Tetra Pak Dairy Index

An annual news and information source about the dairy industry

Issue 4 – July 2011

Emerging Middle Class

Inside

Letter from the CEO

Dear Readers,

We are entering a decade-long dairy boom that will offer our industry unprecedented opportunities. Economic growth, urbanisation and a rapidly growing middle class in emerging markets will combine to generate double-digit growth in demand for liquid dairy products between 2010 and 2020.

The fourth Dairy Index provides valuable insight into the consumption trends that will shape our industry during the coming decade, creating new growth opportunities for our customers.

The report indicates that Asia's emerging economies will — with growing and increasingly prosperous urban populations — consume an ever increasing share of the world's liquid dairy products. Here, as in Africa and in Latin America, a new generation of educated, upwardly mobile consumers will unlock exciting possibilities for our industry to provide distinctive, convenient and diversified new products.

In "mature" markets, such as North America and Western Europe, ageing populations and smaller families will be looking for more value-added products, individualised to suit their increasingly diverse health and lifestyle needs. The ability to create this added value for consumers will, in turn, bring value to dairy producers' bottom line. This is a significant opportunity in markets where volume growth is limited because dairy consumption is already high and birth rates are declining in several countries.

The focus on food safety and long-term health is expected to sharpen, with educated consumers empowered by communications technology to research the origin and benefits of what they eat and drink. Convenience will be paramount as more of the world's population migrates to big, bustling cities. Mobility, both social and geographic, will shape the demands of consumers.

The Dairy Index also tells us that alongside the opportunities of a dairy boom come the challenges of change. Surging demand for packaged food will heighten competition for secure supplies of sustainable energy and raw materials. This will amplify the call for greater efficiency, cost control and environmental performance. Global and local players will increasingly compete for growth in developing markets, accelerating consolidation. Size will matter as manufacturers seek to widen their portfolios and boost their negotiating power as they expand into new markets.

I am convinced that our industry has the creativity, dedication and vision to seize the opportunities offered by phenomenal growth, creating the new strategic partnerships, business models and innovative technological solutions that will ensure we all succeed.

We hope you find this report useful and would welcome your comments at dairyindex@tetrapak.com. You can also find the Tetra Pak Dairy Index at www.tetrapak.com/dairyindex.

Sincerely,
Dennis Jönsson
President and CEO Tetra Pak Group

About the Tetra Pak Dairy Index

The Tetra Pak Dairy Index is an annual report designed to help dairy producers identify new opportunities for growth while offering all industry watchers information on the latest facts, figures and trends related to the global dairy industry.
The data contained in this report are collected from a variety of Tetra Pak and external sources and analysed by Tetra Pak's dairy market experts. The Tetra Pak Dairy Index also includes Tetra Pak's analysis of the industry based on its day-to-day work with dairy customers, governments, non-governmental organisations and local communities around the world supporting every aspect of the dairy value chain.

Emerging middle class to fuel global dairy boom by 2020

The world is set for a decade-long boom in milk consumption, with demand for Liquid Dairy Products (LDP) set to surge by around 30% from 2010 to 2020, driven by economic growth, urbanisation and the rising purchasing power of Asia's middle class, according to research by Tetra Pak.

The research also forecasts that by 2014 packaged milk will outsell "loose" milk in the developing world for the first time, as economic growth and city living spur demand for healthy and convenient products. This shift is expected to mark a turning point in white milk consumption for millions from Delhi to Dhaka.

Global demand for all forms of LDP will grow from some 270 billion litres in 2010 to around 350 billion litres by 2020, according to the Tetra Pak research, which represents one of the world's most comprehensive liquid dairy forecasts.

LDP includes white milk and other liquid dairy products (OLDP), such as flavoured milk, drinking yoghurt, sweetened condensed milk, lactic acid drinks and baby and toddler milk.

During the current decade, global OLDP consumption is set to rise by close to 60%, topping 100 billion litres by 2020.

The research indicates that demand for LDP will climb in every region of the world between 2010 and 2020, with the exception of Western Europe, where demand is likely to remain flat. It also forecasts that the dairy boom will be most pronounced in Asia – led by India and China – where increased prosperity and the rapid growth of the middle class will spur a significant rise in consumption among millions of consumers.

Emerging
Middle Class

Indeed, by the end of the decade India and China are expected to account for more than a third of the world's total LDP consumption, with the Asia-Pacific region alone continuing to consume more than the rest of the world combined.

Asia-Pacific, Latin America and Africa are all forecast to record double-digit growth in demand for LDP in 2010-2020.

Tetra Pak sees three global change drivers – related to demographics, economic growth and sustainability – fuelling six fundamental developments or "mega trends" which will shape the future of the dairy value chain.

Demographic change will be characterised by a growing population increasingly living in cities. Economic growth, particularly in emerging markets, will spur development, boost the ranks of the middle class and speed up globalisation. Sustainability will become a key issue as demand for resources puts pressure on the environment and increases the need for technological innovation.

These three drivers will be the catalyst for six "mega trends": increased demand for packaged food; greater diversification of consumer needs; changing dynamics in food manufacturing and retailing; more food safety awareness; rising competitive pressure; and acceleration in green solutions as a "must-have" for businesses.

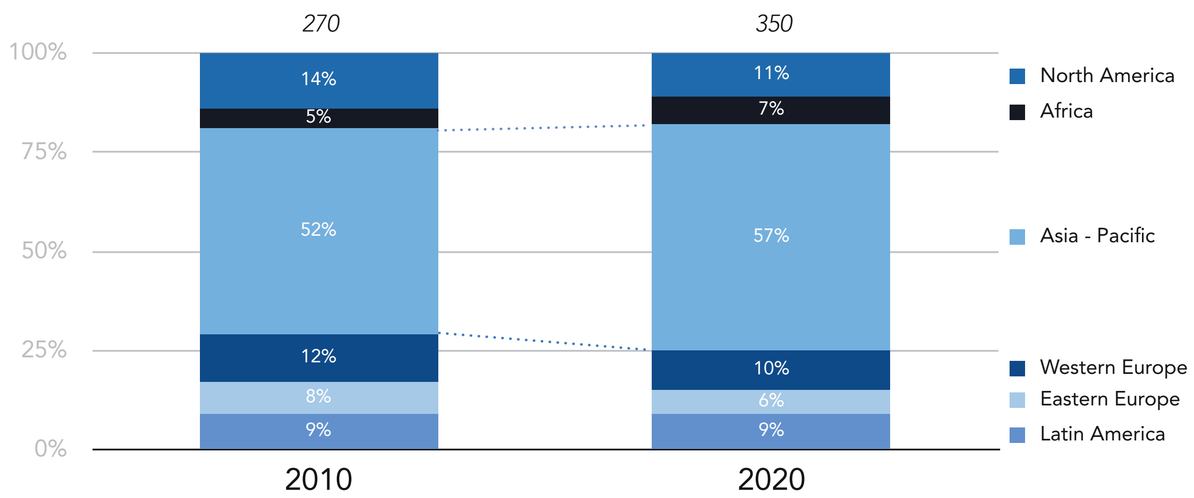
Upwardly mobile

The World Bank expects the global middle class – broadly defined as those earning around $10-$20 a day – to soar from 430 million in 2000 to 1.15 billion by 2030.

Better educated and better informed, these new middle-class consumers are expected to take ever more interest in issues related to food safety, healthy living and the environment. In addition, they are likely to be more brand conscious and interested in products that meet the needs of their busy, urban, "on the go" lifestyles.

"The emergence of the middle class, urbanisation and the expansion of modern shopping habits by busy, health-conscious and well-informed consumers have raised both the consumption and distribution of packaged milk. Consumers are looking for greater convenience without compromising on quality and safety," said Charles Brand, Tetra Pak Vice President, Marketing and Product Management.

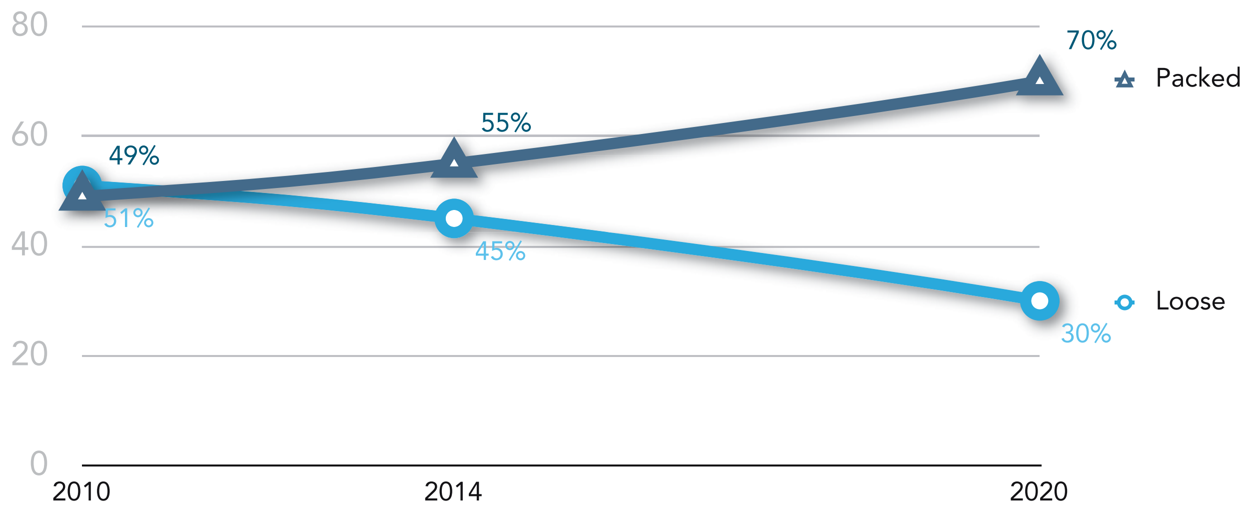
Total Liquid Dairy Products forecast to grow by 30%
LDP consumption growth in bio litres from 2010 to 2020 - Region split



Source: Tetra Pak, 2010

Emerging and developing markets are projected to account for more than 60% of world output in 2020 compared to around a 40% contribution by advanced economies

Total white milk sold loose vs packed milk from 2010 - 2020 in developing countries



Source: Tetra Pak, 2010

Milk: the measure of success

Globally, the forecasts for liquid dairy consumption reflect wider economic change, particularly in China and India.

China and India are the powerhouses of the global economy and, while they remain poorer on a per capita basis than their counterparts in Western markets, Asia has rapidly narrowed the gap in wealth, power and influence.

Emerging and developing markets are projected to account for more than 60% of world output in 2020 compared to around a 40% contribution by advanced economies, according to a 2011 report by The Conference Board, a global business and research organization. China and India alone will contribute more than 30% of global output in 2020, says the report, noting that in 2000 emerging and developing economies' share of global Gross Domestic Product (GDP) was about 40% while developing economies held a 60% share.

India's economic clout

The rising economic power of India – the world's biggest LDP consumer – is expected to spur a huge change in how and what people consume. Consumers are forecast to switch in droves to packaged white milk from "loose" milk in the decade to 2020, Tetra Pak research shows.

Last year, around 51% of white milk consumed in developing countries was bought "loose" and 49% in packages. Sales are

The World at a Glance

Taken region by region, Tetra Pak forecasts that:

- Asia-Pacific LDP consumption will climb by almost 45% from slightly below 140 billion litres in 2010 to almost 200 billion litres by 2020.
- Asia-Pacific's total global market share will grow by at least 5 percentage points between 2010 and 2020 to above 55%.
- Africa will see significant growth in LDP consumption, which will climb by more than 50%, from around 15 billion litres in 2010 to almost 25 billion litres in 2020.
- Latin American consumption will increase by more than 25% during the decade, reaching more than 30 billion litres in 2020 compared with less than 25 billion litres in 2010.
- In North America, consumption will reach approximately 40 billion litres in 2020 compared with about 35 billion litres in 2010.
- In Western Europe, consumption over that same period will show a modest fall. Western Europe's share of global LDP consumption will drop from around 12.5% in 2010 to less than 10% in 2020.
- Despite its stagnant growth, however, Western Europe will remain the biggest LDP consumer per capita in 2020, followed by North America.

forecast to reach a tipping point in 2014 with around 55% of white milk forecast to be sold in packages. This is expected to climb further towards 70% by 2020.

"Loose" milk is typically sold in India, Pakistan, Sri Lanka and Bangladesh. Milkmen carry unpasteurised milk in large metal cans on their bicycles and mopeds from the farm gate to doorsteps or city streets. It is poured from the milkman's can into a jug or bottle.

In India's largest cities – Bangalore, Calcutta, Delhi, Mumbai, Chennai and Hyderabad – it is estimated that the majority of white milk is already sold packaged. But in the countryside "loose" milk still dominates. That is changing fast as people migrate from the countryside to the city in search of jobs, money and opportunity.

"Indians have been drinking 'loose' milk since time immemorial," said Sumit Khatter, Marketing Manager at Tetra Pak India, who remembers his grandmother buying milk from a can brought to her doorstep by the local milkman.

"But across India there has been a marked shift towards packaged milk, particularly in urban areas, and a decline in 'loose' milk consumption. The conversion from 'loose' to packaged milk will accelerate in the years to come," he explained. "People have more money, less time and they have moved away from the countryside. They are increasingly living closer to a city grocery store than a dairy farm."

In India, "loose" milk still accounts for more than 70% of white milk sales, according to Khatter. But as the country becomes more urban, milk produced in the countryside has further to travel to reach consumers.

White milk is expected to continue to account for the lion's share of LDP sales in India for years to come, with demand for affordable portion packs expected to grow.

LDP consumption in India is forecast to rise from close to 55 billion litres in 2009 to around 60 billion litres in 2013, with white milk more than 90% of that consumption, according to Tetra Pak research. Consumption of portion packs of up to 600 millilitres in size is set to rise from around 10 billion litres in 2009 to almost 15 billion litres by 2013.

As recently as 1985, more than 90% of Indians lived on less than a dollar a day. Thanks to economic growth, millions are moving out of poverty. According to research by McKinsey Global Institute (MGI), India's middle class, which numbered around 50 million people in 2007, is expected to reach 583 million people – some 41% of the population – by 2025.

"India is changing fast. How we consume milk reflects the increased spending power of millions of Indians, from college students to civil servants," said Khatter.

China: From countryside to city

China's rapid economic growth has also been a catalyst for urbanisation and a massive expansion in the number of middle income households. According to Euromonitor International, China's middle class, which stood at 80 million people in 2007, is expected to soar to 700 million by 2020.

Rising affluence has gone hand in hand with urbanisation. McKinsey Global Institute has estimated that more than 1 billion people will be living in cities in China by 2030, compared with about 600 million in 2008. As a result, China is expected to be one of the fastest growing markets for liquid dairy.

"The middle class is a hot topic in China," said Tetra Pak's Marketing Manager in China, Henry Yu. "There are big differences between regions and cities because China is so vast. But people have clearly become more affluent and they have adopted a more western lifestyle, including a more western diet," he said.

"The Chinese middle class is concentrated in big cities and their significant purchasing power makes them extremely important consumers on the world stage," he said.

Many Chinese are starting to drink milk for the first time, particularly dairy beverages, while population growth is driving demand for baby and toddler milk. Chinese children are also drinking milk well beyond their toddler years, including iron and vitamin-enriched milk, according to Yu.

Chinese LDP demand is expected to surge by more than 40% between 2009 and 2013 – from around 25 billion litres to some 35 billion litres – driven by more than a 60% rise in consumption of lactic acid drinks and more than a 50% increase in consumption of baby and toddler milk, according to Tetra Pak research.

Indonesia: Milk beverages for kids

In Indonesia, the world's fourth most populous nation, many consumers are opting for "milk beverages" such as lactic acid drinks and chocolate milk drinks with a high water content and typically only about 20-30% milk. They are popular with children who buy them with their pocket money.

"Liquid dairy product consumption is rising thanks to economic growth, education and increased health awareness," said Hari Purnomo, Marketing and Product Management Director at Tetra Pak Indonesia, a market traditionally dominated by sweetened condensed milk and milk powder. "You could say that milk consumption is outstripping economic growth in Indonesia."

Indonesia's LDP consumption between 2009 and 2013 is forecast to rise by more than 500 million litres to almost 3.5 billion litres, according to Tetra Pak forecasts. Over the same period, ready-to-drink UHT white milk consumption is expected to jump by more than 50% to above 70 million litres.

Milk consumption is exceeding economic growth

Ready-to-drink milk in particular is growing in popularity in Indonesia, said Purnomo.

Convenience and health are growing in importance for consumers in a country where more than half the population lives in cities. Indonesian parents who buy milk for their children as babies and toddlers tend to keep buying it for their children until they are in their early teens.

"The increased buying power of the middle class combined with the spread of modern trade through supermarkets and convenience stores has boosted demand for UHT milk," said Purnomo. "Traditional grocers and street stalls are now copying the supermarkets by offering UHT products to consumers. Lifestyles and habits are changing and changing fast."

World population boom

In addition to the shift in economic and consumer power from West to East, a population boom in emerging markets will fuel increased demand for liquid dairy products. The impact will be felt in a variety of ways – from increasing consumer demands to pressure on raw milk supplies to a sharper focus on food safety and responsible environmental practices. It will increase demand for land, water and energy, heightening the focus on sustainability and raising the prospect of stricter environmental legislation.

The United Nations (UN) forecast in 2007 that the world's population would climb from 6.7 billion people to 9.2 billion by 2050. The population of less developed regions of the world was projected to rise from 5.4 billion in 2007 to 7.9 billion in 2050 while the population of more developed regions was expected to remain largely unchanged at 1.2 billion.

The average age of the population of many developed countries will rise during this period with many couples having fewer children and people living longer. Between 2005 and 2050, half of the increase in the world's population will be accounted for by a rise in the population aged 60 years or over, according to the UN. The number of children worldwide aged below 15 is forecast to decline slightly.

In more developed regions, the population aged 60 or over is expected to rise from 245 million in 2005 to 406 million in 2050. As a result, the ranks of ageing and health-conscious consumers seeking new, innovative products tailor-made to their lifestyles is also expected to grow.

Population growth and rapid urbanisation in developing countries together with population ageing and declining fertility in developed countries is expected to prompt greater individualisation among consumers empowered by technology to make well- informed choices about which products to buy.

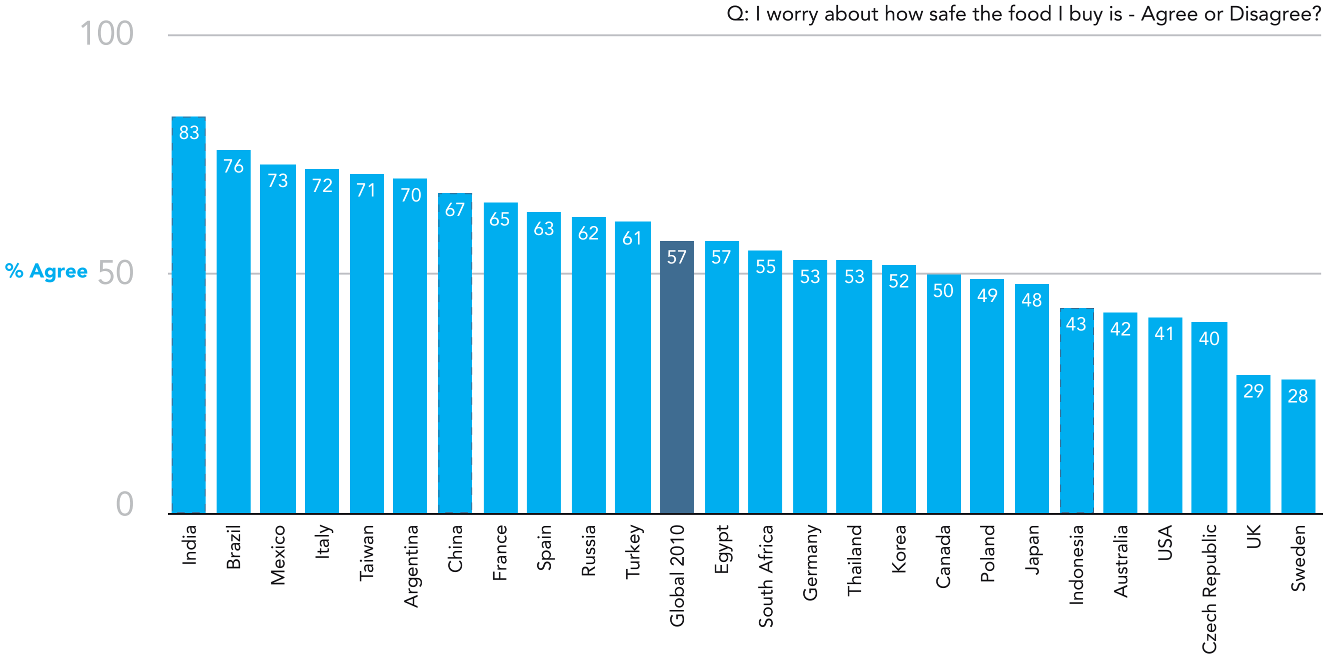
Convenience will become increasingly important for parents with fewer children, less time and more money. At the same time, a rise in life expectancy and education is expected to encourage and empower consumers to take a more hands on approach to their long-term health.

Food safety in focus

Consumer concern about food safety has intensified around the world, particularly in developing markets, according to a 2010 survey in 25 countries by Roper Reports Worldwide, conducted in the wake of China's melamine crisis. Indeed, while 49% of consumers in developed markets said they are worried about the safety of the food they purchased, that number stood at 66% in developing countries.

This concern among consumers was above the global average in Brazil, India, Russia and China, with those in India and Brazil coming out highest among the 25 countries surveyed.

Food safety around the world
Developing countries more worried



Source: Roper Reports Worldwide 2010 (mixed-mode, core 25 countries), I2h

India topped the table with 83% while consumers in developed countries like the UK and Sweden showed the least concern.

The Roper Report also highlighted that consumers are placing their trust in brands, particularly in developing countries.

Brazil, India and China topped the rankings – at 81%, 79% and 78% respectively – for the percentage of consumers who would only buy products and services from a trusted brand. (See chart on page 11.)

Healthy, wealthy and wise

While concern about food safety is by no means as pronounced in developed countries as in developing countries, concern about long term health appears to be a universal theme.

Increasingly well-informed and health-conscious consumers are including dairy in their diets because it is considered to be among the top "good for me" foods.

According to a 2010 survey of consumers on five continents by Roper Reports Worldwide, almost six out of 10 consumers worldwide actively try to include dairy products in their diets.

Some 71% of consumers surveyed by Roper said they consume milk at least once a week. Usage and Attitude research conducted by Tetra Pak show that around 90% of people consume milk at home, often at breakfast time.

Looking ahead, consumers are expected to become more proactive about their health. Around 78% of consumers said they were very focused on their long-term health. This holds true for developed and developing countries.

As incomes rise and more people live in cities, consumers will be increasingly educated and informed about the products they buy, potentially accelerating the shift to more branded and value-added products, according to Tetra Pak research.

The Roper Report shows that, on average, 55% of global consumers spend time researching brands before making purchasing decisions.

South Korea, where 61% of consumers said they dedicated time to researching brands before buying, is a case in point.

South Korea is one of Asia's most developed economies and a country where an economic boom transformed consumer habits. Health is a key issue across the generations, reflected by rising consumption of low-fat and skimmed milk, said Jenny Lee, Marketing Director at Tetra Pak South Korea.

Concern about food safety is more pronounced in developing countries than in developed countries

Low fat and skimmed white milk notched up 78% volume growth in 2008-2010 in South Korea, Tetra Pak research shows.

While South Koreans have more money than a generation ago, they are working harder with less time to shop and cook, raising their need for healthy and convenient products, Lee explained.

"When it comes to shopping for liquid dairy products the focus of consumers is truly going to be on health as we move towards the end of this decade. I think it will be even more health-focused in 2020 than it is now.

"Korean people rely very much on what they eat for health. They know they need to exercise, work out and lead a very healthy lifestyle. We are busier than ever with more stress. People have less time on their hands but more money to eat and drink in a way that takes care of their health," she said.

Roper Reports research shows that consumers in developing countries are more likely to avoid fast food than those in developed countries, focusing more energy on providing healthy meals for their families.

Consumers in developing countries also express greater interest in food and drink with proven health benefits than those in developed nations, 67% compared with 49% respectively, according to Roper Reports.

As a result, dairy manufacturers are offering distinctive new products to cater to Asian consumers with a focus on health and nutrition. These products range from probiotic yoghurt, found, for example, in major Indian cities to products which manufacturers say can improve skin, eyes and teeth, popular in China.

In 2010, a leading manufacturer in China launched the country's first sterol-enriched milk, aimed at consumers seeking to lower their cholesterol. In addition, products based on traditional Chinese medicine are also emerging.

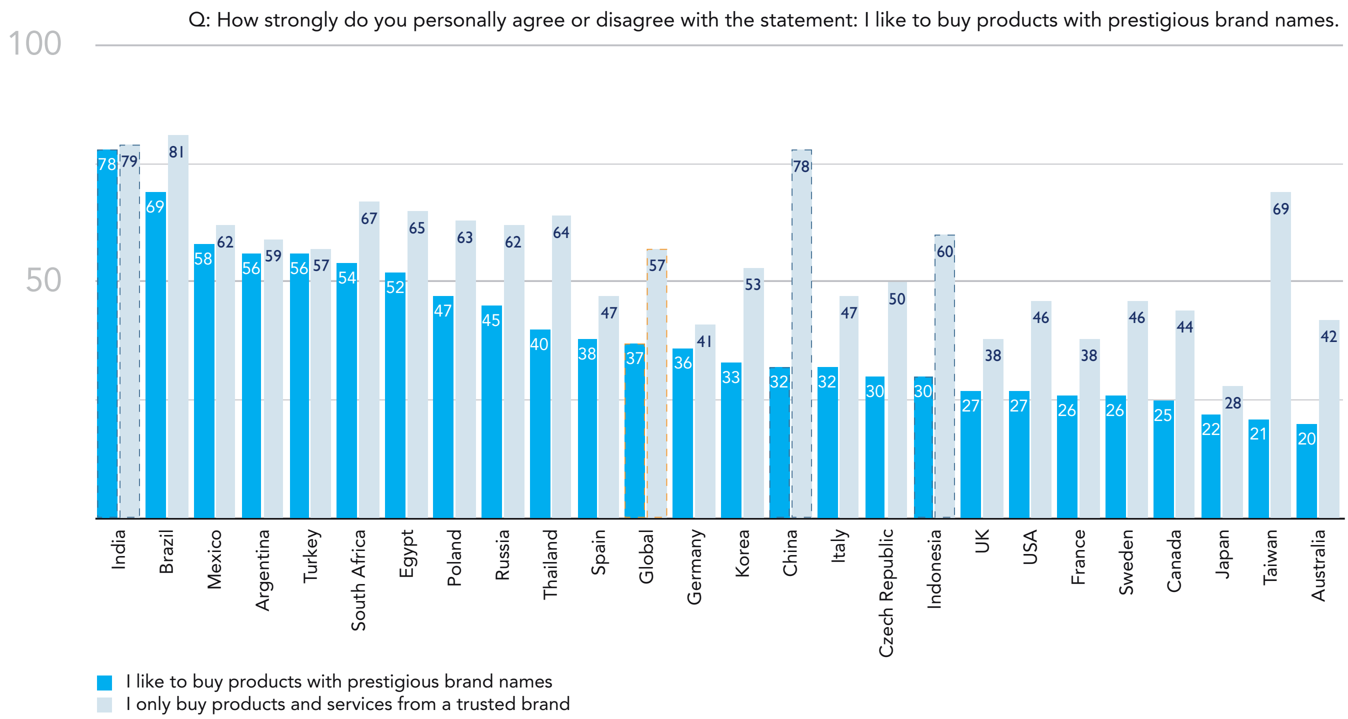
Convenience underpins demand

As Asia's middle class swells, the population booms and mega-cities continue to grow, demand for ambient milk is forecasted to accelerate, according to Tetra Pak research. The consumer's quest for convenience will help to underpin demand for ambient milk, particularly because of its longer shelf life and ease of storage.

Ambient LDP, which accounted for close to 25% of total LDP in 2010, is forecast to increase to more than 30% by 2020. Chilled LDP is set to increase from more than 35% to above 40% during the same period, says Tetra Pak.

Prestigious brands

Are very much appreciated in developing countries



Source: Roper Reports Worldwide 2010 (mixed-mode, core 25 countries), K1f

Brand conscious consumers

With wealth comes a consumer lifestyle allowing millions to buy computers, cars and non-essential items as well as more value-added food and drinks. Shopping has become a major leisure activity for many in developing countries.

In the 2010 survey of 25 countries by Roper Reports Worldwide, India tops the shopping league table with 71% of Indian consumers saying they enjoyed going shopping whether they bought something or not.

Indians and Brazilians are more brand-conscious than other nationalities, according to the Roper survey. Some 78% of Indians and 69% of Brazilians said they liked to buy products with prestigious brand names compared to the global average of 37%.

Big city stress

Increased wealth and urbanisation in developing countries may come at a price, with commuting time and stress rising.

Already more than half of the world's population lives in urban areas. That shift to the city is set to reshape the lives of millions in countries like China, India and Indonesia.

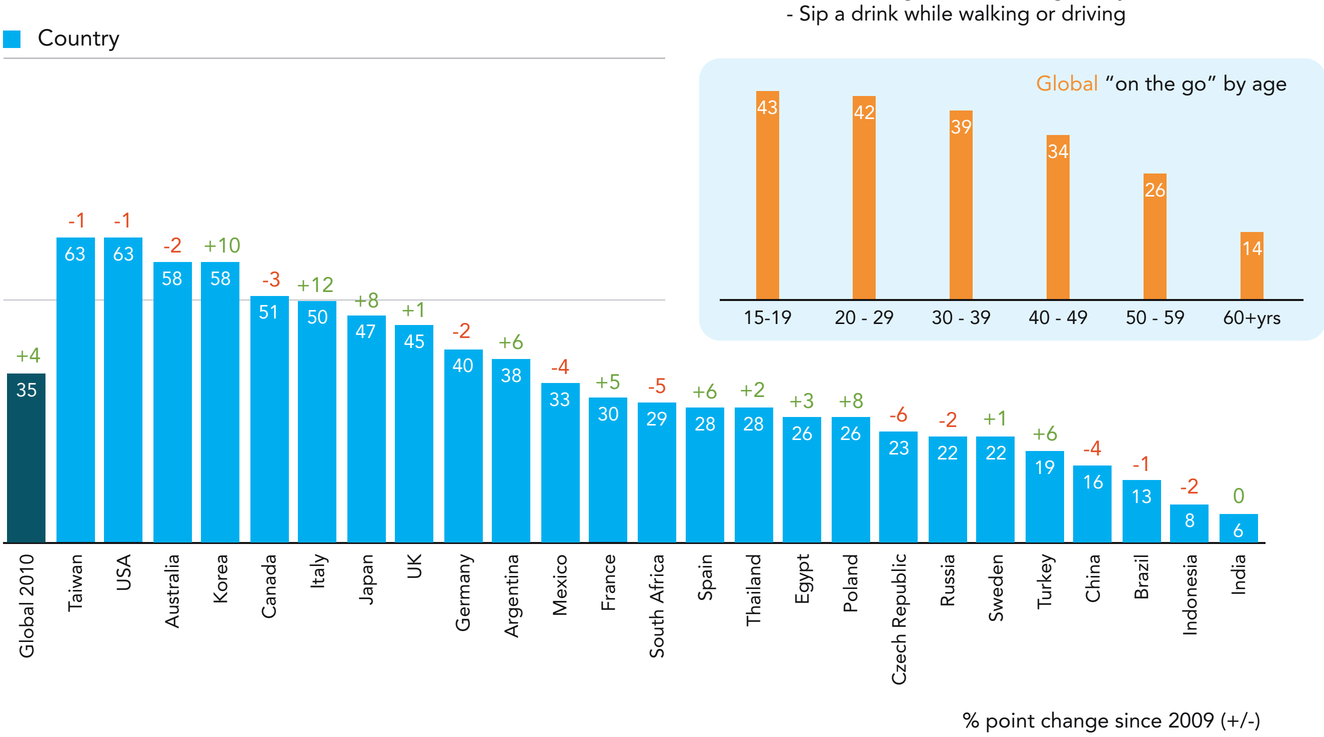
Some 40% of people surveyed by Roper Reports spend at least 5 hours a week commuting while 47% claimed they were often stressed. That, in turn, is forecast to drive up demand for healthy – yet indulgent – dairy products.

A surge in urban living is also forecast to boost demand for products which cater to an "on the go" lifestyle, particularly among younger consumers.

China, where there has been a steady surge of people moving from the countryside to the city, is a case in point. Growth in liquid dairy consumption in China is increasingly coming from lower income consumers, particularly in smaller provincial cities, where a traditional breakfast of noodles is slowly being replaced with milk and bread.

"On the go" consumption

Q: Please indicate how often you do each one among these list of activities:
- Eat on the go (while walking, at my desk, in the car etc)
- Sip a drink while walking or driving



% 15+ who "sip a drink while walking or driving" OR "eat on the go" weekly or more often
Source: Roper Reports Worldwide 2009 and 2010 (mixed-mode trend, core 25 countries), QB3/B2

"When people move to the city their lives are transformed. They live differently, work differently and their habits change. They become busier and more health and time-conscious. As a result the focus on convenience and health increases," said Tetra Pak Marketing Manager Henry Yu. "That means more Chinese are embracing a western-style breakfast."

For many, particularly the young, meals are increasingly something to grab on the way to and from work.

According to Roper Reports, global "on the go" consumption has risen to 35% in 2010 from 31% in 2009, led by Taiwan, the U.S., Australia, South Korea and Canada. The trend is most pronounced among the young, aged 15-19, with 43% saying they sip a drink or eat while on the go at least once a week.

"Working people normally skip breakfast and have an alternative meal instead of their normal lunch," said Tetra Pak Marketing Director Jenny Lee, referring to South Korea.

"That is the trend among those aged 20-30 and it is spreading. It's often the case that people grab a meal in the office, or sometimes at the convenience store, rather than sitting down for a leisurely breakfast."

With the urban population of Asia and Africa set to double in less than a generation, brand awareness is also expected to grow among consumers with higher disposable incomes and more hectic, urban lifestyles.

Smaller families, bigger wallets

Increasing economic opportunities in the midst of a global population boom means that many middle-class couples in these fast growing markets are opting to have fewer children. And parents are expected to increasingly spend more on their children's nutrition and health as well as their own. Children more than double their weight and height between the ages of 2 and 12, laying the foundation for their bodies that will last a lifetime.

In Vietnam – a major growth market – rising disposable income has increased parents' focus on their children's health and nutrition, fuelling the increased popularity of ready-to-drink UHT milk.

According to Tetra Pak research, ready-to-drink UHT milk consumption will more than double in Vietnam from around 335 million litres to almost 885 million litres between 2009 and 2013. Flavoured milk consumption in Vietnam is set to see similar growth, rising to more than 500 million litres by 2013.

"We are allowing our children to indulge in the products we could never afford," said Cassandra Le, Tetra Pak's Marketing and Product Manager in Vietnam. "It's the 'Little Emperor Syndrome.' When we talk to mothers about liquid milk they have a very positive view."

This trend is echoed in other countries too.

A move towards smaller families and the increase in the number of dual income families is having a major impact on consumption in South Korea.

"There are many working mothers nowadays, and they spend a lot of money on their kids and on packaged food that's more nutritious," said Jenny Lee. "They spend more because it compensates for the time they have to give up with their kids to earn money for their families."

"And because they have fewer kids they tend to spend more. The concern that now goes into one kid used to be spread across ten. They want the best education, the best nutrition, anything that's the best for their kids," said Lee.

With Asia-Pacific set to soak up the majority of the world's liquid dairy products by the end of the decade, the importance of the region to the global industry can only grow. Upwardly mobile Asian consumers will increasingly seek products suited to local tastes, cultures and pockets, making the region a source of enormous opportunity, but also significant challenge in the decades ahead.

"We're entering a new era of tremendous growth for the dairy industry. It presents unique opportunities and challenges for our industry to provide healthy, nutritious, convenient, sustainable and environmentally sound products," said Charles Brand, Tetra Pak Vice President, Marketing and Product Management.

Value set to trump volume in mature markets

From breakfast tables in Manhattan to sidewalk cafés in Madrid, milk has been a staple in Western Europe and North America for generations. Plain white milk remains a big seller in mature markets, but it is value-added products promoting convenience, health and well-being that may offer the best growth opportunities.

Despite rising demand in emerging markets, Western Europe and North America are set to remain the top two LDP markets in terms of per capita consumption in 2020, according to Tetra Pak research. The average Western European and American will still be consuming almost 80 litres a year by 2020 compared to the approximately 45 litres consumed by Asians, projects Tetra Pak.

But one inescapable fact remains: per capita LDP consumption is expected to decrease in Western Europe and North America while rising everywhere else from 2010 to 2020. In Western Europe, where birth rates are declining in several major countries, Tetra Pak forecasts LDP per capita consumption to decrease by about 4%. In North American it is projected to fall off by about 3%.

This presents challenges and opportunities for the dairy industry in mature markets. The challenge is to compensate for falling volumes. The opportunity is to offer more value-added, individualised products to an increasingly segmented market, from working mothers buying convenient liquid baby and toddler milk to retired baby boomers aiming to keep fit and healthy by buying sterol-enriched dairy to lower their cholesterol.

Demand for lactose free milk, organic milk, fortified and functional milk is expected to grow with consumers increasingly pro-active in safeguarding their health, particularly in developed countries where fertility rates are falling and the percentage of the population over 60 is growing.

In Spain, one of the world's biggest value-added milk markets, consumption of value-added milk is expected to accelerate for these very reasons, according to Tetra Pak's Manager for Liquid Dairy Products in Spain, Jose Luis Velilla.

Spain's LDP consumption is forecast to remain almost flat at close to five billion litres from 2009 to 2013 while demand for white milk is projected to fall by more than 1% during that period – to just over four billion litres, according to Tetra Pak. However, demand for flavoured milk and drinking yoghurt is expected to grow – from 433 million litres in 2009 to about 460 million litres in 2013.

Rising steadily from 422 million litres in 2000 to 660 million litres in 2010, value-added milk accounts for almost one-fifth of the overall home consumption milk market in Spain – the world's seventh biggest per capita milk consumption market in 2009.

"Spanish consumers are drinking less plain white milk. Households are looking for convenience, ways to save time and they are consuming more outside the home and on the go," Velilla said. "With more women working outside the home, demand for liquid baby formula – rather than powdered baby formula – is also expected to grow."

"With at least one in five people living in single person households there will be an increase in people buying single serve packages and brands which cater to individual tastes," he said.

Velilla explained that while milk remains popular at breakfast time, it is losing ground in the afternoon and evening to value-added drinks like flavoured milk, liquid yoghurts and juice-milk blends, which are seen as more novel.

In the UK – the fourth biggest consumer of milk per capita in 2009 – health awareness is reflected in shoppers trading down in fat content, particularly to 1% fat and lactose-free milk, according to Gail Scotland, Tetra Pak's UK Marketing Manager. Lactose intolerance is a condition thought to affect one in seven people in the UK.

"Shoppers are becoming increasingly sophisticated, health conscious and selective in their buying habits. There is growing interest in diet and health as well as increasing awareness about allergies," she said.

With millions of people in Britain commuting and more people living in smaller households or on their own, there is an opportunity for individualised and portion packs to grow in popularity in the UK, Scotland said.

Although the average British household has fallen from 3.1 persons per home in 1961 to 2.4 in 2009, LDP demand is forecast to remain robust.

The UK's LDP consumption is expected to rise by almost 1% to around seven billion litres from 2009 to 2013 thanks to growing demand for flavoured milk and drinking yoghurt. White milk consumption is set to edge slightly higher to more than six billion litres.

Portion pack demand is also expected to increase due to growth in school milk consumption with demand for flavoured milks growing in particular.

In France, total white milk consumption has been slowly waning over the years, said Laure Chambon, Tetra Pak's Category Manager for Liquid Dairy Products in France. It is a trend which is expected to continue as milk, mostly consumed at breakfast, faces competition from other chilled dairy products and even fruit juices, she said.

But there is clear growth in value-added products like organic milk, vitamin-enriched milk and lactose-free milk with consumers – young and old – focusing on health and well-being, she said.

Sales of Ambient White Milk (AWM), which account for the vast majority of white milk consumed in France, were nearly stable in 2010 (-0.3%). Classic AWM sales, accounting for 82% of total volumes, fell 1%. But value-added AWM sales rose by 5% in 2010 amid growing demand for organic and enriched milk. Value-added milk could grow its share by around five percentage points by 2020, from around 18% today.

"Organic milk is growing strongly in France, and we observe a widening of this trend towards infant and toddler milk. People are increasingly looking for natural, simple products. Families are more concerned about what their children eat and that is boosting demand for organic products – from milk to eggs. Mothers are looking to ensure they buy products which are good for their children – yet affordable too," said Chambon.

Across the Atlantic, in the U.S., average milk consumption in the past decade has dropped from 84.8 litres (22.4 gallons) per person a year in 2000 to 78 litres (20.6 gallons) in 2009, with white milk losing out to water and spoon-able yoghurt.

LDP consumption in the U.S. is forecast to drop by around 1% – to more than 25 billion litres from 2009 to 2013 – amid shrinking demand for drinking yoghurt and white milk.

Around two-thirds of milk sold in the U.S. is private label. The economic downturn in that market sparked a faster drop in branded white milk sales than sales of private label milk from 2007 to 2010.

"To recover lost sales branded companies need to go beyond the logo on their milk: they need to add value – true nutritional benefits that private labels do not offer," said Sheniqua Little, Tetra Pak's Marketing Manager, Dairy and Dairy Alternatives for the U.S. and Canada.

Vietnam: Land of milk and money on the Mekong Delta

Two decades ago Vietnam was one of the world's poorest countries. Today its economy is vibrant, its cities bustling and its middle class growing rapidly. With more money in their pockets, the Vietnamese are spending like never before, and consumption of liquid dairy products has been booming. If you want to picture Asia's changing economic fortunes, lifestyles and dietary habits, think Vietnam.

Vietnam last year recorded double-digit growth in per capita demand for LDP. Consumption rose by 22% from 11.4 litres per capita in 2009 to 13.9 litres in 2010, less than a third of the consumption of their French counterparts and about a fifth of what the average Canadian consumes, but only seven litres less than the average Chinese.

And LDP demand is expected to more than treble – from almost 580 million litres in 2004 to almost two billion litres by 2013, according to Tetra Pak research.

"It's crystal clear that economic growth, urbanisation and the spending power of millions of middle-class consumers shopping in modern supermarkets and convenience stores has fuelled demand for liquid dairy products in Vietnam," said Cassandra Le, Marketing and Product Management Director at Tetra Pak Vietnam.

"This is a country without a long heritage of drinking milk or dairy farming. LDP consumption remains modest by global standards, but there is plenty of room to grow. In fact, the growth has been nothing short of spectacular," she said.

That "spectacular" tag is reflected by consistent double-digit growth. Tetra Pak expects a Compound Annual Growth Rate (CAGR) of more than 15% for LDP consumption in Vietnam from 2009 to 2013, led by surging white milk sales. This compares to a CAGR of more than 10% for LDP from 2004-2008.

Thirst for white milk

White milk is in the ascendancy in Vietnam. In 2004, it accounted for just 30% of LDP sales while other liquid dairy products (OLDP) comprised 70%. That trend is being reversed, with white milk expected to account for more than 50% of LDP consumption by 2013.

Much like in the rest of Asia, rising LDP consumption appears tied to the economic fortunes of the country.

Vietnam launched its "Doi Moi" economic reforms in 1986, emulating China's move to open up its markets. The country has gone from strength to strength in the past 10 years although it still significantly lags its neighbour Thailand in per capita income.

Nonetheless, Vietnam's GDP per capita has more than tripled from $351 in 2000 to $1,156 in 2010, according to a 2010 report on Vietnam by market and brand research specialists Cimigo. More than one fifth of a population of 87 million people now live in cities like Hanoi, Ho Chi Minh City and Hai Phong. The number of consumers – with a monthly household income of at least $300 – in the top six cities has more than doubled from 2.6 million in 2000 to 5.8 million in 2010, according to Cimigo.

The fact that around one in seven Vietnamese is now middle class while at least one in five live in urban areas is boosting demand for LDP, perceived as a healthy and nutritious choice, said Cimigo.

Middle class, urban consumers tend to have higher disposable incomes to buy value-added LDP, such as milk fortified with vitamins and minerals, flavoured milk and drinking yoghurt. Health is the second biggest consumer concern in Vietnam after rising food prices, according to Nielsen Omnibus report in the fourth quarter of 2010.

"Dairy manufacturers have developed a whole range of UHT products which appeal to middle income households focused on health and convenience, such as premium fresh milk, growing up milk (GUM) and fortified milk," said Le. "The middle class is a key consumer segment for dairy companies."

Growing demand for convenience among middle-class households in Vietnam's cities is reflected in growing sales of packaged, ready-to-drink UHT milk, with demand up 39% from 2009-2010, she said.

Another influencing factor on dairy consumption in Vietnam has been the country's two child policy, which has led to more indulgent spending on kids, according to Le.

"A majority of dairy products sold in Vietnam are consumed by children. And mothers have a very positive view of dairy. They see it as one of the building blocks of nutrition and health for young children and they want to give their 'Little Emperors' the best start in life," said Le.

"With many families leading increasingly hectic lives, parents are ready to spend a little more on their kids to ensure they get the best nutrition. They also want to save time by buying products which offer real convenience," she said.

One trend Tetra Pak expects to see as a result of rising demand for convenience is parents switching from powdered GUM to ready-to-drink RTD white and flavoured milk.

"Convenience is really important these days and that is why ready-to-drink milk is so attractive. It saves parents time. If you've experienced rush hour in Hanoi you know how precious every minute is at the beginning and the end of the working day," said Le.

Vietnam

Creating a sustainable value chain

Erika Mink, Director, Environmental Affairs, Tetra Pak

With dairy product consumption continuing to grow and demand for increasingly sustainable operations throughout our industry's value chain, global cooperation, innovation and standardised methodologies and metrics are more vital than ever. They will play a key role in helping the packaging industry rise to the challenge of reducing its carbon footprint, cutting waste and conserving precious resources as demand for ever more sustainable dairy products rises. And they will help inform consumers in their choices of food products.

The demand for sustainable products is increasing all along our value chain. Savvy consumers are looking for environmentally sound as well as safe and convenient products that fit their wallets. Retailers are often driving the change in response to shifting consumer behaviour and government policies. Reduction of food and resource waste, which impacts the bottom line, are also prompting greater focus on environmental efficiency.

Tetra Pak's analysis of global consumer trends in 2011 highlights that shoppers are looking for safe, healthy, convenient and quality products – yet affordable and sustainable ones too. "Economically green" consumers are eager to buy products which are good for the planet and their wallets.

This conclusion is underscored by Roper Reports Worldwide, whose latest surveys of consumers in 25 countries show that environmental pollution and climate change are already among the top 10 global concerns – at number five and 10 respectively.

In fact, research shows that consumers expect a lot from companies when it comes to sustainability and environmental performance. Some 75% of consumers said they wanted companies to take action on the environment.

Sustainability is clearly a competitive issue. Green credentials will increasingly underpin competitiveness for farmers, dairy producers, packaging companies and retailers. The lower the impact of our products, the higher our competitiveness.

2010 Global concerns

1. Recession and unemployment.
2. Inflation and high prices.
3. Money enought to live right / pay bills
4. Crime and lawlessness
5. **Environmental pollution**
6. Educational quality
7. Cost of healthcare
8. Wrongdoing / corruption of elected government officials
9. The future of retirements / pension plans
10. **Global Climate Change / Global Warming**

Source: Roper Reports Worldwide 2009 and 2010 (mixed-mode trend, core 25 countries) QA2

That is why major global retailers like Walmart, Carrefour and Tesco have been a driving force in responding to consumer demand for greater sustainability. Walmart's introduction in 2006 of its packaging scorecard helped catapult sustainability high on the agenda of consumer goods, food and packaging companies. In the UK, one of Tesco's targets is to cut the carbon footprint of its whole supply chain by 30% and become a zero carbon business by 2050.

To make this work most effectively you need cooperation and standardisation right across the Value Chain. And it's starting to happen through such work as the Consumer Goods Forum (CGF) on sustainable packaging, the carbon footprint standard for dairy products developed by the International Dairy Federation (IDF) and the packaging environmental standards being developed by the International Organization for Standardization (ISO).

In June 2010, the CGF issued a key report on sustainability, "A Global Language for Packaging and Sustainability," which outlined a common framework and system for measuring sustainability. The report was designed to help companies make better decisions about packaging and sustainability.

The report was a truly international effort. Manufacturers, retailers, packaging converters, trade associations and academics contributed to the report, as well as Efficient Consumer Response (ECR) Europe, The European Organization for Packaging and the Environment (EUROPEN), the Grocery Manufacturers Association (GMA) and the Sustainable Packaging Coalition (SPC).

In January 2011 a new report urged retailers and suppliers to work together to share ideas, information and assets in a "smart" supply chain to produce products with an emphasis on "quality of life" for increasingly well-informed consumers. The report, "2020 Future Value Chain: Building Strategies for the New Decade," was developed in collaboration with Capgemini, HP and Microsoft and drew on the expertise of over 650 retailers, manufacturers and service providers in 70 countries.

Key role of packaging

Packaging plays a key role in the sustainability value chain. It is estimated to account for 5% - 7% of milk's overall greenhouse gas emissions. More important, it is vital for protecting the nutrition of food and helping to reduce food waste. In Western Europe, up to 3% of food spoils before it reaches the consumer. In developing countries, that can reach as much as 50%. With demand for liquid dairy products set to boom in developing markets this decade, the industry faces a unique opportunity to protect the health and well-being of a new generation of consumers in developing countries.

The importance of packaging in tackling food loss was highlighted by the United Nations Food and Agriculture Organization (FAO) at a conference in Germany this May. Experts attending the SAVE FOOD conference estimated that across the EU about 71 million tons of food is thrown away every year, often by consumers. In developing countries, it is the other way around: waste by consumers is believed to be low but high within the supply chain.

Food safety and consumer protection are a priority for the UN. According to the FAO, an estimated three million people around the world, in developed and developing countries, die every year from food and water-borne disease, with millions more becoming sick.

Another key area is recycling. In 2012 the ISO is expected to complete a report on standards for packaging and the environment, including standards on reuse, recycling and energy recovery.

There are two main ways the industry as a whole can reduce the environmental impact of packaging: first, through its selection of materials – Low Impact Packaging – and second, through recycling and recovery.

As an industry we must step up efforts to encourage wider and better recycling in every country. This includes more extensive collection of packaging waste from households, further development of recycling technologies and the sharing of knowledge, expertise and best practice across continents. Recycling remains the touchstone of sustainability for many consumers. It is something they can see and touch every day when they throw away their household waste. And they want to do something about it. Recycling is tangible and easy – if we work together to make it possible.

In Europe, providing a clear legal framework has played a decisive role in promoting greater sustainability. The European Union's 1994 Directive on Packaging and Packaging Waste harmonised policies to promote reuse and recycling and to manage packaging and packaging waste. The directive focused on prevention of waste, reuse, recycling, and other forms of recovery. It also established the principles of extended producer responsibility (EPR).

EPR extends a producer's responsibility for a product to the end of its life cycle, shifting responsibility towards the producer and away from municipalities for recycling and recovery. It includes incentives for industry to take the environment into account in product design.

Other parts of the world are following suit. Today, products sold in the Americas, (the U.S., Canada, Brazil and Mexico), in Asia/Pacific (Australia, China, Japan, Taiwan, South Korea, India), in Africa and the Middle East (South Africa, Israel), and Europe (EU, Turkey, Ukraine) are subject to some form of environmental packaging requirements. And the list is growing as governments look to address waste and resource management.

Retailers are insisting on replacing high-impact materials with more environmentally efficient alternatives, on reducing packaging waste and on recycling and reducing the amount of packaging used.

Technology and innovation are also playing a significant role in identifying new potential materials for the industry as it seeks to reduce its environmental impact and carbon footprint. "Green polymers" – made from plants rather than fossil fuels – could play an increasingly important role in cutting carbon emissions. These bio-polymers, derived from ethanol produced from plants such as sugar cane, have a significantly lower carbon footprint than plastics made with oil.

Technology and innovation will play a pivotal role in our quest to achieve zero waste and reduce our carbon impact. To reach this goal we must all work together.

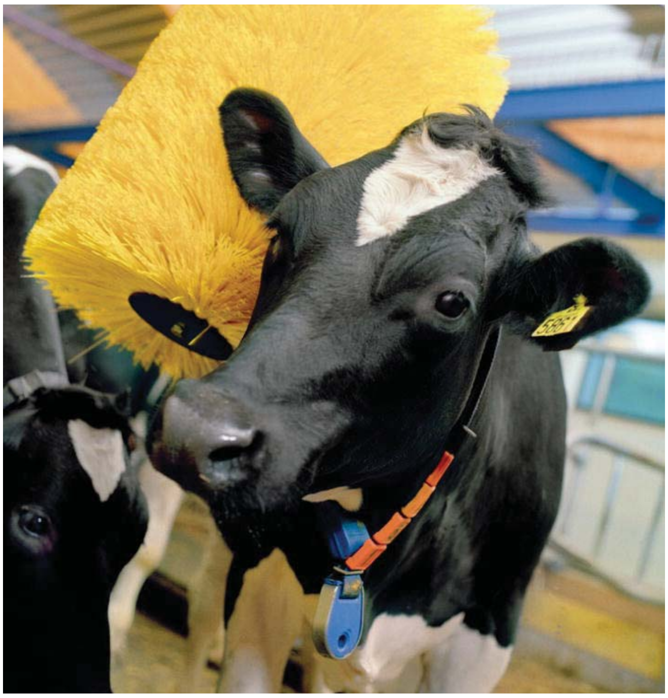
Science will help the dairy industry tackle climate change

Stanislav Jas

Environment & Sustainability Officer at the International Dairy Federation

We at the International Dairy Federation (IDF) are committed to helping dairy farmers and the whole supply chain reduce their greenhouse gas emissions while nurturing their businesses. We believe that investing in science – and sharing best practice – is key to boosting financial and environmental performance.

We know that global dairy production contributes around 2.7% of man-made greenhouse gases. About 80% of dairy greenhouse gas emissions come from farms: including methane, nitrous oxide and carbon dioxide emitted by cows, slurry, fertilizers and the soil. The rest comes from dairy manufacturing, transport, retail, domestic consumption, waste management and disposal of packaging.



Methane emitted by cows and manure is responsible for about half the global warming impact of milk, according to the UN Food and Agriculture Organization (FAO). In short, we need well cared for cows worldwide to produce more milk and less greenhouse gases to underpin the sustainability of global dairy farming.

Research shows that over the past 60 years the dairy industry has already reduced on-farm emissions by almost two-thirds in some parts of the world thanks to improved production efficiency, nutrition management and other advances. Science and innovation is helping us boost milk yields by improving genetic management and breeding practices.

Research is also helping us improve environmental performance. We have found new and more efficient ways to use water, energy and fertilizers and to reduce methane emissions from enteric fermentation by cows.

This fermentation is a major cause of greenhouse gas emissions. These emissions can be significantly reduced by ensuring cows' feed is digested more efficiently, changing the way bacteria in their stomachs break down plant material into waste gas.

Generally, farms in developed countries have higher yields and greater access to support and resources for improving animal feed, use of fertilizers and manure management – major sources of greenhouse gas emissions.

Profitable farms are best equipped to reduce their emissions, struggling farms less so. As a result, we need governments, NGOs and the dairy industry to work together to ensure that farms in developing countries get the help they need to improve their management and environmental performance. Advice from developed countries is crucial in ensuring the adoption of best practice in developing countries.

But science alone does not have all the answers. We also need cooperation across the value chain and across borders to reduce greenhouse gas emissions.

We urge countries to continue working together to find new and better technologies to reduce emissions. We also believe governments need to step up global cooperation on research to find cost effective ways to curb emissions and to invest more in finding ways to mitigate climate change.

The IDF is one of six international and regional dairy organisations which are developing the Global Dairy Agenda for Action on Climate Change.

We believe there is no better way to safeguard our planet and future food production than to make a lasting and voluntary commitment to the economic and environmental sustainability of our industry.

About the IDF

The IDF was established in 1903 to support quality dairy production and promote best practice in protecting the environment, animal health, nutrition, food standards and safety. As a global centre of dairy expertise and science, it fosters scientific innovation and development, coordinating environmental research on climate change, water and biodiversity across borders.

The IDF will unveil the results of a comprehensive global survey of what the dairy sector is doing to reduce greenhouse gas emissions at the World Dairy Summit in Parma, Italy, on October 19, 2011. The survey will represent half the world's milk production and has been conducted in countries including Brazil, the U.S, New Zealand, South Africa and the UK.

About Tetra Pak

Tetra Pak is the world's leading food processing and packaging solutions company. Working closely with our customers and suppliers, we provide safe, innovative and environmentally sound products that each day meet the needs of hundreds of millions of people in more than 170 countries around the world. With almost 22,000 employees based in over 85 countries, we believe in responsible industry leadership and a sustainable approach to business. Our motto, "PROTECTS WHAT'S GOOD™," reflects our vision to make food safe and available, everywhere. More information about Tetra Pak is available at www.tetrapak.com

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