

Mining the tail end of the boom

Western Australia's resources boom may be tailing off, but the transformational impact on the state is still being realised. As WA looks ahead to the next surge in resources activity, Narelle Towie examines the lessons that can be learned from the boom – and the questions we still need to answer.

The boom may be over, but it's certainly not bust for WA mining.

After a tumultuous few years for the state and its economy – accompanied by surges in population, the migration of thousands to and from the North West, and shifts in the way Western Australians live and work – there are clear signs of the slowing pace.

Less than three years ago, 1400 engineering jobs were being advertised on job-advertising website SEEK each week. That number has plummeted to 400 as WA's resources industry moves from construction of mines and plants to production.

"Help wanted" notices that once adorned many shop windows have been pulled as service staff flock home and mining companies are surrendering whole floors of CBD offices.

Even the cost of a takeaway coffee on the Terrace has fallen from record highs, with fewer morning commuters prepared to pay for a top-price cuppa.

But experts say there will still be more than 63,000 fly-in, fly-out workers in WA by 2015 and the state needs to learn important lessons from the past decade to start preparing for the next stage.

One key lesson for educators is that they need to start training the next generation of resource workers now.

WA Chamber of Minerals and Industry spokesman Bruce Campbell-Fraser says technically skilled university graduates hold the future in their hands.

"It's much more about automation now."

"One of the key lessons we have learned is that we need good policy implemented by government that addresses the skills shortage to make sure we are guiding people in training and careers options that look five to ten years ahead," Campbell-Fraser says.

"It's much more about automation now." There are more computer programs and communication programs that need to be linked to operate a mine site 1800km from its (operations) centre.

"We need highly skilled people to operate that equipment and we need to make sure they are trained and ready."

Joondalup MP Jan Norberger, a former mining training and recruitment manager, says the so-called death of the mining boom is "semantics", but agrees education is the lesson WA must learn.

"When we talk about the mining boom, really it was a construction boom that happened when a lot of mining companies set about a major expansion of their mine sites," Norberger says.

"You had duplication of railway lines, you had massive construction work happening at the ports, and then at the mines they were adding more conveyors and screening and brushing plants.

"So when a lot of people were talking about the mining boom, yes, it was on a mine site ... but most of those jobs were construction and they were in the thousands."

Norberger says WA's must become home to a niche manufacturing market with skilled workers at the helm.

"So many of the thousands of jobs up in the North were low-skilled or unskilled, with two- or three-week TAFE-equivalent courses providing the needed tickets," he says.

"If we suddenly need skilled workers that need three or four years through university, we need to be ready for that."

WA Chamber of Commerce and Industry senior economist Ryan Buckland says the decade-long boom was created by a once-in-history set of events.

In 2003, China's thirst for raw materials became insatiable and the price of WA's peak commodity, iron ore, leapt by 1000 per cent.

The opportunity meant that while Western economies across the world struggled with debt and poor economies, Australia avoided a recession.

And, the economic joyride isn't over yet, says Buckland.

"We've seen levels of iron ore exports to China from WA pretty much triple or quadruple just in the space of four years and there is no sign that's likely to decrease any time soon," he says.

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From here to there and back again

One of the most significant shifts to WA's workforce in the past decade has been the rise in FIFO work. According to the 2011 census, Perth was home to about a quarter of all Australia's mining workers – but two out of five reported travelling hundreds if not thousands of kilometres to work.

The knock-on effect of that lifestyle is felt by their families, an 18-month Edith Cowan University study has revealed. ECU PhD student and sociologist Jacinth Watson questioned 12 to 17-year-olds and their parents in 80 FIFO and non-FIFO families. The survey, the biggest of its kind in WA, sought to measure children's ability to cope with stress. Initial results show little difference in psychological resilience between the

groups, although the FIFO group was pushed more to extremes.

"We found a broader experience of resilience in the FIFO group than in the non-FIFO group," Watson says. "That implies that some families cope really well ... and then there are others that don't cope so well."

Before now, little attention has been paid to the impact of regular parental absences on a teenager's coping mechanisms. Watson warns that a problem with this type of survey is that only a small percentage of the FIFO workforce was surveyed, and those who are struggling may be less likely to find the time or inclination to participate.

However, the findings indicate 73 per cent of adolescents are sad when the

FIFO parent returns to work, 43 per cent feel nervous or anxious, and 46 per cent worry about safety at work.

More than half said they did not talk about their experience with friends. "Some families basically have two lives: one when the worker is away, and one when they are at home. How the family manages those two periods of time can create two different strategies that families deal with," Watson says. "Overall, FIFO doesn't appear to have a particularly negative impact on children in most families, and in some ways the lifestyle offers more of an ability to be more resilient.

"But really, it depends on how the families are coping."

The impact of that demand has been seen in WA's powerhouse economy. Over the past decade it has grown by more than 5 per cent on average each year – outstripping the national economy.

But the economic transformation has meant a social transformation as well.

Industries such as manufacturing, professional services, information technology and software development have reaped rewards, but the cost of living has skyrocketed.

In Perth, the fly-in, fly-out or FIFO worker has risen to prominence and migrant workers arrived in droves.

Those changes are still being worked through, experts say.

In February 2013, an inquiry by the Commonwealth House of Representatives Standing Committee on Regional Australia found the need for more research into the effects of FIFO lifestyles, not only at the impact of FIFO on workers but on their home and social situations.

Edith Cowan University PhD candidate Philippa Vojnovic says Australian FIFO workers kill themselves at almost five times the rate of the rest of the population.

The stressful nature of the work and isolation gives rise to high rates of depression that cost the industry \$5.9 billion last year, according to Vojnovic.

"Men are generally less likely to seek support because of a fear of being seen as weak."

"While many FIFO employees work in teams which may provide some social support, men are generally less likely to seek support because of a fear of being seen as weak or not masculine," she says.

An ongoing ECU study of adolescents in FIFO families found that children can struggle to cope with the lifestyle too.

More than 70 per cent reported feeling sad when their FIFO parent left for work and 43 per cent suffered anxiety, according to ECU sociologist Jacinth Watson.

“There are so many different aspects of FIFO with so many different work rosters and patterns,” Ms Watson says.

“The key is if there is less stress around the FIFO roster, then there’s more ability to parent well rather than focus on the work pattern.”

At the same time, the benefits of a high-paid job can be life-changing.

“A lot of FIFO workers may be sending their kids to private schools when they might not (otherwise) have done,” she says.

“There are the extracurricular activities that they are involved in that they may not have been had they not been a FIFO worker and perhaps been struggling financially.”

Meanwhile, the FIFO phenomenon has not just altered the way Western Australians live, but where they live too.

The newly mobile workforce has caused a population explosion in previously sparse areas, and although rents have come off their peak, homes in once dusty outback towns can still cost as much as a property in blue-chip Sydney suburbs.

In Karratha, where the average annual income is \$87,000, (compared with the typical Australian income of about \$44,000), the asking price for a standard four-by-two rental is \$1600 a week. At the height of the boom, it was \$2500.

Addressing the impact of the property bubble on key workers is another area experts feel needs to be tackled in

preparing for any future uptick in activity – as is getting the infrastructure in place to support the change.

Besides the demand for air transport, roads are congested and traffic snarled.

Campbell-Fraser says WA’s population has grown so rapidly it has put pressure on ports and rail, at times delaying works.

“We have not coped with that as well as we could,” he says.

“We need to make sure we need to get the operating environment right and getting costs under control.”



Once mine, now everyone’s

It is a lesson learned the hard way in just about every region rich with resources – that mines have a significant impact on the environment long after their minerals are exhausted. But thanks to the work of Edith Cowan University researchers, the future of many of Western Australia’s mine pits is a bright one, returned to the community as assets not eyesores.

Aquatic ecologist Professor Mark Lund and his team have been working with the WA Government and mining companies in the hope of rehabilitating up to 10 abandoned pit lakes once used for open-cut coal mining in the South West near Collie.

“Potential end uses for these pit lakes include conservation areas or for the largest lake, use as a water ski area,” Lund says.

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When mining operations finish, the pits gradually fill with groundwater and rainfall, becoming large acidic lakes, contaminated with heavy metals and usually devoid of life.

While many are too dangerous to swim in some, such as in Collie, can be relatively clean.

“The unique feature of what we are doing is we are looking at adding low-cost materials to the lakes to stimulate a reversal of the process that generates acid to fix up water quality,” Lund says.

“We have found the low levels of life in these lakes have more to do with lack of habitat and food than with water quality. Adding organic materials can help in this regard.”

The ECU scientists began by studying heavily polluted pit lakes in Queensland. They added sewage and green waste to reduce acidity and sought to combat metal contamination with bacteria.

“The pit lakes we looked at in Queensland had water quality so bad that if animals were to drink it they might die or certainly wouldn’t like it,” Lund says.

“In Collie, there are no problems with increasing salinity, so they are quite fresh – as fresh as any of the Perth lakes.

“There is always a little bit of concern around coal for radioactive compounds but as far as we know there isn’t anything to be concerned about at these particular lakes.

“The main issues are high aluminium concentrations and low pH.”

In Collie, the ECU team first tested using waste products from marron aquaculture, with mixed results.

They now hope organic matter such as leaves or mulch may provide better results. Scientists are also making the most of a rare opportunity to study how pit lakes can be transformed by connecting them to a river. Flooding at Lake Kepwari has caused the once-diverted Collie River to flow through a former coal mine and officials hope this area can eventually be used for water skiing.

The Australian Coal Association is funding a three-year study allowing ECU researchers to study water quality at the lake, which has shown significant improvement.

“Connecting it to the river adds a lot of nutrients such as carbon and phosphorus, and these stimulate algae, provide a source of invertebrates and improve pH,” Lund says.

“This is really about stimulating an ecosystem.” In other parts of the world, pit lakes are used for fishing, horticulture, swimming, sailing and as a water source for farming.

They’re taking our jobs: How has WA’s workforce changed?

In the midst of the boom there were fears thousands of foreign workers heading to Western Australia would take jobs away from Australians – but new research has found the opposite to be true.

Instead, foreign workers safeguarded local jobs during the resources boom, according to a two-year Edith Cowan University study.

Despite fear and rhetoric that workers moving to WA on temporary skilled migration permits – the much-maligned 457 visa – were being employed in favour of locals, researchers at ECU’s Centre for Innovative Practice found companies would have gone bust without them.

Study author and ECU business researcher Dr Susanne Bahn said temporary skilled migrant workers, many from the United Kingdom and Ireland, plugged essential skills gaps.

“What we found was that smaller firms said without the 457 visas they would have gone broke,” Bahn says.

“If they didn’t have the labour, they couldn’t deliver on time. The problem was not that they weren’t seeking local workers – they were – but the workers just weren’t there.”

Bahn and the team surveyed 50 smaller firms that service the mining industry, such as engineering companies and machine operators.

“Overall, business representatives interviewed reported a positive experience of employing workers on 457 visas and valued this much-needed source of labour,” the study concluded.

“This places the resources sector in Australia at the forefront of innovation and technology.”

Resource projects rely in part on foreign investment and researchers found without necessary skilled workers, future investment would have been jeopardised. Organisational learning also occurred through the employment of migrants

with skills unavailable in WA, in areas like the design, construction, operation and maintenance of machinery.

“This places the resources sector in Australia at the forefront of innovation and technology,” the study said.

Meanwhile, the team found foreign workers increased WA’s stable population and that half those who came under 457 visas wanted to settle permanently.

“We found that the 457 visa was a mechanism firms could use to respond quickly to a skills shortage. It worked for smaller firms. But now with a slow down in the sector and with more domestic workers available businesses have a pick of the domestic workers and so visa use is receding,” Bahn says.

“It’s doing what it’s supposed to do.”

“What we found was that smaller firms said without the 457 visas they would have gone broke.”