

Contribution of Dairying in Improving the Economic Status of Farmers: The IDF Perspective

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We are committed to the sustainable development of the dairy sector to generate widespread benefits for people and the planet. In 2016, the dairy sector and the FAO together signed the Dairy Declaration of Rotterdam, thereby committing to help achieve the UN Sustainable Development Goals for 2030.

The UN has defined the SDGs as a leading concept in development and sustainability. Dairy plays a role in a resilient and sustainable food system. The improvement of the economic status of dairy farmers goes through sustainable and smart dairy farming.

Current Global Key Drivers

In 2050, the world will count 9.6 billion people, 70% living in cities with an average income almost twice as high as today. As a result, global demand for animal products will continue to grow and play a critical role in global food security and nutrition. India, with an additional 138 million people by 2027, should overtake China as the most populous country. Today's agricultural policies in India are focused on stimulating agricultural growth in order to meet domestic food security objectives, while other countries such as China and Argentina are aligning more closely with global markets. The dairy sector collective challenge is to produce more food in a sustainable manner.

Dairy's contribution to the SDGs has been acknowledged by the former UN Secretary-General of the United Nations Mr Ban Ki Moon during the opening ceremony of the IDF WDS 2018: *The dairy sector plays a leading role in international efforts to achieve the Sustainable Development Goals which are aimed at socio-economic transformation to eradicate poverty and hunger, and to construct a sustainable world where humanity can enjoy better education, healthcare, and equality.*

The Global Story of the Dairy Sector is strong. It encompasses one billion people, with impacts on 6 billion consumers. The dairy sector cares for 20% of the world's agriculture lands. There are 133 million dairy farms, with 600 million people living on dairy

farms and 400 million additional people supported by the full-time jobs that are created in support of dairy farming. Moreover, 240 million people are directly or indirectly employed in the dairy sector, with 37 million farms being female-headed and 80 million women engaged in dairy farming to some extent. Milk is one of the most produced and valuable agriculture commodities worldwide. Milk ranks 3rd by production tonnage and it is the top agriculture commodity in value terms the world over. Milk and dairy products contribute to 27% to the global value added from livestock and to 10% to the global value added of agriculture. Overall, milk and dairy products account for about 14% of global agriculture trade. At the global level milk contributes an average of 5% of energy, 10% of protein, and 9% of fat.

Current scientific literature demonstrates that engagement in dairying causes higher household welfare. There is strong evidence that in specific settings, dairy development makes a significant contribution to poverty reduction, both at household and community level. The dairy value chain studies showed that milk collection and distribution generated (a) an enhanced consumption of milk, (b) increased crop production through use of cow manure, (c) increased revenues from sales, all of which can enhance food security and nutrition, and (d) investment and considerable amount of direct and indirect employment while employment generation by processing and retail depended on the dominant product types. Formal economy-wide assessments of the economic impacts of dairy sectors suggest that the indirect and induced impacts are at least as large, if not larger than the direct impacts.

India plays a huge role in the global story of dairy. This is in large part due to India's "White Revolution," Operation Flood (OF), a national-scale, federally sponsored intervention which made the country into the largest milk producer in the world. Yet, India has opportunities for improvement to achieve a more sustainable dairy sector such as compliance with international quality standards, upgrading infrastructure facilities for dairy processing,

prevention of milk adulteration, and a stronger commitment to the *One Health* approach.

Dairy Trends

Every year, the IDF publishes its World Dairy Situation (WDS) Report, which is part of its mission to represent and support the dairy industry globally (Figure 1). The report contains a wealth of information about international dairy sector including tables, country reports, and analysis on more than 50 dairy producing countries from all five continents. Several aspects of the dairy industry are covered: from milk production and processing to trade, pricing and consumption. This publication gives an insight on a wide range of policies and economic factors which influence a world who is increasingly focused on sustainable development and nutrition. The 2018 WDS report showed that global milk production continues to grow at around 2% rate, sometimes affected by adverse weather conditions such as the abnormally hot 2018 summer in the Northern Hemisphere, or farmer's reactions to changing prices and the unpredictable trade environment. India had reported one of the largest growth rates at over 3%. These factors, combined with the state of the global economy and the current geopolitical landscape, including the negotiations and implementation of bilateral and multilateral trade agreements contribute to bring some uncertainty in the dairy sector and make dairy product supplies somewhat less predictable than the global demand.

However, milk production per capita is not as high when analyzing data for 2018 milk production, the WDS reported the strongest growth in India, Pakistan, Turkey and Australia. In China, milk production even went backwards which resulted in very strong import demand in 2017. The weak milk production performance of all these



heavy weights makes the 2.2% global growth of cow's milk production even more remarkable. Will global milk production be able to beat the long-term average of 2% for two years in a row? It seems like once again the emerging dairy markets that will have to carry the torch for milk production in the future.

While the number of dairy farms is slowly decreasing throughout the world, the number of animals per farm keeps increasing. In India, number of dairy animals per farm increased 2.5% from 2016-2017. Both buffalo and cow milk production have reported a strong growth in India from 2016-2017, with 6.8% and 4.6% respectively. Prices at farm gate in India continue to rise, more so than in many other countries. Globally, almost 666.5 billion kg of milk were produced in 2015, 30 percent more than in 2005 (Figure 2).

Over the decade, average global milk yield per cow has increased by 15 percent while the number of milking cows increased by 14 percent. However, in India the average cow yield is not as high with less than 2 tons of milk per animal per year.

Growth in world milk production is projected to increase by 22% over the projection period, with a large share of

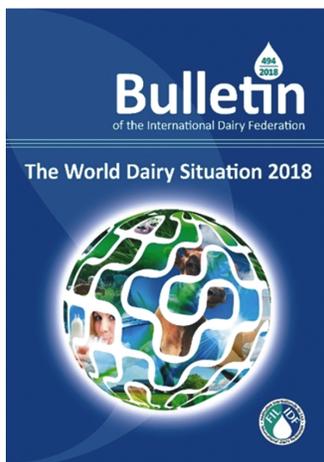
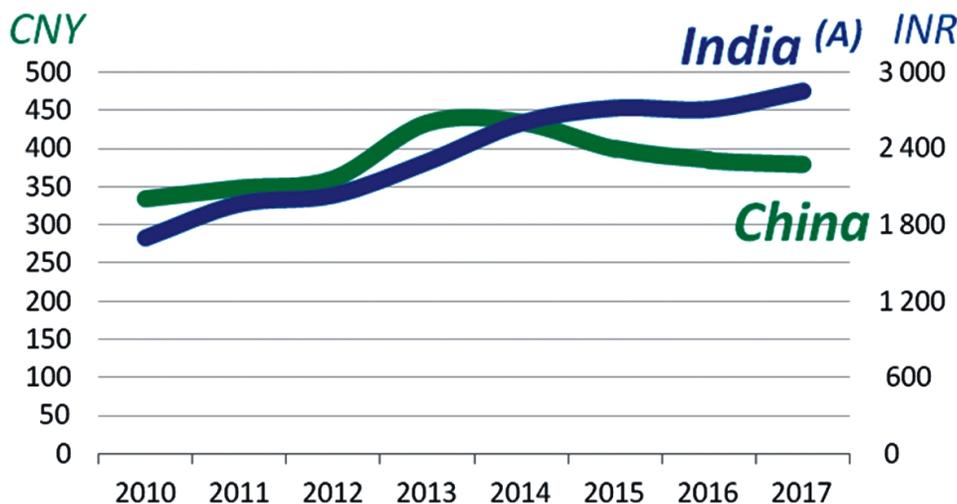


Figure 1: The IDF World Dairy Situation Report 2018

Figure 2: Farmgate Milk Prices for 2018 (IDF World Dairy Situation Report 2018). (A) Dairy years ending March of the following year. Mixed (cow and buffalo) milk; refers to cooperative dairies only.



the increase coming from Pakistan and India. In 2027, these two countries are expected to jointly account for 32% of global milk production. Most of the additional production in these countries will be consumed domestically as fresh dairy products.

In India, consumption of liquid milks as well as yoghurt drinks and other fermented drinks continues to increase. Yet, the slight worldwide increase of dairy consumption per capita is not enough to nourish the global population - consumption of dairy remains lower than recommended for many countries around the world. While income growth in China in the last decade led to increased demand for meat and fish, rising incomes in India are mostly expected to lead to higher consumption of dairy products as the preferred source of animal proteins. The demand for dairy will increase in the coming decade, with 2.2% p.a. growth in consumption, the highest growth rate among the commodities covered in the *Agricultural Outlook*. This increase can be attributed largely to forecasted consumption in India, where dairy is an integral component of the diet and the preferred source of animal proteins. Also butter global demand is expected to grow at nearly 2.2% per year. This growth will be supported by high and expanding consumption in India.

In addition to population growth, food demand

is influenced by the growth of per capita incomes. The macro-economic assumptions underlying this *Outlook* suggest strong growth in per capita GDP in India (6.3% p.a.) and China (5.9% p.a.). The dominance of fresh dairy products will increase in the coming decade, with 2.2% p.a. growth in consumption, the highest growth rate among the commodities covered in the *Agricultural Outlook*. This increase can be attributed largely to India, where dairy is an integral component of the diet. A growing preference for butter in higher-income countries has been attributed in part to

changing perceptions of the health implications of consuming dairy fat. Despite strong price movements in the past year, global demand for butter is expected to grow at nearly 2.2% per year. This growth will be supported by high and expanding consumption in India.

GDP growth rate in India is forecasted of over 8% on average for the period 2018-2027. This is key to reduce poverty and increase farmers' livelihood. The macro-economic of the OECD *Outlook* suggest strong growth in per capita GDP in India (6.3% p.a.) and China (5.9% p.a.). In India, where income growth is stronger, dietary preferences translate rising incomes into an increased per capita demand for dairy as preferred animal protein, rather than meat.

Sustainable farming is key to improving the Economic Status of Dairy Farmers

The improvement of the economic status of the Indian dairy sector passes by managing farmers improvement first. Dairy farmers need to be aware of current consumer demands: safety, quality, trustable and nutritious products, 'healthiness', taste, affordability, high animal welfare standards, UHT Milk, A2 Milk, Organic, naturalness, low environmental footprint, etc. Commitment of farmers to best farming practices is key to achieve safety and nutrition, standards, and sustainability. The IDF can help dairy farmers to improve by providing



science and best practices on all these four areas.

The dairy sector is part of a sustainable food system. Higher yield growth per milking cow may be achieved. Significant improvements in technical efficiency could be achieved through the introduction and adoption of simple changes in husbandry and the way stock is managed. Water is an essential component in any diet and especially critical for a lactating cow, which has additional losses in milk that need to be met. Increased use of low-cost, high-quality grass and forage as a substitute for high-priced concentrated feeds and poonac should improve the profitability of dairying. In many areas, smallholder dairy farmers do not have adequate land to grow grass or do not have secure access or rights to use existing grasslands. A way to reach this goal is through feed and feeding management. Imbalanced feeding leads to excess feeding of some nutrients whilst others remain deficient. It reduces milk production and cost per kg of milk and it affects animal health, fertility and productivity. It is necessary to augment and secure feed resources through short- and long-term planning where possible locally available feeds should be used. Since many smallholder farmers do not have the necessary skills and knowledge to prepare balanced rations, this can be achieved through providing ration balancing advisory services direct to the farmer through village based trained local resource persons.

It is also essential that milk producers feed their animals the nutrients in amounts that match the physiological needs and objective of keeping the animal. When possible the use of precision feeding techniques to match animal requirements with dietary nutrient supply should be used. Dairy farmers can also increase feed efficiency by optimizing the energy and protein content in feed. The National Dairy Development Board (NDDB) of India has developed user-friendly computer software for advising milk producers on their doorstep to balance the ration of their lactating animals with the available feed resources and area-specific mineral mixtures.

Reducing the prevalence of diseases and parasites as healthier animals are more productive. Improper approaches for animal disease control, a lack of a clear strategy for control of diseases, (such as foot-and-mouth disease), and inadequate attention paid to disease prevention and bio-security aspects are major issues in animal health management.

Improving the genetic potential of animals through

planned cross-breeding or selection within breeds and achieving this genetic potential through proper nutrition can really improve productivity and sustainability. Easing stock availability through improved breeding is a slow process. If there is no substantial investment in commercial medium- and large-scale dairy farming in the short term, there will be a serious shortage of quality dairy stock. A way to achieve this is by strengthening artificial insemination delivery and breed-improvement programmes.

Sustainable and productive dairy encompasses low environmental footprint. Thus, keeping greenhouse gas emissions low is another priority and the global dairy sector has made great strides. A recent study of FAO & GDP has shown that there has been a reduction on emission intensity of 11 per cent between 2005 and 2015: the largest gains have been reported in low- and middle-income countries with traditionally low productivity. All of this happened when the dairy production rose by 30%, demonstrating how the dairy sector is already part of the solution to limit climate change.

In order to continue being sustainable and not increment global warming, adequate manure management is key. Composting produces lower GHG emissions as well as increasing soil quality and carbon retention. Besides, manure in biogas systems can be applied.

The IDF ensures the best scientific expertise to support a sustainable dairy sector

The IDF publishes numerous animal health guides and reports, which provide best practices for the global dairy sector. Among those we could highlight the joint FAO/IDF guide to good dairy farming practice (2011), the Guide to Prudent use of Antimicrobial Agents in Dairy Production (2013) and the Guidance on Antimicrobial Resistance from the Dairy Sector (2017). Moreover, IDF produces scientific support aiming to help dairy farming practices.

IDF contributes to international standardization, by collaborating with the OIE on the terrestrial animal health code and ISO, on the recently published technical specification on animal welfare management. The OIE animal welfare standards have an important role in international trade because they are the only global, science-based standards agreed by the trading nations of the world.

As mentioned, the global dairy community is fully

aware of the potential impact of climate change on the environment and on dairy animals and is committed to reducing emissions and other impacts. Therefore, IDF has produced guidance documents to help the dairy sector to substantially reduce its environmental impacts. On Carbon, the IDF methodology aligns carbon footprint calculations for the dairy sector. IDF recommends a practical yet scientific approach that can also be inserted into developed methodologies. This document is the most up-to-date scientifically and aligned with developments in other standards. Opportunities to reduce carbon emission target (1) Animal productivity improvements, (2) Increasing storage of carbon in soil organic matter and (3) Making use of by-products or waste in the circular bio-economy. Improving water efficiency and reutilisation is vital to life and to farming. To help improve the water footprint of the dairy sector and contribute to environmental sustainability, IDF has produced a guidance document to perform water footprint assessments, identify hotspots of water use and establish progress indicators. Dairy can help conserve biodiversity, which is intrinsically linked with food security. The IDF has produced a guidance document to help the dairy sector understand how it impacts local ecological landscapes and identify ways to stay within the local ecological limits while providing benefits to the local environment.

The global dairy sector is working collaboratively to reduce environmental impacts. IDF represents the sector through leadership and active participation in relevant multi-stakeholder partnerships and action networks. IDF participates on the Livestock Environmental Assessment and the Performance (LEAP) Partnership coordinated by FAO. Through the Global Agenda for Sustainable Livestock, the dairy industry partners with other stakeholders work together towards the sustainable development of the livestock sector. IDF is a founding member of the Dairy Sustainability Framework, which provides guidance to dairy stakeholders on sustainable farming practices.

The IDF also works on socioeconomic sustainability and produces yearly a complete and comprehensive report, the “World Dairy Situation Report” and other reports on Marketing Trends.

The IDF facilitates global dairy trade through standards that are produced and published together

with the International Organization for Standardization

Milk and dairy products provide essential nutrients and are an important source of dietary energy, high-quality protein and fats. IDF promotes the role of dairy in health and sustainable diets by (1) producing scientific reports and fact sheets, by (2) engaging the international organizations, such as WHO or the Codex Alimentarius. IDF recently hosted a scientific seminar to discuss the role of dairy in sustainable diets.

IDF also provides platforms for the global dairy sector to network and learn from each other such as the Dairy Farmers’ Round table. An IDF member country hosts every year the International Dairy Federation World Dairy Summit. Next 2022, in India, IDF will host a Dairy Farmers’ Round table to provide dairy farmers with an opportunity to meet for informal discussions on key global farmer issues.

Demand for milk is expected to increase significantly over the next decades, so the dairy sector has a bright future. IDF will be on the frontline in supporting sustainable production of milk and dairy products.

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