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Workforce sustainability in the Chilean logging sector: an ergonomics approach

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Abstract

This thesis examines three key, related elements; social sustainability, forestry and ergonomics, and explores two relationships between these elements. The first relationship is between social sustainability and the Chilean forestry sector, with a focus on the forestry sector workforce and forestry working conditions. The second relationship is between social sustainability and ergonomics and the interconnections between these two bodies of knowledge. The study on which this thesis is based involved data collection over a period of several months from 347 forestry workers from two Chilean forest companies, along with interviews with 7 managers and contractors associated with these two companies and 3 experts in the area of forestry. The overall objective of this study was to investigate the impact of working conditions on the workforce in the Chilean forestry sector.

Health and safety problems within the Chilean forestry sector are well recognised. Statistical information on the forestry sector indicated a steady increase in the number of occupational health (OH) problems over the years, with previous research attributing this to the working conditions. This background research is evidence of the problems of social sustainability faced by the Chilean workforce in particular, as well as those faced by the forestry sector worldwide.

This study examines the relationship between forestry sector working conditions and the workers and identifies causes of problems between these elements. It also examines the strategies the Chilean forestry companies are using to address these issues. The findings indicate that even though working conditions in the Chilean forestry sector have been improved they continue to have a negative impact on workers in terms of occupational health, which in turn has reduced the market attractiveness of the sector. This last aspect

also influences replacement of the working population, which is resulting in an ageing population in the Chilean forestry sector. This ageing population is associated with increasing OH issues and reductions in the productivity of the sector where the main activities are still based on human (non-mechanized) labour.

The findings discuss the strategies that forestry organisations have implemented to improve the sustainability of the workforce, and conclude that these strategies are not enough to assure sustainability in the Chilean forestry sector as they continue to focus on the prevention of accidents rather than on the sources of the OH problems. None of the strategies pay attention to the wellbeing of the workforce and the development of resources, aspects the workers themselves demand. Forestry organisations therefore need to improve their strategies in this area.

The second relationship this thesis explores is between social sustainability and ergonomics. The literature review found that both disciplines share some of the same principles. It also showed that the ergonomics approach is helpful and appropriate to determine the impact of working conditions on workers; however there was a lack of empirical information to prove this potential. The findings of this thesis provide theoretical and practical information about the work that could be done when both disciplines work together. The ergonomics approach was extremely helpful in illuminating the reasons for the impact of working conditions on the workers and at the same time providing information about the problems of organisations and the needs of workers in order to create a sustainable workforce.

Finally, this thesis provides sufficient information from a theoretical and practical of view to continue the further investigation in the forestry sector into social sustainability using an ergonomics approach.

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Glossary

B.C: British Columbian

B.C.C.F.I : British Columbia Coastal Forestry Industry Human Resource Strategy

CMPC: Company Wood Paper and Paperboard [Compañía de Madera Papeles y Cartones]

COFFI: Committee on Forests and the Forest Industry.

CORMA: Wood Corporation [Corporacion de la Madera] Chilean association of stakeholders from the forestry sector

DEI: Demand-Energizer Instrument

EASHW: The European Agency for Safety and Health at Work ()

ECE: Economic Commission for Europe

EFC: European Forestry Commission

ERGONOMICS: Scientific discipline concerned with the understanding of interactions among humans and other elements of a system

FAO: Food and Agriculture Organisation

FC: Forest Companies:

FCC: Forestry Contractors Companies

FSC : Forest Stewardship Council

GDP: Gross domestic product

I.C.F.R.U: International confederation of free trade unions

IEA: International Ergonomics Association

ILO: International Labour Organisations

LOGGING ACTIVITIES:

MSDs: Musculoskeletal disorders