



# Food for thought

*A new CSIRO study looks at the real value of logistics in Australia's food chains. Jason Whittaker reports*

**L**OGISTICS IS a vital component of Australia's food production, but just how vital has never been truly explored.

Until now. A new study by the CSIRO attempts to quantify the real value of logistics in food chains and its contribution to the end product.

**SupplyChain Review** was given an insight into the groundbreaking work by the research scientists responsible for the extensive report — Operations Research Scientist and project leader Dr Andrew Higgins, Dr Silvia Estrada-Flores, a Senior Research Engineer in Packaging, Storage and Transport, and Research Scientist in Adaptive Supply Networks

Gaurav Singh. Tapping into the resources of the wider CSIRO network, the group set about mapping the contribution of logistics in five key case studies areas — beef, mangos, wine, grain and sugar.

The project is unique in Australia but has been completed successfully in countries such as South Africa.

"Everybody talks about logistics and about the cost of logistics but nobody has actually quantified the impact," Estrada-Flores says.

Quantifying the logistics function revealed a number perhaps bigger than anyone thought.

While smaller previous studies found the cost of

logistics as something like 2-3 percent of production costs in the food chain, the CSIRO report puts the figure as high as 25 percent.

More importantly, according to Higgins, the study found that logistics is a major contributor to the overall value of the end retail product.

"So logistics is not just a service provider or a service to the food industry, it really is a value-adding process to the ultimate value of the export or the end consumer," he says.

Being the first widespread study of its kind, the team found each sector didn't have a handle on its logistics costs. What the benchmarking study has been able to highlight is where both the investment and the value is located. Higgins provides an example in the sugar chain, which he examined.

"In the past all of the logistics expenditure has been at the upstream end of the chain like the harvesting and cane transport to the mill," he explains.

"What we found out in the study is the cost of logistics from the mill through to the market was just as high as it was upstream in the value chain, despite the fact most of the effort has been directed at trying to improve the efficiencies upstream in the chain.

"It really shows the industry, hey we've been pumping too much money here trying to get efficiencies at this end of the chain when it's the downstream end of the chain where there's a lot more potential.

"So it gave the industry more insight into where it should put its investment effort."

The report talks of significant change needed in social structures and business practices within the sugar sector.

"Most of the logistical issues in the sugar

industry, much like many other industries, are not that they don't have scheduling systems or the physical tools to help them," Higgins explains.

"The biggest inefficiency is they're not people-wise integrated.

"The incentive systems or the payment systems promote competition between growers, promotes competition between the harvesters and the millers or the growers and the harvesters or the growers and the millers, and it doesn't promote maximising profitability at an industry level. It promotes trying to maximise profitability at a sector level or a participant level within that sector verses other sector participants."

Higgins was struck by the lack of collaboration; millers will operate around the clock while harvesters only operate in daylight hours.

Cane needs to be stored for long periods of time to be transported, leading to over-capitalisation in trains and trucks and storage facilities.

"That's why logistics costs are so high," he says.

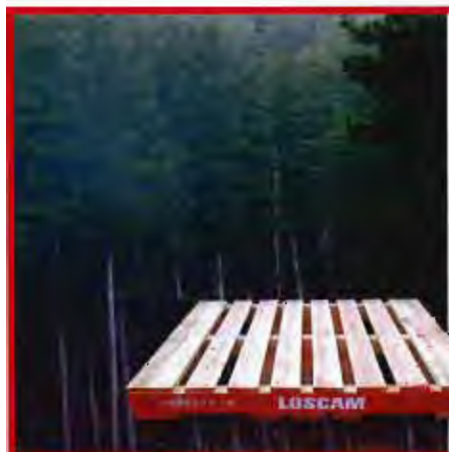
#### REAL SAVINGS

Industries have been able to see real money in the study's findings lost due to inefficiency. The mango chain provides a strong example of this.

Excluding export and manufacturing, Australian mango growers produce 30,000 tonnes of fruit per year for the domestic retail market at a total value of \$210 million.

What the study found was of that 30,000 tonnes only 7,000 tonnes, with a retail value of just \$32 million, was making it to market.

"That's a potential of \$178 million that's not realised," says Estrada-Flores, who looked at the mango chain.



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Poor shelf life is partly to blame, she says, but also supply chain inefficiencies: "We found that mangos don't really go as quickly as possible to market and in the right condition."

Estrada-Flores found an industry that was consolidating, driven by larger players getting more efficient. But the report also cites inconsistency in cold chain practices and a shortage of refrigerated transport (and truck drivers).

Retailers are imposing returnable plastic crates on the industry, which are improving efficiencies at the retail end but, according to Estrada-Flores, perhaps adding labour upstream and, with the lower volume of the crates, costing growers money.

Greater efficiency at one end of the chain is

imposing a penalty at the other, she says. Growers are paying the price.

"The small mango grower is suffering, they don't have the economies of scale, they don't have the ability to realise all the potential commercial value," she says.

"I think it's definitely survival of the fittest, or in this case, survival of the largest. There's definitely a tendency for smaller growers leaving the business and selling to larger corporations.

"The question is with less competition in the industry are we going to get better mango efficiencies or not? It's a hard question to answer. Continuing research in the area will answer that question."

Wine growers are battling the same grower fragmentation issues, while adapting to more efficient (though not necessarily better value) mechanical picking as opposed to manual picking.

The CSIRO study puts the cost of logistics in the wine sector at between 15-30 percent, although that figure, according to Singh, is very much dependent on the weather.

"Climate is a big driver when it comes to the quality of the grapes and what you can produce," he says.

Transport scheduling is important to the wine sector. Timing in receiving grapes is crucial for winemakers, and different types of grapes can't be mixed in the same loads.

Singh says transporters must be kept in the loop, sharing information with growers and wine producers to ensure the most efficient chain to bottle.

#### INFORMATION SHARING

One of the biggest challenges in studying the various logistics chains was extracting data from the participants. Competition concerns made some reluctant to part with their costings.

The team's case was simple: show the lost opportunity in uncooperativeness.

"The aim of the study was really to show on a big picture sense what is it costing by the fact that you guys don't work with each other," says Higgins.

"What is the value in sharing some of this information? What is the value in breaking down some of those barriers?"

"What we hoped the study would achieve is to say logistics is costing the food industry this much money in terms of not investing, in terms of getting greater information transparency across to researchers, to other sectors of the value chain which can be used to improve it.

Inefficient supply is stripping value from the mango chain



"It shows the food industry there's a lot of value in this if they give this information and use this information cooperatively to improve their logistics."

That information sharing must run horizontally and vertically, says Estrada-Flores. Wholesalers, manufacturers and retailers must collaborate with growers.

"How can we enhance from the retail end and feed back to the grower to know what kind of prices am I getting at the end of the chain?" she says.

"Is it better to feed my product into manufacturing or am I going to be better off not even bothering because you're not going to recover the cost?"

While Estrada-Flores acknowledges the power of retailers in the food chain, she highlights an important point: retailers assume the risks of perishable product.

"Retailers are at the end of the chain and are more at risk of losing value in that product, and that is where the product is at the highest level of

value," she says. "Let's understand they have the highest risk in the market."

The benefits of a true value chain extend beyond financial value, according to Higgins. It can be social value, improved cooperation between farmers and better lifestyle, or better environmental outcomes through reduced emissions or greener packaging choices.

"We can see that value is not just money," says Estrada-Flores. "The value chain is a wider concept now than it used to be."

Higgins says the CSIRO report is merely a starting point.

"More work needs to be done by government, more needs to be done by industry and more needs to be done by researchers," he says. ▸

COPIES OF THE CSIRO REPORT ARE AVAILABLE THROUGH ANDREW HIGGINS AT:

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