm">http://www.ite.edu.sg/ft/nitec_ftcls.htm</a></p>
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## Remuneration package, attrition and retention rates

Some soundings with employers (in hospitality and transport industries) suggest Trainees in former Apprenticeship training employments are paid \$500-600 per month wages. Our contacts volunteered information about skill shortages and the need to import skills from overseas (eg at entry Commis Chef level by hotels and fine dining venues).

Apart from the high attrition largely triggered by first exposure to actual work in the Industry in connection with the NITEC Landscape course we were unable to find or obtain current Singapore retention measures in Traineeships.

Apprenticeship training programs are being revived with targeted support by the Workforce Development Agency WDA in a growing range of industries from Retailing to Creative Industries. In these programs apart from training costs, WDA is subsidising stipends (as Apprentice wages are called) up to 50% of wages paid by employers. Stipend subsidies of \$500-600 have been paid.

Support for a new Landscape Apprenticeship Program would be a pioneer scheme for WDA within its Continuing Education Training (CET) framework and the Pre-Employment Training (PET) framework and there may be no precedents. Even WDA's Creative Industries Apprenticeship is still in the process of determining the most helpful level of subsidy and duration range from three to 12 months.

## Duration of training ratio between OJT and OWS training

Two year Traineeships are the norm in Singapore, some shorter but not many longer. Except for the United Kingdom where terms were also gradually reduced to two years (although now recognized as inadequate for more rigorous industries especially at recommended Level 3) this is at odds with three to four year terms in other countries.

We have put up on a public web page details of landscape qualifications and their lengths (eg by Certificate level in Australia) <http://www.apprenticeships.sg/index.php/research/international-frameworks/australia-2011-extracts>

## Apprentice to training supervisor ratio and outcomes

In ITE attachments usually one supervisor to many students. In WDA sponsored apprenticeships and some ITE Traineeships one supervisor to one or two. These ratios are complicate in industries employing Foreign Workers where supervisors do both at the same time.

## Career support / counselling / supervision

We will investigate these pre- and post entry in Phase 1(b)

## Recruitment strategies

including marketing and apprenticeship promotion strategies

ITE relies mainly on differential fee structures and educational pre-requisites backing up secondary school careers information and periodic media campaigns, especially when Vocational Education as a whole is under re-branding (Law, 2005, 15). WDA has promotions and supports career expos and promotion by particular industries (eg recent Creative Industries Apprenticeship. Both have extensive web pages with ITE's designed to excite young people.

We don't know to what extent Generation X and Generation Y value differences affect Singapore's young people as they do in Australia (McCrindle Research, 2009). Investigations of targeted marketing of Landscape Apprenticeships as a career choice, not only for school leavers but also to others like current local industry employees, women and young men completing compulsory National Service, should be an important component of Phase 1(b) of this study to develop interest and ensure uptake in the first year.

## Development and implementation challenges

faced by the apprenticeship programs

As Director and Chief Executive Officer since 1992, Dr Law Song Seng was directly responsible for the review and restructuring of the vocational education and repositioning it as a post- secondary technical education institution.

One of the most important lessons learnt in the following years was the strength of "college mania", as Dr Law called it, the unrealistic expectations from parents and sometimes teachers who "continue to cherish the hope and aspiration that their children will make it to university".

In his valedictory and the last of the ITE Papers, Dr Law concluded: "As a former British colony, Singapore started industrialisation without the benefit of tradition or experience in production and manufacturing. Culturally, there was a steep preference for an academic education. Parents harbour the aspiration that their children will make it to university. The desire for a university degree is pervasive in society.

The respect for the "scholar" and disdain for the "mechanic" and all the negative associations with those who do poorly in schools and manual work only helped to perpetuate the poor image of VTE. To overcome this barrier and change people's mindset, public campaigns on "using the hand" were organised and basic workshop subjects such as metal work, woodwork, technical drawing and basic electricity were made compulsory for all secondary students." Top of the Trade" television competitions and "Apprenticeship of the Year" awards were used to create interest and promote the importance of technical skills among the young. Eventually, as the economy grew and VTE graduates were recognised with high employability and successful careers, the acceptance of VTE and its image gradually improved. Even then, as was shown in the experience of ITE, extensive efforts in communications, marketing and branding continue even today towards building a positive image of VTE in Singapore." (Law, 2007, 18)



## COMPARATIVE STUDY OF FIVE COUNTRIES NEW ZEALAND

### Support infrastructure – funding models

(direct and indirect)

The Government Tertiary Education Commission (TEC) of New Zealand contracts annually with each Industry Training Organisation (ITO) to recruit and train a target number of Modern Apprentices (16-21 year olds). The TEC also provides other ITO funding based on training credits achieved by older apprentices who are generally continuing employees. In the horticulture industry, there is a large number (over 5,500) of relatively small employers (on average 6 employees per employer compared to the NZ average of 11 per employer across all industries) who also contribute to ITO costs, usually to subsidise OWS training fees to a range of contracted educational institutions. About 20% of employers have agreements with their apprentices or trainees which provide for training co-payments to the ITO.

There are no specific Government training incentives apart from specially targeted programs aimed at getting people off social security (eg unemployment) benefits into the workforce.

### Contractual terms and relationships

between stakeholders involved (training organisations, funding bodies, employers, unions, parents, programme administrators, governance & quality assurance)

Through Training Advisors, qualified and experienced in the industry, five regional centres support employers to sign up apprentices from outside and from their own employees. More than 40% of landscape / horticulture apprentices are 36 years or older. The Training Advisors, each with a case-load of up to 200 ongoing, negotiate individual training plans from a vast array of options, arrange and authorise fees payment to OWS training institutions and support "Workplace Assessors" who are the employment OJT supervisors. (van der Werff.2009)

### OJT (On-the-Job Training) and OWS (Off work site) requirements

prerequisites, qualifications and experience required for apprentice, employer and trainer (OJT and OWS)

In the New Zealand landscape/horticulture sector Apprenticeships are overseen by two of 37 NZ Industry Training Organisations (<http://www.tec.govt.nz/Resource-Centre/Directories/Industry-Training-Organisations>) which, since 1992, have been responsible for

- setting national skill standards for their industry
- providing information and advice to trainees and their employers
- arranging for the delivery of on and off-job training (including developing training packages for employers)
- arranging for the assessment of trainees and
- arranging the monitoring of quality training.

New Zealand Horticulture Industry Training Organisation (<http://www.hortito.org.nz/>) manages the following:

- NQF 1015 – Certificate in Horticulture (Advanced) (Level 4) with strands in Amenity Horticulture, Fruit Production, Landscape, Nursery Production, Postharvest, Production Horticulture, Viticulture, and Vegetable Production
- NQF 1533 – Certificate in Horticulture (Arboriculture) (Level 3)
- NQF 1534 – Certificate in Horticulture (Arboriculture) (Level 4) with an optional strand in Advanced
- NQF 1013 – Certificate in Horticulture (Introductory) (Level 2)
- NQF 1471 – Certificate in Horticulture (Level 3) with an optional strand in Cemetery
- NQF 1014 – Certificate in Horticulture (Level 4) with optional strands in Amenity Horticulture, Fruit Production, Landscape, Nursery Production, Postharvest, Viticulture, and Vegetable Production

- NQF 1470 – Certificate in Horticulture (Practical) (Level 1)
- NQF 0896 – Certificate in Horticulture (Arboriculture) with strands in Ground Worker, Consultant Climber, Transplant Worker, Basic Climber, Advanced Climber, and Utility Worker (This qualification is expiring. The last date for assessments to take place is 31 December 2012.)

as well as numerous specialty or content units in the following domains: amenity horticulture 37 units, arboriculture 37, floriculture 11, floristry 31, forest nursery 16, horticulture productions management 14, horticulture property management 6, horticulture resources management 16, landscape 79, nursery production 36, production horticulture 123, vegetable production 12 and viticulture 28.

New Zealand Sports Turf Industry Training Organisation (<http://www.nzstito.org.nz/>) manages the following

- NQF1078 – Certificate in Amenity Turf Maintenance (Level 3) 70 Credits 2 other organisations can assist
- NQF649 – Certificate in Business (First Line Management) (Level 4) 45 Credits 60 other organisations can assist
- NQF700 – Certificate in Sports Turf (Introduction to Turf Care) (Level 3) 48 Credits 5 other organisations can assist
- NQF1558 – Certificate in Sports Turf (Level 5) 70 Credits
- NQF203 – Certificate in Sports Turf Management (Level 4) 223 Credits 3 other organisations can assist
- NQF1272 – Diploma in Sports Turf Management (Level 6) 120 Credits

as well as specialty and content units in sports turf construction and drainage 12 units, sports turf management 33, sports turf weed and pests 10, land based environment management 3 and pest control 58 with standard accreditations overlapping other industry training in agriculture vehicle and machinery 8, amenity horticulture 2, general agriculture 2, general computing 2, nursery production 1, pest control 3 and production horticulture 6.

## Remuneration package, attrition and retention rates

Table 3: Modern NZ Apprenticeships Completion from Start Years 2002-3 by Industry

Industry	2002 starters	5 year %	6 year %	2003 starters	5 year %
<b>Sports Turf</b>	<b>37</b>	<b>38</b>	<b>43</b>	<b>34</b>	<b>65</b>
Road Transport	17	35	35	17	59
Joinery	52	71	75	74	58
Printing	45	56	64	43	58
Electrotechnology	193	54	61	185	55
Painting and Decorating	46	46	48	47	53
Electricity supply	87	33	41	94	45
Baking	102	30	32	107	43
Motor Engineering	546	43	51	363	43
Aeronautical Engineering	11	73	82	19	42
Engineering	484	44	51	423	42
Hospitality	63	38	43	142	42
Flooring	154	49	51	104	40
Furniture	77	34	34	28	36
Boat building	150	26	30	114	29
Building and construction	458	25	35	693	28
Plastics	11	9	9	19	26
Forest industries	257	16	25	187	25
Agriculture	489	15	20	536	19
Plumbing	n/a	n/a	n/a	30	17
Retail	7	0	0	76	13
<b>Horticulture</b>	<b>200</b>	<b>10</b>	<b>14</b>	<b>186</b>	<b>12</b>
Seafood	15	7	3	9	11
Public Sector	30	30	40	10	10
Tourism	8	13	13	48	10
Contracting	103	10	22	99	9
Dairy Manufacturing	n/a	n/a	n/a	2	0
Food Processing	3	67	100	4	0
Aluminium Joinery (architectural)	10	90	90	n/a	n/a
Telecommunications	2	100	100	n/a	n/a

Source: Mahoney, 2009

'Completion' in NZ is taken to mean that the local Workplace Assessor and off-job Training Coordinator have certified all learning requirements specified in the detailed Training Agreement made at commencement have been attained by the Apprentice. This may happen at any time between Year 3 and Year 10 after commencement. Completions are cumulative over these years.

## Duration of training

### ratio between OJT and OWS training

No train then place options. One day OWS in each working week for Certificates with special arrangements agreed to the ITO Advisors for block training and special requirements of particular content units.

## Apprentice to training supervisor ratio and outcomes

Usually 1 to 1 because of generally small employer size. Multiple or team arrangements in production industries like pipifruit, kiwifruit and viticulture (Neild,2010)

## Career support / counselling / supervision

ITO Training Advisors

## Recruitment strategies

including marketing and apprenticeship promotion strategies

ITOs have marketing and promotion budgets to supplement recruitment by individual employers

## Development and implementation challenges

faced by the apprenticeship programs

The Pasifika people of New Zealand (indigenous Maori and other Pacific Islanders) comprising about 18% of New Zealand's population, appear to be under-represented in the horticulture industry and in the workforce. (Newland, Maddell & Scwchenke, 2011) Targeted recruitment and support programs are again becoming a Government priority. Participating industries have strongly entrenched gender barriers which make them particularly unattractive to young women. Parents of secondary school children have traditionally seen apprenticeships as a pathway for non-academic young men; secondary schools promote tertiary study in the form of University or Polytechnic as their priority.

In addition, community concerns about low completion rates are aggravated by unique administrative complications (too many different units) and fuel growing employer criticism of low functional literacy.



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### Early history

"Apprenticeships have a long tradition in the United Kingdom, dating back to around the 12th century and flourishing by the 14th century. The parents or guardians of a minor would agree with a Guild's Master craftsman the conditions for an apprenticeship which would bind the minor for 5–9 years (e.g. from age 14 to 21). They would pay a premium to the craftsman and the contract would be recorded in an indenture. In 1563, the Statute of Artificers and Apprentices was passed to regulate and protect the apprenticeship system, forbidding anyone from practising a trade or craft without first serving a 7-year period as an apprentice to a master...

From 1601, 'parish' apprenticeships under the Elizabethan Poor Law came to be used as a way of providing for poor, illegitimate and orphaned children....

### Last 40 years

Traditional apprenticeships reached their lowest point in the late 1970s: by that time, training programmes were rare and people who were apprentices learned mainly by example. Exceptions to this were in the high technology engineering areas of aerospace, nuclear, automotive, power and energy systems where apprentices served very structured five year programmes of both practical and academic study to qualify as engineering technicians and technologists....

### Revitalisation from 1990s on

In 1994, the Government introduced Modern Apprenticeships (since renamed except in Scotland based) on frameworks that are now devised by Sector Skills Councils. Apprenticeship frameworks.

Employers who offer apprenticeship places have an employment contract with their apprentices, but off-the-job training & assessment is wholly funded by the state for apprentices aged between 16 & 18.... "

### Support infrastructure – funding models

(direct and indirect)

UK Government policy is committed to increasing the number of places for young people in VET, a focus on social inclusion rather than on skills. Recent trends suggest that, unless policies are changed, current projections of steeply increasing commencements in many industries (tabulated below under Remuneration package) are likely to be highly over-optimistic. Growth, under the current model, is coming largely from apprenticeships for those aged over 18, or, indeed, over 24, both overall and for the advanced (level 3) apprenticeships which are so valuable in income and progression (Wolf,2011,79).

In 2008 UK was in the process of simplifying a very complex co-funding model of OWS vocational training in which for 16-18 year olds central Government and employers were to contribute progressively more (up to 50% per qualification) funding, calculated by

SLN (standard learner number values measuring the activity required to deliver a qualification, either activity costs guided learning hours).

X National funding rate (£2,920 in 2009).

X Weighting factor (A – 1.0 B – 1.12 C – 1.3 D – 1.6 E – 1.72 J – 1.25 K – 1.5 where weightings A through E were the weightings in the "learner responsive model" and apply to the knowledge-based elements of apprenticeships; weightings A, J, and K apply to the competence-based elements).

19 years plus rates were adjusted downwards by the actual employer contribution but had an additional "National Co-funded rate" added of from £1,642.80 to £2,289.38 (LSC, 2009).

With the austerity measures of the Conservative Liberal Government the funding formula in fact became more complex.

At the same time a National Minimum Wage for apprentices was introduced from 1 October 2010. The wage applies to all apprentices aged under 19; and apprentices aged 19 or over in the first year of their Apprenticeship . The apprentice minimum wage is £2.50 per hour and applies to time working, plus time spent OWS . Employers are free to pay above the new wage and many do so, but employers must ensure that they are paying their apprentices at least the minimum wage. If an apprentice is on a higher wage, the employer must continue to pay that for the remainder of the training or until the apprentice becomes eligible for the full national minimum wage. (Skills Funding Agency,2010).

Unless the company has 5000 employees or more Government funding for apprentice training is not paid directly to the employer. It is paid directly to the "learning provider". In 2009 Government announced that businesses which already have a proven track record in offering high-quality apprenticeships will be able to access additional funds to train extra apprentices. There are additional wage subsidies available to small businesses which employ 16-18 year olds through one of the newly- established Apprentice Training Agencies (ATAs) as well as for redeveloped group training arrangements. (Steedman,2010,4)

Table 4 : Ingredients of UK Government funding of OWS

Funding	=	SLN	x	National rate per SLN	x	Provider factor			
						Programme weighting	Disadvantage uplift	Area costs uplift	Large Employer factor

Source and further details: Skills Funding Agency, 2010

Table 5: Direct and indirect United Kingdom Government supports

<b>Provide financial incentives for employers?</b>	Government pays more than half of training fees and allows employer to pay lower than normal wage
<b>Non-financial recognition of training employers (and their peak bodies)?</b>	Apprentice ambassadors network and awards
<b>Fund off-the-job / college training?</b>	Government pays more than half training fees Employer pays wages and contributes to fees
<b>Support marketing campaigns to employers?</b>	National Apprenticeship Service provides marketing and employer support
<b>Support marketing campaigns to potential apprentices and trainees?</b>	National Apprenticeship Service provides marketing and apprentice support
<b>Government schools-funded careers advice?</b>	Schools provide advice on all options
<b>Establish or recognise regulatory, coordinating agencies?</b>	Funds Sector Skills bodies like LANTRA to develop qualifications
<b>Fund intermediary agencies like evolving Group Training?</b>	Some schemes but no statutory funding
<b>Require companies to employ apprentices before they get government contracts?</b>	Not mandatory but preferred
<b>Enforce apprenticeship employment ratios and wage rates in industrial relations agreements?</b>	No
<b>Expand the range of people eligible to enter?</b>	All age programme Some schemes for equality and diversity
<b>Take an interest in quality of delivery?</b>	Yes Monthly analysis of all vital statistics

### Contractual terms and relationships

between stakeholders involved (training organisations, funding bodies, employers, unions, parents, programme administrators, governance & quality assurance)

The Sector Skills Councils – which are non-statutory – have become, in the last few years, de facto designers, as well as de facto first-line accreditors, of almost all non-Higher Education qualifications in the United Kingdom other than academic ones. (Wolf,2011,63)

Lantra Awards regulate and monitor the quality of OWS training and assessment being delivered by the network of providers and instructors. As well as instructor re-certification (every 5 years) and annual updates, this is done through visits to instructors and/or providers. Instructors are required to have a technical audit visit every 5 years. There are also non-technical visits and spot checks. ([http://www.lantra-awards.co.uk/faq/faq\\_qas.aspx](http://www.lantra-awards.co.uk/faq/faq_qas.aspx))

LANTRA are the Environmental and land-based industries Skills Council who oversee the landscape/horticulture sector Apprenticeships. LANTRA is 1 of 25 Sector Skills Councils in the UK. (<http://www.lantra.co.uk/>)

LANTRA are responsible for

- Actively promoting the sector as a positive career of choice to young people and adults
- Ensure that people are equipped with the right skills for careers in the sector.
- Develop effective partnerships with leading industry bodies and training providers. Together, we seek collaborative solutions to support skills and business needs.
- Encourage people to value and take up skills and development opportunities available to them
- Identify the most relevant training and development for parties

- Point parties towards funding opportunities for training and skills
- Work rigorously with employers to set the standards and define qualifications ensure the industries are professional and world-class
- Research programs and provide robust information and intelligence to shape policy and investment in learning - take a look at our Skills Assessment research and so funded learning meets the needs of our sector
- Listen to feedback and views so all are heard by governments and others
- With everyone's help are championing the sector as professional, hi-tech and essential to the UK economy
- Support 21st Century competitive businesses by promoting high level skills, new knowledge and technologies
- Help people recognise the importance and value of the sector to the society<sub>1</sub>



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- Offer access to a network of training providers and subsidiary body Lantra Awards, who provide nationally recognised vocational training and qualifications in our sector
- And more recently were approved to deliver Investors in People to land-based and environmental businesses in England (<http://www.lantra.co.uk/About-Us/At-a-Glance.aspx>)

### Level 2 Horticulture qualifications from LANTRA Apprenticeship Framework

- Parks Gardens and Green Space - Cemeteries
- Parks Gardens and Green Space
- Sport turf Greensman
- Sports turf Greenkeeping
- Landscaping
- Horticulture
- Production Horticulture

### Level 3 Horticulture qualifications from LANTRA Apprenticeship Framework

- Certificate in Work-based Horticulture
- Diploma in Work-based Horticulture
- Certificate in Garden Design
- Diploma in Garden and Planting Design
- BTEC Diploma/Extended Diploma in Horticulture
- Diploma in Principles and Practices of Horticulture.

LANTRA has a network of over 500 training providers one of which On Site Training UK were a major contributor to our research. See below details about the Horticulture specifics they currently deliver the following apprenticeships in the Horticulture Industry:

### Level 1 Award in Amenity Horticulture (previously NVQ level 1)

### Level 2 Award/ Certificate/ Diploma : (previously NVQ level 2)

- Landscaping
- Sports Turf (greenkeeping or groundsman)
- Production horticulture
- Parks, gardens and green spaces (cemetery option available)
- Horticulture

### Level 3 Award/ Certificate/ Diploma (previously NVQ level 3)

- Landscaping
- Sports Turf (greenkeeping or groundsman)
- Production horticulture
- Parks, gardens and green spaces

### NVQ level 4 Amenity Horticulture (discontinued 31/3/11-contact us for alternatives)

- Landscape/ Grounds maintenance management
- Sportsground management
- Heritage

### NVQ level 2 Local Environmental Services

### NVQ level 2 Environmental Conservation

### NPTC Certificates of Competence including:

- PA1, 2, 6 and 6W
- Safe use of mowers, hedgetrimmers, pedestrian controlled 2 wheeled tractors
- Safe Manual Handling operations

Horticulture Specialisms courses including Line, pitch and track marking.

<http://www.onsitetraininguk.co.uk/services/horticulture-training>

In order for an apprentice and employer to commence an apprenticeship an employment contract must be in place. Only when all the components have been completed and certified, the documents are sent by the training provider to LANTRA

with an application form for a certificate that says the candidate has completed their Apprenticeship. At completion, the candidate has certificates for all the components and an overall certificate of Apprenticeship.

The National Apprentice Service from the UK is in the process of creating an Apprenticeship Agreement which in the future will be required to be completed upon commencement and within the requirements of s32 of the Apprenticeships, Skills, Children and Learning Act 2009.

### Summary: Who is responsible for what?

Major changes of policy in response to falling numbers of apprentices and the primacy of social inclusion over skills led to the following recent arrangements:

1. The employer takes responsibility for paying the apprentices' wages, training them up on the job, and looking after their wellbeing at work.
2. The National Apprenticeship Service (NAS) has end-to-end responsibility for the delivery of Apprenticeships through the pursuit of three key principles – supporting employers, stimulating high-quality demand from individuals and ensuring that training is relevant, timely and high quality. Its activities include the online Apprenticeship vacancies system.
3. Central government sets the statutory duties for local authorities, oversees bodies such as the NAS, fully funds Apprenticeship training costs for 16- to 18-year-olds, and co-funds training costs for 19- to 24-year-olds.
4. Local authorities are responsible for planning and working with the Youth Training Local Authority to commission activity to meet their local residents' learning needs. They are responsible for the provision of Information, Advice and Guidance (IAG). Local authorities also act as procurers and direct suppliers of services, which can provide opportunities for Apprenticeships.

5. Sector Skills Councils (SSCs) are employer-driven organisations that represent the employers of around 90 per cent of the UK's workforce. There are 25 individual SSCs representing sectors from transport and hospitality to science and law enforcement. They set the content of the Apprenticeship frameworks.
6. The Young People's Learning Agency (YPLA) will have responsibility for funding further education colleges, sixth form colleges and other training providers, and supporting local authorities to provide suitable education and training opportunities for all 16- to 19-year-olds, from August 2010. (LANTRA, 2011b)

### OJT (On-the-Job Training) and OWS (Off work site) requirements

prerequisites, qualifications and experience required for apprentice, employer and trainer (OJT and OWS)

Anyone 16 years old and above and living in England can apply for an apprenticeship as long as they are not already enrolled in full time study. There may be different entry requirements depending on the Apprenticeship and the industry sector. As a general rule people who have completed other qualifications can start apprenticeships but if a student has a qualification in higher education for example completed a degree they will not be eligible for Government Funding which means the employer will need to pay the full fees for the apprentice's training. If the potential apprentice took their GCSE's more than 5 years ago and didn't gain a top grade (A or A\*), or don't have a good GCSE grade in Maths and English they will need to take a literacy and numeracy test before starting.

Any funding for the training is applied for by the training provider/college. If the training provider/college cannot deliver a component themselves, then they must organise this to happen elsewhere and pay it from the fund received.

Funding here is payable monthly, with 25% being held back until full completion. Colleges carry out their training at college, and others deliver workplace training.

### Group Training Association

This model is where a group of employers come together to access, manage or deliver training to a group of employees. The training may be towards an Apprenticeship, vocational qualification or 'non accredited' training that does not lead to a qualification.

In this model apprentices will be employed by individual employers/businesses but they may be a distance away from their local provider so they come together for delivery of provision. Many GTAs deliver training but some work with training providers on behalf of members. By working together, employers are better able to deliver economies of scale or can create enough demand to encourage training providers to deliver courses that meet their needs. (LANTRA, 2011b, 9)

### Entry requirements for the Horticulture Intermediate Apprenticeship

There are no specific entry requirements for the Level 2 Intermediate Apprenticeship in Horticulture, however, there are qualifications and courses that will help learners understand the sector prior to starting:

- Level 1 Certificate in Land-based Operations
- Level 1 Diploma in Horticulture
- Level 1 Diploma in Work-based Horticulture
- Level 1 NVQ in Amenity/Production Horticulture
- Level 1 Diploma in Practical Horticulture Skills
- Level 1 Award/Certificate/Diploma in Work-based Land-based Operations
- Units taken as part of Foundation Learning

- Have previously worked in, or are currently working within the industry
- GCSEs/A levels.

Progression opportunities onto the Horticulture Intermediate Apprenticeship also exist for adult learners who have experience within the Horticulture industry or who are looking for a career change.

### Entry requirements for the Horticulture Advanced Apprenticeship

The Horticulture industry want the entry requirements for the Advanced Apprenticeship to be flexible, so therefore has suggested that one of the following should be completed:

- Level 2 Diploma in Work-based Horticulture
- Level 2 NVQ in Amenity/Production Horticulture
- Level 2 Certificate in Practical Horticulture Skills
- Level 2 Diploma in the Principles and Practices of Horticulture
- Level 2 BTEC Extended Certificate in Horticulture
- Level 2 BTEC Diploma in Horticulture
- Level 2 Extended Certificate in Sports and Amenity Turf Maintenance
- Level 2 Certificate in Gardening
- Level 2 Certificate in Garden Design.
- Practical experience within the Horticulture industry
- 14-19 Diploma in Environmental and Land-based Studies
- 3 GCSEs (A\*-C)/A levels

(There are many qualifications within horticulture, those named above are a few suggestions).



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### Initial Assessment

Training providers and employers should use an initial assessment process which is fit for purpose. This will ensure that applicants starting on the Apprenticeship/Advanced Apprenticeship have a fair opportunity to demonstrate their ability and to tailor programs to meet individual needs, recognising prior qualifications and experience. (LANTRA, 2011a, 6)

On Site Training UK have found that "Horticulture apprentices usually have few school qualifications and are from poorer backgrounds. Exceptions to this are apprentice greenkeepers (as to why is unclear), however they may have tried other jobs, even other apprenticeships before they move into horticulture. For many, the use of machinery is a draw, for a few they have a genuine interest in caring for plants etc."

### Remuneration package, attrition and retention rates

Average apprentice pay in England is well above the average in other apprentice countries.

**Table 0.2 Index (UK=100) of average weekly apprentice pay, 2006 or nearest year**

Austria	55
France - Minimum pay for 16-18 year olds	36
Germany	73
Switzerland 4 year apprenticeship	36
England	100

Employers in other apprentice countries try to recoup some of their training costs by paying an apprentice allowance/ wage which is calculated as a fraction of the wage for a skilled employee. Combined with a longer apprenticeship period, this helps to offset the costs that employers incur when training. (Steedman,2010,4)

There are currently approximately 200 apprentice occupations in England and 85 sector frameworks. Unfortunately the LANTRA apprenticeships are generally unreported as they are below the top 10 uptakes for 2008/09 and predictions for 2009/10.

Most Popular Apprenticeships		
Framework and Starts	2008/09	2009/10
Customers Service	22,100	29,400
Business Administration	20,500	26,500
Hospitality and Catering	16,100	20,900
Children's Care Learning and Development	16,900	19,600
Health and Social Care	12,000	17,400
Retail	10,700	16,800
Hairdressing	15,900	15,800
Engineering	14,700	14,500
Construction	15,700	13,400
Active Leisure & Learning	7,800	10,800

The growth is in the Service industries which remain mostly at Level 2

Apprenticeship Starts by Academic Level				
Level	2008/09	2009/10	Difference	
Level 2	155,300	187,000	31,700	20%
Level 3	78,600	85,400	6,800	9%
Level 4	100	1,500	1,400	1,557%
Overall	240,000	280,000	39,900	170%

Unfortunately, UK-wide voluminous evaluation and statistics do not include horticulture / landscape apprenticeship (relatively too small - UKCES, 2010). This is the case even within the responsible Sector Skills Council, LANTRA (said to be contracted out).

Horticulture Completion Statistics from LANTRA and NAS		
2009/2010	2009/2008	2007/2008
Level 2 – 774	Level 2 – 560	Level 2 – 502
Level 3 – 56	Level 3 – 39	Level 3 – 32
Total – 830	Total – 599	Total – 534

### Duration of training

#### ratio between OJT and OWS training

Apart from specified literacy and numeracy levels (BIS,2011,4-6) and so-called PLTS (Personal Learning and Thinking Skills comprising independent enquiry, creative thinking, reflective learning, team working, self management and effective participation) (BIS,2011,8) apprentice frameworks must provide in each 12 months period of training for a minimum of 180 signed off OJT hours or 70% and 100 OWS hours or 30%.

The specification is worth quoting that a

“ framework must specify the number of Guided Learning Hours (GLH) that an apprentice must receive to complete the framework. This must be a minimum of 280 GLH of which at least 100 GLH or 30% (whichever is the greater) must be delivered off-the-job and clearly evidenced. The remaining GLH must be delivered on-the-job and clearly evidenced. ” (BIS2011,9)

The same applies at both Level 2 (typical Horticulture example is 555 min) and Level 3 (typical Horticulture example is 688 min).

### Apprentice to training supervisor ratio and outcomes

The apprenticeship system in England does not have a specific regulation on the ratio of apprentice to supervisor in the workplace.

There are no specific numbers regulated in the system about trainer to student ratio either however the normal protocol for classes of theoretical studies is for 8-16 students. The normal practice for on the job training are much smaller than 8 or a lot of the time one to one.

Table 6 : Landscape and Horticulture Occupations within LANTRA's Industries (as reported by LANTRA from survey returns)

<b>Amenity Horticulture – Exterior Landscaping</b>	<b>Amenity Horticulture – Sports and Amenity Turf</b>	Growing Manager
Apprentice/Trainee/Assistant Arboriculturalist	Deputy Head/Supervisor Greenkeeper/ Groundsman	Harvester
Arboretum supervisor	Greenkeeper/Groundsman (Trainee & Apprenticeship)	Intensive Vegetable/ Fruit Production Technician
Arboricultural Officer/Woodland Officer	Head Greenkeeper/Groundsman Manager	Laboratory Analyst
Area supervisor/ Glasshouse manager/ Assistant head gardener	Mechanic	Laboratory Analyst
Assistant Arboretum worker	Skilled Greenkeeper/Groundsman	Herb Specialist
Assistant Gardener		Horticultural Advisor
Assistant Machine Plant Operator		Horticultural Craftsperson
Assistant Nursery Worker	<b>Amenity Horticulture – Green Space</b>	Horticultural Production Manager
Botanic Gardens Worker	Arboricultural Officer/Woodland Officer	Horticultural Sales Executive
Botanist/Botanical research manager	Assistant Gardener	Horticultural Scientist/ Researcher
Chargehand Arborist/Arboriculturalist	Assistant greenkeeper/groundsman	Horticultural Supervisor
Contracts Manager	Assistant Nursery Worker	Horticultural Therapist
Curator/ Head Gardener/ Head of collections	Botanical Gardener	Horticultural Therapist
Director/ Head of Horticulture/ Curator	Chargehand Arborist/Arboriculturalist	Horticulture Production Supervisor
Ecologist	Curator/head gardener/head of collections	Horticulture Sales Manager/ Marketing Manager
Foreman/Chargehand Gardener	Deputy head/supervisor greenkeeper/ groundsman	Labourer
Gardener- Semi skilled	Director of gardens	Managing Director
Gardener/ horticulturalist		Mushroom Production Technician
Grave Digger/Cemetery Keeper/ Foreman	<b>Production Horticulture</b>	Nursery Manager
Green Spaces Officer/ Community Parks Officer/ County Parks Officer	Agronomist	Nursery Stock Production Technician
Grounds Maintenance Manager	Apprentice	Nursery Stock Propagator Specialist/ Advisor
Horticulturalist/ Gardener/ Horticultural technician/ Craftsman gardener	Assistant Garden Centre Worker	Nutritionist
Landscape Foreman/ Chargehand/ Landscape Officer	Assistant Glasshouse Production Worker	Operations Manager
Machine Plant Operator / Supervisor	Assistant Horticultural Worker	Order Collator
Manager/ Head Park Ranger/ Estate/ Park Manager	Assistant Mushroom Worker	Owner
Manager/Head Arboriculturalist	Assistant Plant Propagator	Packhouse Manager
Manager/Head Botanic Gardens Worker	Assistant Watercress Production Worker	Packhouse/ Despatch Supervisor
Manager/Head Gardener	Beekeeper	Picker
Manager/Head Landscaper	Botanist	Plant Breeder
Park/Countryside Keeper/Ranger/Foreman	Buyer	Plant Nursery Assistant
Parks and Open Spaces Director	Commercial Manager	Plant Pathologist
Parks Development Officer	Company Director	Quality Control Assurance Manager
Skilled Botanic Gardener	Delivery Driver	Quality Control Assurance Technician
Skilled Nursery Worker	Director	Seasonal Worker
Skilled Spray Operative	Food Quality Control Manager	Senior Buyer
Tree Officer/Inspector	Fruit Production Specialist	Senior Manager
Tree Surgeon	Fruit Sorter	Skilled Fruit Production Worker
Works Supervisor	Fruit/Vegetable Farm Manager	Skilled Glasshouse Production Worker
	Garden Centre Manager	Skilled Horticultural Worker
	Garden Centre Specialist / Adviser	Skilled Intensive Vegetable Production Worker
	Glasshouse Production Specialist/ Adviser	Skilled Mushroom Worker
	Glasshouse Technician	Skilled Nursery Stock Production Worker
	Grader	Skilled Packer/ Despatch Worker
	Grower	Skilled Plant Propagator
	Grower	Skilled Tractor/ Machine Operator
	Grower (owner)	Skilled Watercress Production Worker
		Soil Chemist
		Spray Technician/ Advisor
		Technical Manager/ Advisor
		Transport Manager

(Source: UKCES, 2009)



## COMPARATIVE STUDY OF FIVE COUNTRIES UNITED KINGDOM

### Career support / counselling / supervision

The 1997 Education Act required that between the ages of 14 and 16 all school pupils should follow a programme of careers education and be provided with up to date and relevant materials. However, employers and other apprenticeship providers subsequently found that many schools either did not allow them to present information on apprenticeships to pupils or made access very difficult (House of Lords (2007) 'Apprenticeship: A Key Route to Skill' p. 25 and Appendix 4 p. 50). In 2005, two thirds of those aged 14-15 (Year 10) reported that they had never heard of apprenticeships when in school. Only a quarter of the same age cohort had talked to anyone about apprenticeship after Year 11. However, following representations to government during parliamentary debate, the successor Act, the Apprenticeship, Skills, Children and Learning Act (2009) specifically requires schools to include information on apprenticeship in the programme of careers education offered to 14-16 year olds. This is a step forward but may not in itself result in improved information to school leavers on apprenticeships.

Careers guidance professionals have been found to have low awareness of apprenticeships and a survey of teachers' knowledge of apprenticeship found almost complete ignorance (Skills Commission 2009 p.16, p.20). The new requirements of the 2009 Act will therefore need teachers and other careers professionals to be better informed about apprenticeship. The internet-based interactive Apprenticeship Vacancy Matching Service introduced in 2009 and based on similar services well-established in Germany and elsewhere constitutes a significant advance. If used well by employers and young people it could greatly improve awareness of apprenticeships and help young people (Steedman,2010,16)

### Recruitment strategies

including marketing and apprenticeship promotion strategies

Emphasis on formal qualifications in the United Kingdom eroded apprenticeship commencements in the last 25 years of 20th century, however commencements gradually revived with recruitment in 2010 around 8% of an age cohort under 25 years and rising, with increasing proportions on advanced ('level 3') courses.

The sectors with the highest ratios of level 3 to level 2 starts are engineering and IT-related. (The relevant SSCs are Summit Skills, e-skills UK and SEMTA.) A number of major engineering companies run very demanding and enormously over-subscribed apprenticeship schemes which allow apprentices the possibility of continuing to Higher National, foundation degree and, in some cases, Honours Degree level (Wolf, 2011,168)

The National Apprenticeship Service has an online advertising section specifically for employer's to advertise their Apprentice vacancies. This service on the reverse side allows people looking for apprenticeships to be able to register to search for apprenticeship vacancies and also apply through the online system. This system is free of charge to both employers and jobseekers. It also allows employers to allocate who will handle the entire recruitment process be it the employer themselves or their nominated learning provider. Employers can also direct applicants to apply through their own specific websites if need be. Another of the helpful features is the ability for employers to search for a training provider for their apprentice.

### Promoting Apprenticeships

#### To Employers

Research carried out by the National Apprenticeship Service (NAS) reports that over 80% of people are more likely to use a business if it offers Apprenticeships to young people and that 64% of consumers would use a register enabling them to choose a business that hires apprentices. Consequently the Government is actively promoting the following:

#### Roll of Honour

The Roll of Honour showcases businesses who are committed to Apprenticeships. There are 100's of businesses on the Roll of Honour already as they recognise the business benefits they gain from employing apprentices.



#### Employer Badge

The Employer Badge can be displayed by businesses on their websites, stationery and marketing materials, to highlight their commitment to Apprenticeships. If used, advice to National Apprenticeship Service results in automatic Roll of Honour citation

#### Employer Certificate

To help customers know which companies offer Apprenticeships. Apprenticeship Employer Certificate's are available to employers who employ apprentices within their organisation.



## To Apprentices

### NAS – Apprenticeship National Awards

The awards are held each year in the following award categories:

- Young Apprentice of the Year (school year 11 only)
- Apprentice of the Year
- Advanced Apprentice of the Year
- Higher Apprentice of the Year
- Small Employer of the Year (1 - 24 employees)
- Medium Employer of the Year (25 - 249 employees)
- Large Employer of the Year (250 - 4,999 employees)
- Macro Employer of the Year (5,000 + employees)

Winners from nine Regional Awards proceed to the national stage where one Winner and two Highly Commended entrants are honoured for the National Award.

Available on the LANTRA website are case studies of people within the horticulture industry include apprentices. These case studies are person experiences based on real people. (<http://www.lantra.co.uk/News-Media/Case-Studies>)

LANTRA also has video versions of a similar nature advising potential students of what is involved within the different trades. See below two example links:

#### A Career in Urban Design

<http://www.lantra.co.uk/News-Media/Case-Studies/Horticulture,-Landscaping-and-Sports-Turf/A-career-in-urban-design.aspx>

#### A career in Horticulture

<http://www.lantra.co.uk/News-Media/Case-Studies/Horticulture,-Landscaping-and-Sports-Turf/A-career-in-horticulture.aspx>

## Development and implementation challenges

### Faced by the apprenticeship programs

England and other European countries suffer from indifference and sometimes hostility towards work-based training in schools and little or no advice is provided.

Employers are well-represented on national and sector skill organisations but employer numbers offering apprenticeships are low by international standards (8 per cent). The supply of applicants substantially exceeds employer demand. Apprenticeships require completion of competency based qualifications, underpinning knowledge and key skills, employment experience and off-the-job training. Completion rates have improved and are now comparable to some other countries, like Australia (better than 40%). Progression to higher qualification levels is poor. The administration of government funding for apprenticeship training lacks transparency and deters or at best marginalises many employers. (Steedman,2010,4)

The apprenticeship programme is still heavily segregated by sex and ethnicity in some areas and sectors, reflecting the overall job market.

Growth in Advanced and Higher (level 3+) apprenticeships has been slower than in entry level 2 apprenticeships, lowering the academic mean of the overall program. (Marsh, 2011, 14)

With regards to the Horticulture Industry and Apprenticeship's On Site Training UK have found that "although apprenticeships in the UK are open to those age 16 and above, the industry doesn't want under 18s. This is sometimes because of insurance premiums, the issue of CRB (Criminal records checks) for the mentors, or because legally they can't use the machinery required to carry out the job."

### Wolf Review of Vocational Education 2011 Government Response

"The current system of vocational education is failing too many young people from a number of different causes:

- Indifferent teaching of highly specialised subjects from teachers who are not well enough versed in the courses they are leading.
- Young people taking courses and qualifications which have been designed to meet the needs of adults, already in employment
- Students without a solid grounding in the basics being allowed to drop the study of English and maths – the most vital foundations for employment
- Not enough Apprenticeships for 16-18 year olds and a lack of incentives for employers to be involved in the program
- And underlying these problems, an attitude that vocational education is a second choice, easy option for the less able, which has been reinforced, not tackled, by claims of "equivalence" between qualifications which no one has truly believed.

We will:

1. Ensure that all young people study and achieve in English and mathematics, ideally to GCSE A\*-C, by the age of 19. For those young people who are not immediately able to achieve these qualifications, we will identify high quality English and maths qualifications that will enable them to progress to GCSE later.
2. Reform performance tables and funding rules to remove the perverse incentives which have served only to devalue vocational education, while pushing young people into qualification routes that do not allow them to move into work or further learning.
3. Look at the experience of other countries to simplify Apprenticeships, remove bureaucracy and make them easier for employers to offer."



## COMPARATIVE STUDY OF FIVE COUNTRIES GERMANY

Table 7: German Landscape Industry

Year:	2005	2006	2007	2008	2009	2010
<b>Turnover (Billion €)</b>	4.24	4.35	4.77	4.91	4.91	5.11
<b>Companies</b>	12,892	13,343	14,070	14,461	14,784	15,427
<b>Employees</b>	81,883	84,279	87,165	87,795	88,582	92,338
employees / company	6.4	6.3	6.2	6.1	6.0	6.0
<b>Apprentices</b>	5,941	6,252	6,403	6,898	7,132	6,930
% of employees	7.3%	7.4%	7.3%	7.9%	8.1%	7.5%
apprentices / company	0.46	0.47	0.46	0.48	0.48	0.45
apprentices/ employee	0.07	0.07	0.07	0.08	0.08	0.08
<b>Insolvencies</b>	153	145	126	120	131	130

Source: <http://www.galabau.de/Branchendaten.aspx>

Even though the numbers in Germany's landscape industry as a whole show consistent growth in the last six years, the strength of the employer involvement in industry development and apprentice training is falling. Interpretation of Table 8 trends above is not straightforward because of marked regional differences around the former East Germany and West Germany divide.

Since the German reunification in 1990 and subsequent entry into the European Union there has been a relaxation of industry macroeconomic regulation (taxation and industry self-regulation).

In 1994 the GaLaBau Service GmbH, a federation of 16 State-based landscape industry Chambers of Commerce had 2,815 members nation wide. Most of them had apprentices. At the same time there were 5,539 non-member Landscape companies. This is a ratio of 1:2 or 33% of landscape companies were members of their peak organisation. By 2010 the number of members has grown gradually to 3,290, however new non-member companies grew geometrically to 12,137. The current ratio is 1:4 or only 20% of landscape industry companies are members. The majority of non-members do not have apprentices.

Other Germany-wide Landscape Industry information can be found in GalaBau-Statistik(2010).

We have selected one two State Region of Germany (Berlin & Brandenburg) for more detailed review from the following analysis:

Singapore's recognition as a "Garden City", and further aim of becoming a "City in a Garden" led us to identify the achievements of Peter Lenné, a world famous classicist landscape architect, who became responsible for the planning and development of the then Prussian capital of Berlin in the 1840s. The history of post World War II recovery from occupations one hundred years later, links Berlin and Singapore as do other similarities (in our understanding) including population size and predominantly urban character.

### Singapore and Region

Singapore declared independence, uniting with other former British territories to form Malaysia in 1963, however separated from Malaysia two years later.

Although Singapore is a Southeast Asian Republic, situated off the southern tip of the Malay Peninsula, it is a city and its hinterlands on more than 60 islands with some 5 million people of whom about 3 million were born locally.

Two-thirds of Singapore's present area of 704 km<sup>2</sup>, gradually increasing through land reclamation, is urban in character.

### Berlin and Region

Located in northeastern Germany, Berlin is the capital city of Germany one of the 16 states of Germany and the center of the Berlin/Brandenburg Metropolitan Region.

Berlin's population of about 3½ million is embedded in the geographic Berlin / Brandenburg region of nearly 5 million. The population comprises residents from many nations.

Around one third of Berlin's area is composed of forests, parks, gardens, rivers and lakes.

Table 8: Berlin and Brandenburg Landscape Industry

Federal States:	Berlin	Brandenburg
<b>Turnover (Billion €)</b>	<b>0.14</b>	<b>0.16</b>
<b>Companies</b>	<b>340</b>	<b>580</b>
<b>Employees</b>	<b>2,500</b>	<b>3,000</b>
employees / company	7.4	5.2
<b>Apprentices</b>	<b>150</b>	<b>150</b>
% of employees	6.0 %	5.0%
apprentices / company	.44	.26
apprentices / employee	.06	.05
<b>Companies with apprentices</b>	<b>78</b>	<b>118</b>
as percentage of companies	22.9%	20.3%
<b>Member companies of Fachverband Gartenbau und Landwirtschaft Berlin / Brandenburg e.V. See: <a href="http://www.galabau-berlin-brandenburg.de">www.galabau-berlin-brandenburg.de</a></b>	<b>62</b>	<b>90</b>
as percentage of companies	18.2%	15.5%

Source: Dressler (2011)

Horticulture employer organisations (with a focus on softscapes and plant nurseries and the major central-European dedication to cemetery gardening and funeral flowers) are not included in Table 8. They have parallel national and regional organisations Landesverband Gartenbau und Landwirtschaft Berlin / Brandenburg e.V. see [www.ftb-berlin.de](http://www.ftb-berlin.de)

- Landesverband Gartenbau Brandenburg e.V. see [www.gartenbau-brandenburg.de](http://www.gartenbau-brandenburg.de)

However they share local vocational education and training arrangements.

The seven fields of German horticulture "Fachrichtungen des Gartenbaus" are

- landscape gardening
- arboriculture /tree nursery
- cemetery gardening
- vegetable growing
- fruit growing
- culture of herbaceous plants
- ornamental plant culture.

The top ten landscape contract types in Table 8 have, over the last six years shown most growth in the private garden sector.

In 2010 the major contract types were:

Landscape gardening includes the planting of trees in parks and gardens and their care, including the work of arborists and tree climbers. The employer organisation for landscape gardening companies is

- Fachverband Garten-, Landschafts- und Sportplatzbau Berlin und Brandenburg e.V. see [www.galabau-nord.de/nord/default.aspx](http://www.galabau-nord.de/nord/default.aspx)

Employer organisations for the other fields (with a focus on softscapes and plant nurseries around the major central-European dedication to memorial and visiting cemetery gardening and funeral flowers) are not included in Table 8. They have parallel national and regional organisations

- Landesverband Gartenbau und Landwirtschaft Berlin / Brandenburg e.V. see [www.ftb-berlin.de](http://www.ftb-berlin.de) & [www.gartenbau-brandenburg.de](http://www.gartenbau-brandenburg.de)

"The education of the gardeners is very specialised, the apprentices "don't mix," neither in school classes nor in the companies. If you have finished education in fruit growing, for example, you usually cannot find work in a landscaping business. Landscapers are probably the most versatile, but due to higher wages usually stay in landscaping (even the amount the apprentices receive per month is 20-30% higher). Of the seven fields landscaping comprises 80-90% of apprentices in Berlin. In rural states like Brandenburg, there are still about 60% in landscaping alone (Germany total also about 60%)." (Dressler,2011)

Table 9: Landscape company contracts in Germany and in Berlin and Brandenburg

Contracts by Category		Germany	Berlin & Brandenburg
Hausgarten	Private Gardens	48.01 %	Much lower
Außenanlagen im Wohnungsbau	Outside arrangements in Offices and Apartments	20.34%	
Wegebauarbeiten	Road-related landscape construction work	8.35%	
Parks, Grünanlagen und historische Gärten	Parks, Greens and historical gardens	4.56%	10 -15%
Spielplätze, Schulhöfe	Playgrounds, Schoolgrounds	4.44%	
Teiche, Schwimmteiche, Wasserbecken	Swimming ponds, water surrounds	4.27%	
Straßenbegleitgrün, Lärmschutzanlagen	Green, noise reduction arrangements	2.45%	
Friedhofsanlagen	Cemetery arrangements	1.48%	
Sportanlagen	Sports facilities	1.45%	
Dach- und Fassadenbegrünung	Roof and Facade greening	1.34%	

Sources: GaLaBau-Statistik, 2010 &amp; Dressler (2011)



## COMPARATIVE STUDY OF FIVE COUNTRIES GERMANY

### Support infrastructure – funding models (direct and indirect)

Traditionally, VET (vocational education and training) in Germany has been responsible for the skilling and employment of two out of every three secondary school completers. German VET is characterised by the dual system of close cooperation between

- private enterprises which pay, employ and train apprentices with technical vocational training support from membership Chambers of Commerce type peak and regional organisations, Employer managed vocational training together with text books, learning CDs etc are funded by a State payroll levy of 0.9% on all landscaping companies (ie those with and those without apprentices) and
- German national Government-funded public vocational education schools which provide strong continuing general education, and some teaching of theory related to the industry (but not the kind of OWS technical vocational training usual in non – dual system countries)

### Contractual terms and relationships

between stakeholders involved (training organisations, funding bodies, employers, unions, parents, programme administrators, governance & quality assurance)

Each Federal State has its own laws concerning vocational training while vocational education is Federal law (BBiG – Vocational Training Act 1969). Vocational Training Reform Act 2005 built on these structures and adapted the regulatory frame-work to the terminology of VET.

Apprenticeship Training Contracts are made between Apprentices selected by the training employers. Vocational education schools disclaim any role in finding employers, referring possible applicants to Training Coordinators employed by regional industry employers peak organisations (what would be regional Chambers of Commerce or Industry) who also register the Training Contracts. Train then place vocational courses have been evolving in most industries in response to the availability of young people waiting to start an apprenticeship.

At the referral of Herr Rainer Leimgruber, Headmaster Peter-Lenné Schule, the State Government of Berlin supplied Horticulture enrolment numbers. Estimated first year enrolments for Apprenticeship Education (Duale Ausbildung Gärtner/-in) show a gradual decline (Table 10) while the much smaller Train-then-Place (Schulische Ausbildung) shows slight rise over ten years.

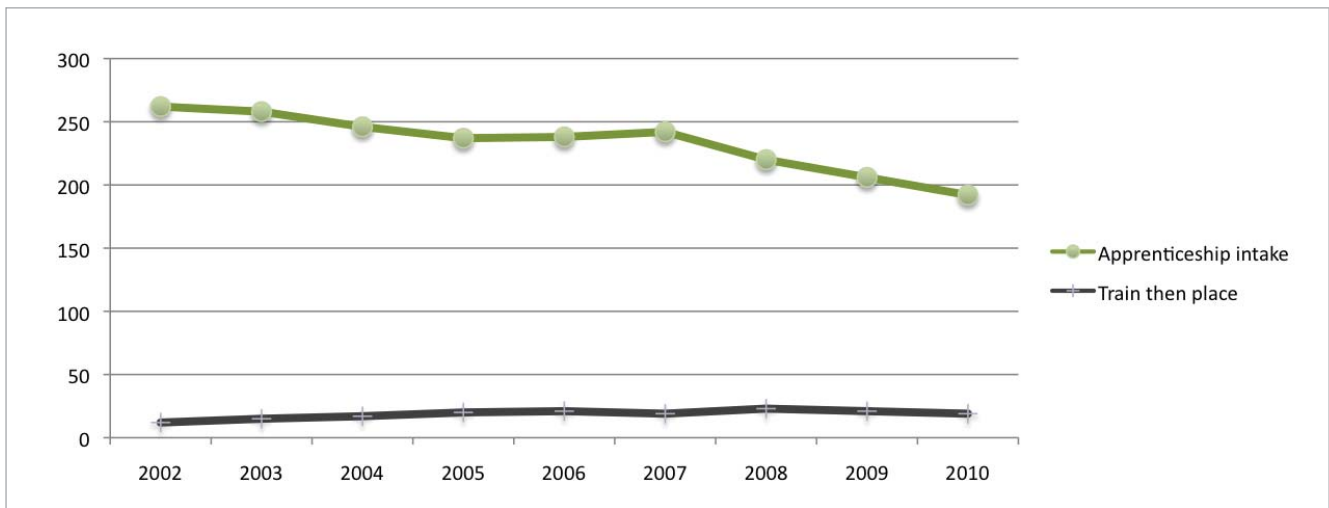
### OJT (On-the-Job Training) and OWS (Off work site) requirements

#### Duration of training

Apprenticeships are typically three years with OJT taking up 70-80% of the time. A major component of OWS is vocational education (including industry / trade theory) taught in the Berufsschulen like the Peter-Lenné-Schule where the apprentice attends for one week for every 4-5 weeks on the job.

In addition the apprentice must complete 6 to 8 week-long vocational training courses in “practical skills” like use of power tools, machinery, dressing natural stone etc at an industry-run training facility (see Table 11).

Table 10: Landscape First year enrolments at Peter-Lenné-Schule für Gartenbau Berlin



## Remuneration package, attrition and retention rates

German Minimum Wage arrangements apply only to a small number of occupations (construction and electrical workers, janitors, roofers, painters and letter carriers). Wages are set by collective bargaining agreements in all other sectors of the economy and enforceable by law.

Landscape apprentices receive monthly wages of €500-800 from their employers. The average age of 242 Landscape apprentices commencing in Berlin and Brandenburg in 2007 was 20 years, with school leavers being only about one in three. The first wage on completion of training is around €2,000 per month.

German apprenticeship completion rates of above 80% were the envy of countries which did not educate and train in the dual system, however social, demographic and industry changes, mainly in the last ten years, reduced these high completion rates. Regional employer organisations in landscape are now concerned about the current “.. high drop out and failure rate of about 30% of beginning apprentices who do not reach the goal!” (Dressler,2011)

## Apprentice to training supervisor ratio and outcomes

OJT supervisor - apprentice ratio usually 1:1. The research literature does not reflect post Reunification changes. Discussions appear irrelevant, certainly to the Landscape industry more about on why German employers train apprentices (Mohrenweiser & Zwick,2008) and why some train apprentices and many others do not (Wolter, Muhlemann & Schweri, 2003)

## Career support / counselling / supervision

School students in their final year of school are expected to decide on a future training occupation or course of full-time study. Schools are responsible for incorporating elements of vocational orientation into the curriculum. This takes different forms in different regions (Länder) but is most commonly described as Learning about the World of Work (Arbeitslehre). Often it is confined to the last two years of compulsory school, but it may start much earlier– as early as year 5 in some cases. Curriculum work on vocational orientation is frequently supplemented by work visits, and also by work-experience placements of between one and three weeks in years 9 or 10.

The Federal Employment Service provides information, guidance and placement services relating to post-school career options (including apprenticeships and higher education); this is designed to complement the school’s responsibilities for vocational orientation both within the curriculum and through work-experience programs. A common pattern is for career counsellors from the Federal Employment Service to visit the schools. They run Sessions with each class in the penultimate year of compulsory schooling.

A wide variety of web-based resources is also available for students at [www.produktionstechnologie.de](http://www.produktionstechnologie.de) A web-based matching service allows students to identify firms offering apprenticeships. Early in 2008 over half (56 per cent) of all school leavers expressed a preference for an apprenticeship; just under half (49 per cent) had begun an apprenticeship in the Autumn of the same year. (Steedman,2010,24)

Table 11: Vocational training at industry Horticulture and Floristry Centre Lehranstalt für Gartenbau und Floristik Großbeeren e.V.

<p><b>Owned by Members</b></p> <ul style="list-style-type: none"> <li>Regional Association horticulture, landscaping and sports Berlin and Brandenburg</li> <li>National Association horticulture and agriculture, Berlin / Brandenburg</li> <li>National Association horticulture Brandenburg</li> <li>Association of German Florists National Association Berlin / Brandenburg</li> <li>Federation of German Landscape Architects Regional Group Berlin / Brandenburg together with the Industry Union, three tertiary education institutes and two Federal State Governments.</li> </ul> <p><b>Governance</b> Board of seven representing Members</p> <p><b>Staff</b> Under Managing Director, Franz Obermaier, and Director Inter-company training, Manfred Wimmer, a permanent staff of 12 is complemented by rotated teams of trainers on a fee for service basis.</p>	<p><b>Inter-company training courses</b></p> <p>Each course typically lasts five days at Großbeeren with some delivered in workplaces, in five sections:</p> <ul style="list-style-type: none"> <li>Defining the task and information gathering</li> <li>Planning and development of fundamentals</li> <li>Performing the task</li> <li>Imagine the practical work</li> <li>Final discussion, evaluation, new knowledge.</li> </ul> <p>An apprentice completes 6 to 8 of these during the three year Training Contract. 50 week-long courses are listed and illustrated. A random selection (in order as presented) follows</p> <ul style="list-style-type: none"> <li>Construction of a theme garden</li> <li>Creation of pavement surfaces</li> <li>Natural stone and plants use</li> <li>Construction and Vegetation</li> <li>Surveying and site management</li> <li>Safety harness 1 - Chainsaw Glow GBG</li> <li><i>Caution: H9 screening before the course</i></li> <li>Chainsaw Glow GBG.</li> </ul>	<ul style="list-style-type: none"> <li>Practical use in felling</li> <li>Tool and machine maintenance &amp; site preparation</li> <li>Pest caused damage diagnosis, procedures, effect of pesticides</li> <li>Machinery &amp; equipment foundations engine instruction</li> <li>Dealing with earthworks, tillage</li> <li>Lawn with concrete construction</li> <li>Knowledge tree grove school</li> <li>Generative propagation. stratification</li> <li>Seed, harvesting, storage, stratification,</li> <li>Sowing dates, substrates, sowing methods</li> <li>Sales and Consulting</li> <li>Service performance, market position, customer loyalty,</li> <li>Service, health and safety</li> <li>Sales promotion and advertising</li> <li>Sales training, communications, corporate identity.</li> <li>Air conditioning Source: <a href="http://snurl.com/vm02n">http://snurl.com/vm02n</a></li> </ul> <p>There are also ongoing Professional and Community courses <a href="http://snurl.com/vl81r">http://snurl.com/vl81r</a></p>
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## COMPARATIVE STUDY OF FIVE COUNTRIES GERMANY

### Recruitment strategies

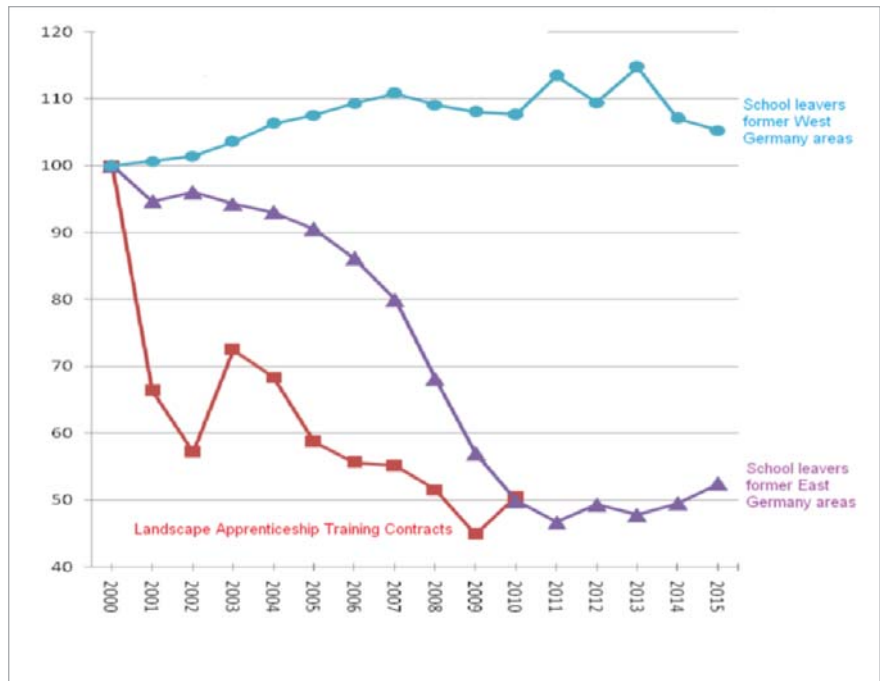
including marketing and apprenticeship promotion strategies

Up to the late 1900s none were needed.

Secondary school completers waited up to three years in many industries to commence an apprenticeship (Rauner et al, 2009).

“Due to a number of reasons, mainly the sinking birth rates in the formerly German Democratic Republic after the fusion with the Federal Republic of Germany in 1989, we have in the state of Brandenburg about half the number of young people leaving the school (Schulabgänger) and thus increasing problems of finding suitable apprentices. Intensive advertising and public relation measures by the companies and ourselves (Regional Association horticulture, landscaping and sports Berlin and Brandenburg) did not yet stop the decline in the number of apprentices.” (Dressler, 2011)

Table 12: Landscape Apprenticeships Training Contracts in Berlin and Brandenburg (2000=100%)



Source: Dressler (2011)

### Development and implementation challenges

faced by the apprenticeship programs

Recent stresses to the system come from three quarters:

- conversion of a small number public owned to many private owned enterprises in the former East Germany areas and the growth in the numbers of small and medium enterprises generally,
- an evolving number of small employers who are unable, without considerable regional industry support, to provide the necessary range of both OJT and OWS, and

- pronounced decline in birth rate in the former East German areas foreshadowing decreasing population in Germany overall at a projected rate of 10-17% between 2005 to 2050 from declining birth-rates, net migration and increase in middle to old-aged populations.

“Additionally, a problem is seen in the insufficient skills of the young people concerning basic mathematical skills and soft skills such as punctuality and stress resistance, to name a few. The landscaping profession, with its strong emphasis on practical and heavy work, is not found to be attractive to young men (80% men in the training) after a boom in the nineties, when “green” jobs were “in”. Apprenticeship applicants

from higher education secondary schools (Gymnasium, 12-13 years of schooling) are under-represented, only about 10%. Vast majority of Landscape Apprentices are young people who left middle school after 10 years of schooling.” (Dressler, 2011)

National Government proposals for change are in two main directions (Federal Ministry of Education and Research, 2007):

- “Second chance” education – promoting qualifications for young adults and the disadvantaged, and
- Greater openness towards Europe – improving mobility and recognition of German skills in the European Union.



## COMPARATIVE STUDY OF FIVE COUNTRIES AUSTRALIA

### Support infrastructure – funding models

(direct and indirect)

Table 13: Direct & indirect Australian Government supports

<b>Provide financial incentives for employers?</b>	Commencement, completion and other incentives
<b>Non-financial recognition of training employers (and their peak bodies)?</b>	Training employer of the year and similar awards
<b>Fund off-the-job / college training?</b>	Fully in some States and up to Certificate II. Student fees co-payment capped at \$1,250 pa for Certificates III & IV. Since 2005 the Australian Government Productivity Place Program in effect pays the student co-payment for “job seekers” on unemployment social security benefits.
<b>Support marketing campaigns to employers?</b>	Small number of Government supported skill shortage programs
<b>Support marketing campaigns to potential apprentices and trainees?</b>	Two of six States have promote apprenticeships media budgets
<b>Government schools-funded careers advice?</b>	Favours Higher Education HE over Vocational Education & Training VET
<b>Establish or recognise regulatory, coordinating agencies?</b>	Six State Training Authorities; Contribute to 11 Industry Skills Councils
<b>Fund intermediary agencies?</b>	Apprentice Centres fully; Group Training companies get some incentives
<b>Require companies to employ apprentices before they get government contracts?</b>	GFC decisions for 10% of Construction tender workforces not policed
<b>Enforce apprenticeship employment ratios and wage rates in industrial relations agreements?</b>	Used in bargaining but not implemented
<b>Expand the range of people eligible to enter?</b>	Incentivise women in non-traditional trades & other disadvantage categories
<b>Take an interest in quality of delivery?</b>	Statistical and evaluative projects of Australian Bureau of Statistics ABS and National Centre for Vocational Education and Research NCVER

Up to the early 1980s there was no ‘contracted training’ outside traditional trades.

Any Australian Government funding was historically to and through six State Training Authorities.

Older people and part-time workers had no access to the system. Women and migrant groups had little access.

Commencements in the early 1980s were low because of economic recession.

Bureaucracy associated with apprenticeships was immense.

The Kirby (1985) Report advocated traineeships in newer industry areas and service industries. Usually 12 months rather than 3 or 4 years. Under the evocative heading *Trawling for Training* (Foster, 1995) one State Training Authority supported by its State Government recognised the purpose of Traineeships, especially in industries like

retailing or in business administration, was to move young people from unemployment social security to low-paid employment, social inclusion rather than industry skills training.

Landscape/Horticulture was one of the newer industries introduced from around 1990. Ongoing confusion between Apprenticeships and Traineeships was never sorted out. Many State Training Authorities classify all horticulture qualifications below the Diploma level as Traineeships because of their links to other post-Kirby industry training start-ups.

In the 1990s rules were relaxed to allow part-time workers and older workers to participate.

Part-time secondary school based participation commenced but was patchy.

Extensive incentive funding for employment of apprentices & trainees, and for formal

training strengthened ‘user choice’.

Private training providers (RTOs) eligible for funding added to the emerging and variously funded Technical and Further Education TAFE system.

A number of State-specific reviews produced calls for simplification and rationalisation of the patchwork system.

Major Australian Government Expert Panel review, (McDowell et al, 2011) produced country-wide alarm at relatively low average completions Australia-wide, below 50%.

Extensive reform recommendations were made based on consolidated research overviews of the system (NCVER, 2011a), of institutional structures (NCVER, 2011b), of the system’s complex relationships with regulatory environment (NCVER, 2011c) and of the economics of apprenticeships and traineeships in Australia (NCVER, 2011d).



## COMPARATIVE STUDY OF FIVE COUNTRIES

### AUSTRALIA

#### Contractual terms and relationships

between stakeholders involved (training organisations, funding bodies, employers, unions, parents, programme administrators, governance & quality assurance)

In the landscape/horticulture sector Apprenticeships are overseen by one of 11 Australian Industry Training Councils (<http://www.isc.org.au/>) which, since 2004, have been responsible for

- providing integrated industry intelligence and advice to Skills Australia (a National policy body to advise the Australian Government since 2007), government and enterprises on workforce development and skills needs,
- actively supporting the development, implementation and continuous improvement of high quality training and workforce development products and services including training packages,
- providing independent skills and training advice to enterprises, including matching identified training needs with appropriate training solutions; working with enterprises, employment service providers, Registered Training Organisations and government to allocate training places under the Productivity Places Program (an Australian Government Scheme introduced in 2007 to provide fully subsidized OWS training to "job seekers" in receipt of social security benefits), and
- engaging with State and Territory Governments, State and Territory industry advisory bodies and peak representative bodies in their area of industry coverage.

Australian State (6) and Territory (2) Governments also collect taxes, notably in connection with land, land transfers and payrolls. In Vocational Education and Training each State has a State Training Authority (STA) which adds to Australian Government payments (eg in the State of Victoria there is a Training Guarantee which tops up full OJT fee payments for Apprentices up to 20 years old) and overseas Apprenticeships in their State.

The apprentice's interface with the Australian and State regulators is:

- The Apprentice and employer sign a training contract.
- One of locally-based Australian Apprenticeships Centres (AAC) facilitates and submits a completed training contract to the relevant STA for approval
- The employer and Apprentice contact selected Registered Training Organisation (RTO) to organise off-the-job training
- A training plan is put in place and training commences.
- Employer is eligible for standard commencement payment at three months and submits an incentive claim form to the AAC which processes the claim form
- The AAC contacts or visits the employer at six and 12 month duration and on completion
- The Apprentice completes the training successfully. The RTO issues the qualification to the apprentice, where the apprentice partially completes a Statement of Attainment is issued.
- Employer validates competency on-the-job. The employer provides verification to the RTO and/or STA of attainment of on-the-job competence.
- The STA provides certification of achieved competency in the trade.
- The employer is eligible for the standard completion payments through the AAC

AgriFood Skills Australia (<http://www.agrifoodskills.net.au/>) is responsible for the the Agriculture, Horticulture and Conservation and Land Management Training Package covering industry sectors including:

- Animal Production
- Dairying
- Shearing
- Rural Business Management
- Production Horticulture
- Floriculture
- Landscaping
- Retail and Production Nursery
- Conservation Earthworks
- Natural Area Restoration
- Bee Keeping
- Weed Management
- Community Coordination and Broadacre Cropping
- Irrigation
- Wool Harvesting and Wool Classing
- Rural Merchandising
- Mushroom Production
- Arboriculture
- Parks and Gardens
- Turf Management
- Indigenous Land Management
- Lands, Parks and Wildlife
- Vertebrate Pest Management
- Commercial Composting

The current Agriculture, Horticulture and Conservation and Land Management, AHC10 Version 2, was endorsed by the Australian National Quality Council (NQC) in April 2011. It is yet to be published on the National Training Information Service (NTIS) website. (<http://search.ntis.gov.au/Default.aspx>)

We have added to the AHC10 Pathways qualifications relevant to any Landscape Apprenticeships Singapore making a total of 46 as follows:

Table 14: Australian Landscape and Horticulture Qualifications 2011

AHC10110	Certificate I in Conservation and Land Management - updated
AHC10210	Certificate I in AgriFood Operations - updated
AHC20310	Certificate II in Production Horticulture
AHC20410	Certificate II in Horticulture
AHC20510	Certificate II in Arboriculture - updated
AHC20610	Certificate II in Parks and Gardens - updated
AHC20710	Certificate II in Production Nursery - updated
AHC20810	Certificate II in Retail Nursery - updated
AHC20910	Certificate II in Sports Turf Management - updated
AHC21010	Certificate II in Conservation and Land Management - updated
AHC21510	Certificate II in Floriculture - updated
AHC21610	Certificate II in Landscaping - updated
AHC30610	Certificate III in Production Horticulture - updated
AHC30710	Certificate III in Horticulture
AHC30810	Certificate III in Arboriculture - updated
AHC30910	Certificate III in Landscape Construction - updated
AHC31010	Certificate III in Parks and Gardens - updated
AHC31110	Certificate III in Production Nursery - updated
AHC31210	Certificate III in Retail Nursery - updated
AHC31310	Certificate III in Sports Turf Management - updated
AHC31410	Certificate III in Conservation and Land Management
AHC31510	Certificate III in Indigenous Land Management - updated
AHC31610	Certificate III in Lands, Parks and Wildlife - updated
AHC31710	Certificate III in Natural Area Restoration - updated
AHC31910	Certificate III in Weed Management - updated
AHC32310	Certificate III in Conservation Earthworks - updated
AHC33210	Certificate III in Floriculture - updated
AHC40310	Certificate IV in Production Horticulture
AHC40410	Certificate IV in Horticulture
AHC40510	Certificate IV in Parks and Gardens - updated
AHC40610	Certificate IV in Production Nursery - updated
AHC40710	Certificate IV in Retail Nursery - updated
AHC40810	Certificate IV in Sports Turf Management - updated
AHC40910	Certificate IV in Conservation and Land Management - updated
AHC50310	Diploma of Production Horticulture - updated
AHC50410	Diploma of Horticulture - updated
AHC50510	Diploma of Arboriculture - updated
AHC50610	Diploma of Landscape Design - updated
AHC50710	Diploma of Parks and Gardens Management - update
AHC50810	Diploma of Production Nursery Management - updated
AHC50910	Diploma of Retail Nursery Management - updated
AHC51010	Diploma of Sports Turf Management - updated
AHC51110	Diploma of Conservation and Land Management - updated
AHC51310	Diploma of Pest Management - updated
AHC60210	Advanced Diploma of Horticulture - updated
AHC60410	Advanced Diploma of Conservation and Land Management - updated

These were extracted from the total package and placed for ease of reference and downloading at <http://www.apprenticeships.sg/index.php/research>

## OJT (On-the-Job Training) and OWS (Off work site) requirements

prerequisites, qualifications and experience required for apprentice, employer and trainer (OJT and OWS)

Within the workplace apprentices must have a supervisor who mentors them throughout their apprenticeship. It is preferable that the supervisor/mentor is suitably qualified within the industry the apprentice is working. This eases the knowledge transfer from supervisor to apprentice and ensures the apprentice is receiving structured on the job training.

In Australia, to employ an apprentice the employer must agree to the following by signing an Apprentice Training Agreement:

- Meet legal obligations from the Australian Apprenticeship Arrangements in the relevant state
- Provide a safe working environment
- Support structured training
- Provide supervision and support
- Provide apprentice rights and responsibilities

If an employer cannot deliver on any of the items above they are unable to commence an apprentice within their workplace. It is the responsibility of the employing organisation to ensure each of the above are met before an apprentice commences and to maintain the standards throughout their employment of an apprentice.

Currently there are no specific entry or experience requirements for an apprentice to commence an apprenticeship. Apprenticeships are very much a focus on getting unskilled workers into an industry where they will be trained to become a skilled tradesperson.



## COMPARATIVE STUDY OF FIVE COUNTRIES AUSTRALIA

The incentives an employer receives for taking on an apprentice in Australia can be effected by an apprentice's previous qualifications. Apprentices who have obtained a higher qualification prior to commencing may leave their employer ineligible for some Government incentives.

For the OWS component, an apprentice can attend a training institute 1 day per week or in a block period. Some training institutes now also offer allocated OWS on the employers work site to cut down on the downtime of the apprentices.

Trainers who deliver nationally accredited apprenticeship training must hold a current Certificate in Training and Assessment. The Certificate is updated approximately every 2 or 3 years to ensure it meets industry standards. When a new TAA training package (course) becomes available in order for trainers/assessors to remain teaching a qualification they must upgrade their own qualification to meet the new assessment criteria. Trainers must hold a current copy of the certificate they are delivering or above. Approximately 2 years ago the VET sector also brought in the requirement of trainers/assessors having to complete 76 hours a year of work within the industry. Organisations who employ trainers are required to release these staff from regular duties to partake in these activities. This is required for both on and off the job training delivery.

### Remuneration package, attrition and retention rates

The Australian Apprenticeships system combines employment and training and therefore involves two regulatory systems: the training system and the Workplace Relations system. Although apprentices and trainees are both covered under the umbrella of the Australian Apprenticeships system, they are treated quite differently concerning wages.

Minimum wage rates for trainees, including part-time trainee wage rates, are generally set by the National Training Wage (NTW) schedule. The NTW schedule is derived from the National Training Wage Award 1994 and is included in 95 of 122 modern awards.

Upon commencement of employment, trainees are entitled to different wage rates according to the highest level of School they have completed and the number of years since they left School.

In general, wage structures for apprentices incorporate wage scales that express minimum wages as a percentage of the basic rate for a qualified tradesperson (although this percentage varies between awards). Under a typical four year apprenticeship wage model the rate of pay for an apprentice increases after each year of service. Apprenticeship wage structures vary across industries and occupations, and accordingly minimum wage rates for apprentices vary across modern awards.

NCVER (2011c,30–59) conducted an analysis of the provisions relating to apprentices and trainees in all 122 modern awards. The research found:

- minimum wage rates for trainees contained in the NTW Schedules range from 45 per cent to 91 per cent of the national minimum wage, depending on factors such as the highest level of Schooling, years since left School and the qualification being undertaken
- few modern awards facilitate competency based wage progression, instead linking wage progression to time served
- wage rates for first year trade apprentices (as a ratio of the relevant trade rate) vary from 37.5 per cent to 58 per cent

For example the rates for an apprentice under the Gardening and Landscaping Services Award 2010 would be paid the following percentages of a tradepersons wage:

Apprentices must be paid the following minimum percentage of the minimum wage rates for the tradesperson classification: Year of Apprenticeship	% of Level 4 rate
1st year	47.5
2nd year	60
3rd year	75
4th year	95

Historically, apprentices are paid below the minimum wage, particularly in the early stages of their training, by way of compensation to the employer for both their lower productivity in the early years of the apprenticeship and the need for the employer to allocate resources to their training. However, over time the profile of apprentices has changed with most now completing year 12. The average starting age has long ceased to be 14 or 15 and is now 17 or 18, with many apprentices also starting as mature-aged apprentices. The low level of pay extends the period of dependence for young people on parents and family, at a time when many of their peers are entering the unskilled workforce and earning considerably more on junior wages. This has led to apprenticeships being perceived as an unattractive proposition for many young people leaving school and seeking employment.

In Australia it is widely acknowledged that the low wages paid to apprentices and trainees has some impact on completion rates, there is considerable debate about the extent of this impact. There are some researchers who unequivocally state that low wages are a major disincentive to both enter and complete an apprenticeship. Other research suggests that while low wages play some role in a decision not to complete, it is rarely the primary reason. Rather,

the level of expected wage premium at the completion of the training contract (the value of the training to the individual) plays a greater role.

Competency based training progression (and associated wages progression) for apprentices and trainees is now slowly becoming favourable. This role of Recognition of Prior Learning (RPL) and Recognition of Current Competencies (RCC) is also significant, given the increased number of mature age Australian Apprentices.

Many Australian Apprentices appear to be receiving above award rates of pay, which likely means that Australian Apprenticeship wage rates contained in awards do not reflect the current market for those wage rates. Whilst many Australian Apprentices receive above award wage rates, the safety net (or minimum wage rates in modern awards) should reflect the changing demographics of Australian Apprentices. This includes more mature age people, many from diverse backgrounds and with a range of experiences choosing to enter into an Australian Apprenticeship compared to the past.

The latest available completion rates for apprentices and trainees who commenced their training in 2005 is 45.6 per cent for trade apprentices and trainees and 52.1 per cent for non trade apprentices and trainees. Attrition rates within the first 12 months across all apprentice and trainee cohorts commencing from 2001 to 2008 have remained steady, ranging from 31.5 per cent to 32.8 per cent for trade occupations, the rate of non completion in the first 12 months has been increasing since 2001, with 32.2 per cent of apprentices and trainees who commenced training in 2008 no longer in training after 12 months. (McDowell et al, 2011, 21-22)

Apprentices and trainees under a mentored model for example through a Group Training scheme have much higher retention rates than the industry average as apprentices and trainees have an industry based mentor assisting them and their supervisor through the qualification and training. The Australian Government has recognised the success of mentored programs and is now establishing its own mentoring programs such as Apprenticeship Support Officers (ASO's) for "at risk" apprentices not under a Group Training scheme. In one state in the trade of plumbing it was identified that the retention rate of apprentices under the mentored model was over 80%.

### Duration of training

#### ratio between OJT and OWS training

There are two ways in which training can be delivered:

1. On the job (OJT) is structured training organised in the workplace by the teacher or trainer. It takes place in an allocated timeslot every week when the apprentice or trainee is not undertaking regular work duties.
2. Off worksite (OWS) training occurs when the apprentice attends a registered training organisation (RTO) who delivers training in a formal setting, usually away from the workplace. The apprentice/trainee and employer will choose a registered training organisation for the off worksite training and agree on a training plan. OWS can be delivered one day a week or in a block.

VET in Schools refers to school based VET programs that provide students with credit towards the Senior Secondary Certificate of Education (SSCE) while they also gain a national industry recognised qualification. The introduction of VET programs into schools, integrated with the Australian Qualifications Framework (AQF) and SSCE, has been

seen as a means of providing more diverse pathways to work and further study for young people. There are two ways for students to do this: either through institution based courses or subject programs or as an apprenticeship or traineeship while completing their SSCE. Career advisors and those in the education system are well placed to promote VET in Schools and Australian School based Apprentice (ASbAs) arrangements as an entry pathway into and platform for a viable and interesting career through an Australian Apprenticeship.

ASbAs differ from VET in Schools programs in that they include an employment arrangement and the requirements for the Australian Apprentice, training provider and employer are set out in the training contract and training plan. An ASbA is a part time Australian Apprenticeship arrangement which enables senior school students to commence a formal qualification while completing their school studies and also earn a wage for the time spent in the workplace.

Training providers are adjusting to a new competency based framework which has had a big effect on back office/administration operations.

Training regulators are still in the process of changing many of the rulings in the regulation framework including a tightening up of audit and compliance requirements. New systems will need to be created by training providers internally for new reporting items such as the transmission of results to apprentice employers. There have also been additional changes to general compliance for training providers which will increase the amount of reporting required. Training providers are concerned about these changes as funding has been reduced over the last 3 years meaning no additional and in some cases less money for an increased workload.



## COMPARATIVE STUDY OF FIVE COUNTRIES

### AUSTRALIA

Discussions with North Melbourne Institute of TAFE (NMIT) (specialists in Horticulture) have found that even though Victoria has recently been affected by both drought and flooding, the Landscaping Industry and demand for apprentices has not slowed with OWS training providers having no issues filling their Horticulture classes.

NMIT are the largest provider of Horticulture/Landscape training in Victoria. They deliver OWS training for their apprentices in a classroom based training facility as a standard. Apprentices attend their training facilities throughout the 3 years training for their 4 year apprenticeship and students do not pass modules until they are deemed competent. Until the competency-oriented AHC10 Pathways horticulture qualifications 2011, training providers and employers did not have a lot of contact unless the student was struggling in some way to complete the training requirements. Training providers now have to report an Apprentice's results to the employer four times each year with employers having to sign off on the results.

NMIT and other TAFEs are worried about having to develop administrative and teacher support arrangements to do this. Group Training benefits struggling apprentices as a representative from the Group Training Organisation will make regular contact monthly or more often if needed with the training provider to ensure training is on track for a successful completion.

The two different arrangements for OWS are block release or day release:

*Block release* will mean that the apprentice will attend the training institution for three week periods at a time (full time) this tends to happen around 3 times per year. This means 342 hours OWS per year and 1634 hours OTJ per year.

*Day release* means the apprentices attends the training provider for training 1 day per week and attends normal daily duties the other 5 days per week.

#### Apprentice to training supervisor ratio and outcomes

Under a Group Training model an appointed mentor generally mentors up to 80 apprentices, conducting regular face to face and on the phone meetings. On site in Australia through experience generally in the horticulture industry an supervisor may mentor and train directly up to 5 apprentices at any one time.

#### Career support / counselling / supervision

Extract from: Shared Responsibility: Apprenticeships for the 21st Century' presented to the Department of Education, Employment and Workplace Relations or the McDowell (2011) Report

#### Quality training and support

The research conducted for the Shared Responsibility: Apprenticeships for the 21st Century Report found that many individuals do not complete their apprenticeship or traineeship due to poor experiences in the workplace, concerns with the employment environment and feeling under- supported. Research also suggests that better support for apprentices and trainees reflects positively on the whole experience and profile of the system, as well as improving retention and completion rates. Mentoring and pastoral care are identified as the most significant support strategies that are particularly beneficial in supporting apprentices and trainees through to completion of their training. (McDowell et al, 2011, 30-31)

The report believes that there are three distinct phases that contribute to skill formation throughout the Australian Apprenticeships system and form the basis of the pathway. These phases are:

- firstly, effective pathways for entry into the system. It is important that the system is equally accessible to all potential apprentices and trainees, both new entrants and existing workers

- secondly, a high quality employment relationship. The system should promote employment relationships which acknowledge the importance of quality training both on the job and off-the-job. The provision of appropriate induction processes and the availability of mentoring and pastoral care are pivotal to a high quality employment relationship
- thirdly, opportunities for continued career development after the completion of the Australian Apprenticeship. Employers and Australian Apprentices should embrace career development as a means of increasing productivity and transferability of skills in both the workplace and the broader economy. (McDowell, et al, 2011, 30/31)

#### Mentoring

While often included under the banner of pastoral care, mentoring focuses primarily on career and skill development and is focused on the workplace. The role of a mentor is typically undertaken by older and more experienced staff in the workplace similar to the traditional apprentice master and is usually in addition to the workplace supervisor. The mentor can provide information and advice on career pathways, development opportunities and general workplace issues, as well as monitoring the overall progress of the apprentice or trainee. Formal mentoring and coaching is a decisive tool in raising the retention rates of apprentices and trainees.

Research by the Manufacturing Industry Skills Advisory Council SA Inc (MISAC) shows apprentices and trainees value mentoring and a relationship with an experienced tradesperson highly. A survey conducted by MISAC in 2008 asked Australian Apprentices their views on a range of options to improve the Australian Apprenticeship experience. A total of 89 per cent of respondents agreed with the statement that there should be more opportunities to pair up with experienced tradespeople, whilst 49 per cent strongly agreed with the statement. (McDowell et al, 2011, 30-31)

Australian Chamber of Commerce and Industry (ACCI) suggests that a similar benefit can be derived through a buddy program whereby newly qualified workers provide support to new apprentices or trainees. The benefits are twofold. Firstly, the newly qualified worker gains a sense of responsibility and boosts their confidence. Secondly, the new apprentices or trainees can receive advice and support from somebody who has recent experience and understands the problems and challenges associated with completing apprenticeships and traineeships. (McDowell et al,2011,30-31)

#### Why Mentoring not 'Management' to Apprenticeships

Interest in the concept of Mentoring, not management is increasing in the workplace. Downsizing and fewer management roles have, in many ways, also replaced the more traditional supervisory lines of authority. Mentoring is a management tool which helps to identify and transfer organisational knowledge while supporting, guiding and teaching. Other benefits of the model include:

- Mentoring assesses and addresses: motivation, concerns, skill gaps, strengths. Compatibility and confidentiality are key to mentoring success as is identifying clear expectations and benchmarks
- Mentoring is a formal method of training and an informal method of connecting and educating today and tomorrow's workforce
- The mentoring approach assists workers to meet the challenges they will find on the job and take on the opportunities for growth and personal career development

#### Trusted Intermediaries

A key reason for Australia's apprenticeship programs success is the Government's use of trusted intermediaries such as Group Training Organisations, combined with Australian Apprenticeship Centres, who ensure the Governments objectives are met by independently bridging the gap between employee and employer expectations as well as monitoring standards across particular industries. The intermediary is able to collect general data from both the employees and the employers closely to monitor the success of the program.

#### Australia's unique 'Group Training' approach

Group Training makes it simple to hire apprentices. Group Training Organisations (GTO) recruit, interview and evaluate candidates, then employ the apprentices and trainees who are placed with Training Employers. The GTO looks after taxes, benefits, pay rates, contracts and paperwork, so employers can get on with their core business. GTO's offer employers flexibility to select the length of time of the apprentice placement. GTO's employ more than 40,000 apprentices and trainees and work with more than 35,000 businesses in Australia. The model is flexible when economic times change. The model is quick to adapt and supply labour in emerging industries and technologies. GTO's generally have completion rates well in excess of traditional Apprenticeship programs (direct employment without mentoring or coaching).

#### Recruitment strategies

including marketing and apprenticeship promotion strategies

#### Marketing

The Australian Government has very generic marketing material available aimed at employers and future apprentices. It is left to each individual company or industry group to come up with their own marketing material targeting apprentices and/or employers for apprentices.

#### Careers Advice

20 years ago, the Australian Government followed advice in a report 'Strengthening Careers Education in Schools' from its then National Board of Employment Education and Training. The appropriateness and adequacy of then current activity were examined with emphasis to gains which were to have been made in the following five years. The result was a national framework to have a careers advisor in each Australian School funded through the States. Schools made different arrangements to implement this framework. Some had dedicated advisors, however most schools had only part time advisors, frequently as a fractional time.

In 2002, a report 'Career Services in Australia' grew from a request of the former MCEETYA [Ministerial Council on Education, Employment, Training and Youth Affairs] National Careers Taskforce for a mapping exercise to describe then existing career information, guidance and counselling arrangements and identify gaps, opportunities and good practice models in the provision of career services throughout Australia.

The Centre for Research on Education Systems at Melbourne University continues to research post compulsory education for a knowledge economy. This research has identified the impact of curriculum on engagement, how Vocational Education and Training is valued compared to University tertiary education and how disengagement often starts at school when students are unable to cope with the curriculum.

#### Incentives

Incentive schemes were established by the Australian Government many years ago to attract candidates and employers to uptake apprenticeships. Incentives for both parties focus on retention and ultimate completion of the trade qualification.



## COMPARATIVE STUDY OF FIVE COUNTRIES

### AUSTRALIA

Table 15: Australian Government payments to Apprentices and Employers

Incentive	Apprentice Incentives	Employer Incentives
Standard commencement of Australian Apprentices incentive for: <ul style="list-style-type: none"> <li>Certificate II level training (nominated equity groups only)</li> <li>Certificate III and IV level training</li> <li>Diploma and Advanced Diploma qualifications</li> </ul>	N/A	\$1250 \$1500 \$1500
Special commencement of Australian Apprentices incentives for: <ul style="list-style-type: none"> <li>eligible Rural and Regional Australian Apprenticeships in Certificate III or IV level qualifications in selected non-metropolitan areas</li> <li>Mature-Aged Worker (disadvantaged person aged 45 years or more) Australian Apprenticeships in Certificate II, III and IV level and Diploma and Advanced Diploma qualifications</li> </ul>	N/A	\$1000 \$750
Additional commencement incentives for: <ul style="list-style-type: none"> <li>endorsed Australian School-based Apprenticeships at Certificate II to IV level or Diploma and</li> <li>Advanced Diploma qualifications</li> <li>Certificate II level Australian Apprentices may be eligible for Declared Drought Area additional commencement incentive where an employer has an Exceptional Circumstances Certificate (declared drought areas)</li> </ul>	N/A	\$750 \$1500
Standard recommencement incentive for: <ul style="list-style-type: none"> <li>employers recommencing Australian Apprentices at Certificate III and IV level or Diploma or Advanced Diploma qualifications</li> </ul>	N/A	\$750
Retention incentive for: <ul style="list-style-type: none"> <li>continued employment of Australian School-based Apprentices at Certificate II to IV level or Diploma or Advanced Diploma qualifications after students have completed Year 12 and have moved from school to the workforce</li> </ul>	N/A	\$750
From 1 July 2009, the completion incentive is paid to only the employer with whom the Australian Apprentice is employed at the time of completion	N/A	\$2,500
Special completion of: <ul style="list-style-type: none"> <li>eligible Certificate II level Australian Apprenticeships that attracted a Declared Drought Area additional commencement incentive</li> <li>Certificate II to IV level and Diploma and Advanced Diploma qualifications Australian Apprenticeships that attracted a Mature-Aged Worker special commencement incentive</li> </ul>	N/A	\$1500 \$750

Incentive	Apprentice Incentives	Employer Incentives
Special completion incentive for: <ul style="list-style-type: none"> <li>Group Training Organisations that support Certificate II level Australian Apprenticeships (nominated equity groups only) to completion</li> </ul>	N/A	\$1000
Tools For Your Trade payment	May be eligible for payments of \$800 at the three month point, \$1000 at the 12 and 24 month points, \$1200 at the 36 month point and \$1500 on successful completion of the Australian Apprenticeship	
Australian Apprentices with disability		The DAAWS payment may provide an employer of an Australian Apprentice with disability with a financial incentive of either \$104.30 a week for a full-time apprentice, or a pro rata amount for a part-time apprentice. To be eligible the employer must be paying a wage of at least \$104.30 per week or its part-time equivalent.
Income Gap Payments 1. Support for Adult (25 years and over) Australian Apprentices – either to Apprentice or Employer reducing by Apprenticeship years	Payments are made at \$150 per week (\$7,800 per annum) in the first year and \$100 per week (\$5,200 per annum) until completion adjusted down for total income in excess of \$30,000 per annum	Should apprentice earn more than \$589.30 this payment is then paid to the employer to recuperate paying above minimum rates.
or 2. Youth Allowance for 16–24 years old, studying or undertaking an Australian Apprenticeship full-time.	Apprentices can earn up to \$236 per fortnight before payment reduced; between \$236 and \$316 reduces payment by 50 cents in the dollar, over \$316 per fortnight reduces payment by 60 cents in the dollar from notional rates. If living at home the rate is \$236 per fortnight means tested on parents' income, if independent single \$675 per fortnight, or with dependents up to \$1,098 per fortnight or 2,400 per month.	N/A
Living away from home	Australian Apprentices eligible to receive the allowance receive \$77.17 a week for up to 12 months, \$38.59 a week for a further 12 months and \$25.00 a week for a third 12 months.	N/A
Existing Workers	N/A	Employers may attract the standard commencement incentive of \$1,500 for existing workers undertaking a Certificate III, IV or Diploma or Advanced Diploma level qualification. In addition, employers may be eligible to receive the standard completion incentive of \$2,500 for an Australian Apprentice who successfully completes a Certificate III, IV or Diploma or Advanced Diploma level qualification where the expected/nominal duration of the Australian Apprenticeship is two years or more.



## COMPARATIVE STUDY OF FIVE COUNTRIES AUSTRALIA

These incentives not only give employers another reason to take on an apprentice but they help both parties to continue and complete the apprenticeship whilst ensuring the apprentice has the equipment required to get the job done. During the economic downturn of 2008, the Government double its incentives to employers to take on an apprentice in a skill shortage trade. Over 30,000 jobs were created under this scheme titled "Kickstart". This was one of the Governments demonstration of its commitment to skills.

In order for the best possible completion outcome of an apprenticeship the key is to get off to a good start with recruitment of the apprentice. Ensuring the apprentice, employer and apprentice position are a good fit will highly reduce the issues to occur in the future of the employment agreement.

It is extremely beneficial for employers to have a close working relationship with Secondary Schools and Training providers.

Training providers are now delivering courses called Pre Apprenticeship Programs to engage school leavers and unemployed youth, this allows these candidates to not only gain some experience in the trade but it's a chance to engage in the industry and give it a go before committing to a 4 year apprenticeship. These courses are generally at a Certificate II level and provide credit towards the schooling of an apprenticeship. Students who complete these courses tend to be more motivated to get involved in the trade as they are aware of what it is all about and what will be expected of them.

### Development and implementation challenges

faced by the apprenticeship programs

#### Skills shortages

"Reports of skills shortages have been commonplace throughout Australia for much of the past decade. While the effect of skills shortages on the economy is not well defined, in many sectors it leads to decreased output and the delay or cancellation of new projects. Shortages are most common during times of high economic growth and low unemployment where there is a mismatch between the skills available and the skills demanded. While there was a significant fall in demand for skilled workers during 2009 associated with the global recession, there have been strong signs of recovery in Australia throughout 2010 which has resulted in increased demand for skills.

Skills shortages are of greatest risk to the economy when they occur in occupations or industries which take considerable time to train for and are important to the economy or society more broadly.

Projections that skills shortages in Australia will continue in the short to medium term are well documented. There are currently more than 50 occupations listed on the National Skills Needs List (NSNL) and industry associations express frustration at the difficulties faced by employers in their respective industries to recruit skilled workers.

Similarly, the Specialised Occupations List developed by Skills Australia as part of its national Workforce Development Plan, was used in the development of the Skilled Occupation List which underpins Australia's skilled migration policy.

In the medium to long term, NCVER research suggests that there is plenty of scope for the supply of tradespersons to expand and therefore skills shortages should not place major constraints on the economy. However, this scenario relies on the assumption that trade occupations remain attractive when compared to alternative occupations. The economic uncertainty which has been experienced in recent times has highlighted the need for a flexible and responsive Australian Apprenticeships system that can support the demand for skills peaks and troughs of the economic cycle. Moreover, there is strong evidence of quite high levels of attrition from some of the major trades in recent years. While some exiting tradespersons commence work in a related field, applying their skills in part, others move to unrelated occupations where their trade skills are largely irrelevant. Part of the solution to addressing skills shortages would require closer investigation of ways to reduce this attrition, as proposed by Skills Australia in their Australian Workforce Futures – National Workforce Development Strategy."

(McDowell et al, 2011, 19-20)

## MAIN FEATURES OF APPRENTICESHIPS IN FIVE COUNTRIES COMPARED

Table 16: Comparison of countries studied by selected variable

	Singapore	United Kingdom	New Zealand	Germany	Australia
Support infrastructure – funding models					
• Government pays all off the job schooling	Some	Half	All	Federal	Most
• Government pays all off the job vocational training	Some	Half	All	Some State	Most
• Government pays incentives for employers	Some	Some	None	None	Most
• Government pays recognised regulatory agencies	X	✓	✓	X	✓
• Government part funds intermediary agencies	X	✓	X	X	✓
• Government pays marketing campaigns	✓	✓	✓	X	Some
• Government displays interest in quality of delivery	✓	✓	✓	✓	✓
Wage regulation in Country					
• Minimum wage	X	✓	✓	X	✓
• Apprenticeship or training wage set	X	✓	✓	X	✓
Typical skill entry landscape/ horticulture wages per month					
• On completing apprenticeship	n/a	£978	NZ\$ 2253	€2,000	A\$ 2,974
• 1st Year	n/a	£412	NZ\$ 1802	€550	A\$ 1413
• Average Age 1st Year	n/a	19 yrs	19 <sub>ys</sub> (20%),36 <sub>ys</sub> (80%)	20 yrs	20 yrs
• 2nd Year	n/a	19 or 20 £412		€700	A\$ 1783
		21+£225	apprentices receive		
• 3rd Year	n/a	42% in Year 1	min wage entire	€750	A\$ 2,229
• 4th Year	n/a	83% in Year 2 if	apprenticeship	€800	A\$ 2,825
• % of entry level skilled wage	n/a	19-20 yrs	80%	30% then 40% from Year 2	By years: 50%, 60%, 75% & 95%
• 100% if 21yrs or over					
Contractual terms and relationships					
Training Contracts	✓	✓	✓	✓	✓
Set Duration of OJT (On the job training) & OWS (Off worksite training)	Variable	✓	Variable	✓	✓
Completion in landscape/horticulture					
• Within five years	n/a	40%	30%	70%	50%
• With group training	n/a				70%
Apprentice to training supervisor ratio	Some ITE	1:many	1:1	1:1	1:many
Career support / counselling / supervision					
School counselling focused on					
• tertiary education careers	Some ITE	✓	✓	X	✓
• vocational training careers	X	X	X	✓	X
Recruitment strategies	Some media	✓	✓	Needed recently	✓
Development and implementation challenges	✓	✓	✓	✓	✓



## COMMON PITFALLS AND KEY SUCCESS FACTORS

The German Apprenticeship system, whilst appearing to be the most relatively successful, is hard to replicate in other regions. In Landscape, and we suspect all industries with physical, manual content, numbers of Training Contracts have been declining after German Re-unification of East with West Germany ten years ago as well as other social and economic changes. The success of their program had been due to both the cultural acceptance of apprenticeships and the high esteem in which trades are held. It is accepted that this cultural shift in thinking could take many years to alter across many generations. Countries such as the UK have tried to adopt this model by including literacy and numeracy studies into their apprenticeships, but today they are still struggling with low retention rates.

What can be taken from the German model is its acceptance of the mentoring system and its benefits in retaining apprentices for the full term of their qualification. In Germany, these mentors are the managers or supervisors who themselves have been apprentices. These managers coach apprentices, using their own experiences as a guide. The idea that apprentices can one day become Managers also demonstrates a desired career path for those entering an apprenticeship. A management role in a business is a highly sought after position in any country.

This mentoring concept has also worked well in Australia through Group Training. This involves external mentors, coaching and mentoring apprentices and their on the job supervisors to ensure that the apprentices remain in the job and complete their qualification. The mentoring models have a higher retention rate in Australia than the non mentored models.

In Singapore it is especially important to demonstrate to industry the benefits of apprenticeships, not only as source of skilled labour in the present, but also to create the next generation of team

leaders, supervisors and managers. This will require an educational campaign to highlight the importance to the landscape industry of a workforce development plan and will require the willing collaboration of Singapore's landscape enterprises. This is not unachievable and has been successfully achieved in other countries.

Australia, like Germany benefits from having industry and business support of apprenticeships which is crucial to a successful program. Many businesses acknowledge that apprenticeships are vital to the ongoing succession planning of their businesses and understand the need to produce the next generation that have skills handed down from the previous. This is particularly important with a worldwide ageing population who are retiring with a wealth of skills knowledge. The Australian Government identified the need of business support long ago and for many years has been running a successful incentives program, increasing the dollars to business when most needed. For example during the 2008 GFC (Global Financial Crisis) the Government doubled incentives to businesses taking on and retaining apprentices to ensure business did not cease apprenticeship programs.

Policy changes to rescue a falling Apprenticeship system in the United Kingdom appear to have reversed the trend. The current criticism and reform are focused on the OWS - off the job training arrangements where the problem appears to be that apprentices in the main are taught by teachers who are qualified as teachers without a trade background.

Australia, similar to Germany have also successfully been able to demonstrate to potential apprenticeship candidates desired career pathways. Australian apprenticeships once completed, allow easy access and credits into further studies including supervisory level and specialist level qualifications at Diploma and Degree levels. This concept of life long learning and career promotion has

helped to acknowledge to Australians that apprenticeships are more than just "second to university" career choices. Australia still does suffer slightly at the school level to promote apprenticeships as competitive secondary colleges fight for Government dollars based on the number of university entrants. However this mindset is gradually changing as the Australian Government acknowledges its drastic lack of local skilled workers and the need to promote these career options to young Australians. The Australian Government also supports apprentices by way of completion incentives and tool and safety equipment vouchers. Businesses likewise often pay above apprentice wages to their best apprentices to ensure they are retained within the company.

In Singapore The "Earn As You Learn" apprenticeship career path may provide an alternative route for apprentices to develop a green career from Landscape Technician to Landscape Supervisor and beyond.

This "earn while you learn" concept is one of the primary values of an apprenticeship to a candidate as an alternative to "learn but don't earn" university pathways. All apprenticeships schemes studied included a component of off-site training skills generally combined with planned competent On the Job Training. For the Off the Job component to be successful, it needs to be within the confines of a credible quality assurance framework against a nationally endorsed curriculum. This off the job training component can be seen as an impediment to business as from an enterprise perspective, this is down time lost while apprentices are being trained both off site and on the job. The incentive schemes put in place by the Australian and German Governments help to compensate this expense. Inclusion of annual Employer training facilitation payments similar to ITE scheme, at the successful conclusion of each training year / competency milestone may assist in Singapore to compensate businesses.

Table 17: Country Strengths &amp; Weaknesses analysis of Apprenticeship systems

(Read within blocks, not left-to right across block)

	Strengths	Weaknesses
<b>Singapore</b>	<p><b>Apprenticeship / Traineeship System</b></p> <ol style="list-style-type: none"> <li>The "Creative Industries Apprenticeship" funding scheme funded by WDA has recently brought back in the dual system model in Singapore</li> <li>The government funds the formal part of the training or stipend in some industries</li> </ol> <p><b>Landscape / Horticulture Apprenticeships</b></p> <ol style="list-style-type: none"> <li>Organisations have recognised the importance of attracting locals to the industry</li> <li>Skill shortages in the industry mean there are many opportunities for locals to gain employment</li> </ol>	<p><b>Apprenticeship / Traineeship System</b></p> <ol style="list-style-type: none"> <li>Theoretical training with limited on the job training</li> <li>NITEC courses generally do not lead to work "on the tools"</li> <li>Apprenticeships were re branded to traineeships</li> <li>Low industry stakeholder involvement</li> <li>There is no statutory basis for the making of indentures or training agreements</li> </ol> <p><b>Landscape / Horticulture Apprenticeships</b></p> <ol style="list-style-type: none"> <li>For NITEC Train-then-place system favored OJT and OWS</li> <li>Government does not fund the OJT training</li> <li>Employers in Singapore pay a training levy</li> <li>Dependant on foreign skilled workers to meet the skills needs</li> </ol>
<b>New Zealand</b>	<p><b>Apprenticeship / Traineeship System</b></p> <ol style="list-style-type: none"> <li>Government provides incentives for training fees</li> <li>No train then place options – must be OJT combined with OWS</li> </ol> <p><b>Landscape / Horticulture Apprenticeships</b></p> <ol style="list-style-type: none"> <li>Supported two Industry Trade Organisations</li> <li>Industry Trade Organisations have marketing promotion budgets to supplement recruitment to the industry</li> <li>Apprentice to training supervisor ratio usually 1 to 1</li> </ol>	<p><b>Apprenticeship / Traineeship System</b></p> <ol style="list-style-type: none"> <li>Complete apprenticeship at own pace</li> <li>Apprenticeships target existing workers so average age is 36</li> <li>Complicated/tailor made individual training plans</li> <li>Minimal Government incentives</li> </ol> <p><b>Landscape / Horticulture Apprenticeships</b></p> <ol style="list-style-type: none"> <li>Structural confusion where Turf and Horticulture come under two different industry councils</li> <li>No group training mentoring model</li> <li>Low completion rate due to freedom to complete at own pace</li> </ol>
<b>United Kingdom</b>	<p><b>Apprenticeship / Traineeship System</b></p> <ol style="list-style-type: none"> <li>Government funded model being reviewed to minimise cost to apprentices and incentivise employers</li> <li>Minimum wage introduced for apprentices in 2010</li> </ol> <p><b>Landscape / Horticulture Apprenticeships</b></p> <ol style="list-style-type: none"> <li>National Apprentice Service NAS has website dedicated to apprenticeships jobs board for the whole country</li> <li>Lantra awards regulate and monitor the quality of OWS training and assessment being delivered.</li> </ol>	<p><b>Apprenticeship / Traineeship System</b></p> <ol style="list-style-type: none"> <li>Horticulture classed as level 2 not 3 as other trades are</li> <li>Not required to take numeracy or literacy subjects</li> <li>No supervisor/mentor ratio to apprentices</li> <li>Issues around quality of off the job training</li> <li>Employer numbers offering apprenticeships are low</li> <li>Few regulations are imposed on the employer</li> <li>Employers may train to business needs not industry requirements</li> <li>Weak connection between industry and further education</li> </ol> <p><b>Landscape / Horticulture Apprenticeships</b></p> <ol style="list-style-type: none"> <li>Many trainees in building trades studying while unemployed</li> <li>Most trainees without employment experience study issues</li> </ol>
<b>Germany</b>	<p><b>Apprenticeship / Traineeship System</b></p> <ol style="list-style-type: none"> <li>Strong cultural community support for Apprenticeships as equal but different to Universities</li> <li>(majority of school leavers seek apprenticeships)</li> <li>Dual system of on-the-job and employer off-the-job training combined with Government vocational theory and continuing non-vocational education at schools</li> <li>Public and well utilized Government careers counseling program</li> <li>Assessment of competencies decided by employer appointed panels (Note: panels not written examinations are the typical method of assessment in European schools)</li> </ol> <p><b>Landscape / Horticulture Apprenticeships</b></p> <ol style="list-style-type: none"> <li>Supporting Federal employer organisations network includes Unions</li> <li>Slow evolution of train-then place courses in the Schools a possible alternative (but low industry support)</li> <li>Overall numbers keeping up from greater supply-side of school leavers in former West Germany</li> </ol>	<p><b>Apprenticeship / Traineeship System</b></p> <ol style="list-style-type: none"> <li>Culturally and Union supported relatively low pay of apprentices under free market pressures</li> <li>Skills shortages exist</li> <li>Employers previously training apprentices dropping out</li> <li>New small employers not employing apprentices</li> <li>Employers providing on-the-job and some off-the-job training has to be increasingly subsidized on a German Federal State by State basis increasing</li> <li>German system, still globally regarded as the golden standard, under increasing change especially in the manual and traditional trades and joining the industrial world-wide trend of young people not wanting to do manual work</li> </ol> <p><b>Landscape / Horticulture Apprenticeships</b></p> <ol style="list-style-type: none"> <li>Regional uptake variations on the former West-East basis</li> <li>(In former East region s uptake down 50% and declining)</li> <li>Employer support for State branches of employer organisations declining</li> <li>School-based component does not make it easily possible to recruit older apprentices or unskilled industry employees</li> </ol>
<b>Australia</b>	<p><b>Apprenticeship / Traineeship System</b></p> <ol style="list-style-type: none"> <li>Extensively Government incentivised system</li> <li>OJT and OWS training concurrent</li> <li>Minimum wage structure and apprenticeship wages</li> <li>Benefits of mentored apprenticeships recognised by government</li> <li>Skills shortages lead to a new focus on career advice</li> <li>A unique Group Training mentored model has higher completion rates</li> <li>Introduction of competency based learning</li> <li>Recognition of prior learning</li> <li>VET in schools program introduces the concept of apprenticeships at a young age</li> </ol> <p><b>Landscape / Horticulture Apprenticeships</b></p> <ol style="list-style-type: none"> <li>Broadening of apprentice demographics and competency based assessment</li> <li>Mature Landscape/Horticulture Apprenticeship framework structured by National Skills Council</li> <li>Progression through the qualification is recognised with increases through a wage scale</li> <li>High up take from both young and mature aged workers</li> </ol>	<p><b>Apprenticeship / Traineeship System</b></p> <ol style="list-style-type: none"> <li>Completion rates averaging below 50% causing national concern</li> <li>Jurisdictional differences between administrative and regulatory processes have created barriers and complexity</li> <li>Apprentice wages are argued to be too low to attract talent</li> <li>Careers Advice in Secondary School still has a tertiary focus</li> <li>No accreditation or oversight of employers or OJT supervisors to ensure consistent minimum standards of training</li> <li>Variability between standards of training provided by public OWS providers Technical and Further Education TAFE providers and expanding private Registered Training Organisations RTOs</li> <li>No strategy to raise the status of apprenticeships including promotion as a valued career choice for both males and females</li> </ol> <p><b>Landscape / Horticulture Apprenticeships</b></p> <ol style="list-style-type: none"> <li>Small employers often do not have the capacity to take on and train apprentices</li> <li>Confusion between states on which landscape/horticulture qualifications fall into apprenticeships or traineeships</li> </ol>



## CONCLUSION

This International Benchmarking Study researched the Singapore, United Kingdom, New Zealand, Germany and Australian Apprenticeship and Traineeship models and systems. Each country has developed its own unique way of implementing and delivering Apprenticeship and Traineeship programs. The Singapore system has been designed or redesigned from the ground up in the last 19 years then implemented, whereas the others, especially United Kingdom and Germany as well as in Australia and New Zealand, have evolved over a much longer period of time.

There is clearly no right or wrong way to undertake Apprenticeships and Traineeships. It must be noted that there are external forces such as political and cultural differences that impact the success and commitment over time to these initiatives. These political and cultural differences exist in all five countries researched.

In the UK, political forces, particularly post the Global Financial Crisis (GFC), have placed pressure on the system to deliver the skilled workers required for the economy however the projections appear to be extremely optimistic. There is strong government financial support that is paid to both the employer and also a learning provider, depending on the size of the organisation. A political commitment to social inclusion results in strong incentives to employers who employ youth at risk of not making the transition from school to work.

The New Zealand Model has the lowest completion rates compared to the other countries. This is partly driven by less attention to commencements and completion timelines, resulting in many Apprentices taking over seven years to complete their training. In landscape horticulture, though not in the separately run sports/turf apprenticeships, the completion rates are less than 20%, however the average age of apprentices is 36 years and more than 40% of them have been recruited from unskilled workers in ongoing landscape/horticulture enterprises. Each apprenticeship OJT and OWS is in effect tailor-made.

The German model has some very strong attributes and its greatest strength begins before the 'formal' model commences. It is in the German public mindset that a trades based career is as fulfilling and rewarding as a university pathway. This is an ingrained social and cultural position that would take many years and significant political and social change for other countries to duplicate. What can be taken from this model, however, is the status and high regard in which apprenticeships are placed.

The Australian Apprenticeship system is the most financially supported system of those researched. Good data and information exists on the benefits and success of Traditional Apprenticeships vs mentored Apprenticeship models such as the unique Group Training Model. In this model, completion rates are often 20%-30% higher in some industries than the non mentored models. Australia continues to have challenges attracting people into Apprenticeships previously having a sole focus on school leavers. With a broader approach being taken to workforce participation, other demographic groups are now being invited to undertake Apprenticeships. This is increasing the available pool of candidates and should be considered as a key take away from the Australian Apprentice model.

In conclusion the Singaporean system, initially based on some attributes of the German Apprenticeship Model before being taken over by the Singapore ITE in 1992, has become, more and more, a train, then place system. The word "Apprenticeship" is seldom used for trades and has been replaced by "Traineeship". The model does not have formal mentoring or coaching as part of its structure.

"Apprenticeship" is used, however in micro-economic industry redevelopment. For example the Workforce Development Agency's "Creative Industries Apprenticeship" Scheme, which aims to help Singaporeans making an entry into the industry to acquire relevant WSQ training and practical work experience in a company. The S\$3 million scheme will provide funding support to help employers defray training and salary costs during the apprenticeship period.

### Need for periodic renewal or new start

Detailed attention to similarities and differences between apprenticeships in different countries may obscure four fundamental similarities:

1. Each system is under pressure from within-country and global economic changes as specific industries expand or contract or new industries form
2. Responses to these changes frequently work and sometimes fail. One example of failure across industries may result from overloading systems designed for skills training by rapid responses to political demands for social inclusion as employed workers of unemployed, disabled or disadvantaged people. It is less clear that the shifts from concurrent OJT with OWS to train-then-place arrangements, which began experimentally in Germany as a measure to provide vocational training for young people waiting after secondary school for an opportunity to start an apprenticeship, have similar origins as an innovation. When applied universally train-then-place systems tend to provide entry to tertiary education rather than skilled engagement in specific industries.
3. The first two similarities are reinforced, and in Singapore fuelled, by a global trend in the industrialized world to upward mobility leading to rejection as good career choices of trades in general and manual trades in particular. But a great many young people, clustered near both ends of any general ability scale, do not make it to or through the University or Polytechnic.
4. The overwhelming global similarity is that disinterest or disengagement of the Master trades people, of employers (who everywhere began apprenticeships as a method of growing and renewing their business, craft, vocation and profession) is associated with the waning of systems.

Any Landscape Apprenticeship system in Singapore will succeed if and only if it is wanted, supported and, as far as possible, run by the growing industry and profession.

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17 August 2011

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## GLOSSARY

Apprenticeship	A system of training regulated by law ,custom and/or Training Agreements which combines on-the-job training paid work experience usually combined with off-the-job training.
Apprentice Ratios	Relates to the number of Apprentices per supervisor in the workplace.
Attrition Rate	The measurement of the number of apprentices who leave training before completion.
Australian Apprenticeship Centre (AAC)	AACs are contracted to provide Australian Apprenticeships Support Services and to arrange for Training Contracts to be registered by State Training Authorities
Australian Qualifications Framework (AQF)	A nationally consistent set of qualifications for all post-compulsory education and training in Australia.
Australian School Based Apprenticeship (ASBA)	Apprenticeships undertaken while attending secondary school on a part time basis normally a Cert II level qualification.
Cancellations and withdrawals	Refers to apprentices whose contract of training has been terminated prior to successful completion.
Commencements or Starts (UK)	Refers to apprentices starting a program of training. The date of commencement is the date that a Training Contract is registered.
Competency-based Training	Progression through an apprenticeship dependent on the satisfactory completion of a number of competencies, and not solely tied to a specific duration
Completion Rate	The rate at which apprentices complete their contract of training. In Australia, United Kingdom and Germany this is generally fixed time contract; in New Zealand it is completion of Training Contract specified learning units based, so can take 5-10 years
Existing-workers	Those apprentices who were employed by their current employer for more than three months full-time prior to commencing their training contract.
Group Training Organisation (GTO)	An organisation in Australia, South Africa and recently, United Kingdom, which employs Apprentices under a training contract and places them with host , training employers. The GTO undertakes the responsibilities for the quality and continuity of the Apprentices' employment and training, including payment of wages.
Industry Skills Councils (ISC) – Australia Industry Training Organisation (ITO) – NZ Sector Skills Council – UK	Government supported peak agency which brings together industry, educators and governments to facilitate action on skills and workforce development; set and oversee Skills or Competency Frameworks ie Lantra in the UK for those in the land based or environmental sector. In Singapore industry-specific meetings of Stakeholder representatives (eg SLIC Singapore Landscape Industry Council) are convened to consider issues or development proposals.
Incentives	Motivating monetary stimulus serving to incite to action, can be employer or employee targeted
Mentor	A wise and trusted counsellor or teacher, especially in occupational settings.
National Apprenticeship Service (NAS) UK	The NAS now has end to end responsibility for Apprenticeships in England. See <a href="http://www.apprenticeships.org.uk/About-Us/National-Apprenticeship-Service.aspx">http://www.apprenticeships.org.uk/About-Us/National-Apprenticeship-Service.aspx</a>
NITEC	National Institute of Technical Education Certificate, Singapore
National Training Wage (NTW)	The Australian NTW sets the minimum wage rates for trainees which overrides specific Awards
Off-the-job training or Off-Work-Site training (OWS)	The formal training conducted by an educational institution which in some cases may be performed at the workplace.
On-the-job training (OJT)	Training undertaken in the workplace by an Apprentice as part of their training contract.
Pathway	A route to or way of access to; way of reaching or achieving something ie Career Pathway
Pastoral Care	A supportive visit to apprentice's workplace or through apprentice contact with an Advisor or Mentor
Pre-apprenticeship course	An approved course undertaken prior to commencing an apprenticeship that may reduce the term of the apprenticeship if successfully completed.
Pre-vocational training	Pre-vocational training focuses on general preparation for employment, providing foundation skills for a range of training and employment outcomes
Recognition of Current Competencies (RCC)	The assessment of a person's current capacity to perform; it applies if an individual has previously successfully completed the requirements for a unit.
Recognition of prior learning (RPL)	Status or credit obtained for courses or subjects on the basis of recognised competencies gained previously through informal and formal training
Skills shortage	A labor shortage is an economic condition in which there are insufficient qualified candidates (employees) to fill the market-place demands for employment at any price.
Trade	A industry with specific and particular skills
Traineeship	In Singapore the word "Traineeship" has generally replaced "Apprenticeship." In other countries usually a shorter (1-2 years) apprenticeship.
Training contract	A legal contract of training which must be undertaken by Apprentices. The training contract includes the trade, the commencement date, the duration of training, details of the employer and training provider as well as the obligations of each party.
Training Plan	A Training Plan is developed in consultation before commencement or Start and is referred to in the Training Agreement..
Vocational Education & Training (VET)	Post-secondary education excluding University education.

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