



The processing of small skins for high quality gloving leather is labour intensive, and in particular close attention to each skin is required during staking.

Tannery of the Year: PT Budi Makmur, Yogyakarta, Indonesia

Founded in the city of Yogyakarta in 1966, PT Budi Makmur is devoted to tanning small skins (goat and sheep) for gloving and shoe upper leather. The company's remoteness from the bulk of the global leather industry has made it especially creative and resourceful in the way it runs its tanning operation.

The residents of Yogyakarta are proud of the attraction their city holds for tourists and travellers. It's the home of stunning, ancient temples, including the famous Borobudur and Prambanan. Other claims to fame are its universities and cultural activities. "This is not an industrial city," explains Haryono Sutanto, chairman of PT Budi Makmur, "and when my father founded this tannery in 1966, it was the first in Yogyakarta, and one of the first in the whole of Indonesia." Now, despite its location, it is processing an average of 150,000 small skins (50% goat and 50% sheep, local and imported) every month. It is the biggest tannery in the city, with 250 employees (20% of them women), dwarfing the

other fifteen or so tanneries that operate in the area.

A tradition of handicraft in silver, wood and the local textile technique called Batik eventually led to Yogyakarta developing a glove-making industry, and it was to supply the glove manufacturers that the tannery came into being. Companies in the central Javan city soon developed specific expertise in making golf gloves, made from small skins, and this activity continues today. Brands whose golf gloves contain Budi Makmur sheep and goat leather include Callaway, TaylorMade and Nike. Around half of all the leather golf gloves being sold in the US at the moment are made in Indonesia, and of those, between 60% and 70% are made



Tannery of the Year Asia 2011: Finalist



The tannery is located next to a river, and within a residential area. The treated effluent is discharged into this river, so not only does the tannery have to maintain a high standard of effluent treatment, but also maintains a high regard for its near neighbours.

in Yogyakarta. Finished product manufacturers in the city employ a total of around 10,000 people.

The tanning company chairman insists that these glove manufacturers and their key suppliers, including his company, are constantly trying to improve their products. Specific to the tannery, in the face of competition from synthetic materials, it has worked hard to develop washable leather, and a version of the stay-soft leather first developed by glove-leather specialist Pittards. "We always try to go one step further than the manufacturers of synthetics," says Haryono Sutanto. "Of course, eventually, the synthetic material manufacturers improve their products, too, but technology costs, and the investment they have to make means the price-gap between the material they can make and ours becomes narrower."

Budi Makmur leather also ships regularly to factories run by outsource manufacturing partners that some brands have in Thailand, and that Nike has in Jakarta and in China. This is a lot of gloves, but Mr Sutanto says he has seen surveys suggesting US golfers buy an average of four gloves a year each, for different weather conditions or to have some for practice sessions on the driving-range and better ones for matches."

Shoe move

In the 1990s, Budi Makmur took the decision to expand into shoe upper leather. "These days we're producing more leather for shoes than for gloves," Mr Sutanto says, "probably 60% of the total. A lot of footwear

brands have moved part of their production to Indonesia in recent years, partly as a reaction to rising costs in China. It was a good decision for us to diversify. The golf glove market has become mature, so there is a lot of competition now, and the price is not so good. You maybe only have to produce leather in three colours (two types of white and a black), so it's easier for other tanners to get into this market. They can start production before they even get an order."

The shoe factories he is referring to are ones making shoes in east and west Java for the US and European brands, including adidas, MBT and Geox which has also begun production in Indonesia using Budi Makmur leather, rather than the central part of the island where the tannery is. "We are just too far from the seaports to have footwear factories," the chairman says.

Even if they don't make it to central Java, the shoe manufacturers are in Indonesia for the long term, Mr Sutanto believes. With eight million young people coming onto the employment market every year, the government is only too pleased to have companies come to the country from overseas to create jobs (as many as 30,000 in one recently opened shoe factory in Java). "This is a relatively small island, but we have a huge population and a plentiful labour supply," he continues. "And we don't have the problem of people going home for New Year and not returning because the people working in the factories live locally." It's ten hours by truck from the tannery to Jakarta in the west and six hours to Surabaya in the east,

so he is confident of being able to continue supplying these facilities from Yogyakarta.

His company's relationship with the city authorities is good, he says. Yes, they expect tax revenues from the bigger companies there, but most of all they look to these employers to create jobs for local people, and, as is fitting for a popular tourist destination, to manage waste and pollution extremely strictly.

At the moment, 30% of Budi Makmur's output stays in Indonesia, shipping to these manufacturers of gloves and shoes. The bulk of customers are in other parts of Asia. But in two years' time, with the increase of shoe production there, the company's chairman believes 60% of total output will be consumed by domestic manufacturers.

Residential area

The tannery buildings in a residential part of town have gone through quite a few layout changes in 45 years. Mr Sutanto explains that some of these changes have been through choice, while others have been forced by circumstances beyond the company's control. From choice, Budi Makmur moved to its current site in 1976, a time of expansion for the company. The original tannery was closer to the centre of the city. An obvious example of enforced change came when one of the principal buildings on the main site—the raw materials store—had to be rebuilt after a severe earthquake hit Yogyakarta in 2006. Other developments have included a combination of imposed and improvised change.

"In the 1980s, the Indonesian government forbade the export of pickled hides," the chairman says. "It wanted companies to add more value here. So we started doing our own wet blue, installing a beamhouse here and moving our finishing operations to a separate site about 1.5 kilometres away. We have our own vehicles to take material from one site to the other. It's not far, and this is not a crowded part of the city." There are houses all around, though, because Java is the most populous island in the world—136 million people live there, 57% of Indonesia's total of 237.5 million—and space for housing is at a premium.

As well as people, sheep and goat have always been numerous in Indonesia, the world's most populous Muslim country. In 2010, there were 25 million sheep and goats in the country, more than twice the number of cattle and buffalo (12 million). Slaughter



From a technical point of view

(1) Overview of operations

The company processes sheep and goat skins from the raw, pickled and wet blue condition to the finished state for gloving and shoe upper leathers. The operations are managed on two sites, both located within residential areas of Yogyakarta, a city of approximately one million people.

Manufacture from the raw to crust state takes place at the major site where manufacture commenced in 1976. This site has expanded to about three times its original size, and supplies the finishing department that is located 1.5 kilometres away. The input to the tannery is about 150,000 skins per month with an average mix of 50-50 sheep and goat skins.

Approximately 60% of the leathers produced are for footwear manufacture, and 40% for glove leathers. The glove leathers demand the smaller skins due to their higher tensile strength at lower substances, with a mix of about 70% sheep, 30% goat skins. There are considerable variations in raw material availability because of surges in slaughter at times of Muslim religious feasts. The tannery uses raw skins from within Indonesia provided by dealers via long established collection chains of supply mainly from small butchers operating under licenced slaughter. Other sources are in the pickled and wet blue state from Saudi Arabia, Yemen, Iraq, and Syria.

Because of the small area of each skin the operations are labour-intensive. The company prides itself on managing a production that is technical, but retains a high element of craft skills. About 250 people are employed in these operations, and about 20% are women.

(2) Manufacture and processing

Four stainless steel hide processors made in Indonesia are used for an 18-hour soak and hair dissolving process for raw sheep and goat skins. Three of these vessels have a working capacity of 500 skins, the fourth a capacity of 700 skins. When there is an excessive number of skins available for soaking—say following festivals—the plant capacity can be increased by suspension soaking in static pits. In this event the skins are individually suspended from bamboo frames.

Fleshing is carried out using three floor-mounted fleshing machines, and this is followed by deliming and pickling in an 18-hour process in three more hide processors of similar size.

Two types of tannages are carried out on site. One is chrome tannage, the other wet white, and this takes place in eight elevated tanning drums. These are slow-revolving, four being 2.5m diameter x 3 m across and manufactured by Vallero, the remainder are of smaller size being manufactured locally. The



The tanning department comprises eight tanning drums. Four of these have been manufactured locally.



All of the skins are inspected in the pickled state.



Both the dyeing and tanning drums are serviced from elevated platforms running along the rear of the drums.

statistics for the year were three million goats and two million sheep. Two million head of cattle were slaughtered and 200,000 buffalo.

A phenomenon famously occurs in Bangladesh of a huge proportion (as much as 80%) of tanneries' annual supply of local raw material becoming available with the peaks in slaughter that take place around only a few days in the year, coinciding with great Muslim feasts such as Eid al-Adha.

Something similar used to happen in Indonesia, too, Mr Sutanto says, but people there eat goat, lamb and mutton all year round. Meat is something of a luxury item in many households; since the Asian economic crash of 1998, the government has withdrawn school and healthcare subsidies and life is expensive for many families. At the same time, the country's population keeps growing, so even if per capita totals have

fallen, total meat consumption has remained pretty constant.

Raw materials supply

The Budi Makmur chairman explains that slaughter of the animals in Indonesia is mostly informal. Across the island of Java, for example, small specialist restaurants are important outlets; they buy up the beasts from local families and smallholder farmers



drums are serviced from an elevated feed platform running along the back of the drums. The chemicals are raised to this level from the chemical store by lift. At the rear of these tanning drums there is a series of concrete tanks—one for each drum—where salt is dissolved to make up the salinity of the tanning bath and to prevent swelling of the pickled skins.

Skins purchased in the pickled condition are wet back, dropped from the drums into containers, stacked into bundles and spun in a centrifuge for dewatering. These are then inspected, trimmed and graded. Wet blue manufactured on site, and skins purchased in the wet blue condition, are also trimmed and graded according to substance, size and four quality grades.

As each skin is shaved it is checked for substance to ensure conformity, and this is followed by dry wheeling on a batch of buffing wheels to remove residual fibres and clean the flesh side. Each batch is then weighted and dyed.

After dyeing and fatliquoring the skins are set, and the gloving leathers hang-dried for between 24 and 36 hours according to substance. This is mainly a suspension drying method supported as necessary by heat cells. This operates in four drying sheds each of 20,000 skin capacity. This arrangement consists of parallel rows of drying rails fitted with pins from which the skins are suspended. The skins are manually loaded and unloaded from floor level, but there is a second layer of drying rails, and these are serviced from an operating platform mounted on a track that can be moved along the whole floor area. The skins are then softened using a combination of seven milling drums of local manufacture, and hand staking on a bank of eight hand staking machines all fitted with dust extraction. Skins for shoe upper leathers are vacuum-dried, then vibration staked, and buffed.

The finishing department comprises two Gemata roller coating and five spraying machines. All are fitted with electric radiant elements for finish drying. In addition to printing and feed-through roller presses, the department is equipped with glazing machines and milling drums.

(3) Co-products and solids management

- All wet blue trimmings of suitable size are sold. They are then stained, hand-oiled and softened by flexing, and made into basic leathers.
- All of the trimmings from pickled skins are sold and used as fish food.
- Fleshings, which are small in volume, and the remaining tannery scrap leather from trimming and buffing, are mixed with dewatered sludge from effluent treatment and deposited to landfill.
- Trials are taking place to compost pickled scrap by mixing with sawdust, rice waste and a composting agent. ☺



The pilot plant comprises 17 drums of three different sizes that have been manufactured locally. They can process between two and fifteen skins.



After grading, the wet blue skins are trimmed before blue setting and shaving. About 20% of the workforce is women.



As each skin is shaved, it is checked for shaved substance.

when they need supply, calling in Halal butchers from the local community to carry out slaughter in the required way. Hide and skin traders travel all over the island to gather the skins from outlets such as these, wet salting them for preservation and selling them to tanneries. Mr Sutanto is certain that increased awareness in rural communities of the value of skins would prevent good local raw material from going

to waste. Capacity could also increase if collection mechanisms improved in other parts of the country, notably Borneo. "Indonesian skins are quite well known in the wider market," he says. "The grain and size, an average of between four and five square-feet, are good."

He points out that collecting and preserving these small skins across a country of 17,500 islands is a capital-

intensive business and is in the control of a handful of family firms—now being run by members of their second or third generations—who are strong and experienced enough to carry out the work and make a living, even though the margins are not enormous. Haryono Sutanto describes these family companies as being mostly of Arab origin, but says immediately that this isn't really relevant as



The tannery needs to be very self sufficient. In addition to plant and machinery of local manufacture, the maintenance department is comprehensive. The photograph shows shaving cylinders being rebladed.

they are sourcing Indonesian material and not relying on contacts in the Middle East. "What is relevant is the continuity they represent," he continues. "And there is a great solidarity among them, as well as competition. We depend on these traders here; price is volatile because demand is usually more than supply. For this reason, we import material, too, directly from the Middle East. This helps stabilise prices."

Around 60% of the raw material his company is using at the moment comes from outside Indonesia, mainly from Iran, Iraq, Saudi Arabia and Syria. Shipments come by container vessel throughout the year; there is no over-reliance on festival-related slaughter because slaughter in Indonesia increases then, too, meaning enough local raw material comes onto the market at these times to satisfy demand. Indonesia's ministry for agriculture is greatly fearful of the threat to the economy of animal health crises and has banned imports of raw skins, so the material that comes in from external sources has to be pickle or wet blue. "We import because we have to," Mr Sutanto says, "but we would like not to have to. We would like there to be a bigger animal population here and I believe the national government is not seeing how important this is. It should have initiatives in place to increase the animal population, such as giving sheep or goats to families. Once the animals breed, those families can pay the government back so that other families can benefit."

Further fears, this time from major finished product brands, of incurring the wrath of non-governmental organisations that have linked leather to illegal deforestation in the Amazon, mean that supplier tanneries, including Budi Makmur are being told they will have to put tags of origin on each skin they tan, although they are still waiting to be told exactly how they must go about doing this. For Haryono Sutanto, the clearest consequence of this is that his company will have to choose the skin suppliers it works with even more carefully than before. "We will have to be very selective," he says. "We won't be able to have 30 or 40 suppliers. This is tricky. I think the big brands don't realise the complexity of the situation we are in."

Changing dynamics

Relationships with other suppliers, and what they offer to Budi Makmur in terms of service, are greatly affected by what is happening elsewhere in the world, the chairman says. For instance, developments in other markets have impacted on the machinery sector, with some suppliers cutting back on their visits to Indonesia in recent years. "There have been times when we might have felt left out of the equation. However, nothing is static and we have noticed a resurgence if interest." With certain sectors, such as the chemical suppliers, attention has never been diverted away from Indonesia. Most of the big European companies have local agents. There are very

few locally produced chemical products, except some basic ones like sodium sulphate, so most are imported from Europe.

Open to the world

An important benefit from this is that importing products from leading chemical suppliers exposes Budi Makmur and other Indonesian tanneries (there are currently 67 in operation) to innovation. "This is about being exposed to creative ideas," Mr Sutanto says. "We are not exposed enough to fashion and future trends." He is attempting to pioneer the local leather industry's journey towards a broader view of the world. As well as opening its doors to the Tannery of the Year team, Budi Makmur has engaged with ISO (see panel), meeting standard 14001 in March 2009, and standard 9001, initially in 1997 and later, for the extended version, in November 2010. It's also involved with the Leather Working Group, achieving bronze status in both the audits it has undergone so far, in 2009 and 2010. The tannery has also engaged with the International Union of Leather Technologists and Chemists Societies (IULTCS) and Mr Sutanto has recently been elected chairman of the Indonesian Tanners Association, APKI. He says the focus of tanners in Indonesia has traditionally been internal. "We are individualists," he continues, "and we are therefore less exposed to outside ideas. Many tanners here feel no need to see how what they are doing compares with what happens in the outside world. But organisations such as IULTCS and some of the chemical companies are sharing ideas and we have decided that we want to be part of that. I will share those ideas with other APKI members. Does this make Budi Makmur a pioneer? Well, I hope so."

He explains that Indonesia is "a bit isolated" from the global leather industry, but having always worked with overseas customers the country, his company has exposed itself to outside influences and international regulations. "I believe these things mean customers can have confidence in us," he says.

Working hours

The tannery opens for business at 7.30 in the morning, six days a week. Operations stop at midday for a half-hour lunch-break, with the tannery providing subsidised food for the workers. Most of the employees are



From a technical point of view

(4) Environmental management

WATER TREATMENT

The main water supply is provided by boreholes, then stored in an underground tank. However, rainwater falling on the tannery roof is collected and mixed with the borehole supply, and provides about 30% of the water consumed. This sump also serves as a reservoir in the event of fire. To overcome the possibility of loss of electrical supply in this event, the pressure is provided by a standby water pump and generator.

All of the water required in process is first run into tanks fitted with calibrated level gauges, where hot and cold water are mixed to provide the right temperature. The water is then pumped directly into the processing vessel.

Savings in water are made by recycling pickle liquors as far as possible, and this also reduces salinity in the final effluent. All of the used chrome liquors are separated via discharge gutters after chrome tanning and flow into a sump. This is then pumped into a settling tank to settle any solids that can be discharged from the tank base as sludge. The clear supernatant chrome solution is then recycled in subsequent tanning loads.

Wastewaters from soaking and liming and unhairing are discharged through common drainage. They first undergo a screening to remove gross solids on a self-cleaning screen, followed by removal of finer solids using wedge wide screens. This effluent is then settled using three settling pits, and the supernatant discharged into a collection sump serving the whole tannery. This effluent is continuously aerated to oxidise sulphides and to mix and blend the effluent.

The effluent then flows to the effluent treatment plant, where it is dosed with aluminium salts and polyelectrolytes. It then flows through a series of sumps to allow settling of the solids, before screening to remove any residual fines.

There is a novel system where the effluent passes through seven filter screens. The frame of each screen is made from bamboo, and the filter medium is coconut fibre sandwiched between split bamboo. The filtered effluent then feeds into the base of a second sump for up-flow through a second filter arrangement. This comprises alternating layers of coconut fibre and small river stones.

The clear effluent then flows into the activated sludge treatment plant for secondary treatment, with a retention time of three days. After secondary clarification, the supernatant is retained for a further three days in settling pits set in series as a form of tertiary treatment, then discharged through another



A line of eight buffing wheels where each skin is buffed to clean the flesh before dyeing.



The interior of one of the suspension drying rooms. There is a second row of hanging rails set above those shown, and these are serviced from an elevated platform that runs on tracking so that it can be moved along the full length of the drying room.



All of the sheep and goat skins manufactured for shoe upper leather are vacuum dried after samm/setting. This operation is then followed by softening using a feed-through staking machine.

Muslim, but Friday is still a working day, although there is a longer break for prayers in an on-site mosque. Sunday is the weekly day off.

Special place

Yogyakarta is a handsome city, 24 kilometres from the coast, surrounded by volcanoes, whose hillsides are, usually at least, covered in lush greenery from trees such as coconut, jack-fruit and mango. In the

case of one of the most famous volcanoes, Mount Merapi, the landscape is less green at the moment. Activity from the volcano in November 2010 led to heat damage to trees over a huge area around the mountain. Villages were destroyed and the people who lived in them are being housed in a refugee camp while rebuilding takes place. This is about 45 minutes' drive north from the Budi Makmur tannery.

Yogyakarta is, at 100 metres, high enough

up and far enough away from the sea to have avoided damage from the pan-Asian tsunami of December 2004. But that event made a big impact on the whole of Indonesia. It suffered the greatest number of casualties (around 150,000) of all the countries affected and had 2,000,000 people displaced. In addition, 430,000 homes were swept away, 5,000 miles of coastline devastated, 2,000 miles of road ruined, and 100,000 fishing boats damaged



series of sumps where the treated effluent is aerated before discharge to the river running alongside the tannery.

There is considerable breakdown of solids in the activated sludge treatment plant, but surplus solids and solids from settling are mixed and blended in a collection sump. When there is sufficient volume, this mixed sludge is dewatered on a filter press.

The tannery has a small lab at the effluent treatment plant for performing COD analysis and holding records that show a reduction in COD of 90-95%. The effluent is also sampled and analysed by local authorities on a monthly basis.

ENERGY MANAGEMENT

The city of Yogyakarta is a centre for wood craft and furniture manufacture, and the tannery has put this to good use by recently installing a wood-burning hot water plant. This consumes approximately 6m³ (0.5 ton/m³) of off-cuts from mango, coconut, jack-fruit and bamboo trees that have no other use, and is the sole source of heat for wet processing and drying. This has saved approximately 400 litres of heavy fuel oil per day.

Energy savings are made as natural air drying is used as far as possible, although this does need additional support from heating cells. The building used for sorting, trimming and grading pickled and wet blue skins is kept cool by the installation of woven bamboo frames on all of the walls and ceiling.

As the factory is subject to power cuts, a generator is installed on site. This has been mounted on a rubber bed to minimise noise and vibration, and is capable of providing the energy needs of the whole tannery if required. At the moment work is taking place on renewing the power cables for greater power efficiency. ☺



The ironing and embossing area, dealing mainly with shoe upper leather. The finishing department is spacious and fully equipped with presses, glazing machines and milling drums. Adjacent are two roller coating machines and five spraying machines all fitted with radiant drying cells.



The two milling drums in the finishing department are made locally. They are mounted on a steel framework so that they can be readily repositioned.



The tannery applies chemical dosing and settling to the effluent before biological treatment. After this treatment the effluent has an extended settling period to remove residual suspended solids, and is then aerated before discharge into the river flowing alongside the tannery.



Waste wood from furniture manufacture is used as fuel. This saves approximately 400 litres of heavy fuel oil each day.

or destroyed.

The 2006 earthquake that destroyed the Budi Makmur raw materials store, clearly did affect the city and the surrounding area (including the Prambanan temple) more directly. It happened just before six o'clock on a May morning, causing more than 5,000 fatalities and leaving an estimated 1.5 million people in the region homeless. It measured 6.3 on the Richter scale. No Budi Makmur

member of staff was injured, but on the day of the earthquake, chairman Haryono Sutanto travelled round the whole area visiting his workers to make sure everyone was all right. He accompanied the injured family members of his workers to hospital and gave assurances that the tannery would help pay for treatment. He is too modest to mention this, but tannery manager, Nugroho Rahmat, tells the tale. The tannery closed for a week

to allow people to recover and put things in order as best they could at home before returning to work.

For all of these reasons, there is a heightened sensitivity in this part of the world towards environmental matters. With the possibility of life-threatening events from the sea, the sky and the soil, it's impossible to ignore how delicate the world has become. "Those events have raised



Control and accreditation

LABORATORY SERVICES

Routine testing for tensile strength in the laboratory. Other standard tests include rub fastness, light fastness and flexing tests.

AWARDS:

- ISO 14001: 2004
- Certificate Award for Zero Accidents (3,327,000 man-hours without accident)—Ministry of Manpower Republic of Indonesia Jan 2005.
- ISO 140001: 2009
- Leather Working Group Audit—Bronze Award: March 2009.
- Quality Management Assurance—ISO 9001: Dec 2010



awareness of how the environment can affect everyone," Haryono Sutanto says. "When you see the real thing, and it affects you directly, then you understand. For us, it's certainly not just slogans."

Focus on people

The company's reaction to experiences like the 2006 earthquake has included drawing up an evacuation plan that is simple and clear; if the alarm sounds, everyone knows what to do—leave their machines at once and follow a carefully prepared 'safe route' to a designated meeting point. Budi Makmur has also trained up a high proportion of its workforce as qualified first-aiders; there are 25 people across the different departments with some skills and training in first aid, 10% of the workforce.

Human resources manager, Tri Ratnaningsih, explains that the company's approach is to focus always on its people. It makes cash assistance available to employees suffering a family illness or bereavement; this is a formal agreement accepted by the trade union that represents the workers. When necessary, union representatives are permitted to go to meetings in company time, with the tannery sometimes providing transport. The company has also responded to calls in the local community to supply capital loans to schools for projects such as libraries and sports equipment, and there are also scholarships for children of employees. For this, things are less formalised, but workers know they can approach Mrs Ratnaningsih to present a case for a child who is doing well in school; if she feels there is a good chance a scholarship will help the young person make the most of their talents, she will present the application to the company leadership.

Another academic connection that the company is proud of is its association with

the Akademi Teknolgy Kulit, the only leather training institution in south-east Asia, which is located in Yogyakarta. The company views its support of the institution as an important contribution to the sustainability of the leather industry in the region because it is the Akademi Teknolgy Kulit that is producing new generations of leather professionals, technicians and designers.

Budi Makmur actively supports a range of sporting activities among its workers; badminton, indoor and 11-a-side football are all popular. The company supplies equipment and organises inter-employee matches, and the occasional encounter with other companies. "All of this helps to make for a good relationship between the workers themselves and between the workforce and the company," Mrs Ratnaningsih says. "It's good for everyone to talk about their families or badminton for a while instead of work."

There are cultural activities, too, including dancers and an orchestra of 15 or 20 members, mixing electric guitars and drums with traditional Javanese bamboo flutes and *gamelan* in a combination known as *campursari*, with all instruments provided by the company.

Co-workers have hired the orchestra for family celebrations such as weddings, and the group has played often at company events, sometimes with the sponsorship of leather chemical companies.

Every five years, the company holds a major celebration and makes a presentation to the best employee over that period, taking into account the quality of the work candidates have produced, the efficiency of their output, their attendance records and so on. Other activities include regular company-wide or departmental excursions to local amusement parks, and celebrations with the local community.

In departmental groups, colleagues also

help each other by means of credit unions, known in Javanese culture as *arisan*. Nugroho Rahmat explains the set-up. Members of most departments in the tannery (without the groups being too restrictive) gather one evening a month, taking turns to host the group in each person's home. Each visitor passes a small sum of money to the householder. If, traditionally, *arisan* was a way of helping a young family build a home or buy a fishing boat, its purpose in the context of the tannery is much more social. "It's not a lot of money," Mr Rahmat says. "The money pays for the hospitality the host provides on the day, nothing more. For us, it's much more about building relationships. Through these gatherings, my colleagues know about me and about my family."

Staff turnover at Budi Makmur is currently one or two people a year. Tri Ratnaningsih is in no doubt that the attention the company pays to the social and cultural needs of its workforce is helping it achieve such an impressive retention record. The chairman says on this subject: "We are happy to have low employee turnover. We are just trying to fit in with Yogyakarta culture. It's a close-knit society here. And if there is a family wedding, for example, people don't send out invitations, they just expect you to come. The culture is not to wait to be asked. But we are happy to have kept our people because it means retaining the skills they have built up, sometimes for 20 years or more. A lot of our processes require skilled people, for example for staking or buffing, and we believe we can achieve better results by using traditional methods. We also believe the quality of the raw materials we use is reflected in the quality of our finished leather. If you use cheaper material, it shows. We don't want to go down that path." ☺