

# Work in the forestry sector: some issues for a changing workforce

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*On labour unions, occupational health and safety, training and changes in the workforce – with particular reference to Chile.*

**F**orests cover one-third of the world's land area, and 84 percent of them are publicly owned. In 2006 global gross value added from forest products was US\$467 908 million, accounting for 1 percent of gross domestic product (GDP). Forestry (considered here as wood production, wood processing and pulp and paper industries) provided employment to 13.7 million people in 2006, accounting for 0.4 percent of the world's jobs (Table 1) (FAO, 2009).

The International Labour Organization (ILO, 2005a) defines work as "human activities, paid or unpaid, that produce the goods or services in an economy, or supply the needs of a community, or provide a person's accustomed means of livelihood". In the past decade, ILO has shown a special concern for decent work, which is defined as that performed "in conditions of freedom, equity, security and human dignity" (ILO, 1999). Decent work is characterized as being:

- productive and secure;
- respectful of labour rights;
- providing adequate income;

- having social protection;
- maintaining a social dialogue with freedom of union association, collective negotiation and participation of all the parties involved.

This article addresses some common issues of relevance to the world's forest workers. It does not, however, address the negative impacts of the international financial crisis on work in the forest sector. [*Ed note:* That subject has been addressed in depth in *Unasylva* 233.]

At the global level, information on forestry employment is scarce or inconsistent. This article relies heavily on examples and data from Chile, which has statistics and specific studies related to the forestry sector available covering the past 40 years, as well as an occupational health and safety system recognized as one of the best in the world.

## FOREST EMPLOYMENT

The Global Forest Resources Assessment 2005 (FAO, 2006) collected information on forestry employment just in primary production (excluding process-

**TABLE 1. Employment in the formal forestry sector (wood production, wood processing, pulp and paper) in 2006, by region**

Region	Forest employment 2006 ('000 workers)	% of total employment	Growth trend
Africa	530	0.1	Unstructured
Asia and Pacific	5 811	0.3	Increasing slightly
Europe	3 815	1.1	Decreasing
Latin America and the Caribbean	1 510	0.7	Increasing
North America	1 677	0.8	Decreasing
Western and Central Asia	365	0.2	Increasing moderately
<b>World total</b>	<b>13 709</b>	<b>0.4</b>	

Source: FAO, 2009.

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*Much of the work in the world's forests is informal, characterized by poor working conditions, low pay, and lack of job security and health and safety protection*

ing of wood and non-wood forest products). Although 138 countries reported on this parameter, differences in the data collected made it difficult to draw conclusions. Some countries, for example, reported part-time work without converting to full-time equivalents; some included sawmilling while others included only roundwood production; and some included fuelwood collection, while others did not.

Even before the financial crisis, the number of forest workers was declining; it had fallen by about 1 million since 1990 (FAO, 2009). The decline was substantial particularly in Asia and Europe as a result of mechanization, business restructuring and the privatization of State activities. Other countries saw slight increases. Blombäck and Poschen (2003) estimated that the forest workforce would decrease by 7 percent between 2003 and 2013 in Europe and the Commonwealth of Independent States because of reductions in tree felling quotas imposed by legislation or environmental regulations. In the United States of America it was estimated that sources of employment in agriculture, forestry, hunting and fisheries would decrease by 0.8 percent annually between 2006 and 2016 (United States Bureau of Labor Statistics, 2007).

Although there are no firm estimates, much of the work in the world's forests and wood industries is informal; in other words, it does not provide social security

protection for workers. This is particularly true in developing countries, where only 23 percent of workers in all sectors are enrolled in some form of social security or welfare system for themselves and their families, as compared with 86 percent in developed countries (Superintendencia de Seguridad Social, Chile, 2007). Informal work is often characterized by deplorable working conditions, low pay, and lack of job security and health and safety protection.

However, international regulations that companies must observe in order to gain or retain access to external markets, such as clean production mechanisms, corporate social responsibility obligations and commitments involved in obtaining forest certification, are being put in place to improve the situation.

*Training is key to improving safety and productivity in forest operations*



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## UNIONIZATION AND ORGANIZATION OF WORKERS

Forest workers' union activities date back at least a century in Europe and spread to other parts of the world with immigration. In the North American forest sector, the union movement began with the founding of the International Woodworkers of America (IWA) in the United States in 1937; a branch opened in Canada in 1946. IWA had its highest membership – about 115 000 workers – in the 1970s, but by 1994 the United States branch had only about 20 000 active members, so it merged into the International Association of Machinists as the Woodworkers Department (IAM, 2009).

In Latin America, the labour union movement has not been as pervasive as in North America. Chile, for example, has about 136 unions, but it is estimated that no more than 10 percent of the forest sector workforce has union membership (Ackerknecht, 2003).

The body currently covering the greatest number of forest-sector workers is the Building and Wood Workers' International (BWI), created in December 2005 from the International Federation of Building and Wood Workers and the World Federation of Construction and Wood Workers. The current organization comprises 318 unions representing approximately 12 million members in

the building, building materials, wood, forestry and related sectors in 130 countries (BWI, 2009).

#### TRAINING AND SKILLS CERTIFICATION

In many countries, the main problem facing forest enterprises seeking to improve the productivity and safety of their operations is the lack of good training for the workforce. Most countries have adequate training systems for engineering and other high-level technical skills, but few programmes to develop the skills needed by timber- and woodworkers to perform safely and productively while protecting the environment.

The compulsory training programmes established in some developed countries are worthy of note. In Germany, for example, operators of power saws and other forestry equipment are required by law to follow a three-year course under the guidance of a forestry supervisor. An additional 800-hour advanced course is required for those desiring to become supervisors.

In an attempt to standardize training for workers in Europe, the Leonardo da Vinci Learn for Work Project in Austria, Belgium, the Czech Republic, Finland,

France, Germany and the Netherlands produced a methodology to monitor and evaluate the level of skills among forestry workers.

In 2006, 47 percent of forest enterprises in Australia reported that 80 to 100 percent of their workers were trained (FAPFESC, 2006). In New Zealand, it was estimated in 2008 that about 80 percent of the forest-sector workforce had the necessary qualifications (I. Boyd and J. Siegfried, personal communication, 2009).

Despite these efforts, many countries, especially developing countries, still have large numbers of workers requiring proper training.

#### OCCUPATIONAL SAFETY AND HEALTH

In many countries, the failure to report health and safety incidents in the workplace hampers provision of the effective medical and preventive attention needed to improve forest workers' quality of life and also makes it impossible to obtain reliable statistics to assess the true state of occupational safety and health in the sector.

The world's countries have not adopted common indicators or criteria for occu-

**TABLE 2. Fatalities per million cubic metres of wood harvested, 1999 to 2004**

Country	All operations	Small-scale operations
Sweden	0.11	0.80
Germany	0.67	2.20
Chile	0.95	–
Austria	1.84	3.60
Switzerland	1.94	–
Slovenia	4.90	–

Sources: Klun and Medved, 2007, cited by Hudson, 2007; ACHS, 2009a.

pational safety and health in the forest sector, making comparison almost impossible. Many countries use incident rate or frequency rate – per 200 000, 500 000, 1 million or other amount of worked hours – to calculate occupational safety levels. In most countries, time lost due to accidents is counted from the third day. But in Argentina it is counted from day 11, while Chile counts lost time from the day of the accident. Employers sometimes hide accidents by sending injured people to work doing light duties or counting them as first-aid cases; in some countries, this alternative is forbidden by law. Finally, some countries include accidents during travel time in their statistics, while others do not.

The number of fatal accidents per million cubic metres of harvested wood is perhaps the only category for which figures can be compared (Table 2).

Standards and regulations developed since the 1990s to reduce the accident rate in forest operations and to contribute to the creation of healthier and safer working environments in the sector include:

- ILO codes of good forest practices promoted (ILO, 1998);
- principles and criteria for worker protection included in criteria and indicators used for certifying sustainable forest management (see Box, left);
- International Organization for Standardization (ISO) standards for quality management (ISO 9001) and environ-

### Principles and criteria for occupational health and safety: some examples

#### FOREST STEWARDSHIP COUNCIL (FSC)

**Principle 4. Community relations and workers' rights. Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities.**

**Criterion 4.2. Forest management should meet or exceed all applicable laws and/or regulations covering health and safety of employees and their families.**

#### CHILEAN SYSTEM FOR SUSTAINABLE FOREST MANAGEMENT CERTIFICATION (CERTFOR)

**Principle 7. Those responsible for forest management must respect forest workers' direct and indirect rights, compensate them adequately and equitably, safeguarding their health and safety in the workplace.**

**Criterion 7.4. Those responsible for the forest management unit shall safeguard workers' health and safety.**



**TABLE 3. Growth in the world population and percentage of older adults between 2000 and 2050**

Period	Growth rate of total population (%)	Over age 60	
		% of total population	Annual growth rate (%)
2000	1.6	8.1	3.2
2025	0.9	14.5	3.7
2050	0.2	24.1	1.8

Sources: UN, 2004, cited by Bertranou, 2005.

mental management (ISO 14001), and the subsequent addition of a series of occupational health and safety evaluation criteria (OHSAS 18001).

The combination of these management systems with sustainable forest management regulations can help reduce occupational risks in forests (see Box p. 64).

#### CHANGES IN THE FOREST-SECTOR WORKFORCE

##### Ageing

Perhaps the greatest challenge facing forest-sector enterprises in the creation of healthier and safer working conditions is that of adapting to a workforce that is ageing in every part of the world (Table 3). Ageing is a positive trend inasmuch as it is a sign of improved life expectancy as well as improved quality of life increasing the number of old people capable of working (although it is also an outcome of a reduced birth rate). However, greater longevity also entails new social risks, such as destabilization of pensions and other social security protection systems (ILO, 2005b).

It is likely that in most countries, the harsh conditions of forest work contribute to the ageing of the sector's workforce, as fewer young people are motivated to pursue a career in forestry at all levels (engineer, technician and labourer) (van Lierop, 2003).

##### Women in the workforce

The gradual entrance of women into various forest activities and the woodworking industry has also altered the workforce.

Female employees are often preferred for tedious tasks or those requiring delicacy and precision. At the engineer level many women work in research, development and planning, while at the medium and lower levels women are found mainly in jobs involving supervision, risk prevention and tasks involving fine motor skills, such as applied genetics (ACHS, 2009a). In many countries, women are not equally represented in management and decision-making (Blombäck and Poschen, 2003). One of the major challenges facing working women today (and increasingly, working men) is that of combining their working activities with caring for their family and the needs of their personal life (ILO and UNDP, 2009). Some enterprises have improved social benefits and working conditions to address this balance.

#### CONCLUSIONS

Adequate social security coverage – including attention to risk prevention, health care and economic compensation for the harsh and potentially dangerous working conditions – is fundamental to improving working conditions in forests and timber industries.

Codes of good practices, holistic management systems and sustainable forest management models can contribute to healthier and safer working environments in the world's forests and wood industries.

Where the social status of forest workers is low, its improvement requires systems for training them and for certifying their skills, to make them true forest professionals.

The world's workforce is ageing, and this general trend may be compounded in the forest sector by a lack of motivation for young people to take up a forest career. Social and welfare protection may need to be intensified commensurate with the increase in age index and in the number of dependent older adults.

Women are increasingly finding employment in the sector, particularly



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*Women's participation is increasing in forestry work, typically in tasks requiring delicacy and precision, such as applied genetics*

in spheres requiring attention to detail. This trend could be encouraged through improved social benefits and working conditions to facilitate a balance between the roles of worker and mother.

A final conclusion is that information on employment in the forest sector must be improved if policies related to safety and working conditions in forests and forest industries are to be improved. ♦



#### Bibliography

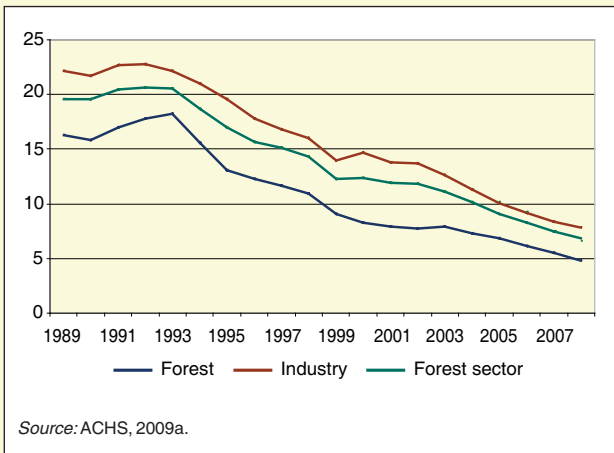
- ACHS. 2009a. *Estadísticas y estudios varios sobre seguridad en el trabajo forestal*. Santiago, Chile, Asociación Chilena de Seguridad.
- ACHS. 2009b. *Relación edad y accidentalidad en trabajadores del sector forestal en Chile*. Santiago, Chile. (Unpublished document)
- Ackerknecht, C. 2003. Forest: life and work, prospects of health and occupational safety. In *Congress proceedings, XII World Forestry Congress*, Vol. A, p. 241. Quebec

### Occupational health and safety in Chile

Some indicators suggest a trend towards improved safety and health in Chile's forest sector. For example, reductions have been observed since 1993 in both the accident rate (relating the number of accidents to the average number of workers) and the loss rate (relating the number of days lost through workplace accidents and work-related disease to the average number of workers) (Figures 1 and 2).

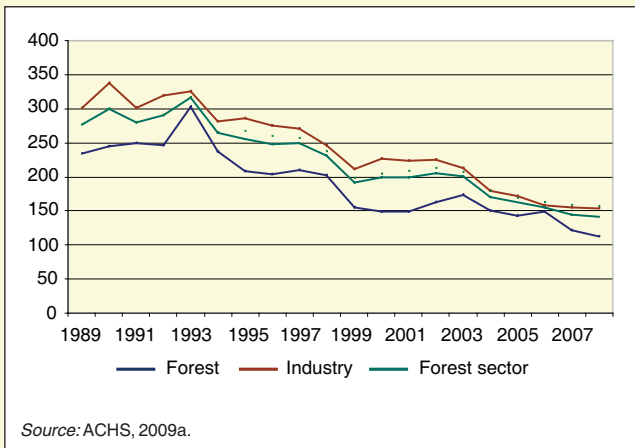
With a view to assessing the impact of sustainable forest management systems on occupational safety and health, the Chilean Safety Association (ACHS), working with the University of la Frontera, monitored 25 forest harvesting enterprises over ten years. Since implementation of ISO 14001 or since adoption of Forest Stewardship Council (FSC) requirements, the enterprises saw significant increases in their competitiveness as a result of improvements in the accident and loss rates and in the average number of days lost through accidents (Ackerknecht *et al.*, 2005).

Some change has also been observed in the age of workers suffering accidents in the sector since 1998 (ACHS, 2009b) (Figure 3).

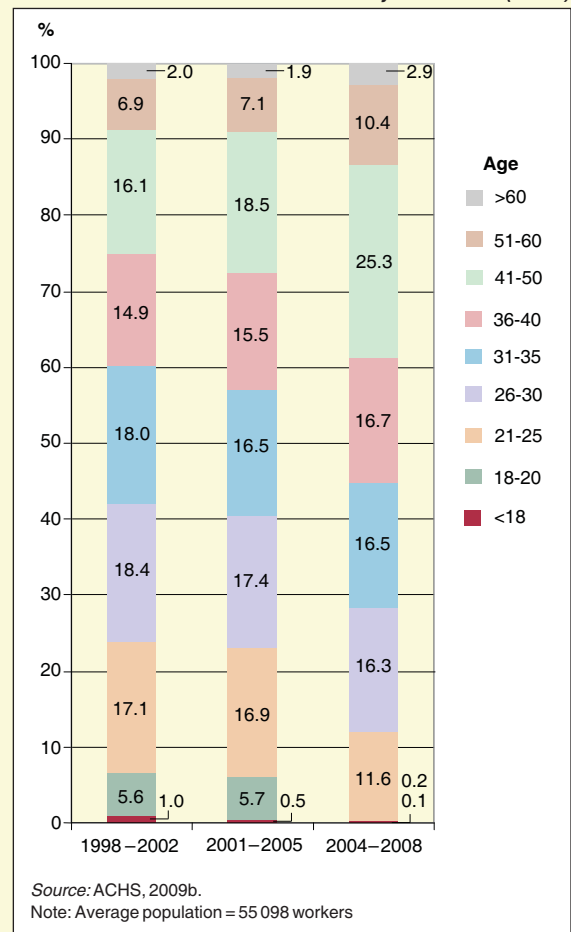


1 Evolution of the accident rate in Chile's forest sector between 1989 and 2008 in 1 892 enterprises belonging to the Chilean Safety Association (ACHS)

2 Evolution of the loss rate in Chile's forest sector between 1989 and 2008 in enterprises belonging to the Chilean Safety Association (ACHS)



3 Evolution of the age of workers suffering accidents in forest sector enterprises belonging to the Chilean Safety Association (ACHS)



- City, Canada, 21–23 September 2003. (Abstract)
- Ackerknecht, C., Bassaber, C., Reyes, M. & Miranda, H.** 2005. Environmental certification systems and impacts of their implementation on occupational health and safety in Chilean forest companies. *New Zealand Journal of Forestry Science*, 35(2/3): 153–165.
- Bertranou, F.** 2005. *Envejecimiento de la población y los sistemas de protección social en América Latina*. Santiago, Chile, ILO Subregional Office for the South Cone of Latin America.
- Blombäck, P. & Poschen, P.** 2003. Decent work in forestry? Enhancing forestry work and forest-based livelihoods. In *Congress proceedings, XII World Forestry Congress*, Vol. A, pp. 231–240. Quebec City, Canada, 21–23 September 2003.
- BWI.** 2009. *About BWI*. Carouge, Switzerland, Building and Wood Workers' International. Internet document. Available at: [www.bwint.org](http://www.bwint.org)
- FAPFESC.** 2006. *Forest and forest products industry workforce and industry data collection survey report 2006*. Victoria, Australia, Forest and Forest Products Employment Skills Company Ltd.
- FAO.** 2006. *Global Forest Resources Assessment 2005 – Progress towards sustainable forest management*. FAO Forestry Paper No. 147. Rome.
- FAO.** 2009. *State of the World's Forests 2009*. Rome.
- Hudson, B.** 2007. The importance of safety in forestry. In *Second International Conference on Safety and Health in Forestry*. Annecy, France.
- IAM.** 2009. *Woodworkers history*. Upper Marlboro, Maryland, USA, International Association of Machinists. Internet document. Available at: [www.goiam.org/index.php/headquarters/departments/woodworkers/woodworkers-history](http://www.goiam.org/index.php/headquarters/departments/woodworkers/woodworkers-history)
- ILO.** 1998. *Safety and health in forestry work*. Geneva, Switzerland, International Labour Office.
- ILO.** 1999. *Report of the Director-General: Decent work*. International Labour Conference, 87th Session. Geneva, Switzerland.
- ILO.** 2005a. *ILO thesaurus 2005*. Geneva, Switzerland. Available at: [www.ilo.org/public/libdoc/ILO-Thesaurus](http://www.ilo.org/public/libdoc/ILO-Thesaurus)
- ILO.** 2005b. 7th European Regional Meeting in Budapest – The impact of ageing on labour markets and pension reform. Feature article, 17 February, Geneva, Switzerland. Available at: [www.ilo.org/global/About\\_the\\_ILO/Media\\_and\\_public\\_information](http://www.ilo.org/global/About_the_ILO/Media_and_public_information)
- ILO & United Nations Development Programme (UNDP).** 2009. *Work and family: towards new forms of reconciliation with social co-responsibility*. Santiago, Chile.
- Superintendencia de Seguridad Social, Chile.** 2007. Sistema de mutualidades chileno. Presented at V Congreso Internacional de Prevención de Riesgos Laborales, Santiago, Chile.
- United States Bureau of Labor Statistics.** 2007. *Employment projections 2006–16*. Washington, D.C.
- van Lierop, P.** 2003. The changing world of forest education: global trends? Presented at the XII World Forestry Congress, Quebec City, Canada, 21–28 September 2003. ♦