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FOREWORD

by **Aisha Bashir**,
Founder, Câ

Some of my fondest memories from childhood are centred around the summers I spent with my grandmother in Maiduguri, Northeastern Nigeria.

I looked forward to waiting at my grandmother's gate in the mornings for the pastoralist women who stopped by every day to sell their delicious and nutritious homemade kindirmu (yoghurt) and nono (fermented milk). Although they worked hard, many of these women struggled to sustain their families on their incomes. They had little education and few chances to transform their livelihoods for the better. Forces beyond their control, including the socio-economic landscape and limited economic opportunities for rural women, left many of them locked in a cycle of poverty and often condemned their children to the same outcomes. Encountering this as a child, and later understanding the situation more clearly through my education and own life experiences, drew me towards a career focused on transforming the lives of the rural poor, especially women in Nigeria. This has remained my primary motivation ever since.

When I started my career 15 years ago, I had the privilege of working in different industries, from multinational corporations to management consulting to co-founding a mobile payment startup. Each professional opportunity brought many important lessons and skills. Despite these exciting experiences, something remained missing – I was still searching for an entry point to solving what I considered to be some of the most fundamental problems of Nigerian society, including poverty and women's poor socio-economic outcomes. A tour of farms and food processing facilities across several Nigerian states during a sabbatical in 2014 helped me refine my understanding of the barriers to food security in Nigeria. A visit to a dairy farm in Kwara State was a lightbulb moment and propelled me on this journey with Câ. I connected my childhood encounters with pastoralist women to the significant challenges facing Nigeria's dairy industry (and, to a large extent, smallholder agriculture), and founded Câ to realise my vision of fulfilling the true potential of this significant sector of Nigeria's economy.

Founding Câ is the beginning of a long-term ambition to create economic opportunities for the modern smallholder farmer, particularly women, and to use Câ's model as a blueprint to scale smallholder-driven supply chains across other



areas of food and agriculture in Africa. Although it has felt like a rollercoaster ride so far (there's never a dull or easy day at Câ), this experience has brought incredible opportunities for learning and meaningful impact, for which I am grateful. Each time I have a conversation with a Câ pastoralist or Ranger, I get invigorated and more optimistic about the future because of the impact I see and the potential for us to scale our solution to reach more people. It feels incredible to see the impact we've made in just a few years. The dairy industry is a powerful vehicle for tackling rural poverty, gender inequality and malnutrition. I believe we have the opportunity to form a strong manufacturing base upon which the Nigerian agri-food sector can be modernised, creating viable and more prosperous jobs for millions of young Nigerians and ensuring food security for current and future populations.

I am deeply excited to share with you the first of many reports from Câ. It tells our story to the world, demonstrates the lessons, highlights the results from our innovative model, and inspires others who share our dream of a prosperous future for Nigeria and its food producers. We have published this report to show the world how our model works and how it can transform the Nigerian dairy value chain, relying on the incredible entrepreneurial spirit and energy of young Africans. I hope you enjoy this report and will share it widely.

A Kanuri proverb that resounds with me is: "Little by little, a bird builds its nest." Câ's early success is evidence that sustained innovation, resilience and a commitment to transformative outcomes can deliver change in Nigeria. At Câ, we look forward to building this strong and powerful nest, little by little, and we look forward to sharing this journey with you.

"Câ's work is an exciting example of how the passion and innovation of young Nigerians can deliver the future we seek. The potential of Nigeria's dairy and agri-food industries to deliver new jobs, enable higher incomes and drive economic growth is evident in the exciting results Câ has been able to demonstrate. With the increased global economic focus on job creation and sustainable economic models, companies like Câ and the results they deliver will become increasingly important to charting the economic future of Nigeria and Africa. I invite investors, policymakers and other key actors to work with the Câ team to deliver on the potential of a Nigerian economy transformed by agricultural growth, development and resilience."

ABUBAKAR SULEIMAN
CHIEF EXECUTIVE OFFICER, STERLING BANK

5 BIG

Câm began working with settled Nigerian pastoralists in 2018 and we launched our pilot in 2020. Within the last three years, our model has been put to the test with numerous challenges, including launching our pilot in a global pandemic, the decline of the Nigerian economy and subsequent cash crisis, the national elections and the fuel subsidy removal. Despite challenging market conditions, we’ve made five significant achievements on our road towards transforming Nigeria’s dairy industry and the lives of millions of people who depend on it.

ACHIEVEMENTS FROM CÂM’S IMPACT ON 500 PASTORALIST FAMILIES

1 170% increase in pastoralist income

We’ve seen a 1.7x increase in the average income of participating pastoralists. Of participating households, 96% achieved higher incomes since working with Câm, and the highest-performing pastoralists earned up to ₦15,900 per day in additional income. Results show that earnings increase the longer pastoralists work with Câm. In rural Northern Nigeria, the average daily income is US\$1.40/₦1,351. Our model has the potential to create agricultural jobs in these regions and transform the socio-economic outcomes of hard-to-reach families currently living in poverty.

2 60% increase in milk prices

Câm’s model guarantees a minimum price per litre, providing pastoralists with a more consistent income and a competitive price for milk that passes hygiene tests and minimum volume requirements. Engaged pastoralists have experienced an average price increase of 60% for their milk, reflecting the true value of their products and improving their quality of life. Through fair pricing and consistent collection,

Câm is building relationships and actively engaging with a growing number of milk producers.

3 69 days saved annually for rural women

Our data shows that pastoralist women who supply Câm with milk save up to 69 days annually. Of the rural women who work with Câm, 90% reported improved quality of life, and almost half use the time savings to pursue other income-generating activities – a surprising achievement in one of the most time-poor and resource-poor regions in the world. This is in large part due to Câm’s infrastructure (including strategic rural milk collection routes and aggregation centres), which leads to more efficient methods and technologies for collecting milk from pastoralist women and saves them time-consuming trips to sell their milk at local markets.

4 88% increase in farm productivity

Many farmers working with Câm have experienced higher yields from the same number of cows. By providing pastoralists with market access and a comprehensive package (including hands-on

training, access to high-quality and affordable health solutions, and strengthening on-farm hygiene practices), our model has almost doubled the average productivity of participating farmers. We believe this is only the first step in unlocking greater productivity gains among Nigeria’s dairy farmers, who have some of the lowest yields in the world.

5 56% increase in resilience and recovery

Pastoralist communities face a range of shocks and stresses, including climate risks and adverse weather events, which severely affect the stability of their livelihoods. Three in ten pastoralists who work with Câm have experienced a climate shock or stress within the past year, and more than half of those affected have attributed their faster recovery and increased resilience to their engagement with Câm. Through Câm’s comprehensive training and use of technology, pastoralists have increased knowledge and capacity to respond to shocks and stresses, therefore building household and community resilience.

The currency exchange rate between the United States Dollar and the Nigerian Naira has been calculated at US\$1 = ₦965 at the time of publication.

“Câm has provided our community with a source of livelihood. They buy milk at a very good price. The women in our community don’t hawk milk anymore and can instead spend more time at home taking care of the children. Câm gives us storage containers that keep our milk fresh and they don’t delay our payment after they buy the milk. They are very nice to us and we appreciate them.”

MUSA AUDU
MALE PASTORALIST, 39

“I don’t hawk milk anymore. I now have time to make money from my sewing business. I am healthier because hawking takes a lot of my strength, so I now have time to rest. I use the money I make from selling milk to Câm to buy soup ingredients. I don’t have to wait for my husband to provide me with money anymore.”

FATIMA SULE
FEMALE PASTORALIST, 40



Image:
Cows grazing in a valley in Mambilla Plateau, Taraba State, Nigeria

ABOUT CÂM

HOW WE FOUND OURSELVES AT THE FOREFRONT OF NIGERIA'S DAIRY INDUSTRY

Câm is a pastoralist-driven dairy company based in Abuja. We're building a new economy that's centred around real dairy – one that reintroduces fresh milk to Nigerian households, nourishes our growing population and eradicates poverty for our pastoralist suppliers.



"Wait, how do you say it?"

Câm is pronounced "cham", as in "champion". That's why we call ourselves the Câmions of real dairy!

CHAMPION

Our name comes from the Kanuri word for milk (câm). We chose it because Câm's founder, Aisha Bashir, is of Kanuri heritage. Aisha holds fond memories of her childhood summers in Maiduguri, Nigeria, visiting her grandmother and trying many delicious and nutritious dairy products made by pastoralist women.

2018

Putting our vision into action

We founded Câm with the vision to bring real milk back to Nigeria – giving people an affordable, more nutritious, and fresh alternative to imports or milk powder. Most dairy processing facilities in Nigeria aren't designed to support a local milk supply chain and process raw milk, so we built a new model from scratch. We designed our model based on the local milk production industry, which is driven by pastoralist communities who own 90% of Nigeria's cows. Many of these once-nomadic pastoralists have now formed permanent settlements across Nigeria's northern and central regions.

2019

Building our supply chain

After a year of research and planning, we signed our first supply agreements with pastoralists in the Paikon Koré grazing reserve in Gwagwalada, Abuja. We delivered comprehensive training programmes and empowered pastoralists to form cooperatives to formalise their milk production businesses, building on their existing local networks. We also began a recruitment campaign that created new jobs for Nigerian youth, including first-time formal employment for rural women.

2020–21

Launching our pilot

In collaboration with Mastercard Foundation, Mulago Foundation and our early investors, we launched a pilot in July 2020 with 111 pastoralists in the Paikon Koré grazing reserve. During the subsequent 14-month period, Câm set up milk supply routes and sourced over 87,000 litres of milk from participating pastoralists, 67% of whom were women. By paying a stable price for raw milk and buying daily, we doubled the average income of many participating households. Our pilot taught us many lessons about what it takes to work successfully with the millions of pastoralists who produce fresh milk in Nigeria.

2022

Opening Câm's factory

We opened one of the first factories in Nigeria dedicated to processing real dairy, initially processing fresh pasteurised milk and Greek-style yoghurt. Located in Abuja, our 9,500-square-foot facility is an environmentally friendly building equipped with state-of-the-art milk processing equipment, with the capacity to process up to 8,000 litres of milk daily. Dairy is delivered to the factory daily from hundreds of pastoralists enrolled in our programme, with the daily collection and delivery of milk managed by our Rangers and our Field Team.

OUR AMBITION IN NUMBERS

10%



Our ambition is to secure 10% of the total addressable market (total retail value of Nigerian dairy) within 10 years, currently valued at US\$3.6 billion.

600K



We plan to achieve this by working with more than 600,000 pastoralists and 8,500 youth across 10 Nigerian states.

+2M



Our goal is to deliver high-quality, affordable and highly nutritious dairy-based products to over 2 million Nigerian consumers.

2023 & BEYOND

Launching vaccination services

Câm launched a vaccination campaign to test viable models for scaling cost-effective and much-needed animal health services to our pastoralist suppliers. We vaccinated almost 1,000 cows in three days, helping to eliminate significant animal health risks. Aside from the immediate health benefits to the cows and their milk production, Câm's campaign helped to strengthen trust with our pastoralist partners, increasing our shared purpose around the health of their livestock.

Looking to the future

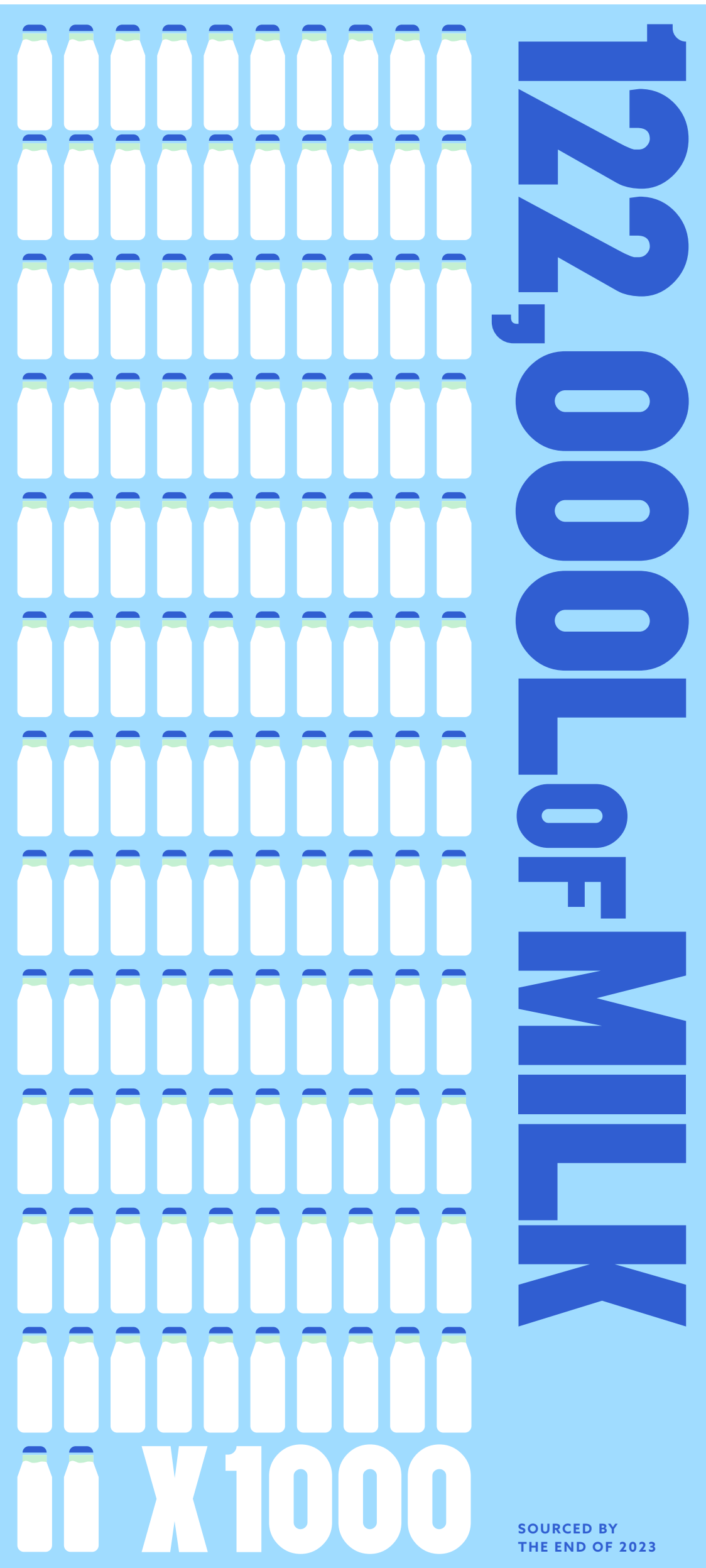
Alongside selling fresh milk and delicious yoghurt to customers and select retailers across Nigeria, we're also busy whipping up delicious new flavours and dairy products using nutritious local fruits and ingredients. Part of our campaign to introduce Nigerians to real dairy includes opening concept stores in Lagos and Abuja to teach people where milk comes from, its nutritional benefits and what it tastes like. We're also working towards identifying packaging solutions that will enable us to make our products more affordable for more Nigerians.

In 2023, Câm processed 122,000 litres of milk. Production is set to significantly increase in 2024 as we raise awareness through advertising and marketing campaigns.

Collaborating with policymakers

Aisha Bashir, Câm's founder, was selected to join President Bola Ahmed Tinubu's Policy Advisory Council's Committee on Agriculture and Water Resources, delivering policy recommendations for the agriculture and water resources sectors. We're continuing to strengthen relationships with policymakers to demonstrate the crucial role of the dairy industry in addressing critical national challenges of malnutrition, youth unemployment and rural poverty.

Câm is currently working on a campaign to put fresh milk into meals within Nigeria's school feeding programmes, to reduce the irreversible developmental problems caused by poor childhood nutrition.



GENETICS
NUTRITION
HEALTH
MILKING
ACCESS

OUR THEORY OF CHANGE
FIVE STEPS TO ACHIEVE
MAXIMUM IMPACT ON THE
LIVES OF PASTORALISTS

At Câm, our theory of change is that pastoralist incomes will increase due to improved productivity only through the following sequence of five steps: 1) market **access**, 2) 2x a day **milking**, 3) animal **health**, 4) **nutrition** and 5) **genetics**.

We believe that if significant investments are made in the Nigerian dairy value chain and these five steps are taken in sequence, then major improvements will be made in productivity for pastoralist dairy farmers.

In turn, this will create income opportunities for rural youth, pastoralists and other critical-value chain actors who will earn higher incomes that will move them out of poverty for good, which will improve access to, and the affordability of, high-quality dairy products, and lead to better socio-economic outcomes and expanded economic opportunities.

Many livestock interventions in Nigeria focus on step five, genetics, which often results in unsuccessful outcomes. Without market access, introducing higher-yielding crossbreeds leads to increased milk loss and waste. These exotic breeds

are also more complicated to look after. Without good nutrition and animal health, these breeds can suffer and die prematurely. Therefore, to increase long-term livestock productivity, we need to target improvements in market access, husbandry, animal health, nutrition and genetics (in that order).

Proof that it can be done
The Rockefeller Foundation predicts a staggering 577% increase in domestic demand for milk in Nigeria by 2050.

Other developing countries like Kenya and India have successfully developed thriving dairy industries and significantly increased their population's milk consumption.

Nigeria has a population of 222 million and consumes only 2 litres of dairy per capita per year compared to Kenya (81 litres) and India (106 litres).

THE CHALLENGE COMPLEX ISSUES KEEPING PASTORALISTS IN A CYCLE OF POVERTY

Despite Nigeria's 15 million pastoralists, there are a number of complex challenges that have prevented a more profitable dairy industry. These challenges have kept Nigerian pastoralists in a cycle of poverty, even though there are high levels of profitability among many comparable dairy-producing communities in developing countries.

Pastoralists make up 7% of Nigeria's population and own 90% of the livestock (an estimated 21 million cows, of which 12% are dairy-producing). However, due to high levels of milk imports, only 40% of dairy consumed in Nigeria is produced locally, with the majority of this coming from pastoralist communities.

The dairy and livestock industries go far beyond their function in food production, playing a significant role in poverty reduction, improved nutritional outcomes, and increased job creation and economic development. Therefore, the underdevelopment of Nigeria's dairy industry has implications not just for the millions of pastoralists who depend on dairy for their livelihoods, but for the Nigerian population faced with malnutrition and unemployment crises.

There are three main categories of challenges that are shaping the Nigerian dairy industry and the lives of Nigerian pastoralists.

01

SOCIO-ECONOMICS

Pastoralists survive on US\$1.40/₦1,351 per day

Most pastoralists live in Northern Nigeria, a region shaped by high levels of poverty, malnutrition, illiteracy, unemployment and poor socio-economic outcomes. The average pastoralist household lives on less than US\$1.40/₦1,351 per day. Northern Nigeria also has the lowest levels of education and the highest levels of poverty in the country, with disproportionate effects on young people and women. People living in Northern Nigeria are four times more likely to have no education compared to those living in the South, and 7 out of 10 Nigerians living in rural areas are poor, compared to 4 out of 10 in urban areas. This gap is further increased as only 16% of Cam pastoralists have received formal education from attending school. Persistent poverty and poor educational outcomes make it impossible for many pastoralists to progress beyond subsistence living and transform their livestock assets into profitable businesses.

30% of children under five are stunted in growth Nigeria has the most stunted children in Africa. More than one million children under five die annually, with more than a third of these deaths resulting from nutrition-related problems. Micronutrient deficiencies are common among Nigerian women, leading to poor maternal health outcomes. This raises the risk of early death for children and limits their intellectual development. As an affordable source of nutrition, dairy can play a critical role in addressing malnutrition. However, Nigeria's annual per capita consumption is at 2 litres, which is less than 2% of what the Food and Agriculture Organization (FAO) recommends. According to 2016 statistics, Nigeria's annual per capita consumption (2 litres) is less than the African average (44 litres) and significantly behind Kenya (81 litres), India (106 litres) and Brazil (144 litres). With the population on track to double by 2050, Nigeria must figure out how to nourish a projected population of 400 million people.

02

MARKET AND INFRASTRUCTURE

Low milk yields from Nigerian cows

West African cows produce an average of 500 litres of milk annually, compared to 13 times that amount in the EU. However, Nigeria only produces 0.5 million tonnes of milk annually (mostly from pastoralist communities), despite its large cattle population of 21 million. This large productivity gap is caused by limited availability of high-quality and nutritious feeding solutions, limited knowledge of optimal feeding strategies, seasonal variations in the availability of food and water, a genetic pool of local breeds which have not been bred for milking, and limited access to high-quality animal health services, leading to increased animal vulnerability to diseases.

A fragmented and poorly connected market

The market linkages between the dairy value chain actors are weak. Most pastoralists don't

have reliable access to milk buyers, and most dairy companies struggle to reach pastoralists at scale. In addition, local milk production sites often have poor quality control and limited options for hygienic and safe milk collection. Like other smallholder farmers, pastoralists have few links to formal financial services and limited pathways to accessing affordable financial products. The dairy market is dominated by volatile and non-transparent pricing. Therefore, many pastoralists are hesitant to take on the additional financial risk needed to transform their businesses.

Lack of investment in critical infrastructure

The National Agricultural Technology and Innovation Policy described Nigeria's dairy sector as, "essentially subsistent with small farm holdings, inadequate cooperative groups, limited technology adoption, low application of good agricultural practices, low access to quality inputs, finance and market." Weak market linkages and the dispersed nature of most pastoralist communities also present an infrastructural challenge in cooling milk and transporting it hygienically to processing sites without spoilage. These communities have limited mobile connectivity, poor road access and are largely off-grid. Recent estimates indicate that up to 40% of milk produced by Nigerian pastoralists is lost before reaching processing facilities and consumers.

Reliance on dairy imports and powdered milk

Nigeria currently imports more than 1 million tons of dairy annually (valued at US\$1.3 billion in 2019), most notably from Ireland, Germany and Malaysia. Measurable demand for dairy currently exceeds 1.5 million tons annually and is growing (furthermore, these figures fall significantly short of the population's nutritional requirements). The persistent low productivity, weak market linkages and poor infrastructure have driven the Nigerian dairy industry's dependence on imported milk powder (arguably less nutritious and mixed with palm oil, known as vegetable fat filled milk), which is now cheaper than locally produced fresh milk (due to milk surpluses in developed countries) further depressing the local dairy market.

03

CLIMATE CHANGE

Access to grazing lands

Climate change has slowed agricultural production development in Africa more than in any other continent between 1961 and 2021 (by 34%). The impact of climate change has driven desertification and loss of water resources, significantly increasing pressure on existing farmland and grazing areas, which are often occupied by other smallholders. This has led to conflicts between pastoralists and other farmers, driving instability in the African Sahel. As disputed African state boundaries have shifted and new legislations have come into force, private ownership of land has increased. These factors have combined to drive many pastoralists out of their historic grazing landscapes. Climate-change-induced resource competition has been a significant driver of the settlement of pastoralists, who now seek more

permanent homes after centuries of being part of primarily nomadic cultures.

Reduction in productivity

By 2050, climate change is expected to result in sharp reductions in African farmers' productivity, with resultant negative effects on food security, youth employment and socio-economic development. In the worst-case and intermediate emissions scenarios, temperatures are predicted to increase by 3–6°C from the levels seen in the late 20th century, with temperatures in the Sahel rising 1.5 times faster than anywhere in the world.

Displacement and risk from rising temperatures

Over 3.2 million people were affected by flooding in Nigeria in 2022, and over 600 people died as a result. Of the 36 states, 34 have been affected, and more than 1.4 million people have been displaced. Nigeria is among the most vulnerable countries in the world, experiencing increased temperatures, variable rainfall, desertification and extreme weather events such as floods, droughts, sandstorms and heatwaves. Variable rainfall in particular is pushing northern Nigerian herders further south, where there is a longer rainy season and more abundant vegetation. Insecurity is an additional push factor displacing pastoralists, including farmer-herder clashes due to natural resource conflict, armed banditry and Boko Haram and ISWAP terrorism.

Conflict between farmers and herders

Despite rich natural resources in the sub-humid Middle Belt of Nigeria, increased human and animal populations and cultivation of land have led to natural resource conflict between herders and farmers. During the dry season, when resources are scarce, pastoralists access in their home villages is restricted to marginal areas by dry-season irrigated farming. In the rainy season, when resources are abundant, the fear of cattle trampling crops is a significant obstacle to pastoralists' grazing rights. Farmers fear losing their crops (and associated income) to trampling, while pastoralists fear punitive compensation payments and expulsion from the area. There is a desire to avoid animosity on all sides; therefore, cattle are expected to leave once crops are above ground. Consequently, throughout the year, pastoralists are either restricted to marginal areas or forced into transhumance to maintain their herds.

Environmental impact of the dairy industry

Although African cows produce less emissions than their European and American counterparts, the inconsistent feeding patterns and limited use of improved production and feeding solutions mean there are underutilised opportunities to reduce their environmental footprint. Scaling solutions and best practices that mitigate the climate impact are essential to the survival and transformation of the livelihoods of millions of pastoralists and other Nigerians who depend on the dairy industry for nutrition and income.

CÂM'S CIRCULAR DAIRY MODEL

Our goal is to establish a highly profitable dairy industry that turns Nigeria from a net importer to a net producer of dairy, all anchored around pastoralist milk.

Our scalable model provides a roadmap to working with 600,000 pastoralists and 8,500 CâM Rangers by 2030, generating an estimated 1.6 million litres of milk daily. This could unlock thousands of rural job opportunities, help eliminate extreme poverty in pastoralist communities, and increase local consumption of affordable and highly nutritious dairy products. By guaranteeing a stable price for pastoralists and Rangers, we are building a sustainable model that incentivises them to continue supplying milk to CâM.



1 ESTABLISH PASTORALIST-LED GROUPS

It's essential to develop strong trust-based relationships with pastoralist communities and their traditional leadership. We provide the practical knowledge and processes required for them to successfully organise themselves and establish the foundations required to commercialise their milk as entrepreneurs. These groups are formed at the household level and more formally as cooperatives. After engaging with the community, our Field Team assesses whether they are ready to come on board as CâM suppliers.



2 ONBOARD AND TRAIN PASTORALISTS

We onboard pastoralists via our mobile app which allows us to collect important data on their households and milk production activities and practices. We then supply them with an equipment starter pack, including a 10-litre CâM milk churn, an ID card and a milk record sheet. Once registered, we run comprehensive training sessions covering milk hygiene, cleaning of equipment, storage of milk, and animal care.



3 ESTABLISH MILK SUPPLY ROUTES

Next, we hire CâM Rangers from pastoralist communities. Rangers are young adults aged 18-35 years, often the children of pastoralists. They are trained and equipped to collect fresh milk daily from milk collection points (no more than a 15-minute walk from a pastoralist's home) in each community, delivering the milk via motorcycle to their nearest Milk Aggregation Centre. We calculate the volume of safe milk delivered and accepted by our CâM Rangers, then pay them based on our pricing agreement at the end of each week. Learn more about our innovative Ranger model on p.20.



6 DELIVER TO CUSTOMERS

We deliver our delicious real dairy products to retail partners and direct to customers (currently in Abuja, Lagos, Kano, Kaduna and Oyo, with more Nigerian cities to come). Customers can start a subscription, order through our e-commerce store, or buy from more than 70 retailers that stock CâM, including Shoprite, the largest retailer in Nigeria.



5 PROCESS MILK AT CÂM'S FACTORY

Milk arrives at our factory within 3-4 hours of milking. We perform another series of tests before it's pasteurised and homogenised by our trained factory staff. This involves heating the milk to 72°C for 15 seconds, which eliminates any pathogens and extends its shelf life. We then bottle this fresh milk or use it to make our yoghurts. We are working to invest in sustainable cooling at the Milk Aggregation Centres (step 4), which will enable us to cool the milk over longer periods and allow for the collection of larger volumes day and night.



4 BUILD MILK AGGREGATION CENTRES

Each Milk Aggregation Centre serves a 25km radius. At this point, milk is thoroughly tested and either accepted or rejected. Approved milk is then cooled, ready for its journey to our factory. Milk hygiene is monitored at every stage from collection to aggregation, and processing upon arrival at the factory. In the event of spoilage, our mobile app provides traceability to identify the source, allowing our Field Team to swiftly intervene, offer on-farm support, provide milk hygiene refresher training, and minimise future incidences of milk loss.

CÂM'S SCALABLE RANGER MODEL

THE ESSENTIAL LINK BETWEEN PASTORALISTS AND OUR FACTORY



Our Ranger model provides entrepreneurial opportunities for Nigerian rural youth and has increased their earnings by 140%, allowing Câ€™m to scale operations while recruiting from the communities where we operate.

Câm Rangers are self-employed and recruited from pastoralist communities. They are typically men between 18 and 35 years old. This role is ideal for those who want flexible work hours and the opportunity for career progression. They work closely with Field Supervisors, who are full-time Câ€™m employees. The Câ€™m Field Team runs the Milk Aggregation Centres and is the bridge between Câ€™m Rangers and the factory.

In 2023, Câ€™m Rangers supplied an average of 59 litres of milk per day and earned an average monthly income from Câ€™m of ₦66,580 (2.2x minimum wage and an increase of 1.4x their previous monthly income).

1 Recruiting Câ€™m Rangers

Câm Rangers are often the children of pastoralists. Most Câ€™m Rangers are young men without higher education who don't yet own any cattle or have chosen to pursue job opportunities outside of farming. In many cases, their role with Câ€™m is the first time they have worked outside of their households. Successful candidates must meet minimum requirements, including basic literacy, fluency in local languages, excellent communication and problem-solving skills, having a motorcycle driving licence, and strong local community references.

2 Onboarding for success

If accepted, Câ€™m Rangers must have access to their own motorcycle and smartphone (often supported through loans from Câ€™m), giving them access to Câ€™m's mobile app. We then train them on multiple topics, including safe milk collection, hygienic milk transportation, and relationship management with pastoralist partners. Each Câ€™m Ranger receives a starter kit including two stainless steel Câ€™m milk churns affixed to the motorcycle and a Câ€™m Ranger uniform. The cost of the starter kit can either be self-funded or paid in instalments as a loan (repaid through monthly deductions from their income). All of the Câ€™m Rangers who participated in Cam's pilot fully repaid the cost of the starter kit (including a motorcycle) within 12 months, and most have continued working with us.

3 Assigning milk collection routes

Câm Rangers operate within a 25km radius of their nearest Milk Aggregation Centre, with a typical route taking them 1.5 hours to complete. Each Câ€™m Ranger manages one or more unique milk collection routes (no two Rangers are assigned the same route). This route includes numerous collection points at multiple pastoralist villages. Motorcycles are particularly well-suited to the rural terrain and unpaved roads, particularly in the wet season when Câ€™m Rangers often have to cross seasonal streams to reach collection points.

4 Arriving at the Milk Aggregation Centre

Milk Aggregation Centres are permanent facilities in strategic locations where milk is tested and

“They trained our youths and gave them motorcycles to collect milk. Câ€™m brought a challenge to the community because the pastoralists didn't want to enrol their children in school. But now many pastoralists enrol their children in school just to have future employment opportunities with Câ€™m.”

MUSTAPHA IBRAHIM
MALE PASTORALIST, 43



cooled before continuing its journey to the factory. When Câ€™m Rangers arrive with the milk in the morning, each batch is tested by the Câ€™m Field Team – and either accepted or rejected depending on safety and hygiene test results. Câ€™m only pays for milk which is accepted at an aggregation centre after testing, so both Rangers and pastoralist partners have strong incentives to meet our safety and hygiene standards.

5 Long-term opportunities

High-performing Câ€™m Rangers have several opportunities for career advancement. They can apply to join the Câ€™m Field Team, where they could work their way towards running a Milk Aggregation Centre, or they can build and manage their own team of Rangers to increase their income. Some Câ€™m Rangers have used their income to purchase cattle and become Câ€™m milk suppliers. As we continue to evolve our Câ€™m Ranger model, we envisage a future where being a Ranger becomes a full-time opportunity that combines multiple skills, such as recruiting pastoralists and representing Câ€™m in local communities. We see a future where Rangers progress to running their own Milk Aggregation Centres.

MEET
Suleiman

Since joining Câ€™m in 2020, Suleiman (son of Safiya, featured on p.28) has aggregated an average of 3,997.5 litres of milk per month and has increased his earnings by 86.19%. We caught up with Suleiman to ask him about his life as a Câ€™m Ranger.



AN ENTREPRENEURIAL
CÂ€™M RANGER WHO
IS NOW EARNING MORE
THAN 3X NIGERIA'S
MINIMUM WAGE

Tell us a bit about yourself.

My name is Suleiman Ahmad, I was born in 1995, and I am 28 years old. I am married to two wives and have six children: five boys and one girl. I currently have three Câ€™m milk routes, which involve me travelling to collection points and then to the nearest Milk Aggregation Centre.

How long have you lived in the Paikon Koré grazing reserve?

I moved to Paiko with my family 10 years ago, after the reserve was established by the government. My family decided to move here. It's given me a great opportunity to grow in ways beyond my imagination.

What was life like for you before you started working for Câ€™m?

Before becoming a Câ€™m Ranger, I used to herd my cattle and supply milk to the general market. I own 25 cows, but due to the change in weather, they have migrated to Ondo State, where my brother helps me take care of them. I visit them regularly. I have friends here in Abuja who own more than 50 cows. We all sell raw milk at the general market. Sometimes, we can go up to three days without sales. When days like that happen, I go to sell some of my cattle so I can provide for my family. In 2017, I opened a small shop in Paikon Koré where I sell provisions to the community.

Now I have my own collection point where the pastoralists bring milk to me. They all know me so it is easy to convince them to do so. I can load up to three 50-litre churns on my bike. From there, I supply Câ€™m's Milk Aggregation Centre. In a day, I can supply up to 130 litres of milk. Sadly, because of the changes in weather affecting milk collection and our ability to feed the cows, supply has dropped to about 100 litres. When the cattle return in the rainy season, I expect to collect higher quantities of milk from my pastoralists.

Tell us about the loan that was provided by Câ€™m.

Yes, Câ€™m provided us with a loan that we used to acquire a bike and other tools for the job. Purchasing the bike has really helped me with transportation. I can freely move around and do more aside from milk collection.

What do you do with your earnings from our partnership?

Since I resumed supplying to Câ€™m as an independent contractor, I have earned over ₦130,000 per month – way more than I would earn sitting in the market to sell. I am really happy about this because I can now pay my children's school fees. I also buy food and take care of my family.

How has Câ€™m impacted your life?

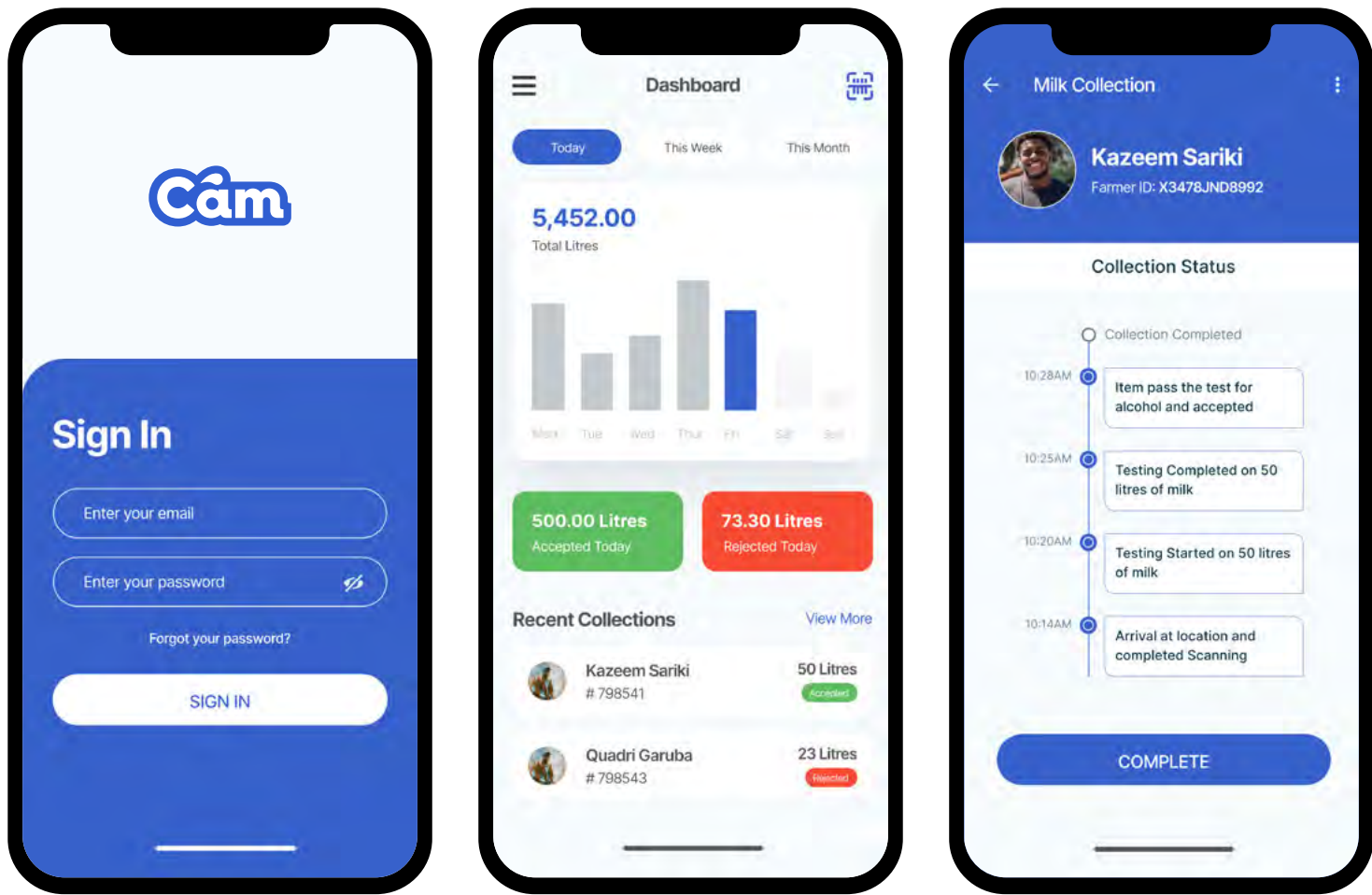
What I earn from Câ€™m is enough to help me take care of my family. I don't have to sell my cattle or do too much to earn. This gives me more time to spend with my family. In the future, I want to own a house and promote my business. I hope that, one day, my children will continue the family business seeing as my cattle are their inheritance. I also pray that all my children, especially my daughter, will have a sound education. If I wasn't a Câ€™m Ranger, the only other income opportunities would be farming or okada (like a taxi, but with bikes), which I wouldn't like to do.

What more can we do to help you and what are your future expectations?

I need Câ€™m to continue consistent milk collection. The more they collect from us the more we earn and grow. We also need help in providing quality feed for our cattle. We struggle with feeding them well during the dry season. For next year, I hope that Câ€™m will set up a cooling centre in Paiko to allow us to store our milk and prevent future losses. For anyone thinking of a career as a Câ€™m Ranger, I would say not to hesitate to join. If you build relationships with people who have milk, they will never stop supplying you. Since I started working with Câ€™m, I now have my provision store, which is an additional income source for me and my family.

EMBRACING NEW TECHNOLOGIES

At Câ€™m, we're always embracing new technologies and rethinking how the dairy industry operates. Here are just some of the ways we're using innovative technology to improve the lives of partners and build a modern dairy industry.



1 Câ€™m's mobile app

2 Smart refrigerator

Our supply chain runs on a mobile app that manages our milk collections and aggregations. This allows us to record test results, the volume of milk and the churn ID for each pastoralist. By using this system, we can monitor quality control and delivery times. We can also trace our milk right back to its source if there are any issues with quality control. At the end of every month, our Câ€™m mobile app generates a 'Câ€™m Print' that shows how much milk each pastoralist sold and what they were paid. Our mobile app is also used to conduct pastoralist surveys to measure our impact.

Câ€™m was one of 15 companies in Nigeria selected by the International Finance Corporation's TechEmerge programme to pilot sustainable cooling technologies in 2021. Our pasteurised milk and yoghurt must be kept at 4°C at all times to maintain optimal quality and shelf life (average outside temperatures are often +30°C). Therefore, the storage and transportation of our products must be under temperature-controlled conditions. Conventional refrigeration technologies use large amounts of energy and emit significant greenhouse gases. Furthermore, their high consumption of diesel and petrol has made the operation of these technologies expensive, given the 40% and 200% increase in the prices of these fuels respectively in the past year.

The TechEmerge project presented an ideal opportunity for Câ€™m to test more sustainable refrigeration systems. Câ€™m partnered with an Indian company, Tessol, to pilot the use of innovative phase change material (PCM) technology (fitted to all of our delivery vehicles). PCMs can store thermal energy and slowly release it over a required period of time, enabling accurate temperature control during transportation. We also partnered with a Nigerian company, Figorr, to provide us with remote cold chain monitoring systems to measure performance and efficiency. This means we're already much less reliant on fossil fuels and harmful CFC gases to keep our milk cool.

PASTORALIST PROFILES
WHEN WE TALK ABOUT
PASTORALISTS, WE MEAN
ANYONE WHO MAKES THEIR
LIVING FROM KEEPING

Pastoralists own 90% of Nigeria's cows. These communities traditionally led a nomadic way of life and depended on livestock for their food security and income. However, the complex challenges described earlier (p.16 and p.38) have led many pastoralists from the arid Sahel region in Nigeria's north to settle on grazing reserves outside cities like Abuja, where they have engaged with Câ.

Since engaging with our first pastoralists in 2018, we've built strong relationships with these communities and have collected survey data from 402 trained and registered pastoralists. These results give us a clear picture of their way of life, including information on demographics, family networks and community infrastructure – highlighting areas Câ and our partners can add future value.

“My quality of life has improved. I use the money I get from selling milk to the company to improve my farming, which has enabled me to cultivate large volumes of maize for home consumption. Previously, I usually didn't have enough money to spend on the farm.”

AISHA HASHIMU
FEMALE PASTORALIST, 46





The average pastoralist: 44% are women / 34% of their herd of 35 are milking cows / 94% are married / 5 children per household on average / 35 years of age on average / 88% of homes are made from mud blocks and grass straw / 100% use wood as fuel for cooking / 0% have electricity in their homes / 59% do not own a mobile phone / 16% have never attended a school / 1% are members of cooperatives / 62% get their drinking water from a river (not considered clean water) / 1% own land / 26% have access to healthcare (insights based on averages from Câm's registered pastoralists).

Impact of free time on earnings: 75% of suppliers mention an increase in the amount of free time they have / women are most likely to have more free time (91%) but less likely to use it to generate income (38% versus 87% for men) / 96% of suppliers report increased earnings from milk (this results both from increased sales volumes and higher milk prices) / 7 in 10 say earnings have increased "very much".

SAFIYA’S STORY
A GLIMPSE INTO THE
LIFE OF ONE OF CÂM’S
EARLIEST AND MOST
SUCCESSFUL FEMALE
PASTORALISTS



We asked pastoralists what they do with the extra free time they have since becoming a Câ€™m supplier.

“I sell fabrics in the market to earn more income.”

“I trained my kids and do some businesses that will earn extra income.”

“I spend time with my children, do the household work and run a little business within the community.”

“I go to the market to sell cows and also buy from whoever wants to sell. I will then bring the one bought from the market home, rear it and then sell again.”

“I use the additional time I get to sell goods in the market (things like detergent, soft drinks, beans etc.) which gives me more income.”

Safiya is one of Câ€™m’s highest-earning pastoralists, with a peak daily income of ₦15,900, which is 12x more than her daily income before Câ€™m.

A 60-year-old pastoralist, Safiya migrated to Ungwar Tela in the Paikon Koré grazing reserve with her family 11 years ago. Since becoming a widow, Safiya now lives with her son Suleiman (who is a Câ€™m Ranger, featured on p.20) and her other children in a mud house with a thatched roof, where they make their living from livestock.

Before becoming a Câ€™m supplier in 2020, Safiya would earn ₦150 per litre for her milk. Now she is guaranteed a stable price (on average ₦300 per litre). When asked about her life prior to Câ€™m, Safiya explained:

“You cannot compare my life before [when I was hawking milk] to my life now. I sit at home and my milk is bought at a good price. I make more profit selling to Câ€™m. I then use my free time and money to take care of my family.”

The process of hawking milk is time-consuming and physically demanding. Prior to Câ€™m, Safiya would carry milk, buttermilk and yoghurts in plastic containers to nearby markets such as Paiko and Gwagwalada where she would sell them as either fermented milk (known locally as ‘nono’), yoghurts (‘kindirmo’) and millet dough balls (‘fura’).

Safiya would typically make ₦3,000 per trip (with a total of three trips per week). However, there was a limit to how much milk she could carry, therefore any unsold milk was wasted, and her household income was irregular. Safiya said:

“Sometimes I paid for a motorcycle to take me to the markets. However, if I couldn’t find one, I would trek to Paiko. This journey takes me more than an hour to walk from my house in the dry season, and even longer in the rainy season because of the terrain.”

Although Safiya’s quality of life has improved and pastoralists have access to several more grazing reserves like Paikon Koré, her community still faces many challenges.

“We settled in the grazing reserve because we had to look for a safe place. The grazing reserve is safer than the other places.”

The government established reserves like Paikon Koré as a solution to conflicts between pastoralists and other smallholder farmers, which were caused by a combination of climate change and urbanisation increasing competition for limited land and water resources.

“The lack of grazing land and water is a problem for all pastoralist communities.”

Many pastoralists (62%), including Safiya, get their drinking water from a river, which is not clean or considered safe for human consumption. Access to sufficient year-round grazing land means that pastoralists must migrate their herds to neighbouring states like Niger and Nasarawa in the rainy season, which typically starts in March/April and ends in October/November. Despite these challenges, Paikon Koré grazing reserve continues to thrive, with more pastoralists continuing to settle in the area in search of a better life.

In a culture where the woman traditionally owns the milk and the man owns the cow, Câ€™m’s dairy model is able to improve the lives of women by directly addressing the challenges they face in the value chain. For instance, women have been instrumental in starting milk cooperatives in their communities. The Women’s Only Cooperative in Paikon Koré has used profits to invest in sewing machines, helping women to start sewing businesses to earn additional income. In 2022, Safiya helped establish the Kautal Hore Lumo Biradam Cooperative and has also organised an informal group of women to pool smaller volumes of milk together (in volumes large enough to be eligible for milk collection from Câ€™m).

Safiya’s story demonstrates the positive impact Câ€™m’s business model can have on the lives of pastoralist women. 44% of all Câ€™m milk suppliers are women and 79% of the female pastoralists we spoke to said Câ€™m is the best milk buyer they have worked with, with no similar alternatives available to them. These results show that we’re making a positive impact and transforming the lives of Safiya and hundreds of other women in pastoralist households.



VACCINATION
CAMPAIGN
PROTECTING
1,000S COWS

AGAINST
CONTAGIOUS BOVINE
PLEUROPNEUMONIA

“As a paid service, the success of our vaccination drive highlights how pastoralists are willing to invest in veterinary support outside of traditional NGO and government outreaches, which are unsustainable and often not delivered frequently enough to be effective.”

DR MUSA TANKO
ANIMAL HEALTH & NUTRITION SUPERVISOR, CÂM

In 2023, Câm launched a paid vaccination drive for a limited number of pastoralists in the community of Paikon Koré, Gwagwalada. Our aim was to help them protect their most valuable asset by vaccinating their herds against Contagious Bovine Pleuropneumonia (CBPP). Prevalent in Africa, this highly contagious disease has a mortality rate of up to 50%.

For CBPP vaccinations to be successful, they need to be administered twice a year. The free services offered by the government have gaps and lapses. These inconsistent campaigns result in compromised immunity, which makes the cattle more susceptible to diseases. Câm's model fosters a sense of ownership and responsibility that creates a self-sustaining culture around vaccinations and cow health.

Aside from the immediate benefits to the cows and our milk production, Câm's campaign helped to strengthen trust with our pastoralist partners, giving us a shared purpose around the health of their cows. By actively engaging with pastoralists and encouraging their participation in healthcare initiatives, we're empowering them to help us build a sustainable dairy industry in Nigeria.

Setting the standard for paid healthcare

37 pastoralists participated in the vaccination drive, resulting in the successful vaccination of 857 cows in three days. This proof of concept is evidence of the willingness to pay and unlocks future vaccination drives and allows Câm to provide healthcare initiatives to more communities, organised via pastoralist cooperatives.

Let's put the cost of vaccine into perspective

Seasonal diseases like foot and mouth disease (FMD) can be fatal. If there's an outbreak in a community, the risk rate of infection is 70-90% unless infected cows are isolated. By the time symptoms are spotted, the disease has usually spread. Once infected there is a 3-5% chance that the cow will not survive and a 30-50% chance that infected calves will not survive.

Cost of an FMD vaccine/cow = ₦1,100/US\$1.14

Cost of a cow = ₦400,000/US\$415

Preserving Nigeria's cow breeds

The cattle industry contributes to 6.7% of Nigeria's GDP. There are an estimated 21 million cows (19 million owned by pastoralists) in Nigeria with a variety of breeds, including White Fulani, Red Bororo, Sokoto Gudali, Adamawa Gudali, Wadara, Azawak, Muturu, Keteku, Ndama and Kuri.

Cows are an integral part of the livelihoods of many communities, providing sustenance through milk, meat and leather (generating a combined US\$6.8 billion annually). For pastoralists, cows hold deep cultural significance, often playing pivotal roles in ceremonies, rituals and traditional practices. Cows are also a key sign of wealth and prestige in these communities.

These iconic Nigerian cattle breeds are a reminder of our country's rich cultural tapestry and diverse ecosystems. Preserving our native cattle breeds not only protects the livelihoods of local communities but also contributes to Nigeria's economy and preserves our national identity for future generations.



NUTRITIONAL SNAPSHOT

WHAT'S IN A GLASS OF MILK?

PROTEIN
CALCIUM
VITAMIN A
IODINE
ZINC

As one of the fastest-growing populations in the world, Nigeria faces the challenge of ramping up the production of food and reducing reliance on overseas imports. Today, 32% of children under the age of five are stunted in growth and 20% are underweight due to inadequate nutrition. If unaddressed at a young age, this results in irreversible developmental problems, which limits professional opportunities later in life and maintains a cycle of poverty.

According to the Food and Agriculture Organization (FAO), 50% of the world's population is at risk of calcium deficiency and 90% of them reside in Africa and Asia. Nigeria has previously successfully addressed nutritional issues on a national

scale, such as iodine deficiency. In 1995, Nigeria mandated that all food-grade salt be iodized, achieving a household coverage of 98% and becoming the first African country to be certified as USI (universal salt iodization) compliant.

A similar widespread campaign to introduce milk to schools (see p.38) could help to significantly reduce calcium deficiencies as well as provide other essential nutrients. Fresh milk is a viable, accessible and scalable source of nutrition that's full of protein and calcium. A 250ml glass of milk per day achieves the recommended daily intake and meets the needs of three common nutritional deficiencies in Nigeria: vitamin A, iodine and zinc.

KEY TAKEAWAYS & NEXT STEPS FIVE OPPORTUNITIES FOR POLICYMAKERS AND PARTNERS TO HELP SHAPE NIGERIA’S FUTURE

Câm is building long-term relationships with policymakers, impact investors and like-minded partners who share our vision. With improved nutrition to increase milk yield, our projected goal is to raise pastoralists’ daily income by 300% by 2030 with improved production practices and veterinary support.

Results from our pilot suggest we can further drive up household income by pulling five key market levers: increased market access, increased frequency of milking, improved animal health, better feeding and improved breeding practices.

As demonstrated in this report, Câm’s model is already gathering momentum and changing the lives of pastoralists. With your help, we can do even more.

1

Invest in the infrastructure for local dairy development

Nigeria’s population is expected to double by 2050, reaching 400 million people. More than half our population will be under 25 years old. In the same timeframe, the milk industry could reach a market size of US\$49.8 billion (Nigeria currently spends US\$1.3 billion on dairy imports). By reducing our reliance on overseas dairy, we can invest back into the Nigerian economy, create rural jobs in some of our poorest regions and bring stability to the Sahel.

We believe the route to pastoralist-driven local dairy development is via gradual import substitution through domestic investment, rather than restricting imports – in other words, building infrastructure rather than barriers. As one of the first factories in Nigeria dedicated to real dairy and the only company currently scaling through a pastoralist-driven model, we are uniquely positioned to build a strong milk supply base for other dairy processors in Nigeria.

The government can play a key role in driving local dairy development through policies that support the building of access roads, sustainable electricity grid connectivity, access to land for grazing and access to water. There is also an opportunity for private-sector organisations to benefit, such as mobile network providers extending their coverage to rural areas and financial institutions (especially innovative fintech companies) providing appropriate and affordable financial products that service an untapped demographic living in a rural environment.

“Imagine us producing enough milk for our school children. Imagine us becoming net exporters of cheese and yoghurt. Imagine us producing the skin massively with a major Nigerian leather industry. Imagine us providing cold storage facilities and employment across the nation. These things are possible in front of us.”

BOLA AHMED TINUBU
PRESIDENT OF NIGERIA, SEPTEMBER 2023

2

Introduce dairy-based nutrition via school feeding programmes

Fresh milk is a viable, accessible and scalable source of nutrition that’s full of protein and calcium. A 250ml glass of milk per day achieves the recommended daily intake and meets the needs of three common nutritional deficiencies in Nigeria: vitamin A, iodine and zinc. Câm goals are aligned with Nigeria’s school feeding programme, which has the following objectives:

1. Improve the enrolment of primary school children in Nigeria and reduce the current dropout rate from primary school which is estimated at 30%.
2. Improve child nutrition and health – Nigeria has the third largest population of chronically undernourished children in the world.
3. Strengthen local agricultural economies by providing a school feeding market in which farmers can sell their produce directly.
4. Create job opportunities along the value chain and provide a multiplier effect for economic growth and development.

In Nigeria, 32% of children under the age of five are stunted in growth and 20% are underweight due to inadequate nutrition. If unaddressed at a young age, this results in irreversible developmental problems, which limits professional opportunities later in life and maintains a cycle of poverty. The first 1,000 days of a child’s life offer a unique window of opportunity for preventing undernutrition and its consequences.

By funding a campaign to introduce fresh milk to schools, we provide a baseline of nutrition at a critical point of a child’s development and support the government in eradicating child malnutrition.

“Home-grown school meals have the potential, through coordinated, multi-sectoral, and consolidated efforts and partnership, to significantly contribute to enhancing food and nutrition security in households and communities all over the country.”

ANJOR OBANDE
NIGERIAN HOME GROWN SCHOOL FEEDING PROGRAMME, OCTOBER 2023

3

Increase financial inclusion through pastoralist-focused products

Câm has established trusted relationships with a pastoralist network that lives outside of the formal economy. In partnership with financial service providers and other institutions, Câm can serve as an aggregator to deliver financial products to an untapped demographic where there is already a demand.

59% of the pastoralists we work with don’t own a mobile phone and the majority don’t have a bank account. Therefore, current financial products provided by banks and fintechs often do not reach them. As a result, financial inclusion initiatives must be context-specific and rooted in the reality of rural environments where there is limited network connectivity, bank branches are far away and cost a day’s wages to reach, and field agents charge high fees for cash withdrawal. Cash remains king in rural Nigeria due to these barriers to financial inclusion. Organisations like Câm can serve as a gateway for delivering low-risk, affordable financial products to a section of society that needs them.

To understand the requirements and perspectives of pastoralist communities, we have collected extensive demographic, income and milk supply data along with surveys to understand the spending habits of pastoralists and their needs for

feed and fodder. These surveys have identified a strong interest in accessing credit to invest in animal nutrition (to increase milk yield), vaccinations, and equipment that opens up revenue streams (such as the purchase of a motorcycle for Câm Rangers).

Using this data, we are able to build a credit profile and access the creditworthiness of a large segment of the population that is currently excluded from accessing many financial products that can help them grow their businesses.

“With about 70 million hectares of underutilised arable land, which is 75% of our total land area, Nigeria offers a substantial opportunity to both local and foreign investors to boost agricultural productivity... Nigeria is committed to the journey towards a world where food security and nutrition are not luxuries but fundamental rights for all.”

KASHIM SHETTIMA
VICE PRESIDENT OF NIGERIA, OCTOBER 2023

4

Roll out innovative cooling technologies in rural Nigeria

Refrigeration is a challenge for any business operating in rural Nigeria. Many locations outside urban areas do not have access to grid electricity (relying on diesel-powered generators), and in-transport refrigeration depends on a combination of CFC gases and higher consumption of expensive petrol and diesel from the vehicle. Not only is this damaging to the environment, it also places financial pressure on businesses in an economic climate where petrol prices increased 218% between May–October 2023 (from ₦195 to ₦620). However, inconsistent access to refrigeration along the value chain holds back productivity for pastoralists. Low production is largely due to high rates of post-production losses of up to 40%. Another 10% is rejected for not meeting quality standards.

In a 2022 article about cold refrigeration in Africa, The New Yorker said, “The International Institute of Refrigeration estimates that, globally, 1.6 billion tons of food are wasted every year, and that thirty percent of this could be saved by refrigeration – a lost harvest of sufficient abundance to feed nine hundred and fifty million people annually.”

Our goal is to meet Câm’s refrigeration needs in rural locations through sustainable, renewable energy – such as solar panels to generate electricity for our Milk Aggregation Centres and smart cooling technologies in our vehicles. We have already made inroads into sustainable cooling by being one of 15 Nigerian companies selected by IFC’s TechEmerge programme to pilot an innovative new approach to refrigerating perishable goods in transit. Widespread investment in the roll-out of sustainable cooling technologies can lower the cost of producing food in Nigeria and provide underdeveloped areas with future-proof infrastructure to promote a new wave of economic growth.

According to the International Institute of Refrigeration, the absence of refrigerated food

cold chains resulted in an estimated additional 1 billion tons of carbon dioxide equivalent (CO2e) emissions from food loss as of 2021.

There is an increasing demand for refrigeration and cold chains. The UNEP and Food and Agriculture Organization of the United Nations have recognised that this need is especially acute in developing countries, which face growing populations and high levels of malnutrition, yet are confronted with a food system that lacks connectivity and is increasingly insecure due to climate change, leading to high levels of food loss and low prices for producers.

5

Create new employment pathways for rural youth and women

Câm’s Ranger model (p.20) is a blueprint for creating income opportunities at scale in regions where unemployment is often the highest, education is the lowest, and career avenues for young people and women are virtually non-existent. With a high investment-to-impact ratio, we’re able to reach people in disadvantaged areas and provide them with a structured path that leads to financial security and career progression – without the overheads of full-time employment centred around a physical workplace.

Currently, 65% of youth in Nigeria are unemployed and 60% of the unemployed youth in Northeastern Nigeria have been out of work for at least 3 years. Projections estimate that around half of Africa’s new jobseekers will need to find employment in rural areas, at least until 2030. In sub-Saharan Africa (SSA) in particular, around 60% of the youth population is expected to continue to live in rural areas in SSA for at least the next decade.

Because our model is centred around the women owning the milk, Câm is able to put money directly into the hands of women, helping them save towards starting their own businesses or providing disposable income to care for their families.

To create economic impact in rural areas, we need to strike a balance between allowing people to embrace their culture and traditions while exploring their way into the modern world. Investment in progressive employment initiatives like Câm’s Ranger model provides the government and private-sector actors with a practical route to job creation in rural areas, driving down employment figures and bringing stability to areas like the Sahel.

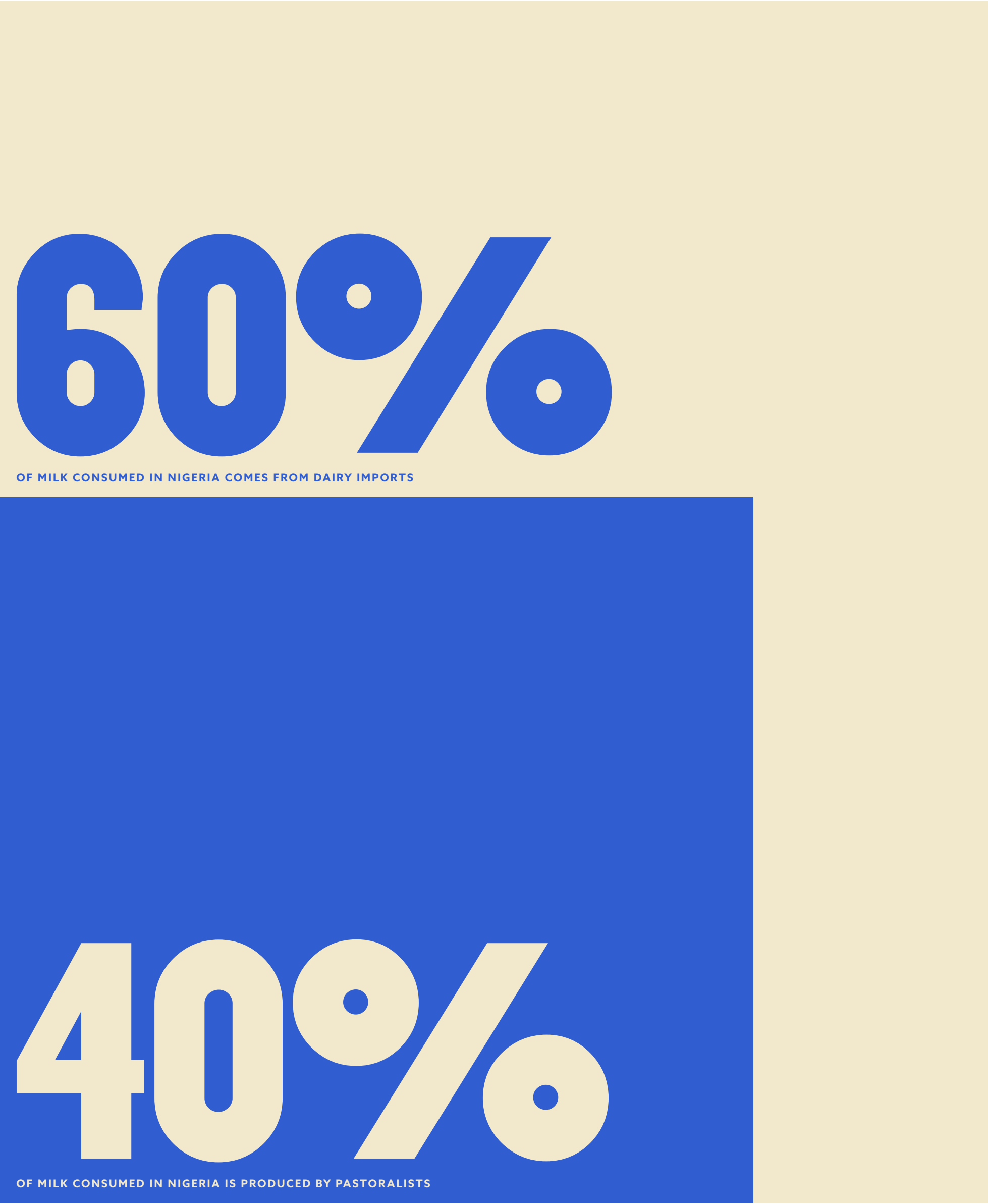
Câm is a social impact movement that just happens to make dairy. Our goal is to create a massive income boost for 600,000 pastoralists and 8,500 youth entrepreneurs living in extreme poverty, and nourish millions of customers with essential nutrients by 2030.

WE BELIEVE: (1) NIGERIA’S RELIANCE ON FOOD IMPORTS HAS BEEN DESTRUCTIVE TO OUR LOCAL ECONOMY, ENVIRONMENT AND JOBS (2) OUR CHILDREN HAVE THE RIGHT TO SAFE, NUTRITIOUS AND AFFORDABLE FOODS THAT ARE VITAL FOR THEIR DEVELOPMENT (3) SMALLHOLDER-DRIVEN AGRICULTURE, ESPECIALLY IN THE DAIRY VALUE CHAIN, HAS A HIGH POTENTIAL TO DRIVE JOB CREATION, IMPROVE DIET QUALITY AND END POVERTY FOR GOOD (4) TO BE SUSTAINABLE, WE MUST BE PROFITABLE (5) A PASTORALIST-POWERED DAIRY INDUSTRY IS THE FASTEST AND MOST SUSTAINABLE WAY TO ADDRESS THESE CHALLENGES (6) SUCCESS DEPENDS ON BUILDING TRUST AND RESPECT WITH MARGINALISED COMMUNITIES WHO ARE LIVING IN EXTREME POVERTY (7) NIGERIA HAS ENOUGH COWS TO MEET OUR POPULATION’S NUTRITIONAL NEEDS IF WE APPLY CÂM’S THEORY OF CHANGE (8) OUR PASTORALIST IMPACT WILL COMPOUND WITH CONSISTENT AND SUSTAINED EFFORT (9) THE DAIRY INDUSTRY IS A VEHICLE THAT CAN SHAPE THE FUTURE OF NIGERIA (10) TO ACHIEVE THAT GOAL, WE MUST SHARE OUR BLUEPRINT WITH OTHERS.

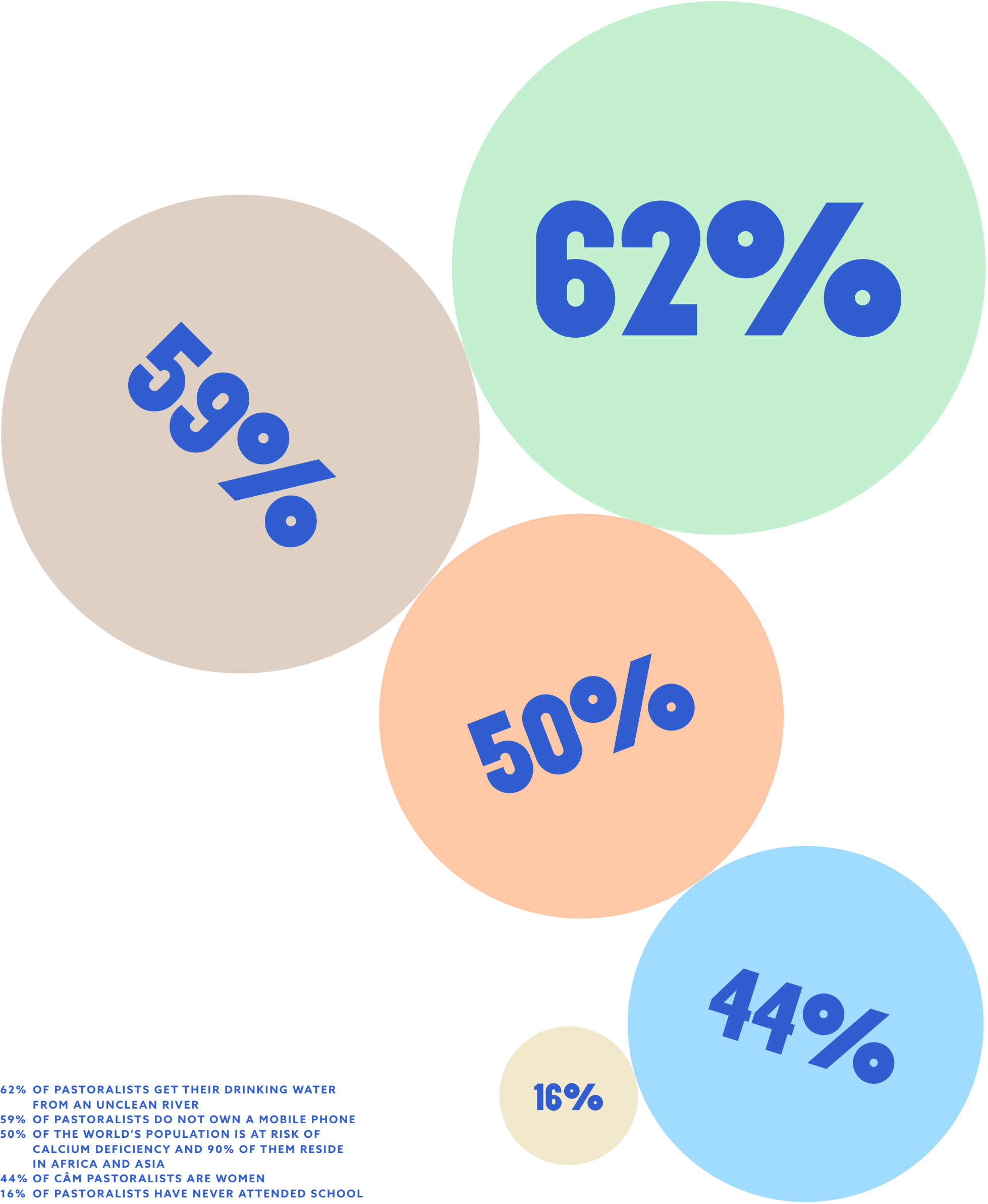
CÂM’S PROGRESS
OUR IMPACT IN NUMBERS



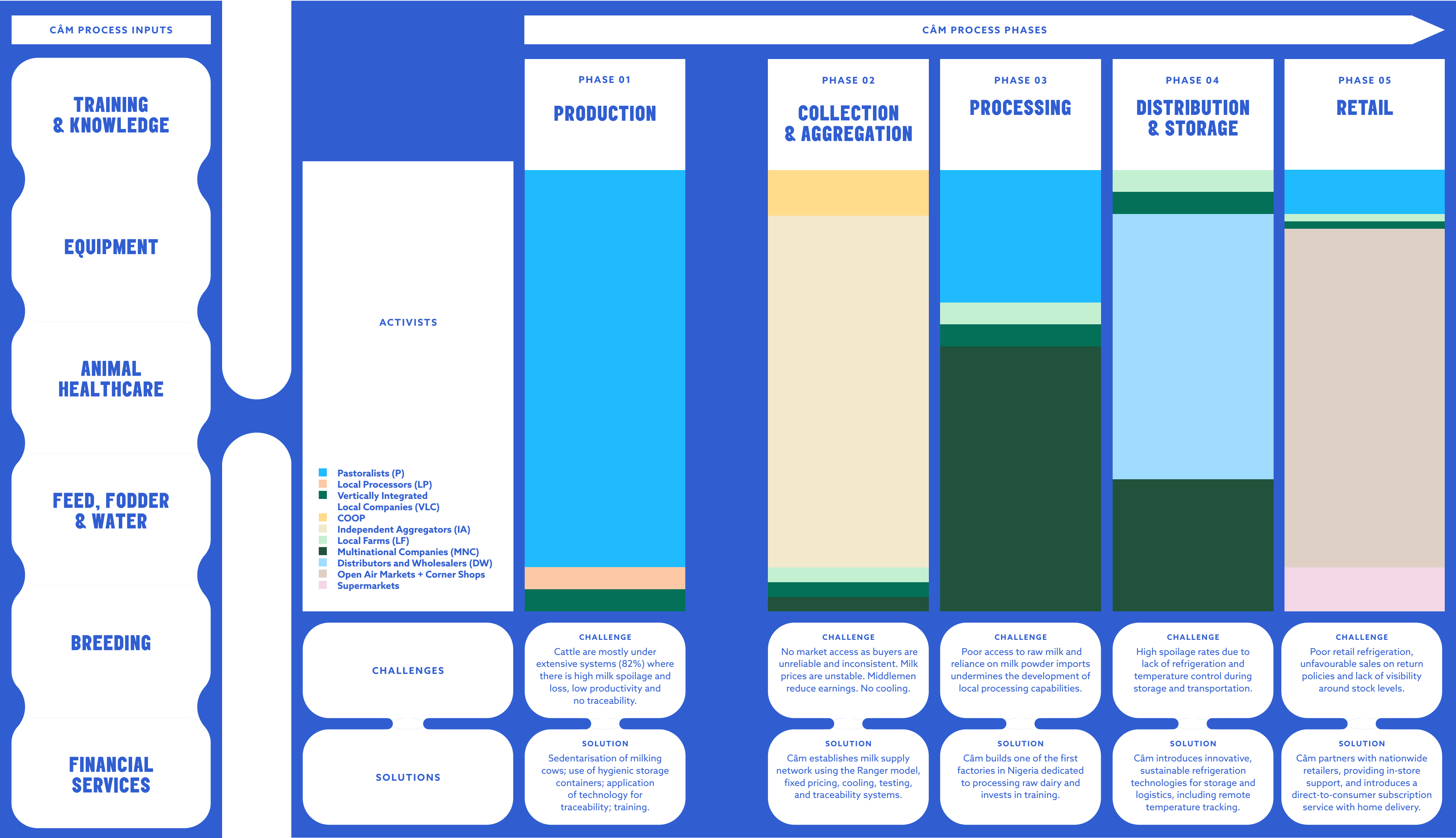
Untapped pastoralist potential



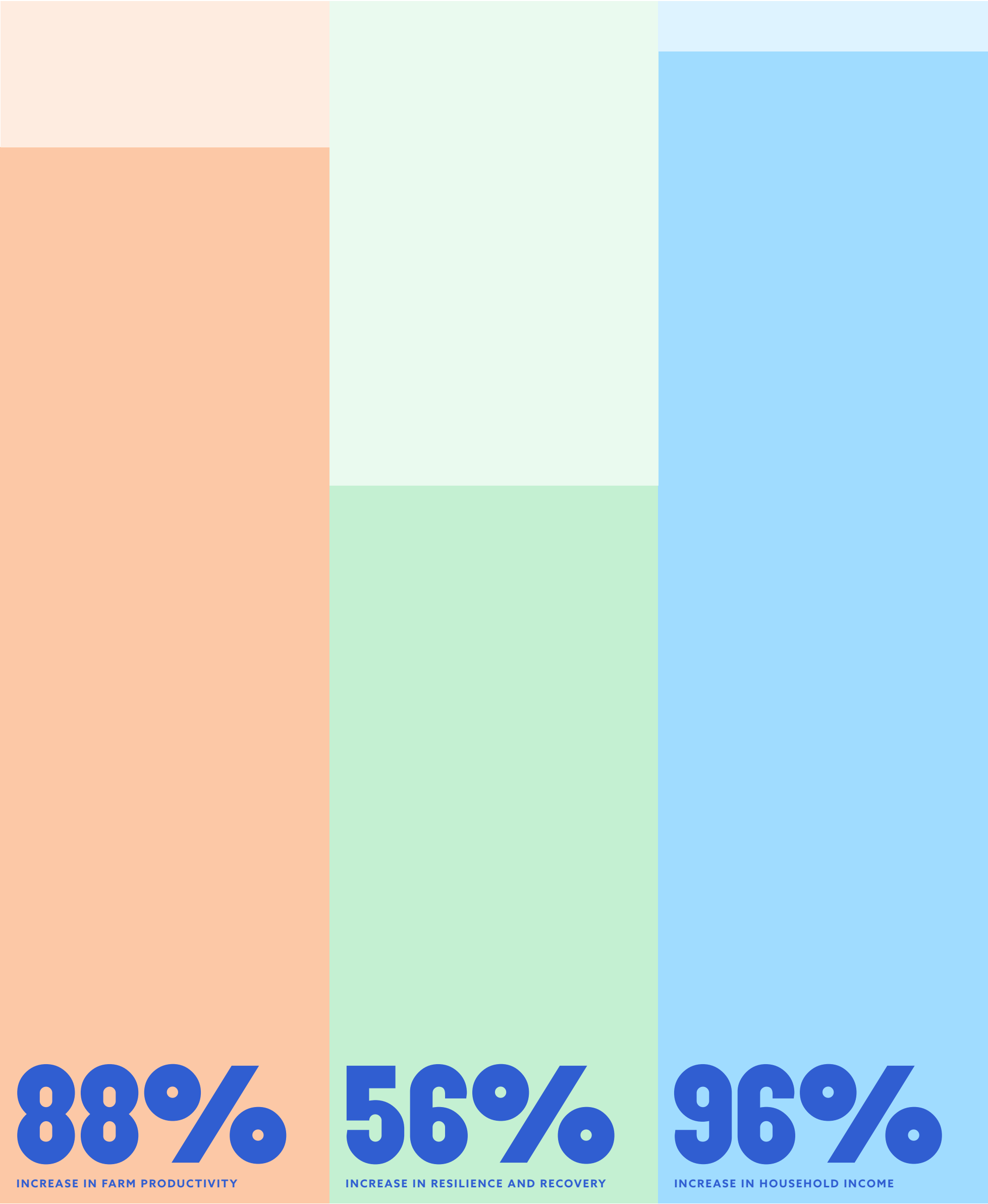
The average pastoralist - in numbers



Câm's sustainable dairy model



Productivity is on the rise



Positively impacting women's lives

69

DAYS SAVED ANNUALLY FOR RURAL WOMEN, PROVIDING THEM WITH OVER TWO MONTHS OF ADDITIONAL TIME TO PURSUE NEW CAREER AND INCOME OPPORTUNITIES

TOGETHER WE ARE ON THE ROAD TO TRANSFORMING NIGERIA'S DAIRY INDUSTRY

This 2023 impact performance report is published by Cârn Dairy Foods, with data and information from qualitative and quantitative insights gathered by Cârn and a 2023 independent survey by 60_decibels based on interviews with 173 pastoralists.

Special thanks to Faridah O. Ibrahim, Seth Rowden, Susanna Foppoli and the Cârn team for producing our first Cârn report.