SKILLS CERTIFICATION, A KEY DRIVER TO IMPROVE TRAINING QUALITY AND RELEVANCE (AND WORKERS EMPLOYABILITY)

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“Improving Jobs Opportunities and Worker Protection: the Role of Labor Policies”
Washington DC, 8 May 2013
CONTENTS

1. Skills certification: why, what, how
2. The chilean policy context
4. Scaling-up and the unfinished agenda
5. New developments: workforce planning and development in the mining industry
1. SKILLS CERTIFICATION SYSTEMS
Why, what, how
SKILLS ON DEMAND

Levy & Murnane, 2006
### LOW SKILLS / LOW WAGES TRAJECTORIES

<table>
<thead>
<tr>
<th>Employer Demand for Higher Level Skills</th>
<th>Skills Shortage Imbalance</th>
<th>High Skill Equilibrium – economy with a strong demand for high level skills, which has a positive effect throughout the supply chain on enhancing the aspirations and actions of individuals with respect to participation in education and training</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>SKILLS SHORTAGE IMBALANCE - mismatch caused by companies demanding higher qualifications than are available in the local workforce</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>LOW SKILL EQUILIBRIUM – employers face few skill shortages in a predominantly low skilled workforce, where there is little incentive to participate in education and training and raise qualification levels and aspirations</td>
<td>SKILLS SURPLUS IMBALANCE mismatch caused by a workforce which cannot find local employment to match their skills and aspirations</td>
</tr>
</tbody>
</table>

**SOURCE:** As quoted in Tether, B. (2008) How does successful innovation impact on the demand for skills and how do skills drive innovation.
WHY DEVELOPING SKILLS CERTIFICATION SYSTEMS?

• To improve the signaling of workers’ occupational skills to employers.
• To improve the signaling of employers’ skill requirements to teachers, trainers and trainees.
• Better signaling of employers requirements results in better training programs and a more motivated set of trainees.
• Better signaling of worker skills increases the proportion of trainees who find jobs in their field.
• This increases the payoff to training and this in turn attracts additional people into training.
• The SCS should therefore focus on certifying skills and knowledge that are taught in training programmes or learned at work, not traits of character that are hard to teach and impossible to measure reliably.
To improve the signaling of workers’ occupational skills to employers.

To improve the signaling of employers’ skill requirements to teachers, trainers and trainees.

Better training programs and a more motivated set of trainees.

Better employment prospects of trainees in their field.

Increasing payoff to training

Additional people attracted into training (more investment)

Why certificate skills?
- Increases the proportion of trainees who find jobs in their field
- Increasing payoff to training
- Additional people attracted into training (more investment)

Workers’ occupational skills to employers

Employers’ skill requirements to teachers, trainers and trainees

- Better training programs (content, structure, pedagogy)
- More motivated set of trainees
1. To induce youth and adults who would otherwise be unskilled to get training necessary to become better skilled.

2. To improve the quality of training.

3. To improve the utilization of the skills that are developed.
Certification

1. To improve signaling of the occupational and other work related skills that individuals develop in schools or on the job.
2. This increases the likelihood that workers are assigned to jobs that use their skills.
3. This increases the demand for training, which in turn, induces more investment
1. Describing the skills that employers in particular occupations desire and developing performance assessments for these skills should induce Technical-Vocational Education and Training (TVET) providers to do a better job and help workers select training programmes more effectively.
A SCS SHOULD BE FOCUSED ON TRAINING THE UNSKILLED PEOPLE

1. Not in raising the barriers for current low paid jobs
2. Success in increasing the supply of well trained workers expands the size of the pie and improves its distribution (the relative wage rates how high skill occupations fall)
3. Removing people from the unskilled group reduces the supply of workers to low wage industries (and wage are forced up)
INSTITUTIONAL ARRANGEMENTS NOT TRIVIAL

1. Certification should be voluntary;
2. Industry / Employer led;
3. Voluntary partnerships involving employers, unions, training organisations, local communities, etc.
4. Public financial support for training should be subjected to programmes aligned to Skills Standards and Certification.
5. Certificates should be become part of National Qualification Frameworks to promote flexible learning pathways across the life span; otherwise occupational certificates risk becoming dead ends.
2. THE CHILEAN POLICY CONTEXT
CHILE

- Long narrow country (4.300 kms)
- 17.1 million population
- GDP growth 5.4% (2010)
- Per capita GDP US$ 15.107
- Life expectancy at birth 78.6 years
- Total employment 7.1 million
- Unemployment rate 6.5 - 7.0%
- Poverty 18% (extreme poverty 3%)
- OECD member since 2010
DECREASING POVERTY
RELATIVELY LOW POVERTY + POOR INCOME DISTRIBUTION

POVERTY AND INEQUALITY IN LATIN AMERICA COMPARISON

INEQUALITY OECD COMPARISON

A. Poverty

B. Gini coefficient

After taxes and cash transfers

Before taxes and cash transfers
INACTIVE AND UNEMPLOYED PEOPLE ACROSS INCOME QUINTILES
As per cent of total (Household Survey 2009)
INFORMALITY AND JOB QUALITY ACROSS INCOME QUINTILES
As per cent of total in the quintile

A. Share of workers without social security

B. Share of employees who do not have a contract

Informality and job quality across income quintiles
As per cent of total in the quintile

C. Share of workers who work in a company with less than 6 employees
PERCENTAGE OF POPULATION THAT HAS ATTAINED TERTIARY EDUCATION, BY AGE GROUP (2009)

Source: www.oecd.org/edu/eag2011
LABOUR-FORCE PARTICIPATION
Percentage of 25-64-year-olds active in the labour market.

Source: OECD Labour Force Statistics Database.
YOUNG PEOPLE AND WOMEN IN THE LABOUR MARKET: PARTICIPATION RATE WELL BELOW OECD STANDARDS

Source: OECD, Labour Force Statistics Database.
In Chile, between 1990-2011 the net coverage in tertiary education increased from 11.9% to 36.3% (Mineduc, 2011). Gross coverage 50%. Lowest income decile increased its participation from 3.8% to 16.4% (net coverage).
1. A significant amount of experienced workers lacking formal qualifications “trapped” in low productivity jobs
2. An even more relevant number of low skilled young people and adults without the motivation to participate in training: unemployed, inactive.
3. Relatively low participation on workforce training (on-the-job / off-the-job)
4. “Disjointed” systems offering lifelong learning opportunities
5. Poor quality and relevance of the subsidised training for the labour force (tax incentive for companies; training for groups at risk of social exclusion). Mostly supply driven. No Quality Training Framework.
6. Increasing concern about low labour productivity at the company and aggregate level (discouraging outcomes from the first International Adult Literacy Survey)
7. More dynamic and competitive industries facing skills gaps and shortages.
NSCS, A CRUCIAL ROLE TO DEVELOP A DEMAND DRIVEN TRAINING SYSTEM

HR Management (recruitment, selection, performance appraisal, training, succession plans, rewards, etc.)

Labour Market Intermediation / Information Services

Industry Endorsed Skills / Competency Standards

Skills Assessment & Certification System

NATIONAL SKILL CERTIFICATION SYSTEM

TVET PROVIDERS (SECONDARY, TERTIARY, INFORMAL TRAINING PROVIDERS)

National Training System
THE PROJECT (1999-2007)

(i) Develop an institutional framework that articulated actors involved
(ii) Industry specific occupational and labour market studies report: main challenges, priorities for skill certification
(iii) Skills standards development and sectorial validation
(iv) Assessment methodologies and tools development, including criteria procedures and instruments
(v) Criteria to assess the quality of training programs in the occupational areas included in the project
(vi) Pilot of the defined assessment & certification mechanisms with a actual workers from the participating industries
(vii) Positioning and disseminate the products / services of the system at national and international levels (viii)
(viii) Design and propose an institutional and financial platform for the system.
1. Seleccionar e Identificar Sector Productivo
2. Movilizar Actores Claves
3. Definir Estándares
4. Validar Estándares con Actores Claves
5. Adaptar Currículum y Formación según Estándares
6. Evaluar y Certificar Trabajadores
7. Promover y Difundir
8. Actualizar Estándares según Necesidades

MANTENIENDO LA VANTAJA COMPETITIVA

SELECT AND IDENTIFY INDUSTRY
DEFINE OCCUPATIONAL AND EMPLOYABILITY SKILLS STANDARDS
VALIDATE STANDARDS WITH STAKEHOLDERS
UPDATE STANDARDS AS NEEDED
PROMOTE AND DISSEMINATE
KEEPING THE COMPETITIVE EDGE
ADAPT CURRICULA AND TRAINING TO STANDARDS
VALIDATE STANDARDS WITH STAKEHOLDERS

15 INDUSTRY VOLUNTARY PARTNERSHIPS
250 COMPANIES
500 OCCUPATIONAL STANDARDS, + EMPLOYABILITY SKILLS MODELS (8 COMPETENCIES)

WEB SITE (SKILLS STANDARDS)
NEW REGULATION
MEDIA COVERAGE

30.000 WORKERS CERTIFIED EMPLOYABILITY SKILLS FOR 7.000 STUDENTS
METHODOLOGY TRANSFER TO 300 TVET PROVIDERS
1999-2013: FROM PILOT TO SCALING-UP

**Pilot Project Stage 1**
1999-2003

**Pilot Project Stage 2**
2003-2009

**CHILE VALORA (legislation)**
2009 -

**FUNDACION CHILE**
3 ECONOMIC SECTORS
Min Labour
Min Education
Min Ec Development
MIF/IDB MMUS$ 1.9
CORFO MMUS$ 1

**FUNDACION CHILE**
15 ECONOMIC SECTORS
WB Lifelong Learning Project (MMUS$ 5)

**Tripartite Governance**
34 Industry Voluntary partnerships
70 labour unions
66 industry associations (MMUS$ 5)
Skills Standards reflect how the job has to be done, according to the industry’s performance criteria.
1. TOURISM (hospitality, gastronomy, eco-tourism)
2. ENERGY (gas / electricity value chain)
3. MINING (metals)
4. RETAIL
5. TELECOMMUNICATIONS
6. FRESH FRUIT (exports)
7. WINE (value chain)
8. FOOD PROCESSED (4 subsectors)
9. AGROPECUARY
10. METALMECHANICS
11. LOGISTICS AND TRANSPORT
12. AQUACULTURE
13. CONSTRUCTION
14. SMALL AND MEDIUM SIZE COMPANIES (business management)
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<th>SECTORS / SUBSECTORS</th>
<th>2002</th>
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<td>245</td>
<td>152</td>
<td>231</td>
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<td>988</td>
<td>294</td>
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<td>301</td>
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<td>FRESH FRUIT (EXPORTS)</td>
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<td>1.390</td>
<td>1.023</td>
<td>491</td>
<td>1.967</td>
<td>255</td>
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<td>782</td>
<td>408</td>
<td>32</td>
<td>131</td>
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<td>FISHING / AQUACULTURE</td>
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<td>SEED PRODUCTION</td>
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<td>POULTRY AND PORK</td>
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<td>RETAIL (SUPERMARKETS)</td>
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<td>TELECOMMUNICATIONS</td>
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<td>TOTAL</td>
<td>1.754</td>
<td>830</td>
<td>2.227</td>
<td>2.083</td>
<td>5.280</td>
<td>5.832</td>
<td>2.669</td>
<td>8.510</td>
<td>29.185</td>
</tr>
</tbody>
</table>

30.000 CERTIFIED WORKERS.
CERTIFICADO DE COMPETENCIAS LABORALES

SECTOR VITIVINICOLA

La Asociación de Viñas de Chile certifica que:

ha sido evaluado en el Perfil Ocupacional de:

Resultando Competente en las unidades de competencia laboral que a continuación se indican:

- 001 Realizar la poda
- 008 Realizar labores de manejo de follaje
- 009 Realizar amarras
- 010 Realizar la mantención de estructuras
- 007 Realizar la cosecha de la fruta

mediante evaluación realizada según modelo de Fundación Chile en el marco del Proyecto Piloto de Certificación de Competencias Laborales en el Sector Vitivinífcola.

Santiago, Diciembre de 2005

Aníbal Ariztía
Presidente
Asociación de Viñas de Chile A.G.
CERTIFICADO DE COMPETENCIAS LABORALES
SECTOR TURISMO

La Cámara Nacional de Comercio, Servicios y Turismo de Chile certifica que:

Roger Sigifredo Véliz Mora

ha sido evaluado durante el año 2008 en el Perfil Ocupacional:

Maestro De Cocina

habiendo demostrado su Competencia Laboral en las siguientes unidades de competencia:

- STSG 008 Limpiar y trozar alimentos
- STSG 009 Interpretar y aplicar recetas
- STSG 010 Hervir, cocer, freir y hornear alimentos
- STSG 011 Preparar mice en place
- STSG 012 Organizar y supervisar cocina
- STSG 013 Mantener presentación personal y cocina

mediante evaluación realizada por Fundación Chile en el marco del Proyecto Piloto de certificación de Competencias Laborales vigente al año 2010

Carlos Eugenio Barquiera Malschafsky
Presidente
Cámara Nacional de Comercio, Servicios y Turismo de Chile

Matías Astoreca Brown
Presidente
Consejo Superior de Turismo de Chile
“Somos competentes en nuestro trabajo y nuestro sector empleador nos ha certificado”
Programa Piloto de Certificación de Competencias Laborales

Gerofal
ta
já hora la experiencia cuenta

MANUAL DEL CANDIDATO

Gastronomía

Energía y Cambio
Acuicultura · Educación · Economía · Gestión

FCH
Fundación Chile
Catálogo de Competencias Laborales

ACUÍCOLA PESQUERO
AGROINDUSTRIAL
GAS Y ELECTRICIDAD
LOGÍSTICA Y TRANSPORTE
METALÚRGICO METALMECÁNICO
MINERÍA
TURISMO

Chilecalifica · Gobierno de Chile · FundaciónChile
1. National coverage of the evaluation experience / certification with 30,000 workers.

2. Sectors of the project correspond to clusters selected by the National Council of Innovation for Competitiveness to design the National Strategy for Competitiveness.

3. Interaction with companies facilitates the adoption of competencies model in the selection, performance evaluation and purchase of training.

4. Main services sectors have validated standards: tourism, logistics and transportation, training, trade.

5. Installation of a common methodology for identifying and raising standards of competencies.

6. Accessibility standards for small and medium enterprises.
7. Certification with the development of transversal occupational profiles which cut across various sectors: health and safety, energy efficiency, SME.

8. Competency profiles for the system’s operation: Evaluation of competencies, processes audit to the processes of competencies assessment.


10. Construction of certification, standards, evaluators and certifiers records.

11. Educational material and training plan for competency-based training.
THE USERS PERSPECTIVE:
MOTIVATIONS AND APPREHENSIONS FROM MANAGERS AND WORKERS TO PARTICIPATE IN SKILLS CERTIFICATION PROCESSES

MOTIVATIONS

Managers:
- Articulation of production processes and HR management
- Improvement of training provision
- Company’s reputation and image

Workers:
- Value to the curriculum
- Professionalization of work
- Self-reward

APPREHENSIONS

Managers:
- Workers’ expectations of salaries’ increase
- Resistance to share information with competitors
- Demanding complementary actions required to exploit the potential of certification

Workers:
- Fear to negative evaluation
THE USERS PERSPECTIVE

BENEFITS OF CERTIFICATION

- Better matching between jobs and skills
- Tool for performance management: based on feedback; worker reflects on his/her performance, mending errors and deviations, gaining better understanding of performance indicators and their on productivity.

- Incremental changes in productivity
- Motivation and recognition of workers
- Corporate image
- Human resources management

- Feelings of accomplishment and self-realization (self-esteem)
- Greater motivation to carry out improved productivity
- Symbolic relevance of the awarding ceremony, particularly for the low skilled workers
- Decreasing turnover rates
- Credentionals for future employability.

- Skills certification an enabler for corporate quality systems
- Shared ground to support employer-union relationships
- Greater willingness of short term workers to being re-employed.

- Identification of skills gaps / training needs
- Decreasing recruitment and selection costs
- Input for job design improvement
- Better focused investment in training
CRITICAL SUCCESS FACTORS

- Industry leadership of the initiative (demand driven)
- Private-public partnership
- Funding from private sources in the initial stage (grant MIF/IDB + WB Lifelong Learning project (Chile Califica + companies)
- Increasing participation of more sectors of the economy
- Bottom-up approach, no legislation needed during the pilot
- Do not reinventing the wheel: methodological transfer from Australia and other countries with more developed SCS
- Impact evaluation at the sectorial level
- Fundación Chile, a non-for-profit technology transfer and innovation institution playing the role of the “honest broker” relying on its neutrality and public-private governance stakeholder management (transaction and coordination costs).
4. SCALING-UP AND THE UNFINISHED AGENDA
EPILOGUE: SCALING-UP THE PROJECT THROUGH LEGISLATION

- National Skills Certification System created by legislation in 2008, after a long discussion in the National Congress.

- CHILE VALORA is an autonomous public institution, linked to the Minister of Labour and Social Affairs.

- Board comprising Public Sector (Labour, Education, Economic Development), Labour Unions, Industry Associations.

- Financing: public budget to support CHILE VALORA; subsidies to certification demand coupled to subsidies for training.
THE UNFINISHED AGENDA

- Building a lifelong learning system with a clearer link between the NSCS and the TVET System.
  - Qualification Framework (at least level 1-5)
  - Quality Framework (accreditation)
  - Financing (incentives, etc.)
- NSCS as the basis for a new generation training reform.
- Robust impact evaluation (employment, wages, labour mobility to higher productivity jobs, productivity at the company level).
Mining: an opportunity to develop a world-class education and training system in Chile.
Five of Chile’s largest copper mining companies took part in the study. Together these 5 companies account for **83% of Chile’s copper production** while operating 18 different mine sites.
DEMAND FORECAST (2012 – 2020)
COMPANIES AND CONTRACTORS

• The estimation assumes current productivity figures of the industry.
• A 1.75 rate between contractors and company employees is assumed.
• Demand considering projects at the feasibility stage only: 44,256 workers.
• Current workforce not considered.
ENGINEERING CONTRACTORS DEMAND
(Mining + Energy & Infrastructure Projects)

<table>
<thead>
<tr>
<th>Year</th>
<th>Mining Sector Projects</th>
<th>Public Infrastructure and Energy Projects</th>
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<td>2012</td>
<td>6,365</td>
<td>5,918</td>
</tr>
<tr>
<td>2013</td>
<td>5,139</td>
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<tr>
<td>2014</td>
<td>3,441</td>
<td>3,313</td>
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<td>2015</td>
<td>2,354</td>
<td>1,884</td>
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<td>2016</td>
<td>1,954</td>
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<td>2017</td>
<td>1,534</td>
<td>1,018</td>
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<tr>
<td>2018</td>
<td>801</td>
<td>470</td>
</tr>
<tr>
<td>2019</td>
<td>226</td>
<td>226</td>
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</table>
With respect to the construction workforce required for the projects, participant companies will need to have a total staff of 56,228 workers by 2012, and 69,934 workers by 2013.

In total, **192,893** construction workers will be needed by 2013. This is by far the biggest challenge regarding the human resources needed to materialize the investment required by the mining industry.
Skills gaps and shortages are one of the most important challenges for the development of large-scale mining in Chile for the period 2012 – 2020.
WHAT TO DO?
A sectorial strategy (mining companies, contractors, training providers, government) with a short-term component in order to bridge 2012-2015 gaps and a long-term component to install capacities to ensure the quantity and quality of human resources required.

A. SECTORIAL MANAGEMENT, STANDARDS AND ATTRACTION.
- Workforce Attraction
- Occupation Framework
- Certification Capacity Assurance
- Consolidation of a Large-Scale Mining Industry Information System

B. TRAIN 28,000 OPERATORS AND MAINTENANCE WORKERS
- Execution of trade programs for operators and maintenance personnel, as well as labor intermediation for companies.

C. ENSURE EDUCATION AND TRAINING CAPACITIES
- Ensure the availability of Mining Training Hubs with learning technologies to optimize results.
In the period from 2012 to 2015, large-scale mining will need to fill the human capital shortage as detailed below.

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<thead>
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<td>Operators</td>
<td>34,945</td>
<td>1,214</td>
<td>723</td>
<td>5,854</td>
<td>4,782</td>
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<tr>
<td>Professionals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>150% OF ESTIMATED SKILL SHORTAGE</td>
</tr>
<tr>
<td>Professionals</td>
<td>11,915</td>
<td>178</td>
<td>34</td>
<td>1,606</td>
<td>1,140</td>
<td>2,932</td>
<td></td>
</tr>
</tbody>
</table>

(*) Considering only top 10 Universities
1. STAKEHOLDERS MANAGEMENT, STANDARDS FOR TRAINING AND ATTRACTION PLAN

• Sectorial articulation and management
• Design and implementation of an Attraction Strategy (2,690 maintenance workers, 2,000 supervisors and 850 professionals)
• Update gap study / information system
• Technical/professional qualification framework for the mining industry
• Program accreditation standards and job competency certification
• Qualified instructors and other learning professionals.
2. FAST TRACK TRAINING PROGRAMMES FOR ENTRY LEVEL WORKERS

• 18,900 operators (400-hour courses)
• 8,708 trained maintenance workers (courses lasting 400 and 800 hours depending on profile)

3. STRENGTHENING VOCATIONAL EDUCATION AND TRAINING PROVISION

- Improving Installed Capacity for Technical Vocational Education and Training
  - Investment projects for the establishment of training hubs with state-of-the-art learning technologies.
  - Updating current trade, technician and professional training supply
  - Creation of training hubs in regions lacking enough supply
THREE PILLARS OF THE EDUCATION & TRAINING SYSTEM FOR MINING

GOVERNANCE:
MINING INDUSTRY SKILLS COUNCIL
(COMPANIES, PROVIDERS, GOVERNMENT)

QUALIFICATIONS FRAMEWORK FOR MINING AND RELATED OCCUPATIONAL FIELDS

QUALITY ASSURANCE AND ACCREDITATION FRAMEWORK FOR EDUCATION & TRAINING PROVIDERS