



# Chile's Forestry Industry

**After years of brisk growth, Chile's forestry industry has been hit hard by the global economic downturn but, in the medium term, is rich in opportunities for diversification and innovation.**

By **Gideon Long**

**L**ike most Latin American businesses based on the export of raw materials, Chile's forestry industry has enjoyed an extraordinary boom for much of this decade. In just five years, the value of its wood and wood pulp exports more than doubled from US\$2.5 billion in 2003 to a record US\$5.6 billion in 2008.

But the global financial crisis has taken its toll. Timber exports have dwindled and, in August, market prices for wood pulp were still around 25% down on a year earlier.

As a result, export revenues from forestry products fell 28% in the first half of this year compared to the first six months of 2008. That was the biggest year-on-year decline in over a decade

and the Chilean Wood Corporation (CORMA), which represents over 200 forestry companies, predicts that for the full year, export revenues be around US\$4.3 billion, down by US\$1.3 billion on 2008.

In volume terms, sales of wood pulp have remained fairly steady, largely because production costs in Chile are lower than elsewhere. But the sharp decline in prices means that, even though Chile is exporting roughly the same amount of pulp, it's earning much less for it.

On the timber side of the business, the picture is bleaker still. Sales of medium-density fiberboard (MDF), sawn timber and panel board have all dropped, forcing many sawmills to close or reduce output, and, until house

building picks up again, they are likely to remain in the doldrums.

"In wood pulp, we've seen a sharp fall in prices but not in volumes, but in timber we've seen a sharp drop in both," reports José Rafael Campino, president of CORMA. "The only positive sign is that the decline seems to have stopped but we're still a long way from being able to talk about a recovery."

But, despite the difficulties of the past year, the industry is ripe with potential. Chile's big forestry firms are expanding regionally, establishing themselves in countries that are relatively new to the business like Uruguay.

And as global warming pushes its way up the political agenda, they are evolving to meet calls for cleaner sources of energy. Many of them already use waste products from their business to power their own facilities, and it might not be too long before they also start growing trees specifically as sources of fuel.

### Trees, trees, trees

Drive through south-central Chile and you get some idea of the importance of forestry to the country's economy. A canopy of treetops stretches as far as the eye can see and trucks loaded with logs ply the roads from plantations to pulp mills.

In all, Chile boasts 16.2 million hectares of woodland - more than 21% of the country's surface area, according to the government's Forestry Institute (INFOR). The Bío Bío Region is the center of the industry, with trees covering more than 40% of its total surface area, followed by the neighboring Araucanía and Maule Regions with around 20% coverage apiece.

Of the total, the vast majority - nearly 14 million hectares - is native woodland, rich in coihue, lenga, ñirre and other species. Only 2.3 million hectares are planted with pine and eucalyptus, the two principal non-native species grown in Chile.

But it is these plantations that provide much of the industry's income. Globally, plantations account for only 5% of the world's forests but provide around a third of its wood products.



**"Forestry is an industry in which size is very important."**

Gonzalo García  
Empresas CMPC

Chile's two main forestry companies - Arauco, which forms part of the Angelini industrial group, and the Matte group's Empresas CMPC - are among the largest in the world. Wood pulp has proved particularly profitable and these days Chile accounts for around 6% of global output and, although its market share for timber is smaller, it is also significant.

Geographically, China is now the biggest market for Chilean forestry exports, accounting for 14.4% of the

total last year. The U.S. market, badly hit by the slump in the construction industry, accounted for 13.3%, while Japan, Mexico and South Korea were also big importers.

As the industry has expanded, the main companies have started to look outside Chile for future growth. This is not because there is a shortage of land in Chile. Indeed, CORMA estimates that there is room to expand the current 2.3 million hectares of pine and eucalyptus plantations to around 5 million hectares.

However, some of that extra land is of poor quality. Also, land prices have risen in Chile, prompting forestry companies to scour the rest of Latin America for cheaper alternatives.

The so-called 'Mapuche conflict' is another reason why Chile's forestry companies are turning to foreign soil. Mapuche activists, claiming ancestral rights to land now occupied by plantations, have attacked forestry facilities, burned trucks and stolen timber in both the Bío Bío and Araucanía Regions.

But perhaps the main reason why Chilean forestry companies are expanding abroad is economy of scale. "This is an industry in which size is very important," notes Gonzalo García, secretary-general of Empresas CMPC.

### Regional expansion

By the beginning of this year, Arauco owned 125,000 hectares of

**"Cellulosic ethanol doesn't involve land that could otherwise be used for food production."**

Jaime Baeza  
Bioenercel



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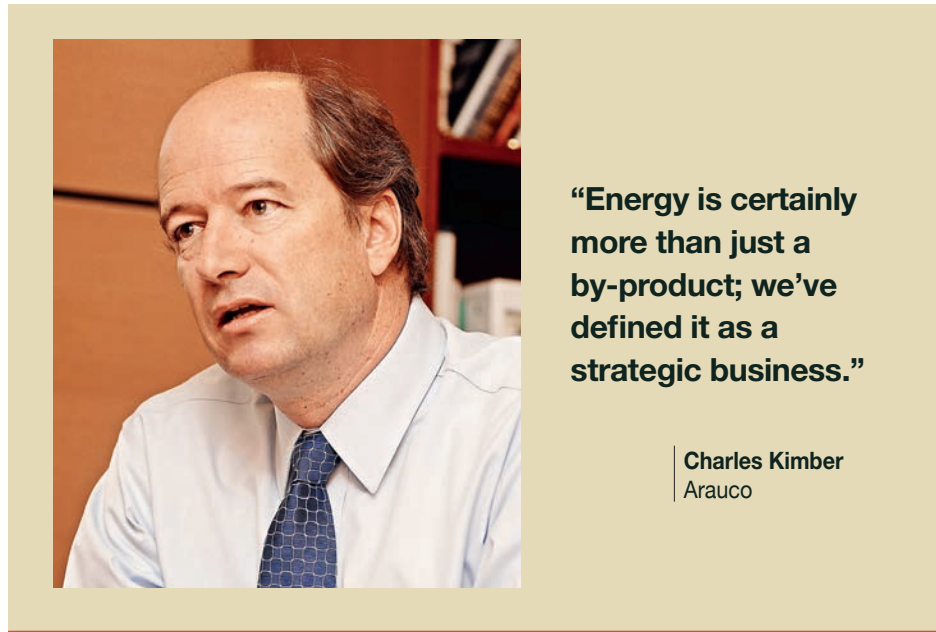
## SPECIAL REPORT

forest in Argentina, 65,000 in Brazil and 27,000 in Uruguay, with these three countries accounting for 28% of its total plantations. It has since also announced a partnership with Scandinavian forestry giant Stora Enso to combine their assets in Uruguay and, in addition, to buy the Uruguayan plantations of Spain's Ence.

"We had managed to reach a forestry mass of about 27,000 hectares in Uruguay but for a pulp mill to be cost effective you need at least 100,000 or 150,000 hectares," says Charles Kimber, Arauco's manager for corporate affairs and marketing.

"It would have been difficult to grow organically so we had three alternatives: to sell, to buy or to join forces with someone." Through their joint venture, Arauco and Stora Enso now have over 250,000 hectares of Uruguayan forest to harvest, making the proposed mill viable.

Latin America's growing political and economic stability has also been behind the decision to venture into other parts



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Charles Kimber  
Arauco

of the continent. "The timeframe for a return on investment in a wood pulp plant is very long compared to other industries," points out CMPC's García. "So things like a good business climate, economic stability and respect for the terms of contracts are key factors in any decision to invest."

Arauco's Kimber says that, in many parts of Latin America, there is "an excitement in the business community" about developing a forestry industry. "In Uruguay, for example, a lot of people have been planting," he says, "and there's a mood similar to that in Chile in the mid-1980s."

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Brazil, as well as having a strong forestry tradition, has a large domestic market which makes it particularly attractive. In April, Empresas CMPC announced that it had agreed to acquire Melhoramentos Papéis, one of the country’s largest tissue producers, and in August, Arauco went on to acquire Tafisa Brasil, a fiberboard manufacturer.

**Better trees**

But the expansion of the forestry industry is not just about planting more trees; it’s also about planting better ones. Forestry companies are plowing millions of dollars into research and development (R&D) in a bid to improve

the productivity of their plantations.

CORMA president Campino describes R&D in the Chilean forestry sector as “world-class” and gives two examples of how it has helped the industry.

The first is the development of a new strain of *eucalyptus globulus*, one of the world’s most commonly grown eucalyptus species. It is best suited to Mediterranean climates but the new strain is better adapted to the cooler climes of southern Chile.

The second example Campino gives is the development of a pine tree that grows straighter than traditional pines. This allows foresters to use more of the



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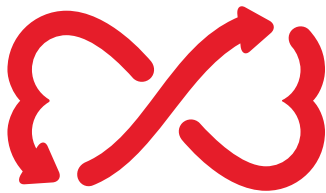
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## Chile's Forest Plantations

Region / Species	Atriplex spp	Eucalyptus globulus	Eucalyptus nitens	Pinus ponderosa	Pinus radiata	Pseudotsuga menziessi	Others	Total (ha)
Coquimbo	58,768	2,634					21,343	82,745
Valparaíso		39,065			10,903		1,783	51,751
O'Higgins		34,152	17		66,380		1,907	102,457
Maule		37,565	631		389,434	219	4,799	432,647
Bío Bío		195,198	45,275	172	610,124	383	7,349	858,592
Araucanía		119,975	48,044	1,896	262,430	6,845	2,916	442,106
Los Ríos		19,883	41,148	3	106,762	3,703	9,164	180,700
Los Lagos		16,993	25,191	58	15,179	643	3,581	61,646
Aysén				23,564		4,276	15,297	43,137
<b>Total (ha)</b>	<b>58,768</b>	<b>465,466</b>	<b>160,342</b>	<b>25,693</b>	<b>1,461,212</b>	<b>16,069</b>	<b>68,230</b>	<b>2,255,780</b>

Source: Instituto Forestal, 2006.

wood and cut down on waste.

At CMPC, García highlights research into the advantages of planting *eucalyptus nitens* in Chile. This species is also resistant to cold and grows well in the foothills of the Andes.

Its other advantage is that it produces high-quality pulp that can be used for writing paper and fine tissue. "It's more resistant than other short-fiber wood pulps and it doesn't need much refining to bring out the best in it, which means it allows our paper-making customers to save on energy costs," reports García.

It's not only Chileans who are involved in such research. Japan's Agency for International Cooperation, for example, is currently involved in a project to plant nearly 500 hectares of *pinus ponderosa* in the Aysén Region of the far south.

Much of that land was devastated by fires and the idea of the project is to regenerate the soil and allow foresters to make money not only from selling timber but also from the sale of carbon credits.

### Wood energy

Much of the R&D in the sector is, however, directed at the use of wood as an alternative source of energy. An estimated 60% of harvested wood in the world is already used to produce

energy either by being burnt directly or in the form of charcoal, pellets or the black-liquor residues of pulp mills.

Biomass from wood chippings and pulp by-products can, for example, be used to produce electricity and this is what Arauco is already doing at seven power plants in Chile. It uses most of the electricity to power its own facilities but sells around a 30% surplus - enough to power a city of half a million people - to the national grid.

There are other options for energy production too. One is to mix biomass with coal in thermal power plants or to make pellets that can be burned for household heating. Another is to use lignocellulose, a raw material derived from biomass, to make ethanol.

One of the consortia working in this area is Bioenercel, a public-private initiative bringing together Arauco and CMPC with Masisa, another forestry company, and Fundación Chile, a technology transfer institute, as well as the University of Concepción and the Catholic University of Valparaíso. With a US\$10 million budget and a five-year timeframe, Bioenercel plans to build a pilot plant next year where it will experiment with various methods of using trees, as opposed to sugarcane or corn, to produce ethanol.

Cellulosic ethanol is an alternative to fossil fuels that wouldn't involve using land on which food could otherwise be produced, points out Jaime Baeza, coordinator of Bioenercel. He accepts, however, that there are still problems such as the high cost of producing enzymes that can break down lignocellulose into sugars for fermenting to make ethanol.

But that could change as technology improves, and it's not inconceivable that one day Chile's forestry companies will cultivate trees specifically for use as fuel. However, Arauco's Kimber warns that the day is still some way off, at least for his company.

"We're not in a position to say that energy will overtake other areas and become our core business," he says. "However, energy is certainly more than just a by-product; we've defined it as a strategic business and we will be making investments in it in the future."

In the meantime, however, as it begins to see light at the end of international recession, Chile's forestry industry also has plenty of other opportunities for investments - and it seems the energy to develop them. **BUSINESS CHILE**

Gideon Long is a freelance journalist based in Santiago. He also works for the BBC.