



At a glance . . .



Papyrus Australia Pty Ltd

Location: Thebarton, South Australia.

The project: A new paper for the exclusive paper, packaging and building markets.

NIDP funding: \$110 000 to support a pilot plant to produce paper and board using banana plantation waste.

to produce enough for the market. 'It's one of those situations where you can't start small and grow,' Ramy says, 'To be productive, we have to build a full-scale factory which will cost about \$3 million. In paper terms, that's a pittance—wood-pulp paper factories usually cost billions.'

Transforming

Papyrus Australia works with, and owns 70 per cent of, another Queensland company called Transform Australia Pty Ltd. Transform was formed as a cooperative venture between Ramy's research and development team and banana farmers. Where Papyrus Australia's product is technology and machinery; Transform Australia will take the technology and machinery, turn it into paper products and find a market for them.

Ramy explains, 'It was Transform's job to take some samples, and find out who would pay the most. They started with the Queensland tourist market and printed Australian flora and fauna onto the banana sheets to sell to tourists as limited edition prints. The hand-painted originals combine Aboriginal art and natural banana paper and are selling fast.'

Another marketing issue for Ramy is to sell the technology that turns banana plantation waste into paper around the world. 'That's a totally different exercise,' he says. The technology is applicable to sugar cane and coconut, palm oil and rubber tree palms. 'We just wanted to produce beautiful papers for designers and craftspeople,' Ramy says, 'But other industries and markets approached and created a demand for other products.'



Useful contacts

Transform Australia Pty Ltd
www.transformaustralia.com.au



Turning banana waste into profit and choosing the right markets

Capitalising on a new product by identifying the markets in which you will have a competitive advantage

By converting banana plantation waste into paper, using an innovative Australian technique, Ramy Azer, of Papyrus Australia, is creating more jobs in banana harvesting and in paper production. Banana fibre is an effective, low cost, strong, water-resistant, recyclable and ultimately biodegradable alternative to wood-pulp paper—the other alternatives are hemp, bagasse and straw pulp.

Banana paper is cost-effective, sustainable and environmentally friendly. Its production even helps control fungal disease in banana plantations through removal of decomposing matter that can infect the remaining trees. The long-fibre banana paper technology uses less fresh water, creates less chemical effluent and also reduces landfill. Based on ancient Egyptian techniques, the banana fibres are laid across each other in layers, so the paper is called, 'ply-paper'.

Papyrus Australia is creating international interest in its innovative techniques. Ecuador is the largest banana exporter in the world and, according to Ramy, it's banana industry is well organised. But Equadorian banana producers have sent a representative to Ramy because they spend US\$3 billion a year importing waxed cardboard boxes in which to ship their bananas. If they could produce enough paper from their own banana plantation waste they could ship bananas in their own banana boxes at a much reduced cost.

'Paper is a generic product,' says Ramy, 'It goes into producing many thousands of different products—it is one of the basic materials. This broad market includes its use in panels in cars, as insulation and backing for tiles in building, etc. so the dilemma of marketing banana paper is really that we can't market our paper everywhere at the same time.'

Ramy is looking for sectors where his paper provides a competitive advantage because that is where they can command the highest price. 'Initially we have to pick winning market, then move into other sectors. To start the business, we look for sectors that need low quantities of high-quality paper and are willing to pay a higher price; and then we'll move towards the higher volume, low-price, cost-competitive sector. Everyone wishes life was so easy!'

'When we first started developing banana paper,' Ramy recalls, 'we gained an AusIndustry grant to produce this new paper for the decorative, high-quality paper market. It changed to paper for building and packaging and we received our New Industries Development Program (NIDP) grant.' Some of the NIDP grant money went into a scientific demonstration pilot plant to tweak the technology and Ramy believes they are currently two stages removed from their first commercial plant. Ramy's pilot factory is already creating product that is used in diverse market segments in Australia.



Clockwise from above left

Ramy Azer, of Papyrus Australia. Karla bags are among many items made from banana paper.

Banana paper is different to normal paper—it is even washable and sewable. At last year's Melbourne Cup, for example, a model wore a skirt, top and hat with a matching bag—all made of banana paper. Given that no other paper can be turned into fashion, that is one sector where they have a competitive advantage—and they can sell it at the price of high-quality fabric.

In a sector at the other end of the market spectrum, cement bags are made of up to eight layers of wood-pulp-based kraft paper and a layer of plastic to carry the weight and protect the dry cement from moisture. Because banana paper is strong and water-resistant, cement manufacturers would need to use only one layer of paper, creating an instant savings ratio of 8:1. Another market with a competitive advantage.

The marketing importance of a story

'In those segments, we really have competitive advantage,' states Ramy. 'On the other hand, the novel look of the paper, and the fact that it has a story, gives us additional marketing value. Anita Roddick's Body Shop loves selling stuff with a story.' As an example of a story link: there is a company on Kangaroo Island, off South Australia, that produces and exports herbal, organic and biodynamic tea. Their image is dependent on their market perception as producing the cleanest food. So they also need the cleanest, most environmentally-sound packaging. While recycled paper is environmentally friendly, it is not perceived as being clean—banana paper is.

Professor Jack Garnett at the University of Western Sydney has even developed an oxygen-and-chlorine-bleach-free process in which banana paper can be coated to create environmentally-friendly white office paper. This paper extends Papyrus Australia's product line and attracts a different market segment. Professor Garnett has found an environmentally-friendly way to coat and control the surface features of paper and still produce any colour, matt or glossy, using the fibrous base. The white paper demonstrates what we can do,' Ramy says.

Papyrus Australia is only producing samples at the moment because it does not have the infrastructure