

Therapeutic Milk: Market and Supply Update

UNICEF Supply Division

June 2020

Therapeutic Milk Market and Supply Update June 2020

This update provides information on therapeutic milk supply for the period 2020-2021. It highlights the successful transition to the new product packaging in metal canisters allowing for a longer shelf life once opened, preparation in smaller quantities, less waste, reduced contamination risks, and alignment with Codex Alimentarius standards for hygienic practices for powdered infant formula.

1. Summary

- Therapeutic milk formula F-75 and F-100 are strategic products used by UNICEF and partners in nutritional feeding programmes aimed at decreasing under-five child mortality from severe acute malnutrition (SAM). UNICEF procures F-75 and F-100 for the inpatient treatment of children with complicated SAM primarily in emergencies. Health workers use F-75 and F-100 for inpatient care to stabilize a patient's nutritional deterioration, and to ensure their transition to community-based management of acute malnutrition (CMAM) and return to normal diet.
- Over the last few years, nutrition programmes have been using less F-75 and F-100 in favour of ready-to-use therapeutic food (RUTF), as it does not require mixing with water, and it enables home treatment through CMAM. However, UNICEF retains F-75 and F-100 as strategic products that are essential for the inpatient treatment of SAM with complications.
- UNICEF, in collaboration with the World Health Organization (WHO) and partners, have improved the standards and quality of service delivery for children with SAM by driving improvements in processing and packaging F-75 and F-100. F-75 and F-100 are packed in canisters with measuring scoops instead of in sachets and are manufactured in dedicated infant formula-standard production facilities. Canisters reduce the risk of contamination during production and allow health workers to use the product for a longer period after opening. The scoops make measuring during reconstitution more accurate and result in less wastage. In addition, manufacturers replaced the product's main dairy ingredient of whey powder with milk powder to provide a milkier texture with less separation when added to water.
- UNICEF procures an estimated 80 per cent share of the therapeutic milk global market. Despite the decline in procurement in favour of RUTF, UNICEF anticipates the demand for therapeutic milk to stabilize as a result of the continued scale-up and expansion of integrated CMAM, balanced by efficiencies gained from the new packaging format, and better supply chain management. However, forecast accuracy remains a challenge given the emergency nature of the programmes using these products and their dependence on donor funding.
- In 2017, UNICEF awarded long-term arrangements (LTAs) to two suppliers through 2018 and 2019. One LTA was extended until early 2021, while the second LTA was interrupted between September 2019 and April 2020. UNICEF will launch a new tender in the second half of 2020 aiming to expand its supplier base.
- Since the start of the COVID-19 outbreak, UNICEF has been undertaking a continuous assessment of its developments and the impact the crisis is having on acute food insecurity, global manufacturer production capacities, and supply chains globally, as well as it is affecting UNICEF's ability to source and secure all essential and strategic supplies, including specialised nutrition products. To mitigate any risks, UNICEF is working with its therapeutic milk suppliers to pre-position therapeutic milk in regional locations in East and southern Africa as well as to expand its supplier base.

2. Background

In 2018, the total number of deaths in children under-five worldwide reached 5.3 million. It represents a decrease of 59 per cent since 1990.¹ However, WHO estimates that approximately 45 per cent of all under-five deaths are related to aspects of malnutrition and its various forms.² This represents the loss of approximately 2.4 million children a year, mostly from low- and middle-income countries (LICs and MICs) across Africa and Asia.³ Malnourished children, particularly those suffering from SAM, have a higher risk of mortality from common childhood diseases such as diarrhoea, malaria, and pneumonia. The

¹ World Health Organization, [Children: Reducing Mortality](#), WHO, September 2019.

² World Health Organization, [Malnutrition](#), WHO, Geneva, February 2018.

³ UNICEF, World Health Organization, World Bank, [Joint Child Malnutrition Estimates: Levels and Trends](#), UNICEF, New York, March 2020.

interaction between malnutrition and infection can also create potentially lethal cycles of deteriorating illness and nutritional status.

In 2019, UNICEF, WHO, and the World Bank estimated that there were approximately 47 million children under-five suffering from wasting, the most severe form of malnutrition. It represents approximately seven per cent of all under five children globally, of which 14.3 million suffered from its severe form, SAM.⁴ Many children suffer from more than one form of malnutrition. They can suffer from stunting as well as being overweight or from stunting and wasting. Poor nutrition during a child's first one thousand days of life can also lead to stunting, which is irreversible, affecting their cognitive ability, reducing school and work performance.⁵

In 2015, world leaders at the United Nations (UN) Sustainable Development Summit adopted the Sustainable Development Goals (SDGs), which included targets that tackle malnutrition. Targets 2.1. and 2.2. seek to ensure access to safe, nutritious, and sufficient food all year round, and to end all forms of malnutrition respectively. Target 3.2. seeks to end all preventable deaths of children under-five by 2030.⁶ These targets pre-existed the SDGs and were already established by the World Health Assembly in 2012, seeking to reduce the proportion of children suffering from wasting to less than five per cent by 2025 and less than three per cent by 2030. The UN incorporated these targets into the SDGs.⁷ However, since these targets were adopted, the proportion of children suffering from wasting has largely remained unchanged, at 7 per cent. Wasting has only marginally reduced from an estimated 7.3 in 2018 to 6.9 per cent in 2019,^{8,9}. Seventy per cent of all under five children suffering from wasting live in Asia, and a quarter of them in Africa.¹⁰ The Global Action Plan (GAP) framework highlights priority actions on the prevention and treatment of child wasting.¹¹ It focuses on improving maternal nutrition; access to primary health care, water, sanitation, and hygiene services; improving breast feeding and children's diets; as well as to strengthen health systems, integrating treatment into routine primary health services.

3. Therapeutic Milk Products

UNICEF procures therapeutic milk as strategic, standard products (Table 1). F-75 and F-100 are powdered milk diet products with added vegetable fats, carbohydrates, and fortified with 13 vitamins and 10 minerals. They provide the special dietary requirements for young children and infants above six months of age with SAM. F-75 and F-100 refers to their respective energy density characteristics of 75kcal / 100ml and 100-110kcal / 100ml, respectively.

Table 1 Therapeutic Milk Products Available through UNICEF

Material Number	Product	Packaging
S0000236	F-75	F-75 Therapeutic milk CAN 400g/CAR-24
S0000237	F-100	F-100 Therapeutic milk CAN 400g/CAR-24

Source: UNICEF Supply Division

As these products are essential relief items required for UNICEF emergency response, UNICEF includes them in its Emergency Supply List (ESL).¹² These products have a limited shelf life, and so they are not stocked at UNICEF's warehouse in Copenhagen, but rather produced on order and shipped directly from suppliers that enter into supply agreements with UNICEF. In order to meet UNICEF's emergency response times, UNICEF expects manufacturers with LTAs to hold buffer stocks based on the forecast requirements provided by UNICEF in advance of receiving any orders. To ensure manufacturers comply and adhere to the safety, quality,¹³ and technical standards,¹⁴ UNICEF's Quality Assurance Centre tests and approves finished products.

⁴ Ibid., p. 2.

⁵ UNICEF, [Malnutrition, Current Status and Progress](#), UNICEF, Geneva, March 2020.

⁶ United Nations, [Sustainable Development Goal 3. Ensure Healthy Lives and Promote Well-being for All at All Ages](#), UN, New York, 2015.

⁷ World Health Organization, [Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition](#), WHO, Geneva, 2014.

⁸ UNICEF, World Health Organization, World Bank, [Levels and Trends in Child Malnutrition: Joint Child Malnutrition Estimates](#), WHO, Geneva. 2019.

⁹ UNICEF, WHO, WB, [Joint Child Malnutrition Estimates: Levels and Trends](#).

¹⁰ Ibid., p. 3.

¹¹ World Health Organization, [Global Action Plan on Child Wasting](#), WHO, March 2020, p. 4.

¹² UNICEF, [Emergency Supplies](#), UNICEF, Copenhagen, November, 2019.

¹³ UNICEF, [Quality Assurance for Medicines and Nutrition Products](#), UNICEF, Copenhagen, April 2020.

¹⁴ UNICEF, [Technical Requirements for Non-pharmaceutical Nutritional Products](#), UNICEF, Copenhagen, May 2017.

Trained health workers use F-75 and F-100 for inpatient care to treat children with SAM who have medical complications, which can include severe oedema, poor appetite, or one or more integrated management of childhood illness (IMCI) danger signs. WHO's treatment protocol recommends health workers use F-75 during the first phase of inpatient stabilization and F-100 during the second phase of nutritional recovery and rehabilitation, until interventions stabilize a patient's nutritional deterioration (Table 2).¹⁵

Table 2 WHO SAM Treatment Phases and Duration

Phase	Stabilization - Phase 1	Rehabilitation - Phase 2
Approximate phase duration	Days 1-7	Weeks 2-6
Required therapeutic milk formula	F-75	F-100

Source: WHO

As patients start to regain sufficient appetite, they transition to CMAM and RUTF. Following the introduction of CMAM programmes, scale up, and use of RUTF in countries, the use of F-100 has been reduced to about 4 days from 2-6 weeks. UNICEF provides a detailed market update highlighting [RUTF market outlook and supply availability](#).¹⁶

4. Product Composition and Packaging

UNICEF's previous product specifications requested manufacturers to produce therapeutic milk in sachets to allow health workers to reconstitute the entire contents at one time in 500ml of water to make approximately 600ml of therapeutic milk. However, observers noted that end-users were often inconsistent in following the label's instructions in preparing therapeutic milk. For example, health workers used scoops or spoons not developed or designed for use with therapeutic milk, making it difficult to ensure a correct dosing. In addition, once opened, health workers left the remaining milk powder open and exposed to the risks of contamination, as they could not effectively reseal the sachets. Sachets also have a higher risk of microbial contamination during production compared to canisters. Industry sources confirmed that canisters are the powdered infant formula (PIF) industry's standard packaging. Over the last 10 years, industry standards and best practices in both the production of specialized milks, and the instructions given for inpatient setting preparations, have adapted to better address the risks of food safety.

As such, in collaboration with WHO and partners, UNICEF sought to improve the standards and quality of service delivery for children with SAM with improvements to F-75 and F-100 processing and packaging. UNICEF now only supplies F-75 and F-100 in 400g metal canisters with a plastic lid and scoop.¹⁷ They were specifically developed to allow the preparation of smaller amounts of therapeutic milk (as little as 28ml), should only a small number of patients need treatment (Table 3).¹⁸ The new resealable packaging allows therapeutic milk once opened to have a longer shelf life, increasing it from 24 hours to four weeks, compared to sachets, resulting in less wastage. Canisters also reduce the risk of contamination during production, storage, and usage. The change to industry-standard 400g tins with scoops has generally been well accepted by users. The new packaging option has now completely replaced sachets, which were removed from UNICEF's supply catalogue in 2018.

Table 3 Packaging and Pack Size

Material Nb.	Short description	Carton Gross Weight / Volume	Image
S0000236	<ul style="list-style-type: none"> Canister contains 400g of F-75 therapeutic milk powder and scoop. Each carton contains 24 canisters. 	<ul style="list-style-type: none"> 13.7-14.0 kg 0.035-0.046 m³ 	
S0000237	<ul style="list-style-type: none"> Canister contains 400g of F-100 therapeutic milk powder and a scoop. Each carton contains 24 canisters. 	<ul style="list-style-type: none"> 13.7-14.0 kg 0.035-0.046 m³ 	

Source: UNICEF Supply Division

Manufacturers also improved products by replacing whey powder as the main dairy ingredient with milk powder, to provide a milkier texture with less separation once health workers mix it with water. Even though all product nutrient levels remain

¹⁵ World Health Organization, [Updates on the Management of Severe Acute Malnutrition in Infants and Children](#), WHO, Geneva, 2013.

¹⁶ UNICEF, [Ready-to-Use Therapeutic Food Market Outlook](#), UNICEF, Copenhagen, February 2019.

¹⁷ F-75 comes with a white branded scoop; and F-100 comes with a blue branded scoop.

¹⁸ UNICEF, [Product Update for Therapeutic Milk F-75 and F-100, Technical Bulletin, No.23](#), UNICEF, Copenhagen, August 2017.

unchanged, the improvements to therapeutic milk products procured through UNICEF represent greater alignment with the Food and Agriculture Organization's (FAO) Code of Hygienic Practice for Powdered Formulae for Infants and Young Children ([CAC/RCP 66 2008](#)).¹⁹

5. Product Use

WHO recommends health workers prepare therapeutic milk with boiled, safe drinking water that has been left to cool for a minimum 3-5 minutes (so that the water temperature is no cooler than 70°C).²⁰ Health workers should leave the prepared therapeutic milk to cool to feeding temperature before giving it to patients, in accordance with FAO and WHO's [Safe Preparation, Storage, and Handling of Powdered Infant Formula Guidelines](#).²¹ UNICEF prepared a [demonstration video](#) in various languages on safe preparation of F-75 and F-100.²²

In emergency and relief situations, WHO recommends babies to be breastfed if possible. Artificial feeding beyond curative therapeutic care in an emergency to address SAM is difficult, hazardous, and can lead to increased infant mortality. UNICEF and WHO are concerned about the promotion and marketing of breast milk substitutes, as artificial feeding can undermine the importance of breastfeeding, which is *the ideal* for optimal infant and young child health, growth, and development. UNICEF and WHO recommend that infants are breastfed exclusively for the first six months of life, followed by the introduction of nutritionally-adequate and safe complementary (solid) foods at six months of age together with continued breastfeeding for up to two years of age or beyond,²³ including in emergencies.²⁴ The World Health Assembly's [International Code of Marketing of Breast Milk Substitutes](#), adopted in 1981, regulates the inappropriate sale and promotion of infant foods used to replace breast milk. Implementation and monitoring of the Code is the responsibility of the members states of the WHO. UNICEF and WHO support and enforce the code through their respective established policies. The [International Baby Food Action Network \(IBFAN\)](#) also monitors code implementation and violation. UNICEF reviews the IBFAN reports to ensure that contracted suppliers comply with the code.

6. Current Market Situation COVID-19

Therapeutic milk is manufactured in dedicated powdered infant formula (PIF) production facilities, which also produce regular infant formula. Although UNICEF is the biggest buyer of therapeutic milk, this volume is negligible when compared to the market for PIF. The global baby infant formula market size was valued at USD 24 billion in 2018, and was projected to reach USD 45 billion by 2025, growing at a compound aggregate growth rate of 9.5 per cent from 2018 to 2025.²⁵ However, the current COVID-19 outbreak is globally applying pressure on manufacturer production capacities and global supply chains, and is impacting market assessments and forecasts. Since the start of the outbreak, UNICEF has been undertaking a continuous assessment of developments and the impact this crisis is having on being able to source essential and strategic supplies, as well as shipping freight, and logistics.

The UN recently reported that around 135 million people across 55 countries are experiencing acute food insecurity requiring urgent food, nutrition, and livelihoods assistance for survival. Of those countries, 47, an additional 183 million people were found to be living in so-called "stressed conditions", or on the verge of slipping into acute hunger if hit by the COVID-19 pandemic.²⁶

Even though the manufacturers of many specialized nutrition products are geographically well spread across the globe. UNICEF's supplier base for therapeutic milk is constrained with only one LTA holder located in France. UNICEF had a second LTA with a supplier in South Africa, which was interrupted between September 2019 through to April 2020, and has recently been resumed. To mitigate any supply risk, UNICEF is working with its suppliers to pre-position therapeutic milk at supplier's

¹⁹ Food and Agriculture Organization, [Code of Hygienic Practice for Powdered Formulae for Infants and Young Children CAC/RCP 66 2008](#), FAO, Rome, 2015.

²⁰ Ibid., p. 9.

²¹ Food and Agriculture Organization, World Health Organization, [Safe Preparation, Storage, and Handling of Powdered Infant Formula Guidelines](#), WHO, Geneva, 2007.

²² UNICEF, [Safe Preparation of Therapeutic Milk F75 and F100](#), UNICEF, 2020.

²³ World Health Organization, [Infant and Young Child Feeding](#), WHO, Geneva, February 2018.

²⁴ World Health Organization, [Q&A: Malnutrition and Emergencies](#), WHO, Geneva, January 2020.

²⁵ Allied Market Research, [Baby Infant Formula Market Overview](#), Allied Market Research, Portland, November 2018.

²⁶ UN News, [Keep Critical Food Supply Chains Operating to Save Lives During COVID-19, Urges New UN-backed Report](#), UN News, New York, April 2020.

responsibility in East and southern Africa and to increase production. UNICEF is closely monitoring how the COVID-19 outbreak may impact the supply of therapeutic milk as well as its other specialised nutrition products.

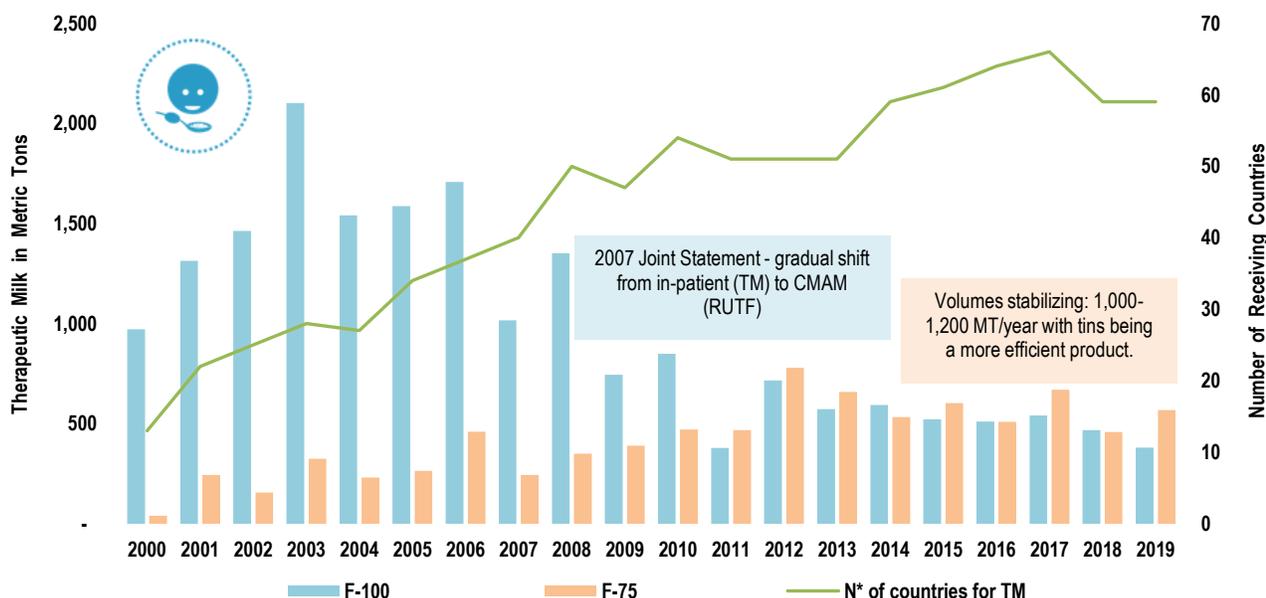
As UNICEF primarily procures therapeutic milk products for use in emergencies, they are vulnerable to disruptions to global airfreight as well as any logistics bottlenecks created by border closures, export bans, and reductions to sea, air, and road transport, which can also have an impact on the production of finished products if manufacturers rely on the importation of raw materials and packaging. The cancellation of major passenger airline and the grounding of planes due to the restrictions on passenger movements has dramatically reduced the freight carrying capacity of these airlines, creating a shortfall of approximately 70-90 per cent of global capacity, although some airlines have started to use their passenger flights as charter planes to carry freight. A substantial portion of UNICEF’s critical supplies are shipped via airfreight using the cargo carrying capacity of passenger flights. Passenger flight cancellations constrain UNICEF’s access to freight capacity, which has also resulted in increased rates with some airlines that have cancelled contract rates and have resorted to ad hoc rates on demand.

6.1 Changes in Demand and Forecast

The demand for therapeutic milk through UNICEF is difficult to accurately forecast as funding unpredictability affects country forecast accuracy. As it is an emergency product, actual demand depends on emergency programming, schedules, and donor funding.

UNICEF procurement of F-75 and F-100 reached 2,400 MT in 2003, and gradually declined to level off at around 1,000-1,200 MT annually as a result of the successful introduction of RUTF, and the implementation of CMAM programmes after 2007 (Figure 1).²⁷

Figure 1 UNICEF Therapeutic Milk Procurement in MT and Number of Receiving Countries 2000-2019



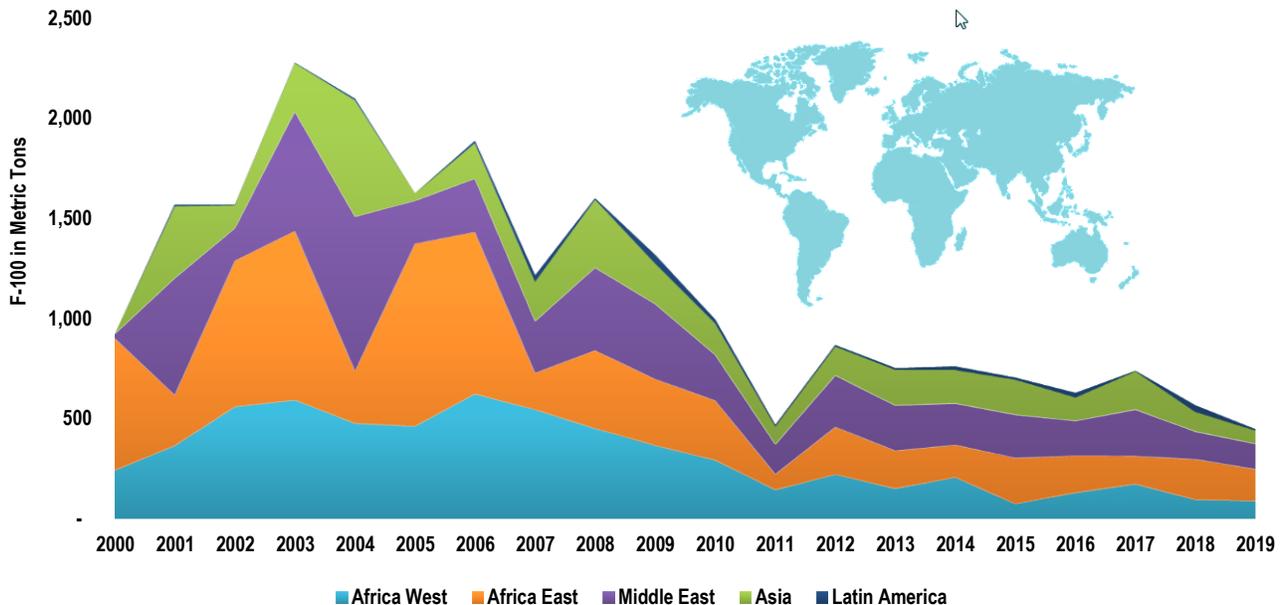
Source: UNICEF Supply Division

Consequently, the relative share of F-75 and F-100 procurement volumes also changed over time. While F-100 originally represented over 80-90 per cent of total therapeutic milk demand, its share gradually reduced to below 50 per cent in 2011. Even children suffering from SAM with complications, requiring treatment with F-100, now stay for shorter periods of time as inpatients, as caregivers manage the final stages of recovery with RUTF in inpatient departments and at home. On the other hand, the concurrent increase in F-75 demand reflects integrated SAM management programmes and geographical expansion, as country programmes include more inpatient facilities.

²⁷ UNICEF, the UN Standing Committee on Nutrition, World Health Organization, World Food Programme, [Joint Statement on Community-Based Management of Severe Acute Malnutrition](#), UNICEF, Geneva, May 2007.

UNICEF anticipates therapeutic milk demand will stabilize, unless there is additional funding and investment by governments. Ongoing integrated CMAM scale-up and expansion within available funding is increasing the beneficiary numbers in several countries, but this does not necessarily result in increased total procurement volumes because of the efficiencies gained with the introduction of canisters and better supply chain management. Africa accounted for most of UNICEF's F-100 demand in 2019 (55 per cent), followed by the Middle East (28 per cent), and Asia (15 per cent) (Figure 20), even though 70 per cent of all under five children suffering from wasting live in Asia, with only 25 per cent being in Africa.

Figure 2 UNICEF F-100 Therapeutic Milk Procurement per Region 2000-2019



Source: UNICEF Supply Division

6.2 Supply

The market for therapeutic milk accounts for approximately USD 6-8 million annually and is modest when compared to the global market for PIF, valued at USD 24 billion in 2018.²⁸ However, within the therapeutic milk market, UNICEF's procurement is estimated to constitute an 80 per cent market share. Some governments, WHO, the International Committee of the Red Cross (ICRC), Médecins Sans Frontières (MSF), Save the Children, and other non-governmental organizations (NGOs) procure the remainder.

Ideally, therapeutic milk production should occur in facilities with dedicated PIF production. In the past, not all UNICEF therapeutic milk suppliers had dedicated production facilities, which increased the risk of microbiological contamination, including from *Cronobacter sakazakii* and *Salmonella*. In response to several incidents of PIF contamination, FAO published a Code of Hygienic Practices for Powdered Formula for Infants and Young Children ([CAC/RCP 66-2008](#)).²⁹ To establish stricter therapeutic milk production control, UNICEF applied the Codex Alimentarius' standard for PIF to F-75 and F-100 product specifications, sampling plan, and release criteria as of 2013.

In 2017, UNICEF concluded its therapeutic milk tender targeting suppliers with dedicated PIF-standard manufacturing capacity. UNICEF awarded LTAs to two suppliers that meet the Codex' standards for hygienic production of infant milk formulas (Table 4). Knowing that therapeutic milk is a high-risk product considering the vulnerable nature of the beneficiaries requiring it, UNICEF planned to award a third manufacturer an LTA to ensure continuous supply availability and mitigate any risks that could disrupt therapeutic milk supply, but this will not be likely during the current tender period as the supplier is not ready.

²⁸ Allied Market Research, [Baby Infant Formula Market Overview](#).

²⁹ FAO, [Code of Hygienic Practice for Powdered Formulae for Infants and Young Children CAC/RCP 66 2008](#).

Table 4 UNICEF Supplier Long-Term Arrangement

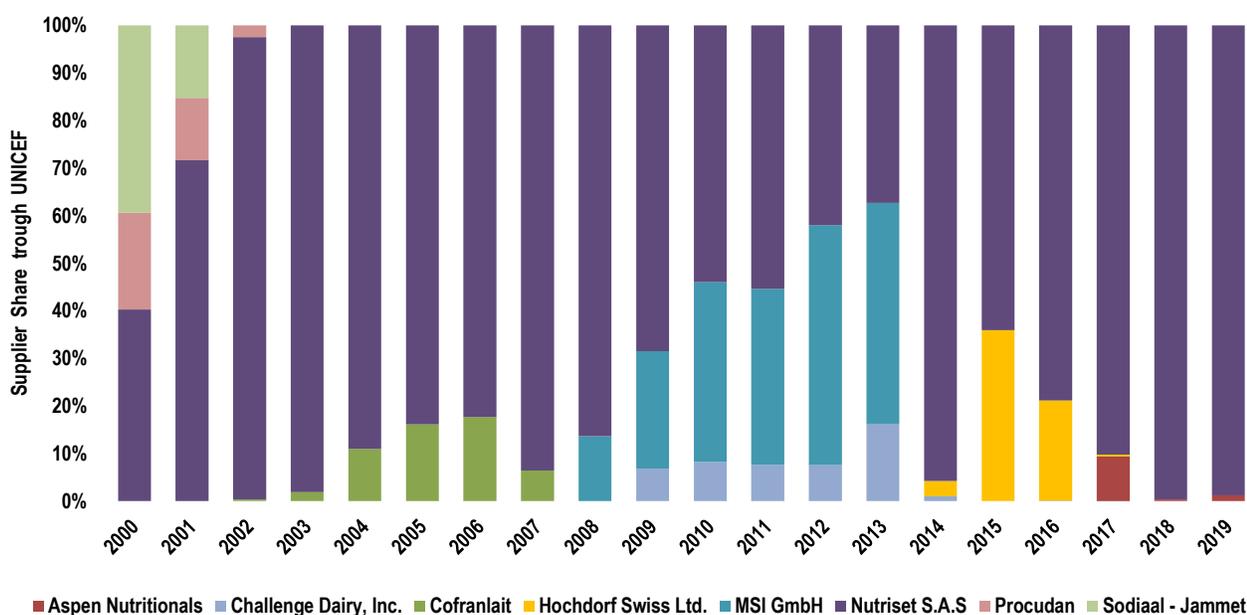
Supplier	Product	LTA start date	LTA end date	Comment
Nutrisset, France	F-75 Therapeutic milk, CAN, 400g/CAR-24	04/07/17	03/01/21	
	F-100 Therapeutic milk, CAN, 400g/CAR-24	04/07/17	03/01/21	
Aspen Pharmacare, South Africa	F-75 Therapeutic milk, CAN, 400g/CAR-24	08/09/17	03/01/21	LTA interrupted between Sep19 and Apr20
	F-100 Therapeutic milk, CAN, 400g/CAR-24	08/09/17	03/01/21	LTA interrupted between Sep19 and Apr20

Source: UNICEF Supply Division.

UNICEF does not stock therapeutic milk at its warehouse in Copenhagen due to its limited shelf life. Rather, manufacturers deliver directly to consignees. The minimum order is for one carton containing 24 canisters. Purchase orders can take 30 to 90 days to deliver on account of processing, production, sampling/testing, and shipment.

Supplier interest in manufacturing therapeutic milk continues to evolve over time. It is a relatively small and highly specialized market, requiring regular investment in product development and upgrades to production processes to comply with FAO's Codex Alimentarius standards, which poses a challenge to many potential suppliers. Compliance with the World Health Assembly's International Code of Marketing of Breast Milk Substitutes adopted in 1981 equally presents challenges to manufacturers with their own brands. Figure 3 provides an overview of the different therapeutic milk suppliers through UNICEF from 2000 through 2019.

Figure 3 Therapeutic Milk Procurement Share in Volume through UNICEF 2010-2019



Source- UNICEF Supply Division

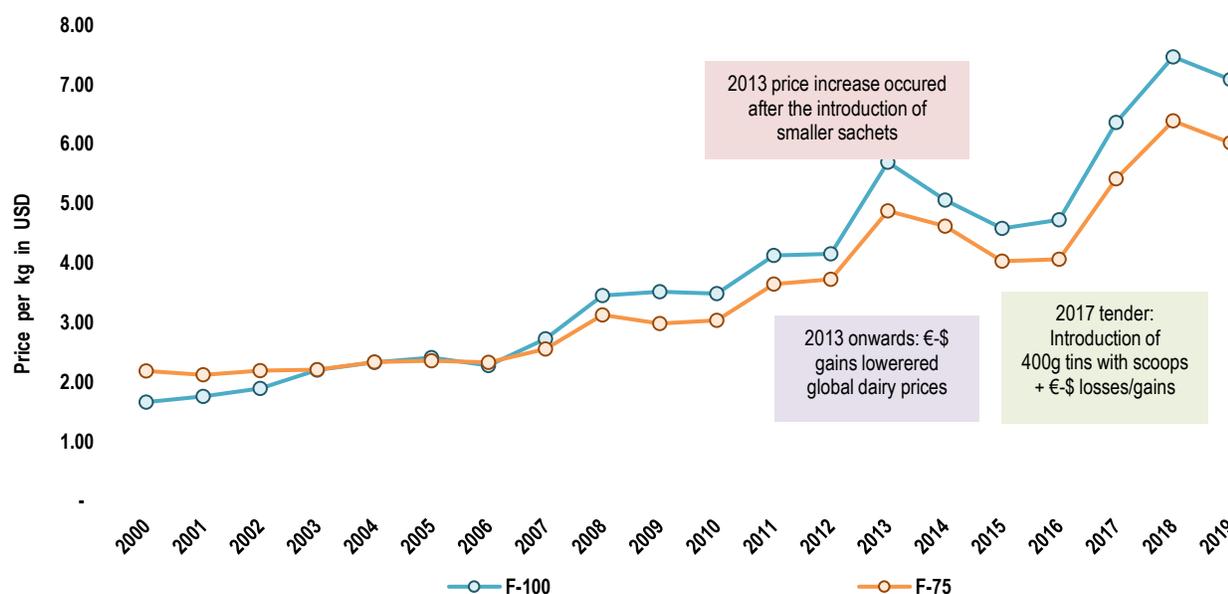
6.3 Pricing

Figure 4 (next page) describes the weighted average price (WAP) trend for therapeutic milk since 2000. The price of therapeutic milk is heavily dependent on several factors, including the price of milk powder, which fluctuates significantly according to shifts in global supply and demand; as well as packaging materials; USD-EUR foreign exchange rate fluctuations; and the relative profit margins for infant formula, which uses the same manufacturing capacity as therapeutic milk.

The reduction in size of therapeutic milk sachets, introduced in 2011, increased the finished product's pricing by about 30 per cent. The replacement in the last tender of sachets by metal canisters with scoops, combined with improved quality requirements, significantly increased prices further in 2017 by 30-40 per cent (Figure 4, previous page). The price increase reflects mostly the higher quality production requirements as well as the use of higher quality production systems. The systems are different from those used to produce sachets in previous tenders. They are the industry standard and their use for

therapeutic milk is in competition with producing higher value infant formula products. For current indicative prices please consult [UNICEF's Supply Catalogue](#).^{30, 31}

Figure 4 Therapeutic Milk Weighted Average Price 2000-2019



Source: UNICEF Supply Division

7. Issues and Challenges

The market for therapeutic milk faces several key issues and challenges (Table 5), for which UNICEF identifies a number of possible actions to address them.

Table 5 Major Therapeutic Milk Market and Supply Chain Challenges - Continued overleaf

Issues / Challenges	Actions / Considerations
<ul style="list-style-type: none"> Occurrence of microbial contamination and other quality issues result in product unavailability or recalls. 	<ul style="list-style-type: none"> UNICEF only procures from manufacturers that have dedicated PIF production facilities and continues to aim for a supplier base of two and possibly three suppliers to mitigate any disruption to supply availability. UNICEF will ensure early detection through supplier- and UNICEF-initiated sampling and testing protocols. The replacement of sachets with canisters has already reduced the risk of contamination and is aligning with PIF industry standard packaging.
<ul style="list-style-type: none"> Some suppliers do not have dedicated therapeutic milk production facilities, which can increase the risk of microbiological contamination. 	<ul style="list-style-type: none"> UNICEF requires manufacturers producing therapeutic milk to comply with Codex standards CAC/RCP 66 - 2008. UNICEF is expanding its supplier base with sufficient manufacturers having their own purpose-built PIF production facilities to ensure demand can be met.
<ul style="list-style-type: none"> Price per kg of therapeutic milk has increased over time. 	<ul style="list-style-type: none"> UNICEF does not want to compromise product quality. The new packaging format allows for a better shelf life after opening and for more accurate measuring for smaller doses, resulting in less waste or reconstituted milk that needs to be discarded.
<ul style="list-style-type: none"> Products are sensitive to storage conditions and require dry conditions maintained below 25°C. Products stored inappropriately gradually turn yellow/brown from white. 	<ul style="list-style-type: none"> UNICEF recommends country offices to implement optimal storage instructions as specified in UNICEF's Supply Manual, and support partners to assure warehouses and health facilities have proper storage conditions.

³⁰ UNICEF, [Supplies and Logistics](#), UNICEF, Copenhagen, 2017.

³¹ UNICEF's Supply Catalogue contains specifications and indicative pricing for over 2,000 products that respond to the needs of children and their families. It is designed to assist UNICEF supply staff to identify the most appropriate supplies for country programmes, and assist country offices with their supply planning, delivery, and monitoring.

Issues / Challenges	Actions / Considerations
	<ul style="list-style-type: none"> UNICEF projects will set and apply the required standards and specifications for temperature-controlled transport. UNICEF developed and disseminated a guidance document for in-country nutrition product transport and storage, taking into account applicable regulations and best practices.
<ul style="list-style-type: none"> Unable to respond timely to emergency requests due to suppliers not having minimum stock levels held at their premises. 	<ul style="list-style-type: none"> UNICEF will include in tender documents and LTAs the requirement for suppliers to hold a minimum buffer stock level ready for dispatch within 48 hours of a procurement order. The size of buffer stock will be based on UNICEF's analysis of emergency requests.

Source: UNICEF Supply Division

8. Next Steps

- UNICEF will continuously and closely monitor the evolution of the COVID-19 outbreak and the impact it is having on the supply of specialized nutrition products, including therapeutic milk, as well as on logistic and supply chains.
- To ensure that UNICEF can meet any demand, and alternative product sources are available to mitigate any risk to supply availability, UNICEF will continue to expand its supplier base with sufficient manufacturers that have dedicated purpose-built PIF production facilities.
- UNICEF will ensure that awarded manufacturers adhere to strict manufacturing and product quality and specification requirements.
- UNICEF will ensure a timely response to emergency requests through availability of minimum quantities of quality-approved therapeutic milk produced and held at supplier premises.
- UNICEF will explore the possibility to procure F-75 and F-100 in liquid form, for countries challenged in being able to ensure the product's safe reconstitution. These products could offer a solution in situations where resources are limited (e.g. during hospital night shifts, and in emergencies), where access to inpatient care is constrained or where safe water is not easily or readily available.
- UNICEF, and partners, will continue to invest in communication and training programmes for end-users in the field in how to prepare therapeutic milk appropriately. UNICEF and partners, produced video guidance for the safe preparation of F-75 and F-100 in Arabic, English, and French, accessible [here](#).³²
- UNICEF plans to launch a new tender during the second half of 2020.

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Other UNICEF information notes can be found at: <https://www.unicef.org/supply/market-notes-and-updates>

³² UNICEF, [Safe Preparation of Therapeutic Milks F-75 and F-100](#), UNICEF, Copenhagen, January 2018.