



# Coping strategies of dairy cooperatives and loss and waste reduction during the COVID-19 pandemic: the case of India and Japan

## INTRODUCTION

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Unlike any other crisis, the COVID-19 pandemic significantly impacted food value chains at all levels (production, processing, logistics and even consumer behaviour to name a few). The impacts vary across countries and are constantly changing with the spread of the pandemic as governments, stakeholders and other actors in value chains adopt and implement a broad spectrum of measures to manage the spread of the virus and mitigate its impacts on food insecurity and poverty. The present brief reviews secondary information pertinent to the impacts of COVID-19 on dairy producing/processing cooperatives, and their coping strategies, with a view to developing policy recommendations that focus on food loss and waste reduction. Toward that end, this brief reviews the issues in the context of two countries with large and small dairy cooperatives, namely India<sup>1</sup> and Japan<sup>2</sup>. It makes use of secondary information structured in a manner to highlight the impacts of the pandemic and the measures adopted by cooperatives to mitigate its impacts at different levels of the value chain and reduce loss and waste. In view of the importance of the interventions of governments across the entire value chain, the policy brief provides an overview.

## GOVERNMENT: SPECIFIC POLICIES TOWARDS THE DAIRY SECTOR DURING COVID-19

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### Common policies

- **CLOSURE OF PUBLIC ESTABLISHMENTS.** In India as well as in Japan, schools, restaurants, hotels and stores, other than those selling daily essentials, closed down owing to government regulations or requests. In both countries, one of the first policies implemented by the governments was the closure of schools.
- **SUBSIDIES.** Both countries subsidized milk prices paid to producers. While subsidies applied in Japan were adopted at the national level, subsidies were only adopted in one state in India.

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<sup>1</sup> India is the largest producer of milk in the world (<https://indiadairy.com/>). It is estimated that approximately 80 million rural households are engaged in the dairy sector, most are small, marginal or landless farmers (USDA and GAIN, 2020). It is estimated that cooperatives and the private sector procure approximately 20 percent of the milk produced in the country; that 34 percent is sold in the unorganized market and producers directly consume about 46 percent (Care Ratings, 2017). As regards processed products, according to USDA and GAIN (2020), cooperatives in India own around 47 percent of the installed milk processing capacity. The largest cooperatives – recognized by their trademark products are AMUL, Mother Dairy, Milma, Aavin and Nandini.

<sup>2</sup> In Japan, there are around 15 million dairy farms. Most dairy farmers participate in agricultural cooperatives. The Government designated ten agricultural cooperatives to strengthen their bargaining power, reduce shipping costs and reduce the risk of demand fluctuation. The Government also provides subsidies to farmers through these cooperatives. Dairy cooperatives collect fresh milk from small cooperatives and sell it to dairy processors. Dairy cooperatives account for more than 95 percent of the market share of fresh milk in Japan.

## Different policies

- **LOCKDOWN MEASURES.** While the Government of India issued a compulsory lockdown to restrict mobility, the Japanese authorities did not. In fact, the Government of Japan issued a state of emergency that included few regulations, but did not include mobility restrictions.
- **FINANCIAL SUPPORT AND WORKING CAPITAL.** The Government of Japan initiated the provision of financial support to the dairy sector prior to the onset of the pandemic in the country, and the declaration of the state of emergency. The Government of Japan, for instance, provided subsidies that covered part of the price difference between milk targeted for direct consumption against that used for processing.<sup>3</sup> Indeed, in Japan, the price of milk targeted for processing is, in general, lower than that used for direct consumption. During the emergency period, this support grew because of the increased production of skim milk powder (SMP).<sup>4</sup> Thanks to this financial support, cooperatives were able to decide on the end use of their milk, thereby contributing to the reduction of food loss and waste.
- Additionally, in order to reduce the stock of SMP, which significantly increased as a result of the decline in the demand for milk for direct consumption, the Government of Japan provided another temporary<sup>5</sup> subsidy to manufacturers of SMP that supply the feed sector, in view of the significant price difference between SMP produced for feedstuff and SMP produced for food. By covering this price difference, manufacturers sustained reduced losses when selling SMP for use as feedstuff. Japanese dairy farmers and a broad spectrum of primary producers, benefitted from the financial support provided by the government, wherein farmers were able to borrow at a zero percent interest rate and those, whose income had fallen by more than 50 percent, received a lump sum from the government.
- In India, further to the occurrence of disruptions within the dairy value chain, the federal and a few state governments intervened by ensuring low-cost working capital was available for producer-owned institutions to convert milk into SMP and milk fat. Moreover, a few state governments engaged in the direct procurement of milk surpluses for conversion – into butter powder, for example – and directly distributed these products to the market or to vulnerable people.
- **ESSENTIAL VALUE CHAINS.** In India, the government quickly classified milk as an essential food, which helped organized producers at every level of the value chain (procurement, processing and distribution of milk). Notwithstanding, government authorities proactively approached larger players in the sector to solicit permission to operate during the lockdown, small dairy players appeared to have struggled with the paperwork required to reopen their businesses. Nonetheless, the Indian federal government requested that regional governments consider including veterinary services on the list of essential services in all states. Furthermore, other associated value chains such as feed mills and packaging suppliers suffered because they were unable to operate as essential value chains. In Japan, conversely, these issues did not arise as there was no lockdown.
- **FOOD WASTE.** In Japan, the federal government collected information and facilitated donation from food industries to food banks; in India, one state worked directly with dairy processors and distributed milk for a couple of weeks at no cost to people residing in slums.
- **OTHER.** Interestingly, in India, some cooperatives donated money to public funds created by the Government to address COVID-19 related issues.

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<sup>3</sup> In Japan, the price difference between milk for direct-consumption and processed milk is not linked to quality issues. Rather, it is the result of the level of competition in both markets, as the value-added dairy market is highly prone to low-price competition from processed dairy imports.

<sup>4</sup> This support was announced on 2 March 2020. Then, on 7 March, the Japanese Government requested the closure of schools – which are a major market for direct-consumption milk – and three days later, on March 10 – additional support was officially announced for the dairy industry.

<sup>5</sup> Part of this subsidy was stopped when schools were re-opened.

## PRODUCTION AND PROCESSING

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### Similar impacts and common reactions

- **MILK CONTROL.** Management of milk production, and consequently milk losses, proved difficult, as farmers were unable to halt their milking operations, as this would result in illness and death of the cattle. This linked with other factors,<sup>6</sup> was one of the main reasons farmers discarded (wasted) milk.
- According to the Indian Dairy Association, the apex body of the dairy industry, cooperatives responded well to the crisis. In general, the dairy industry witnessed a significant increase in dairy-processed products, namely skimmed milk and SMP (e.g. estimates show that production doubled for both products in just six weeks).
- **PRODUCTS.** In India and Japan, although quantities of milk targeted for direct consumption decreased, processed dairy products – including butter, cheese and SMP – increased because they are easier to store over extensive periods. It is, however, important to point out that the capacity to produce and store these products in both countries was limited and was almost fully reached during the peak of the crisis.
- **WORKING CONDITIONS.** Cooperatives in both countries adapted their processes to respect physical distancing rules and to mitigate the risk of spreading the disease. Measures taken by the cooperatives included the provision of sanitizers and masks to employees, awareness-raising of employees, for example using billboards at collection centres, and the rationalization of staff to carry forward daily operations.<sup>7</sup> However, even with these precautionary measures, dairy employees were still vulnerable to the risk of infection in their personal lives.
- The dairy industry in both countries developed safety guidelines to prevent the spread of COVID-19. For instance, in India, one cooperative association shared essential advisory materials with its members. In Japan, the Livestock Industry Organization released guidelines for workers in the industry.
- **MILK WASTE REDUCTION.** In both countries several producers engaged in the direct distribution of milk at no cost to hospitals, welfare institutions and their own employees to reduce milk waste.

### Different impacts and different reactions

- **ANIMAL FEED.** In India, the procurement of cattle feed is difficult and prices have shot up.<sup>8</sup> Consequently, farmers feed their livestock sparingly in an effort to overcome the challenge of reduced feed availability. This also provides farmers the opportunity to reduce milk production.
- **MILK ADULTERATION.** Prior to the COVID-19 pandemic, the adulteration of milk in India was already a significant problem. This practice showed an increasing trend during the pandemic, particularly for intermediaries and small off-takers who suffered financial distress linked to reduced milk prices.<sup>9</sup>
- **PROCESSING.** In India, whenever possible, processors and individuals engage in the processing of unsold milk into processed products such as butter. Nevertheless, the lack of working capital precludes their ability to purchase surplus milk and convert it to milk powder or white butter.

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<sup>6</sup> Other important factors that complicate how producers control milk production are the difficulty of storing milk for long periods as well as the relative low cost of milk compared to the high cost of delivery.

<sup>7</sup> The research did not find evidence of cooperatives laying off employees.

<sup>8</sup> According to a media report, India has a 23.4 percent shortage in dry fodder availability, 11.24 percent in green fodder, and 28.9 percent in concentrates (<https://yourstory.com/2020/05/bengaluru-hydrogreens-agritech-startup-farmers-fodder>).

<sup>9</sup> While, in some cases, adulteration – e.g. mixing with water – decreased the quality of the milk, in other cases adulteration – e.g. mixing with urea – increased the harmfulness of the product.

Furthermore, the working capital of many cooperatives has been strained as the turnover of milk for direct consumption is higher than that of processed milk.

- **NEW PRODUCTS AND MARKETS.** In India, cooperatives launched a number of new milk-based products to boost immunity<sup>10</sup> in an effort to diversify their market opportunities. Larger cooperatives launched products such as butter cookies and bread.
- **LACK OF OFF-TAKERS INCREASED MILK WASTE.** Unlike Japan, in India, farmers from different states – at the beginning of, and during the lockdown – were seen dumping milk, into canals and on roads, due to the lack of off-takers.
- **AVAILABILITY OF LABOUR.** In both countries, the impact of a shortage of workers was minimal. In India, smallholders manage much of the dairy industry, while in Japan, a majority of foreign workers – who comprise a minority – were able to extend the terms of their stay and continue working during the crisis. In India, a few cooperatives provided additional payments to transporters, distributors, dealers, loaders and factory workers to compensate workers for the risks incurred.
- Overall, in Japan, apart from the increase in processed products, there were few impacts at both the production and processing levels of the value chain.

## LOGISTICS

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### Similar impacts and common reactions

- **DELIVERY CHANNELS.** Cooperatives in both countries explored new delivery channels such as e-commerce platforms and promoted the use of digital payment models. In India, for instance, online sales of the largest cooperative in the country more than doubled during the lockdown.

### Different impacts and different reactions

- **MOBILITY.** Since both countries adopted different measures for mobility, the impact of logistics in both countries was – with a few exceptions – completely different.
- **DISTRIBUTION AND IMPACTS OF COOPERATIVE SIZE.** Throughout the lockdown, milk supply to consumers across India was largely unaffected, unlike for fruits and vegetables that suffered from recurrent price volatility. This stability mainly resulted from the highly efficient supply chain systems developed by the large organized dairy cooperatives. These large cooperatives did not face any major logistical issues. However, in specific cases, even organized players faced distribution issues. In Punjab, notwithstanding the federal and regional permission to move within the state, the sourcing and sale of milk was temporarily obstructed. This, according to a local newspaper, resulted in a shortfall of up to 70 percent of milk in some districts and an overall loss of 800 thousand litres of milk per day.
- Only about one-quarter of India's milk production is, however, handled by large organized players. For farmers disconnected from established networks, the lockdown has led to a sudden surplus of unsold milk and significant losses. This was the case for pastoral communities (about 35 million, according to Sarker for Reuters, 2020) whose livelihoods were significantly impacted as they are facing difficulties in grazing their livestock across districts and states because of mobility restrictions.

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<sup>10</sup> Some of the ingredients in these immune system enhancing products are a powder supplement made from colostrum and pure turmeric mixed with milk.

- In Japan, since the government did not implement additional logistical regulations, the impact on dairy logistics was minimal.
- **DELIVERY CHANNELS.** Cooperatives in India explored alternative delivery channels such as home delivery using mobile carts and vans. Transport between states and the use of trains to transport milk significantly increased during this period. All of these measures helped to stabilize milk sales and facilitated delivery of supplies.

## MARKETS (OFF-TAKERS AND END CONSUMERS)

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### Similar impacts and common reactions

- **SALES.** In India, while large cooperatives suffered a temporary loss of sales resulting from the closure of hotels, restaurants and cafeterias (a market that comprises around 25 percent of all sales for the industry and around 8 to 10 percent for one large cooperative), small producers suffered losses from fewer sales to off-takers, such as intermediaries. Several, from a few organized dairies, stopped visiting farmers, confectioners and teashops. Moreover, households switched from consumption of fresh milk to that of packaged milk. Small and non-cooperative smallholders, accordingly – and to some extent – increased their sales to cooperatives (e.g. it is estimated that most cooperatives procured 8 to 10 percent more milk during the period March to May 2020). Sales of value-added products such as cream, cheese and ice cream plunged because of reduced working hours at retail outlets and closure of hotels and restaurants. Sales of ice cream were, for example, estimated to be down by almost 50 percent.
- In Japan, direct consumption of milk decreased because schools, hotels and restaurants closed. To cope with this reduction, cooperatives increased their sales of milk for processing. For instance, during March 2020, sales of milk for direct consumption from the largest fresh milk producer cooperative fell by 12 percent; sales of cream decreased by 5 percent. However, for products with a comparably longer shelf-life, such as cheese and SMP, sales increased by 7 and 15 percent, respectively.
- **COMMUNICATION CAMPAIGNS.** In both Asian countries, cooperatives increased their commercial public campaigns, particularly targeting households that significantly increased consumption of dairy and related products. In India, for example, one large cooperative acknowledging the change in consumer consumption patterns increased its marketing budget targeting households. While in Japan, cooperatives together with the government and other institutions linked to the dairy industry, publicly promoted an increase in household milk consumption by introducing recipes incorporating the use of significant quantities of milk. Thanks to these actions, in Japan, household milk consumption increased by nearly 20 percent from the end of April to the beginning of June, which significantly helped the industry avoid milk losses and waste. Following, the Government of Japan increasingly promoted the consumption of SMP-based products – such as yogurt and ice cream – over direct-consumption milk, in an effort to reduce the large stocks of SMP.

### Different impacts and different reactions

- **SALES.** The closure of schools in Japan was a major driver of decreased direct-milk consumption as nearly 10 percent of all direct-milk consumption is included in school lunches. Since July 2020, the supply and demand of milk for direct consumption stabilized for two reasons: First, the supply showed a decreasing trend as a result of the high summer temperatures and secondly, demand increased with the resumption of school activities (summer holidays were shortened).

- Moreover, in Japan, vast quantities of milk, butter and cream are used as souvenirs for local tourists,<sup>11</sup> which significantly impacted sales.
- In India, the overall impact of school closure was significantly lower as milk was provided to schools by a few states and non-governmental organizations.
- In order to increase their sales, a few Indian cooperatives set up temporary kiosks to sell their products.
- **OFF-TAKER PRICES.** Overall, in India, the procurement price for milk plunged. According to different farmers, prices ranged from 40 to 80 percent for cooperatives and 70 percent for intermediaries. It would, however, appear that distance to markets was an important factor as farmers living close to urban areas were, in some cases, able to obtain better prices.
- **RETAIL PRICES.** The decrease in procurement prices in India caused some distress among farmers as they argued that retail prices remained stable. It would, therefore, appear that during the first weeks of the lockdown, the retail price of fresh milk remained stable, while the retail price of packaged milk increased by 15 percent. As of August 2020, prices of other products such as SMP declined by 40 percent, most likely due to the high stock of this product.
- In Japan, both off-takers and retail prices remained stable during the state of emergency as milk quantities did not show any significant fluctuation during the crisis. It would appear that cooperatives were able to adequately manage and allocate milk for direct consumption and processing.
- **PROFITS.** Interestingly, in India, large players in the dairy sector, including cooperatives, appear to have benefited from the crisis as some private dairy companies doubled their share prices and others increased their overall sales by more than 10 percent.
- **COMMUNICATIONS CAMPAIGNS.** Indian cooperatives increased their public campaigns to assure customers of the continuity of supply and hygiene of products all along the supply chain – even recommending that consumers wash the milk plastic pouches with hot water.<sup>12</sup>

## POLICY CONCLUSIONS

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- **GENERAL.** Coordination among ministries and across federal and government institutions is key to ensuring the adequate functioning of the dairy value chain. The inclusion of veterinary services as an essential service and adequate access to working capital are two important policy issues that require coordination between different government institutions to assure milk supplies.
- **MULTIPLE INTERVENTIONS.** Targeted public interventions in the value chain may significantly impact the entire value chain. Therefore, in order to maximize their efficacy, the application of multiple interventions by public authorities is necessary to achieving the desired outcomes. In both countries, for instance, early public interventions targeting processing milk to increase shelf-life had to be followed up with complementary interventions, such as supporting milk distribution channels or with financial support to facilitate processing operations to increase storability.
- **LOGISTICS.** The rapid reaction of governments – both at the federal as well as at the local level – in identifying essential services helped organized value chains ensure an adequate supply of milk during lockdowns. However, it is important to point out that unorganized players – which in some countries can be thousands or even millions – still face significant problems ensuring the adequate

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<sup>11</sup> In Japan, gift giving is a common part of Japanese culture. In fact, Japanese tourists tend to buy many souvenirs – such as regional dairy specialties – for their friends, relatives and coworkers.

<sup>12</sup> The suggestion was made at the beginning of the crisis, when it was speculated that COVID-19 could be spread through food.

functioning of their supply chains, despite their operation in essential value chains. For instance, in India, pastoral communities and intermediaries were severely impacted by mobility restrictions. They were unable to adequately feed their livestock or sell milk, and primary producers and off-takers suffered serious financial and food losses. Public policies should, therefore, address the needs of unorganized players, such as small players in the value chain, who are generally extremely vulnerable.

- **FOOD LOSSES.** Specific public interventions to reduce food losses such as the provision of affordable working capital loans and financial subsidies to both producers and processors clearly helped reduce food losses.
- **FOOD WASTE.** Interventions pertinent to milk waste in both countries appear to have been ad hoc. Consequently, significant room exists for improving public policies that govern the reduction of food waste, particularly when food insecurity is an issue. For example, the facilitation of food donation from food industries to food banks.
- **FINANCIAL SUPPORT.** Public authorities can provide financial support in different ways (lump sum grants to producers, price subsidies for producers and processors, subsidies to working capital loans and even direct purchase of products). In this regard, it is recommended that financial interventions be tailored to the specific needs of each actor in the value chain, as some instruments may not be suitable for some actors. In fact, some actors in the value chain may need more than one type of financial support scheme and others such as small producers or pastoral communities could face difficulties accessing formal financial mechanisms. Furthermore, although operationally it is easier to provide financial support to cooperatives, federations and companies, the benefits may not always trickle down to primary producers. Consequently, governments – as in Japan – should also aim to provide direct financial support to primary producers.
- **TAXES.** COVID-19 has significantly increased or reduced the demand for specific dairy products. In this regard, even a temporary lower tax regime for processed products could provide an incentive to dairy producers in this sector while also reducing food losses.
- **PUBLIC COMMUNICATIONS.** Public communications are important during a pandemic as they serve to reassure customers that markets are going to be well provisioned and to dispel unfounded rumours about food safety that could severely impact producers. Moreover, in the case of Japan, as exemplified by the promotion of innovative recipes that increased the use of milk, collaboration between public and private partners helped reduce food losses and waste.
- Concerning good safety practices in the value chain, increased dissemination of information across the entire value chain can contribute significantly to promote good practices.
- **PRICES.** While monitoring and control of prices along the value chain may be a difficult task for public authorities, this is an important issue as the significant price fluctuations seen in India appeared to mainly impact small producers leading them to not only suffer financial losses but also resulted in increased food loss and waste, through for instance, the adulteration and dumping of milk. Towards that end, multi-stakeholder platforms among large dairy players, smallholders and public authorities could provide a pertinent mechanism to coordinate actions and avoid unnecessary price fluctuations along the value chain.
- **PUBLIC WET MARKETS.** Although no published evidence could be found on public markets becoming virus hotspots, the extension of opening hours could reduce large crowds at peak hours and also reduce food waste by allowing producers to increase their sales of perishable foods such as milk. Moreover, the modernization and adoption of good hygienic practices in public wet markets could help reduce food waste by ensuring that customers feel protected, so they continue to purchase food.

- **ASSOCIATED VALUE CHAINS.** The dairy value chain in some countries – as in India – is closely connected to other value chains such as the feed mill industry. Specific public policies on dairy, or its associated value chains, should also consider the impact on associated value chains as many dairy farmers could be affected by disruptions – such as difficulty in selling unproductive cattle – or face problems procuring animal feed.

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Read more FAO guidelines on COVID-19 [here](#) and about food loss and waste [here](#).

