REPORT

on participation by the South African organized dairy industry in the World Dairy Summit and Business meetings of the International Dairy Federation

WORLD DAIRY SUMMIT 2024

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South Africa
National Committee

Milk South Africa
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South Africa
National Committee

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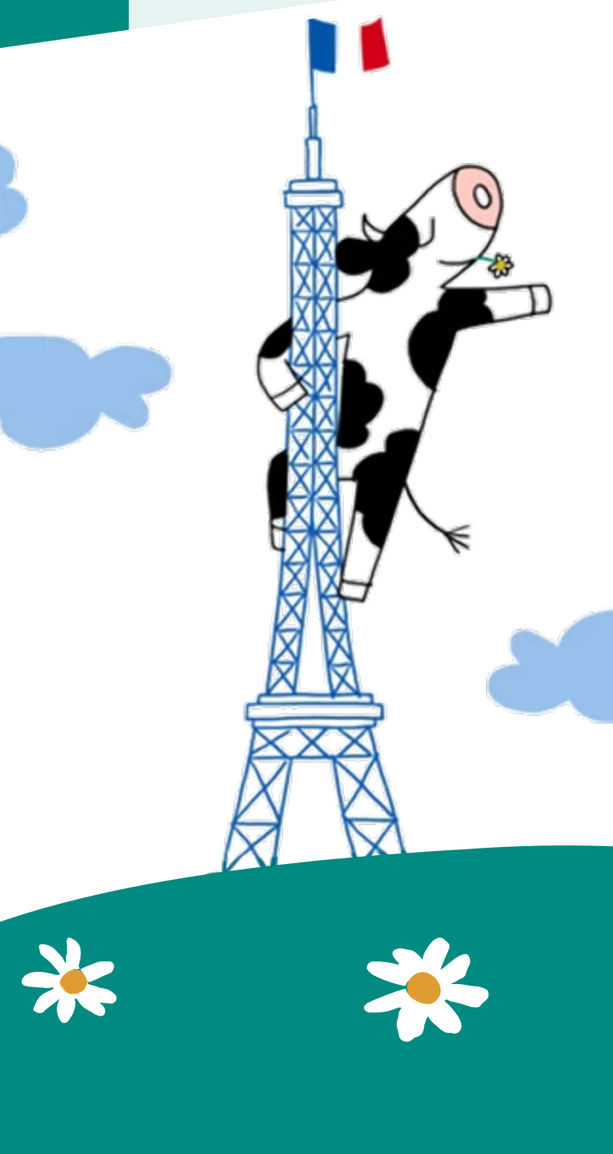

DAIRY 2024 THE FUTURE
Proudly committed to a sustainable world

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PREFACE

The IDF is funded by membership fees collected from member countries. South Africa's dairy industry is a full member through the SA National Committee of the IDF, and pays the fee as determined by IDF General Assembly at the yearly World Dairy Summits.

South Africa is also a full member of the International Milk Promotion (IMP) group of IDF which specializes in marketing and advertising and has to pay its separate membership fee. The benefits of IDF membership are:

- The IDF can deal with challenges which cannot be dealt with by individual countries or by competition in the markets and must be dealt with collectively t o achieve growth and development of the international dairy industry.
- The IDF can deal with food standards relating to safety and composition, nutrition and health issues, methods of analysis and sampling, dairy science and technology, animal health and welfare, sustainability, environment and economics, policies and marketing.
- International issues demand expert scientific knowledge and research and the best expertise of the member countries including South Africa, is used.
- IDF's science based approach and reputation is highly regarded by international organizations whose work strongly influence actions of countries in respect of quality and properties of the dairy products. The relevant international organizations include the WHO, FAO, OIE, Codex Alimentarius and ISO.
- The SA dairy industry is linked to the IDF through SANCIDF whose full members (in 2024) were the SA Milk Processors' Organisation and the Department of Agriculture, Land Reform and Rural Development whose membership fees finances part of the work of this committee.
- The opportunity to meet and exchange ideas with fellow specialists in other countries is an invaluable resource when confronted with new problems requiring solution.
- The opportunity to be part of a dairy organisation which has 39 countries as members which produce ±66% of the world's milk production and 85% of milk powder exports.
- The understanding of a global vision of issues, opportunities and challenges facing the global dairy sector.
- The opportunity to be part of an organisation whose members export the bulk of cross border traded dairy products.
- The opportunity to partake in discussions on international dairy product marketing campaigns via the IMP.
- Involvement in the Federation's almost 140 separate work items in the Work Programme.

The projects and activities of Milk South Africa are aligned with that of the International Dairy Federation. The South African dairy industry is well represented on most of the IDF Standing Committees and through its Primaria Members of the local Standing Committees, the SA National Committee actively contributes to the work programmes of the IDF.

Milk South Africa and the SA National Committee of the IDF are proud to present this combined report of the attendees to the 2024 World Dairy Summit which was held in Paris, France.

OVERVIEW OF THE DAIRY INDUSTRY OF FRANCE

Dairy landscapes

From the coasts of the Channel to the mountains of the Alps, passing through the Loire regions, each French region offers a different dairy landscape. This variety of terroir gives rise to the diversity of French dairy products and the unique character of the dairy sector. These territories make France an exceptionally favourable country for milk production. The temperate climate, the know-how of farmers inherited from the dairy tradition and the fertility of the soil contribute to making the French dairy industry unique and unequalled.

Product diversity and export

The French dairy sector has made diversity and quality its two major assets. It has been able to maintain traditional manufacturing while innovating and guaranteeing an exemplary level of health safety. Through this know-how it is possible to offer a range of 1 500 different dairy products, including 1200 traditional cheeses and regional specialities as well as dynamic innovation. France has a remarkable heritage of cheeses, butters and creams whose quality is recognised through PDOs (Protected Designation of Origin) for 45 cheeses, 3 butters and 2 creams as well as organic farming (AB) products.

France's dairy know-how is appreciated beyond is borders: 4 in 10 litres of milk produced in France are exported in the form of different dairy products.

Milk Production and Dairy Cattle

France is home to an impressive 3.8 million dairy cows, contributing to an annual milk production of approximately 25 billion litres. This substantial output solidifies France's standing as a leading milk producer both continentally and globally.

Milk Processing and Key Enterprises

Annually, France processes around 23 billion litres of milk, transforming it into a diverse array of dairy products. Key enterprises like Danone and Lactalis play central roles in this process. Notably, Danone has recently announced a €70 million investment to enhance domestic production, particularly focusing on medical nutrition. Lactalis is also expanding its international presence, with recent acquisitions in Colombia and Southern Germany.

Cheese Production

Cheese production is a hallmark of French dairy, with approximately 1.9 million tonnes produced annually. This reflects both strong domestic consumption and a robust export market.

Milk Powder and Whey Production

France produces about 1.4 million tonnes of milk powder and whey each year, playing a crucial role in the global dairy supply chain.

Sources: https://dairynews.today/ and CNIEL

GOVERNANCE

Laura Rycken
Director-General of the IDF

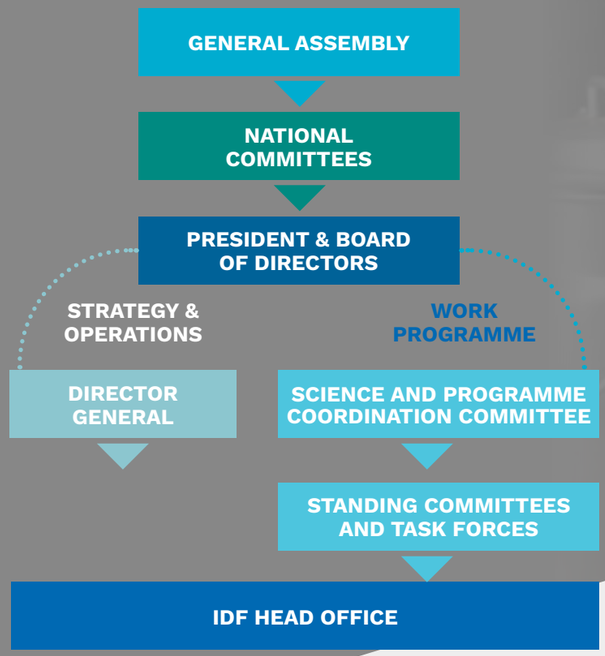
Ludovic Blin
President IDF France

National Committees are the backbone of IDF. They are represented in the General Assembly, which is the supreme authority. The Board of Directors contributes to the development and to the achievement of IDF objectives. The Science and Programme Coordination Committee ensures the coordination and supervision of the scientific, technical and policy considerations of dairy issues. They are elected by the General Assembly.

The primary purpose of IDF Standing Committees is to consider and recommend actions and propose policies in the functional areas under their jurisdictions, subject to final approval by the IDF Board and SPCC. Office, current affairs and the general coordination of activities, are the responsibility of the Director General.

Task forces are time-bound and outcome-focused groups that are convened to support IDF's mission, strategic objectives or program activities.

The daily management including the organization and administration of the IDF Head Office, current affairs and the general coordination of activities, are the responsibility of the Director-General.



The new Board members elected are (left to right):
Dr Jamie Jonker (USA - Chair of the SPCC), Ms Tjitske Regina Bolt (Netherlands), Ms Sharon Mitchell (New Zealand), Dr Meenesh Shah (India), Mr Gilles Froment (Canada - President), Ms Marit Haugen (Norway), Mr Melt Loubser (South Africa), Ms Laurence Rycken (Director General), Mr Laurent Damiens (France) and Dr Zhanyou Yun (China).

Piercristiano Brazzale
President of the IDF up until the 2024 WDS

Gilles Froment
IDF President elected on 14 October 2024

DELEGATES TO THE 2024 WORLD DAIRY SUMMIT

held in Paris, France

Melt Loubser

- Director: International Dairy Federation
- President: SA National Committee of the IDF
- Chairman: SA Milk Processors' Organisation
- Director & Vice-Chairman: Milk SA
- Chairman: Milk SA Advisory Committee, Economies & Markets
- Chairman: Milk SA Advisory Committee, Customs duties & Market access
- Member: Executive Committee of Milk SA
- Member: Human Resources Committee of Milk SA
- Director & CEO: Fair Cape Dairies

Christine Leighton

- Chairperson: Standing Committee on Marketing
- Member: International Milk Promotion Group (IMP)
- Project Manager: Milk SA Consumer Education Project

Maretha Vermaak

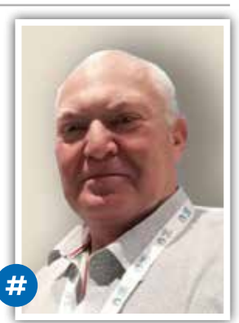
- Member: IDF Standing Committee on Nutrition and Health
- Action Team Leader: IDF School Milk Programmes
- Registered Dietitian: Milk SA Consumer Education Project

Chané Pretorius

- Technical Manager: Dairy Standard Agency
- Member: IDF Standing Committee on Food Hygiene

Dr Mark Chimes

- Veterinary advisor and Programme Manager: Animal Health and Welfare for Milk SA
- Dairy Standard Agency: Dairy auditor and Veterinary advisor
- Member: Dairy Research & Development Committee of Milk SA
- Chairman: National Brucellosis and Tuberculosis Steering Committee: National Animal Health Forum (NAHF)
- South African representative: IDF Standing Committee on Animal Health & Welfare
- Milk SA representative: National Animal Health Forum (NAHF)
- Milk SA representative: Livestock Welfare Coordinating Committee (LWCC)
- Milk SA representative: South African Veterinary Association (SAVA)
- Milk SA representative: Ruminant Veterinary Association of South Africa (RuVASA)



Dr Ndumiso Mazibuko

- Senior Economist: SA Milk Processors' Organisation (SAMPRO)
- Member: Milk SA Advisory Committee: Economies & Markets
- Member: Milk SA Work Group: Economies & Markets
- Member: Milk SA Advisory Committee on Customs Duties and Market Access
- Member: IDF Standing Committee on Dairy Policies & Economics
- Dairy Industry representative: Agriculture and Agro-processing Masterplan.

Fanie Ferreira[1]

- Director: Milk SA
- CEO: Milk Producers' Organisation (MPO)
- Chairperson: Milk SA Subcommittee on Skills & Knowledge Development, Primary Dairy Industry Sector
- Member: Statutory Measures Committee of Milk SA
- Member: Executive Committee of Milk SA
- Milk SA representative: Livestock Welfare Coordinating Committee (LWCC)

1 Mr Ferreira, who was a delegate of the Milk Producers' Organisation, did not offer a report for this publication.

Dr Colin Ohlhoff

- Milk SA Programme Manager: Environmental Sustainability
- Member: Dairy Research & Development Committee of Milk SA
- Vice-Chairperson: IDF Standing Committee on the Environment
- Committee Member: South African Society of Dairy Technology

Bertus van Heerden

- Milk SA Project Manager: Economies & Markets
- Member: Work Group, Economies & Markets of Milk SA
- Member: Advisory Committee, Economy & Markets of Milk SA
- Member: Advisory Committee, Customs duties & Market access of Milk SA
- Member: IDF Standing Committee on Dairy Policies & Economics
- Member: IDF Standing Committee on Farm Management
- MPO Chief Economist

Thabang Rampa

- Manager: Dairy Regulations & Standards – Dairy Standard Agency

(*) Delegates were funded by Milk South Africa

(#) Delegates were funded by the SA National Committee of the IDF

(Φ) Delegate was funded by the Milk Producers' Organisation

(╔) Delegate was funded by the SA Milk Processors' Organisation

The following person from South Africa, who is not a members of the South African Organized Dairy Industry, also attended the World Dairy Summit in Paris and was paid for by her institution:

- Prof Elna Buys: University of South Africa

REPORT BY: MELT LOUBSER

INTRODUCTION

I had the privilege as President of the South African National Committee of IDF (SANCIDF) to attend the 2024 World Dairy Summit.
I report on a high-level overview of my observations regarding this summit and will not be delving into the details of each session, as I believe that there are more specialised experts who attended the various sessions and will report on their observations and conclusions.

The South African dairy industry is in a remarkably privileged position that SANCIDF can be a member of IDF and that delegates can participate in the IDF activities through the funding of Milk SA.
Many countries, including some of the major dairy producing countries, simply cannot interact and participate to the extent that South Africa can. Some can act only in an administrative capacity and in many instances, they can only afford the membership fees.

So, my sincere gratitude to Milk SA, the South African National Committee of IDF and all the structures of the industry - but especially to Milk SA. The value add to the South African dairy industry, because of our active participation in IDF, is immense and the various reports from all the delegates are testimony to this.

Also, my gratitude to Fair Cape Dairies, for allowing me the opportunity and time to attend and participate in this remarkable event.

I wish to acknowledge the hard work and dedication of all the South African delegates. The role that South Africa plays in the formal structures of the International Dairy Federation is commendable and a tribute to the level of expertise and skills in our industry.

118TH GENERAL ASSEMBLY

Finances

- Better financial performance than in the past. Cost within budget.
- IDF long-term investment of €1 million recovered significantly from a deficit of -14% last year to -2% currently. This investment stands at €978 000. Diversifying this fund into even more secure and diversified investments is being looked at. This aligns with our comments in the past.
- Short-term investment on a six-month basis amounts to €472 000 invested at 2.88% interest.
- The 120th anniversary fund of €50 000 is now depleted with approximately €3 500 left for the rest of the year.
- Expectation of 2% average inflation. IDF salaries increased by 3.5% to 4% which are regulated by Belgian law.
- Membership fees for 2025 will increase by 2.5%.
- Budget for 2025 approved.

Election of 21st president of IDF

There were two candidates, namely Mr Gilles Froment from Canada and Mr Laurant Damiens from France. Gilles Froment was elected as President for the next 4 years.

In his acceptance speech, Mr Froment noted that Dairy is at a crossroads, and that we need to adapt more than ever - especially on issues of nutrition, food safety, innovation and environmental sustainability. The dairy industry can be a leader in environmental sustainability and should be positioned not as part of the problem, but as part of the solution. IDF is in a perfect place through its wide network of world expertise. We need to expand our reach to include all sectors in the world. Transparency is crucial and IDF needs to be the trusted voice of the world dairy sector. We must be proactive in communication to promote our sector as an employee of skilled workers, while also communicating successes in an efficient way to all stakeholders.

Froment committed himself to the challenge of building a stronger and more united IDF.

The composition of the new Board reflects a balanced representation of member countries

of IDF - from China in the east to the United States - and from South Africa in the south to Norway in the north.
I trust that my experience gained over all the years in the South African dairy industry, combined with the expertise of a diverse board, will add value to IDF in the years to come.

The Dairy Declaration of Paris which was signed at the Summit, endorses the Dairy Declaration of Rotterdam which was signed in 2016. The declaration of Paris forms part of this report.

I was extremely impressed with the commitment and energy of the President, Mr Piercristiano Brazzale.
His passion for the industry and his ability to unite and collaborate have been hugely applauded by the assembly.

SPCC Chair report Dr Jamie Jonker

Dr Jonker agreed to extend his Chairmanship of the SPCC by another year up to the end of 2025. The expertise, enthusiasm and energy from Jamie Jonker is worth mentioning and IDF will have to dive deep to find a suitable replacement before the end of 2025.

The SPCC currently consists of 15 standing committees and five task forces with 150 projects ongoing. In the past year there were 10 bulletins and reports, 26 events and technical webinars, 33 contributions to international organisations, 13 fact sheets, and five Joint IDF/ISO standards. This is an incredible output, with the limited number of people all committed to the course with no - or very little - commercial outlook.

The science-based approach is making IDF stand tall and play a leading role even in Codex, WHO, OAE and others.

GENERAL OVERVIEW

I was most impressed with the new Director General, Ms Laurence Rycken, who is diligent, well spoken, organised and detailed. The IDF head office has a small staff complement, which has now been extended with two additional staff members.

The conference took place at the CNIT in La Défense Puteaux Conference Centre in Paris from 20 to 25 October with the theme of the event being “DAIRY 4 THE FUTURE.” It was an excellent venue with all the sessions in proximity for ease of attendance.

The event was well attended by more than 1 600 delegates. The price tag of around €1 165 (R23 000) registration fee gives an indication of the value perception of members and other interested parties in the world.

The conference covered topics of sustainable nutrition and health, the environment and food safety standards (Codex, labelling and all other standards for dairy) amongst others.

The various scientific work committees involve 1 200 international experts, from private institutions to academics from prestigious universities all over the world, on a voluntary basis.

Sixty-four countries are members of IDF, including African countries such as Zimbabwe, while others represent 74% of global milk production.

Other delegates from South Africa that attended, include Ms Christine Leighton, Ms Maretha Vermaak, Dr Colin Ohlhoff, Dr Mark Chimes, Ms Thabang Rampa, Mr Bertus van Heerden, Ms Chané Pretorius, Dr Ndumiso Mazibuko and Prof Elna Buys.

My general observations of the conference can be summarised as follows**:**

- Sustainability was again at the heart of the summit, with most of the sessions attended focusing on the transition to sustainable food systems. Comment was made that “Sustainability must be entrenched in the DNA of dairy”.
- The narrative that dairy is a part of the food security solution was certainly very prominent in all the plenary sessions.
- ‘Decarbonisation’ was a term that was frequently used, with numerous presentations referencing the future role of methane inhibiting feed additives. The USA focused on farm-level promoting climate-smart technologies, for example anaerobic digestion and the use of feed additives, although there are still risks and challenges associated with the adoption of these technologies.
- Discussion revolved around incentivising the uptake of climate mitigation approaches. However, this remains controversial as it is complex to standardise. This is due to variations across farming systems, as well as the vast number of methodologies used in quantification.
- The topic of ‘biodiversity’ was discussed in the environmental sessions. Biodiversity plays a vital role in maintaining healthy ecosystems, which directly impact dairy farming and its sustainability. Achieving balance between productivity and conservation of natural ecosystems was highlighted.
- Global appetite for dairy proteins will continue to grow, sports nutrition being mentioned as a key area of growth.
- Product innovation and marketing focuses on dairy protein for aging populations (healthy aging). Scientific studies were presented which indicate the health benefits of dairy, particularly the role of dairy in maintaining bone mass density in older adults.
- The potential of dairy towards positive health outcomes is immense. The role of science and communication with the consumer is as important as ever.

OTHER OBSERVATIONS

Huge regulatory challenges are placed on the industry to deal with environmental sustainability and animal welfare. If the dairy industries of the world do not react to the global consumer awareness on these topics, regulations will follow. In certain parts of the world, especially in Europe, the demand for farmers is such that milk production in these regions is in decline. In the Netherlands, the latest reduction targets in the infiltration of Nitrogen and Phosphates in the soil, can have dire consequences for their dairy industry. The only way to adhere to these demands will result in a dramatic reduction in the national herd in that country. Regulations might also eventually impact on the rules for international trade and dairy industries need to be aware of the developments on this front.

Growth in milk production is expected in countries which are less sensitive to environmental sustainability amongst others. Immense growth is expected for dairy production in India, which is officially recognised as the largest producer of raw milk internationally. An animal census in India revealed that milk is produced from 400 million animals mixed between dairy cows and buffaloes, with a production of 2,8 litres per animal per day. Other areas of growth in the world are Africa, China and South America and even the USA will be able to deliver if there is international demand for their products.

There is a substantial expected growth in demand for dairy products worldwide, especially cheese. The predictions made by experts are clear that this will lead to an international deficit in milk supply, even though I might not agree with this statement. Supply always follows demand.

World leaders got together and the signing of the Paris accord demonstrates to the world the efforts made by members and role-players to curb the environmental impact of dairy.

In my presentation I indicated the following with regard to South Africa:

- The huge increase in productivity in the primary sectors. Only in the last five years has our productivity on farm level increased by 52% according to information published in Lacto Data.
- The awareness of carbon sequestration with an organic approach to soil health and others. The impact of carbon sequestration due to sinking methane is something on which IDF needs to place high emphasis in providing a balanced view on the environmental impact of live bovine animals.
- Our collective interest that is dealt with in a structured way focusing on R&D and Consumer education, which ensures that the right messages reach consumers and that they are well informed on the health and other benefits of dairy. These programmes also convey the factual position on oversimplified and populist viewpoints which are commonly spread by groups whose interest is not for the dairy industry to prosper and grow.

THE PARIS DAIRY DECLARATION ON SUSTAINABILITY

“We, representatives of the global dairy community, gathered in Paris at the World Dairy Summit, from 15 to 18 October 2024, reiterate and reinforce our commitments for a sustainable transformation of the dairy sector.

We recognise:

- The 2023 UN Secretary’s General Call to Action for accelerated food systems transformation as a key driver to achieve the Sustainable Development Goals.
- The role of approximately 130 million dairy farms in the provision of nutritious food to billions of consumers and livelihoods for around 1 billion people, including farmers, processors, service providers, wholesalers, retailers and others.
- The role of the dairy sector in environmental sustainability and the need to decelerate climate change.
- The 2016 Declaration of Rotterdam, through which IDF and FAO committed to the sustainable development of the dairy sector.
- That current progress falls far short of what is required to meet the targets of the 2030 Agenda.

We agree to:

- Communicate and highlight the quantified and timetabled commitments made by the dairy sector, including companies and associations, towards sustainability.
- Document and share sustainable dairy practices aligned with sustainable developmental goals for wider adoption by dairy stakeholders.
- Foster and support open consultation among dairy, other stakeholders and decision-makers for making the dairy sector a proactive player in the transformative shift towards sustainable food systems.

We call upon global, regional, national and local stakeholders to:

- Recognise the critical role of the dairy sector in accelerating a sustainable transformation of food systems, from a socio-economic, environmental and public health perspective.
- Enhance public-private dialogue and collaboration for the creation of an enabling environment that supports the wide adoption of sustainable dairy practices that reflect local needs and realities.
- Support risk-taking, innovation and an incentive-driven approach for rapidly and sustainably transforming the dairy sector, whilst preserving and improving the livelihoods of dairy stakeholders and the sustainability of the entire dairy chain.”

REPORT BY: CHANÉ PRETORIUS

A general overview of the World Dairy Summit

With over 1 600 participants, the World Dairy Summit which was held in Paris, France, left a lasting impression as a professionally organised and intellectually stimulating event. I was particularly impressed by the quality and relevance of the discussions, which provided valuable insights into critical issues on the international dairy front.

The theme “Dairy for the future” included a full programme of four days which focused on topics including women in dairy, biodiversity and environmental issues in dairy, animal welfare, the role of dairy in diets, the role of fermentation and the ‘One Health Approach’ in food safety. The talks were highly informative, and the overall structure of the event reflected meticulous planning. The mixture of participants, ranging from farmers to scientists, was both down-to-earth and welcoming, fostering a friendly and engaging atmosphere.

The summit also stood out for its memorable social events and exceptional networking opportunities, allowing me to meet new contacts and build meaningful business relationships. Participating in the poster exhibition was a privilege, offering a platform to share ideas and learn from peers in the industry. Overall, the experience was both enriching and enjoyable, making it a highlight in professional dairy engagement.

Report on Business Meetings

Business meetings preceding the World Dairy Summit were attended at CNIT Forest, in Paris, France. Overall, the meetings gave a broad and intense view of global dairy matters, from the viewpoint of the most professional stakeholders in the dairy industry. It was exciting to engage with these professionals in discussions as they are highly regarded internationally. As a newcomer to IDF, the meetings were overwhelming; however, I look forward to future meetings where I can engage with more confidence, knowing what to expect and deliver.

Standing Committee on Microbial Hygiene

The programme of work outlined global efforts to address emerging hazards in milk and dairy products, emphasising monitoring, regulatory updates, and research:

France reported a rising influence of climate change on biological risks, including *E. coli* O80:H2, the second-leading cause of pediatric hemolytic uremic syndrome (HUS) since 2015. Significant steps included revising non-regulatory safety criteria for Shiga toxin-producing *E. coli* (STEC), testing for serotype O80, and the first isolation of this strain from asymptomatic cattle, linking bovine and human clinical cases. Additionally, France faces unprecedented foodborne outbreaks linked to unpasteurised goat cheese contaminated with *Yersinia enterocolitica*. Triple epizootics - Bluetongue (serotypes 3 and 8), epizootic hemorrhagic disease, and highly pathogenic avian influenza (HPAI) H5N1 impact trade, production, and animal health, with concerns over long-term effects. Pasteurisation is highlighted as essential for controlling HPAI in a country reliant on unpasteurised products.

Canada is monitoring the evolution of HPAI in the USA with robust measures, including emergency response plans, border controls, diversion of raw milk cheese to pasteurisation, and surveillance extending to processing plants, with public reporting of results.

Denmark reports over 500 herds affected by Bluetongue disease, though pasteurisation ensures no export impact, and discusses regulatory revisions for *Listeria monocytogenes.* The EU and Codex previously aligned on *Listeria monocytogenes* criteria:

Standing Committee on Microbial Hygiene

negative in 25g at production and <100 CFU/g at the end of shelf life. A proposal was suggested requiring products to remain negative in 25g at the end of shelf life if compliance with <100 CFU/g cannot be proven. This change is contentious, as the 25g method is less commonly used, and its feasibility is uncertain. The preferred approach is to maintain the current criteria by demonstrating compliance, as the impact and relevance of the proposed modification remain unproven. Furthermore, the debate continues over microbial food cultures, with proposals to classify them as additives or ingredients.

In the UK, a national outbreak of STEC O145 linked to raw milk cheese has led to expanded testing regimes, including multi-STEC PCR methods, and upcoming workshops aimed at enhancing diagnostic capabilities.

In the USA, HPAI has been confirmed in 299 dairy herds across 14 states as of October 2024, but pasteurisation ensures milk safety for consumers. A six-week study is set to monitor raw milk supply for asymptomatic cases, with efforts to prevent the virus from spreading through isolation protocols and good farming practices.

Norway focuses on HPAI monitoring, with Bluetongue cases limited to sheep in the south.

Switzerland collaborates with CNIEL on cheese testing related to HPAI.

Germany reports improvements in isolated Bluetongue cases and a *Pseudomonas* spp. case that has been resolved, but Arla Foods Ingredients decided to include this microbiological testing alongside total bacteria count analysis.

China revisits risks associated with genetically modified organisms (GMOs), antimicrobial resistance, and macro-protein safety and that it will be good to consider how to evaluate those genes, especially anti-microbial resistant genes for safety purposes.

South Africa, New Zealand, Ireland, and Poland report no significant dairy-related issues.

Furthermore, the draft outline for the “Bulletin of the IDF on Water Use and Reuse in the Dairy Sector” was presented and volunteers were sought to contribute to its sections. The Purpose & Scope will be addressed by the co-chairs and A. Dubois, while the background may involve someone from Arla, pending confirmation. F. Bourdichon will handle Definitions and Terminology of Water Use and Reuse. The section on Water Fit for Purpose and Compliance Requirements currently lacks volunteers. Contributions on Dairy Farming will come from Ireland, the United States, and France, with responses to follow. France will also respond regarding *Dairy Collection, Transport, and Distribution*. For Dairy Processing, input is expected from Germany, South Africa, and possibly Denmark, with Nestlé to be contacted for potential contributions. Additionally, a section on Validation and Verification of Control Measures will include contributions from E. Wemmenhove and F. Martinez, with discussions on validation of analytical methods involving ISO TC 34/SC9 WG3. B. Bansal will provide support across several chapters.

O. McAuliffe provided an update on IDF publications addressing significant microbiological hazards. Three fact sheets are in progress or under revision. The revised draft on *Campylobacter* and raw milk, led by O. McAuliffe and D. Bolton, has incorporated reviewer feedback and will proceed to final Science and Programme Coordination Committee (SPCC) approval, editing, and publication. A first draft on *Listeria* spp. and *Listeria monocytogenes* is being prepared by F. Bourdichon, incorporating recent insights, including new species and expanding the understanding of the *Listeria* genus. Similarly, a first draft on *Staphylococcus aureus*, led by T. Berger, is expected soon and will be shared with SCMH delegates. SC members were encouraged to propose additional topics of interest, with suggestions directed to O. McAuliffe.

F. Bourdichon provided a brief summary of a presentation given in early September in China

Roundtable discussion

with S. Yao, focusing on the safety considerations of synthetic biology, specifically in the context of precision fermentation. There have been considerable discussions about the safety of new food sources and production systems. Bourdichon compared the terms “Precision Fermentation” (a recent marketing term) with “Synthetic Biology” (a term in use for over 40 years). He also addressed labelling concerns, noting that a product may be labelled “dairy-free” but still contain dairy allergens, as the proteins produced could share similar epitopes. In such cases, this must be clearly stated on the label.

N. Gardner highlighted the misalignment within FAO and WHO between staff working on Codex, who recognise the General Standard for the Use of Dairy Terms, and those outside the Codex Secretariat, leading to confusion. To address this issue, members are encouraged to share concerns with their governments via National Committees and advocate for FAO leadership to prioritise the protection of dairy terms. While drafting the position paper, the Action Team referred to the FAO reference document to define “precision fermentation.” However, IDF does not endorse this term but uses it in its documentation to remain relevant in ongoing discussions.

The Task Force on Processing and discussions about Standing Committee mandates have led to proposed revisions in the objectives and title of the Standing Committee to better align its scope with the Codex Committee on Food Hygiene (CCFH). Updated objectives and priorities were shared with members, alongside a proposal to rename the committee from SCMH (Standing Committee on Microbiological Hygiene) to SCFH (Standing Committee on Food Hygiene) to better reflect its focus on food hygiene and operations. No feedback on the proposal was received. A. Dubois outlined the next steps: seeking SPCC approval for the name change, followed by a call for experts through IDF National Committees. Current members and ongoing work will transition from SCMH to the new SCFH. Additionally, a call for nominations for a new chair and deputy chair will take place at the next meeting.

IDF Standing Committee on Residues and Chemical Contaminants

The Standing Committee on Residues and Chemical Contaminants meeting discussed in a roundtable the surveillance of relevant information and reporting of emerging hazards associated with milk and milk products from various countries.

Countries and organisations are addressing a range of critical issues related to dairy safety and quality, with progress and challenges varying across regions. In France, climate change has heightened concerns over chemical and bacteriological hazards, potentially impacting dairy products and animal health.

Aflatoxin contamination, linked to imported non-GMO soybean meal from Nigeria, has prompted tighter monitoring of raw milk. Significant advancements include a validated method for detecting mineral oils in fatty matrices, with standardisation expected in 2024, and evolving perfluoroalkylated substances (PFAS) regulations, including detection mandates for aqueous discharges.

Bromide ions in milk, exceeding Maximum Residue Limits (MRLs), have raised concerns, with EFSA calling for international harmonisation to address risks to human and animal health. Japan is monitoring PFAS and developing rapid methods to detect non-steroidal anti-inflammatory drugs (NSAIDs) residues in milk, reflecting increasing scrutiny of veterinary pharmaceuticals. The Codex Committee on Pesticide Residues mandates that whole milk and milk fats be tested for regulatory purposes, while surveys on NSAIDs in dairy products remain an emerging priority.

In the United Kingdom, EFSA reassessments of brominated flame retardants (BFRs) have shown no immediate concerns for dairy; however, monitoring of new and emerging BFRs is ongoing, with assessments expected in 2024 to 2025. Bromide toxicity studies highlight its potential impact on thyroid and central nervous system health, with MRL exceedances necessitating stringent monitoring and safety measures for dairy cows.

The United States FDA has introduced a Post-Market Assessment Programme to prioritise chemicals in the food supply, addressing both intentionally added substances (e.g. packaging materials) and environmental contaminants like PFAS and heavy metals. This programme complements the Closer to Zero initiative, which targets heavy metals in food. Across these regions, efforts emphasise improved detection methods, stricter monitoring, and regulatory updates, with a strong call for international guidance, harmonisation, and standardisation to ensure safety and quality in the dairy sector.

The Action Team on Emerging Chemical Contaminant Risks from Farm to Processing reported their ongoing efforts to develop proactive management strategies for chemical contaminants within dairy supply chains. Their purpose includes creating a central IDF repository and delivering comprehensive topical guidance. Key deliverables have already been achieved, such as the publication of a technical paper and fact sheet on chlorates in an IDF Bulletin; the dissemination of a briefing sheet on PFAS to IDF National Committees and other committees (SCRCC, SCDST, SCFM, SCAMAC); and the sharing of a briefing sheet on micro and nano plastics. Additionally, a technical paper on chlorine-based disinfectants was finalised in Q2 of 2024.

The team also highlighted several work-in-progress initiatives, including projects on organic acids (led by C Mateus) emphasising mineral oils and hydrocarbons, quaternary ammonium compounds (QACs) (awaiting a team leader), mineral oils (requiring an action team lead), and methane-reducing additives (led by J. Karlsson, with additional experts needed).

Discussion points emphasised the importance of maintaining focus on key contaminants like PFAS, with calls to assess new insights from the past one and a half years and update the briefing sheet if necessary. Other emerging issues include contaminants from food contact materials, mycotoxins such as aflatoxin M1 (with debates on what qualifies as ‘emerging’). Mycotoxin in low concentration could act as antibiotics or stimulatory hormones in animals according to Poland.

Suggestions arose to expand the scope by adding open input for new contaminants and maintaining an overview of methane inhibitors without delving into toxicological evaluations. To advance these efforts, the team emphasised the urgent need for volunteers with expertise in farm management, dairy processing, toxicology, regulation, and analytics.

The Codex committees are addressing various contaminant-related questions, with updates provided on key topics. A. Dubois shared an update on discussions around nitrates within the Codex Committee on Food Additives and Codex Committee on Methods of Analysis and Sampling (CCMAS), including progress from the electronic Working Group (eWG) of CCMAS. Additionally, the upcoming Codex Committee on Contaminants in Foods (CCCF) in April 2024 will address critical issues such as aflatoxin B1 in feed for milk-producing animals (eWG), aflatoxin M1, and PFAS. It was also highlighted that the risk of antimicrobial resistance in pasteurised dairy products is considered very low, as reported by Dairy Australia. This underscores the importance of distinguishing between antimicrobial residues and resistant genes when evaluating risks. These developments continue to shape the understanding and management of contaminants in dairy products.

IDF SC Dairy Science and Technology

Roundtable discussion: Japan, Canada, and Germany are addressing various emerging issues in the dairy sector. In Japan, A2 milk has gained attention among dairy farmers and smaller companies as a potential value-added product, though the scientific evidence for its health benefits remains unclear, and no major companies have entered the market. Additionally, Japan revised its Foods with Function claims labelling system, following a health hazard case involving mould-contaminated supplements. The revision mandates GMP standards for supplement manufacturers and prompt reporting of health hazards to authorities. In Canada, recombinant β-lactoglobulin received regulatory approval, sparking industry questions about its use in formulations, while concerns about the impact of avian influenza on milk and methane reduction strategies are being monitored. Further research is needed to understand recombinant protein effects on milk processing. In Germany, novel processing technologies like membrane filtration and UV-C offer energy-efficient alternatives to traditional heat treatments, but legal and regulatory barriers persist. Thermal options like ohmic heating may be permissible if proven to meet existing safety standards. Across all regions, harmonisation, guidance, and scientific data are critical for addressing these challenges effectively.

Other discussions focused on precision fermentation, a technology combining traditional fermentation with modern biotechnology, allowing the production of targeted compounds like proteins and vitamins. It relies on genetically modified microorganisms, though the term “precision” often masks the GMO aspect to improve consumer acceptance. While synthetic biology in food production offers scalability and sustainability, challenges persist, including safety assessments, allergenicity, and labelling. Regulatory clarity is needed to distinguish these products from natural fermented foods, which have long been valued for their health benefits. Despite advancements, precision-fermented products face scepticism due to their artificial perception and potential regulatory hurdles.

REPORT ON WORLD DAIRY SUMMIT SESSIONS

FOOD SAFETY

The One-Health approach in food safety (1): Codex Guidelines for the control of Shiga toxin-producing E. coli (STEC)

Delphine Sergente

Shiga toxin-producing *Escherichia coli* (STEC) is a zoonotic pathogen with high genomic diversity, primarily found in the microbiota of ruminants such as cattle, sheep, and goats, which act as asymptomatic carriers. It poses a significant global health risk, mainly through foodborne transmission via contaminated products like bovine meat, raw milk, and dairy products. STEC infections are associated with severe health conditions, including diarrhoea, bloody diarrhoea, haemolytic uremic syndrome (HUS), thrombotic thrombocytopenic purpura, and long-term renal complications in about one-third of severe cases.

The virulence arises from adhesion factors like *eae* and *aggR* genes and toxins like Shiga toxins (*stx*) that damage endothelial cells, primarily in the intestines, kidneys, and brain, leading to clinical symptoms and sometimes fatal outcomes. Globally, STEC is a major public health concern, causing approximately one million illnesses, 128 deaths, and 13,000 disability-adjusted life years annually, as reported by the World Health Organisation. In the European Union, STEC remains a persistent challenge; in 2022 alone, 7,117 cases were reported, resulting in 1,130 hospitalisations and 28 deaths, with bovine meat and the products thereof identified as the top vehicles of transmission.

STEC infections are primarily foodborne, and contamination often originates from faecal material during milking, meat processing, or handling. Poor hygiene practices during milking, inadequate cleaning of equipment, and improper design or maintenance of milking systems significantly contribute to contamination risks. STEC can persist on milking equipment and pipelines, forming biofilms that resist cleaning and sanitisation. Studies reveal that biofilms formed by STEC serotypes, such as O157:H7, exhibit increased tolerance to sanitisers, especially when cleaning is suboptimal or when sanitisers are applied at sublethal concentrations. These biofilms can serve as reservoirs for STEC, allowing bacteria to persist and contaminate subsequent batches of milk. Additionally, the raw milk used in cheese production presents another risk, as some traditional cheese-making processes may not effectively reduce STEC levels. For instance, the initial stages of cheese production can lead to a 1-3 log increase in STEC due to favourable growth conditions. While processes like rapid acidification and curd “cooking” have been associated with significant reductions in STEC, these techniques may not align with all traditional cheese-making practices, necessitating alternative control measures.

Testing and monitoring are critical in managing STEC risks, but challenges persist due to the pathogen’s low infectious dose and variability in virulence. Most routine testing targets generic *E. coli* as an indicator of faecal contamination, but this approach does not confirm the presence of STEC, as not all *E. coli* strains carry Shiga toxin genes or exhibit pathogenicity. Specific detection methods, such as polymerase chain reaction (PCR) and Whole Genome Sequencing (WGS), are more accurate for identifying STEC strains with high-risk virulence gene combinations, such as those associated with severe illnesses like HUS. WGS has emerged as a powerful tool for understanding virulence factors, tracking outbreaks, and developing risk management strategies. However, these advanced techniques are costly, time-consuming, and require specialised expertise, which can limit their widespread application in developing economies or small-scale operations. As a result, periodic STEC testing is often complemented by audits of farms and processing facilities to assess hygiene practices and identify potential contamination sources.

International regulatory frameworks, such as those established by the Codex Committee on Food Hygiene (CCFH) and the Joint FAO/WHO Expert Meetings on Microbiological Risk Assessment (JEMRA), provide science-based guidelines to mitigate STEC risks. Since 2019, the CCFH has focused on developing specific annexes addressing STEC control in raw beef, raw milk, raw milk cheeses, and fresh leafy vegetables. These efforts aim to prioritise public health while considering the diverse economic and cultural contexts of different countries. For instance, the guidelines emphasise the importance of good agricultural and hygiene practices at the farm level, effective sanitation measures during processing, and microbiological testing for verification. The collaborative approach taken by CCFH, incorporating input from JEMRA, ensures that the guidelines are based on the latest scientific evidence and remain applicable to countries with varying levels of technological and economic development.

At the dairy farm level, controlling STEC involves implementing stringent hygiene practices during milking, maintaining clean and healthy animals, and preventing faecal contamination. Factors such as diet, stress, housing conditions, herd size, and geographic location can influence STEC shedding in ruminants, making farm management practices critical to reducing contamination risks. Proper cleaning and disinfection of milking equipment are essential to prevent biofilm formation and eliminate persistent STEC reservoirs. On the processing side, monitoring critical control points during cheese production is vital, particularly in the early stages when STEC growth is most likely to occur. Food Business Operators are encouraged to test raw milk for high-priority STEC strains and use microbiological criteria based on indicator microorganisms like *E. coli* to validate and verify hygiene measures.

Despite these measures, several challenges and risks remain. Testing alone is insufficient due to the low prevalence of STEC in raw milk, which means samples may not detect the pathogen even when it is present. Additionally, the cost and complexity of STEC testing can deter small producers from implementing routine analysis. Biofilm resistance and the persistence of STEC in poorly maintained equipment further complicate control efforts. The evolving nature of STEC virulence factors also necessitates ongoing research and adaptation of detection methods and risk management strategies. For instance, WGS provides detailed insights into the genetic makeup of STEC strains but requires significant investment in infrastructure and expertise. Moreover, the lack of a universally agreed-upon nomenclature for genetic variations poses challenges for data interpretation and international collaboration.

In conclusion, STEC remains a critical public health issue, requiring a multifaceted approach to control its risks in the food supply chain. Effective management relies on a combination of good hygiene practices, advanced detection methods, regulatory frameworks, and international collaboration. While technological advancements like WGS and improved monitoring tools offer promising solutions, their implementation must be balanced with considerations of cost, accessibility, and practicality for diverse stakeholders. Continuous scientific research, coupled with robust regulatory oversight and stakeholder engagement, is essential to reduce STEC-related illnesses and protect public health in an increasingly interconnected food system.

FOOD SAFETY

The One-Health approach in food safety (1): Exploring the nexus between new technologies of analysis and dairy food safety as part of a “One Health” Approach

- Fréderic Martinez

Dairy products are consumed globally by eight billion people, underscoring the critical importance of ensuring food safety across the dairy supply chain. Food safety is a collective responsibility that requires coordinated efforts from stakeholders, including farmers, manufacturers, authorities, and international organisations. To effectively manage emerging food safety risks, these stakeholders must adopt innovative approaches, leverage advanced technologies, and implement proactive measures to identify risks and provide early warning signals in a timely manner.

Farmers play a fundamental role in safeguarding food safety at the primary production level. Good Agricultural and Hygiene Practices are essential to minimise contamination risks. Farmers are encouraged to maintain strict hygiene standards, including cleaning equipment, washing hands, and using pre- and post-milking dipping techniques. Routine analyses and sanitation practices help maintain healthier herds and efficient equipment, reducing the need for excessive antimicrobial use. Proactively controlling factors that could introduce pathogens at the farm level is a vital step in ensuring the safety of milk and dairy products.

Food business operators must adhere to strict safety protocols aligned with Hazard Analysis and Risk-Based Preventive Controls and the IDF’s Standing Committee on Microbiological Hygiene guidelines. Advanced diagnostic tools, data management systems, and environmental monitoring programmes enable the effective management of residues, pathogens, and potential contamination events. These systems help operators anticipate risks, implement corrective actions, and ensure compliance with food safety standards, ultimately protecting consumers and maintaining public trust in dairy products.

Authorities play a regulatory role by encouraging good husbandry practices, promoting the implementation of international codes such as the Codex Code of Hygienic Practice for Milk and Milk Products, and enforcing legislation through inspections. Their efforts are critical in harmonising food safety practices across regions and ensuring consistency in dairy production standards. In addition to regulation, authorities must actively engage in capacity-building initiatives to support farmers and manufacturers in adhering to best practices.

The ‘One Health’ approach, which recognises the interconnectedness of human, animal, and environmental health, offers a holistic framework for addressing food safety challenges. For example, zoonotic disease surveillance involves monitoring pathogens in dairy animals and their environments to prevent their transmission to humans through milk and dairy products. Efforts to combat antimicrobial resistance, focus on assessing the prevalence of antibiotic-resistant bacteria in dairy production and mitigating the potential for transfer to humans. Environmental monitoring addresses the impact of dairy farming on water quality, soil contamination, and greenhouse gas emissions, emphasising sustainability while safeguarding public health. Additionally, advanced analytical tools support outbreak investigations by tracing contamination sources and implementing preventive measures.

New technologies are revolutionising dairy food safety analysis and monitoring. Rapid detection methods, such as polymerase chain reaction (PCR), loop-mediated isothermal amplification, and next-generation sequencing, enable precise and efficient identification of pathogens in milk and dairy products. Chemical residue analysis using chromatography and mass spectrometry facilitates the detection of contaminants like antibiotics and pesticides. These tools ensure that safety standards are met while allowing for timely interventions to mitigate risks.

Sensor technology and the Internet of Things (IoT) are enhancing real-time monitoring at critical control points (CCPs) in the dairy production process. Sensors measure parameters such as temperature, humidity, and pH, providing early warnings of potential contamination or deviations in processing conditions. By integrating IoT with artificial intelligence (AI), dairy farms can automate processes, improve traceability, and enhance overall efficiency. For example, IoT devices can monitor herd health and environmental conditions, allowing farmers to respond quickly to any anomalies that could compromise food safety.

The integration of Big Data and analytics platforms in the dairy industry provides a unified view of data from various sources, enabling stakeholders to make informed decisions. Analytics platforms track environmental monitoring schedules, facilitate product testing, and generate actionable insights through comprehensive reporting. These tools empower producers to anticipate issues and implement solutions before they escalate into significant problems.

Whole Genome Sequencing (WGS) is another transformative technology that is increasingly being used for the precise identification of foodborne pathogens and contamination sources. WGS supports outbreak investigations by determining the origins of contamination and enabling targeted interventions. Regulatory agencies and industry stakeholders globally are adopting WGS to enhance food safety measures. For instance, the European Commission has proposed legislation requiring EU countries to use WGS during foodborne outbreaks. This approach aligns with the Directive 2003/99/EC on monitoring zoonoses and highlights the importance of standardised genetic data for effective risk management.

A recent case study involving a multi-country outbreak of monophasic Salmonella typhimurium linked to chocolate products demonstrates the value of advanced technologies in managing food safety risks. In this case, WGS revealed two distinct clusters of the pathogen, enabling targeted recalls and corrective actions. However, the investigation also highlighted challenges such as the persistence of pathogens in production environments and the need for robust preventive measures.

Despite the benefits of these innovations, there are significant risks and challenges associated with their implementation. Managing Big Data requires reliable systems to ensure data availability and sensitivity. Blockchain technology, often used for traceability, faces issues related to information sharing and data ownership. WGS, while powerful, has raised concerns about costs, industry pushback, and the potential for assigning blame during investigations. The absence of a mutually agreed international nomenclature for genetic variations further complicates data interpretation.

The labelling and regulation of products derived from advanced technologies, such as precision fermentation, present additional challenges. Precision fermentation, which uses genetically modified microorganisms to produce compounds of interest, blurs the line between traditional and synthetic processes. This lack of clarity can confuse consumers and erode trust in dairy products. For instance, products created using this technology may exhibit allergenic properties similar to their animal-derived counterparts but cannot be labelled as dairy under Codex standards. Clear definitions and transparent communication are essential to address these concerns.

As the dairy industry evolves, data-driven digitisation is critical for maintaining a competitive edge and improving food safety programmes. Technologies such as environmental metagenomics, AI, and IoT enable stakeholders to analyse data in real time, optimise processes, and enhance food safety outcomes. However, these advancements must be supported by a robust pre-crisis plan to ensure rapid and effective responses to emerging risks.

It was concluded that in ensuring the safety of dairy products in a rapidly changing global landscape, a collaborative and multi-faceted approach is required. By integrating advanced technologies, fostering a ‘One Health’ perspective, and addressing regulatory challenges, stakeholders can build resilient dairy food systems that protect public health and maintain consumer trust.

In conclusion, I wish to extend my gratitude to Milk SA for allowing me the opportunity to attend the World Dairy Summit in person. It was an immense honour to showcase my research as a poster at such a prestigious event and a privilege to engage with professional peers. This opportunity enabled me to grow both personally and professionally.

REPORT BY: MARETHA VERMAAK

Standing Committee on Nutrition and Health

REPORT ON MID-YEAR BUSINESS MEETINGS

STANDING COMMITTEE ON NUTRITION AND HEALTH - MID-YEAR MEETING: UTRECHT, THE NETHERLANDS - 11 JUNE 2024

The mid-year meeting of the IDF Standing Committee on Nutrition and Health (SCNH) convened on 11 June 2024, in Utrecht, Netherlands. The meeting saw the participation of 24 members who focused on reviewing updates across various IDF bodies, discussing current collaborations, and evaluating ongoing projects relevant to the Committee's objectives.

IDF Head Office and Structural Updates

IDF's Head Office has seen recent organisational changes. Laurence Rycken has been appointed as the new Director General of IDF, while Anabel Mulet assumes the role of Science and Standards Programme Manager and serves as SCNH's secretariat. In alignment with this restructuring, IDF is recruiting actively for additional roles, specifically in its communications and science teams, to further support its scientific and advocacy goals.

Key Insights from the Science and Programme Coordination Committee (SPCC)

Isabelle Neiderer (CA) provided an overview of the SPCC's core responsibilities, primarily the approval of new work items (NWIs) and the prioritisation of projects critical to IDF's strategic focus. Significant projects relevant to SCNH were highlighted:

- **Protection of Dairy Terms**: A new initiative focused on promoting the Codex General Standard for Use of Dairy Terms, ensuring the correct labelling of dairy and non-dairy products.
- **School Milk in Sustainable Systems**: Advocating for the inclusion of milk in school feeding programmes, aligned with sustainable food systems.
- **Food Additives and Codex Alignment**: Addressing the alignment of food additives in dairy standards in collaboration with the Codex General Standard for Food Additives.

Among the eight NWIs approved in 2024, two stand out for their relevance to SCNH: a project advocating for dairy in Food-based Dietary Guidelines and a new Task Force on the place of dairy in the protein transition (TF-PDPT). SPCC also reviewed the progress of its Strategic Work Plan (2022 to 2025), with highlights including the development of the IDF Cloud, skill mapping for IDF experts, and the introduction of the Paul Jelen Award to recognise young scientific talent. Looking ahead, the Committee plans to assess work priorities of its high-priority partners in 2024 and to focus on engagement and succession planning in 2025.

Updates from IDF Task Forces

Progress updates were shared from various IDF Task Forces (TFs):

- **Processing TF**: This team produced a fact sheet and conducted a gap analysis regarding processing-related aspects of the IDF Programme of Work. An upcoming IDF session at the International Union of Food Science and Technology (IUFoST) conference will address the role of dairy processing in food systems, with a presentation from SCNH member Ivana Gandolfi.
- **Protein Transition TF**: As part of its mandate, this task force seeks to strengthen the role of dairy in the ongoing protein transition debate, including economic, nutritional, environmental, and cultural considerations. There is a need for expert contributions from fields such as dairy policy, economics, and environmental science. SCNH members proposed additional focal areas, like protein digestibility, bioavailability, the impact on under-consumed nutrients, and the comparative quality of proteins. The kick-off meeting for the Protein Transition TF was planned for 12 October 2024.

Concerns were raised about the progress of the **Plant-Based Foods TF**, and Anabel Mulet confirmed that a revised draft is in process for circulation.

Engagement with the World Health Organization (WHO)

A recent WHO call was discussed for experts aimed at formulating guidelines on animal-source foods and plant-based alternatives. Prof Warren McNabb from the Sustainable Nutrition Initiative at Massey University has been selected to join the expert panel, while additional expert confirmations are pending. SCNH members requested regular updates on candidate selections.

The committee also discussed WHO's recent communication on trans fats, which lacked differentiation between industrially produced and naturally occurring trans fats. SCNH members emphasised the importance of communicating this distinction and proposed developing an external paper or fact sheet clarifying the unique profile of dairy-based trans fats. Suggested strategies for promoting dairy's position in this discourse included collaboration with Codex and placing dairy experts at external conferences.

FAO's Food Systems-based Dietary Guidelines

Finally, an FAO initiative was introduced to publish a resource on food systems-based dietary guidelines. This resource will include a series of modules and webinars scheduled for release throughout 2024, guiding countries in adopting food system approaches for dietary guidance.

This initial section of the meeting reflected a cohesive effort by SCNH and IDF to advance the role of dairy in sustainable and health-promoting food systems, addressing ongoing structural and project-based initiatives, and fostering strong international collaboration.

Programme of Work

The Standing Committee on Nutrition and Health reviewed a series of initiatives focused on furthering the role of dairy in nutrition and public health.

Nutrition and Health Symposium 2024

Erica Hocking (UK) provided insights into the recent Nutrition and Health Symposium, which took place on 15 May, focusing on the role of dairy in Food-based Dietary Guidelines (FBDGs) and sustainable diets. The event hosted international speakers from countries including

Ireland, the USA, New Zealand, China and South Africa, with WHO Dr Francesca Branca delivering opening remarks. During the event, a new fact sheet, developed by the Action Team on FBDGs, was introduced to support the symposium's theme further.

Promoted across national networks and social media, the event garnered strong interest, with over 1 100 registrations and about 400 participants joining live, particularly from Canada and South Africa. The subsequent evaluation survey, completed by 130 attendees (primarily dietitians and nutritionists), reflected high levels of satisfaction with the content and interest in additional topics on dairy and health. The recordings are available online for those who could not attend.

Discussions among members centred on ways to bolster future symposia by securing endorsements from professional nutrition and dietetic bodies and promoting the event across their networks. In Ireland, a national press release was issued, spotlighting Dr Sinead McCarthy's insights on the sustainability of Irish FBDGs.

School Milk in School Feeding Programmes

Maretha Vermaak (ZA) shared the objectives and recent progress of the Action Team on school milk, highlighting updates to the School Milk Knowledge Hub and the ongoing School Milk Survey and Bulletin. The survey, launched on World School Milk Day 2023, closed in February 2024, and data analysis is now underway as part of the Bulletin drafting process.

The team is also examining the affordability of dairy nutrients, aiming to showcase the value of milk in addressing nutritional needs in school feeding programmes. In addition, a literature review led by Prof Adam Drewnowski on the cost-benefit ratio of milk in schools, is set for release in 2025. The team welcomes new members, especially those with experience in school milk initiatives.

Members discussed the affordability angle, with references to research by Massey University and Prof Drewnowski.

Dairy in Food-based Dietary Guidelines

Ashley Rosales (USA) reviewed the objectives of the New Work Item (NWI) on the role of dairy in FBDGs, noting the recent launch of a fact sheet and a dedicated collaboration folder in the IDF Cloud. The Action Team will continue developing Toolkit resources, expanding the database, and considering a peer-reviewed paper to connect with scientists beyond the dairy sector.

Following a recent WHO call for FBDG experts, the Action Team compiled recommendations for potential candidates. A technical webinar on 17 June 2024 will delve into recent changes in Germany's dietary guidelines.

In discussions, members emphasised keeping nutrition central to FBDGs, with recent studies on bone health and protein transitions being particularly relevant. They advised that IDF should align its communication with national FBDGs, recognising that some guidelines may omit or downplay dairy. National committees are encouraged to translate and adapt these resources for local use with policymakers and stakeholders.

Dairy Matrix

Stephan Peters (NL) presented updates on the work of the Dairy Matrix Action Team, including four new fact sheets, one of which was launched at the 2023 Nutrition and Health Symposium, which highlighted the Dairy Matrix. The team is finalising a peer-reviewed paper and creating a graphical abstract that illustrates health connections in the Dairy Matrix.

The team is exploring potential outreach opportunities, such as holding a satellite symposium at the upcoming International Union of Nutritional Sciences Conference (IUNS-ICN) in August 2025. Collaboration was suggested with groups like the European Milk Forum (EMF) or the European Dairy Association (EDA), as these organisations are active in dairy-related symposia.

Members also discussed broadening the Dairy Matrix focus to include effects on gut health, mood, sleep, and other wellness areas, given the current interest in plant-based and ultra-processed foods. However, regulatory challenges regarding health claims may pose barriers.

Sustainable and Healthy Diets: New Indicators

Stephan Peters reviewed past progress, such as the endorsement of the FAO report on Nutritional Life Cycle Assessments (nLCAs) and the guiding principles drafted for nLCAs. This complex area has generated mixed perspectives, although there is a clear consensus that nutrition must remain central in sustainability discussions. Peters referred to the guiding principles, which could inform future work within the Action Team.

Support was voiced for producing new fact sheets or peer-reviewed papers aimed at both scientists and consumers. Members underscored the need for clear communication, especially with the impending release of the EAT-Lancet 2.0. They agreed on using comparable or category-based food scoring models.

Codex Nutrition Matters

Jacco Gerritsen (NL) addressed various Codex-related topics, covering IDF's ongoing engagement in areas such as probiotics, plant-based and alternative proteins, and added sugars. Key items included:

- Probiotic Guidelines: IDF has submitted feedback on proposals for harmonised guidelines, supporting an update of the FAO/WHO report (2001).
- Alternative Proteins: IDF will monitor developments on plant-based and alternative proteins, emphasising the whole-food matrix approach to protect dairy terms.
- Regional Working Group: At Codex CCEURO, a regional expert group (Germany, Kazakhstan, Turkey) was established to address dietary recommendations.
- Definition of Added Sugars: Codex's Food Labelling Committee (CCFL) is working towards a harmonised definition.

Gerritsen highlighted the importance of these Codex issues and invited members to support this work. Anabel Mulet (IDF) offered to organise a call to clarify Codex's role and to outline how members can contribute.

Discussion of the upcoming IDF world dairy summit 2024 in Paris, France

Corinne Marmonier (FR) discussed the upcoming World Dairy Summit (WDS), scheduled for 15 to 18 October, with a unique Tuesday start date. The nutrition stream would occur on Thursday and Friday, spotlighting the role of dairy across the four dimensions of sustainable diets and life-course health.

New Work Item Proposals

IDF World Dairy Summit (WDS) 2025 – Santiago, Chile

Roberto Koch Vergara (Chile) introduced the theme for WDS 2025: *"Nourishing a Sustainable World"*. The event is set to be held from 17 to 25 October at the Hotel Intercontinental Santiago, including business meetings, the main summit, and technical tours. The summit will spotlight themes like sustainable food systems, the role of artificial intelligence in sustainability, and dairy as a food security staple in developing countries. Koch Vergara will lead the nutrition stream with support from various committee members across countries (e.g., USA, France, South Africa, New Zealand, Netherlands, UK), and other members welcome to join.

Lactose as a Prebiotic and Dairy Peptides

Ivana Gandolfi (I) proposed exploring the prebiotic qualities of lactose, particularly in Parmigiano Reggiano, and presented related research. Members generally found this idea promising, suggesting that the scope should expand to consider all dairy foods and their potential in gut health, IBS, and digestion. They noted existing research on the subject in the *Lactose Bulletin,* recommending updates with new studies. Gandolfi also shared findings on certain cheese peptides with digestive and systemic health benefits, suggesting a potential link with broader dairy bioactive topics.

Dairy Bioactives

Moises Torres-Gonzalez (USA) recommended expanding the Dairy Matrix initiative to focus on bioactive dairy components – like peptides, lipids, and carbohydrates – which are not understood widely. He proposed creating resources to help non-specialists grasp the value of these elements. Stephan Peters (NL) supported this, noting that it could bridge gaps in knowledge on nutrients and their health roles, potentially integrating with the lactose-as-prebiotic work.

Action to be Taken: Ivana Gandolfi and Moises Torres-Gonzalez are to discuss combining these ideas, either as a stand-alone item or as part of the Dairy Matrix work item.

Protein Hydrolysates

Anabel Mulet (IDF) highlighted challenges with milk protein hydrolysates, such as a lack of definitions and standardised methods, proposing a publication on their nutritional benefits. Stephan Peters questioned whether this aligned with other SCNH priorities and suggested that it might not fit in the Dairy Matrix, since hydrolysates represent processed products rather than whole dairy items. Ultimately, members preferred to defer a decision.

Dairy Products: Foods, Not Beverages

Corinne Marmonier (FR) raised concerns over drinkable dairy products potentially being taxed alongside sugary beverages. Given the daily nutritional value of dairy, she proposed developing a white paper to position dairy as *foods* in policy and dietary guidelines. Members acknowledged the global complexity of this issue, noting some drinkable dairy items might not qualify universally as foods. This idea could be part of the remit of the Food-based Dietary Guidelines (FBDG) Action Team.

Maretha Vermaak moderating a session on Nutrition & Health

Global Updates on Nutrition and Health Initiatives – Round-table Discussion

Representatives from seven countries shared updates on their national Nutrition and Health initiatives:

Australia is making strides in developing Food-based Dietary Guidelines (FBDG) and refining their Health Star Rating system for food labelling. They are also conducting a significant bone fractures trial.

Canada reported progress on multiple fronts, including front-of-pack (FOP) labelling, vitamin D fortification, and marketing regulations for children's food products. They are also working on school food policies and exploring new methods for protein quality assessment.

Chile celebrated a milestone – the 50th anniversary of its milk powder programme aimed at addressing malnutrition.

China is focusing on dairy innovation, with efforts in processing technology and R&D for dairy ingredients. They are also running milk promotion campaigns and establishing a National Centre for Innovation to tackle industry-wide challenges.

New Zealand provided updates on their Health Star Rating system and added sugar labelling initiatives. They are also conducting a national nutrition survey and developing a Dairy Nutrition Hub through Fonterra.

The *United Kingdom* is exploring vitamin D fortification and sustainable diet strategies.

The *United States* shared progress on several fronts, including a potential health claim linking yoghurt consumption to reduced Type 2 diabetes risk. They are also organising a Dairy Matrix symposium and updating their national dietary guidelines.

Emerging Concerns and Future Focus

An important alert came from Melissa Cameron (Australia) regarding an upcoming report from the UN International Agency for Research on Cancer. This report will review the role of ultra-processed foods, possibly impacting future nutrition policies and guidelines that may influence dairy.

Leadership Changes – Election of New Chair and Deputy Chair

The meeting saw a change in leadership, with Erica Hocking and Moises Torres-Gonsalez elected as the new Chair and Deputy chair of the SCNH, respectively. The Committee expressed gratitude to Stephan Peters for his six years of leadership.

The next SCNH meeting is scheduled for Monday, 14 October 2024, in Paris.

THE UTRECHT GROUP MEETING: UTRECHT, THE NETHERLANDS: 12–13 JUNE 2024

The Utrecht Group is an annual and closed (by invitation only) two-day scientific event led and organised by the Netherlands Dairy Organisation (NZO) in collaboration with several international dairy organisations, to discuss scientific evidence and sometimes controversial issues on the topics regarding dairy, health and sustainability. The number of people attending is also limited. Members who may attend are representatives from dairy organisations and scientists and/or health and nutrition professionals affiliated with the member organisations. No marketing or business experts may participate in the meetings.

The dietitian of CEP (Consumer Education Project) has been attending the Utrecht group meetings since 2018 and was the last new member admitted to the group. For the June 2024 meeting, we were, including all the speakers, 23 attendees.

The programme consisted of four sessions:

- Session 1: Dairy and Gut Health
- Session 2: Dairy and Brain Health/Parkinson's Disease
- Session 3: Dairy versus Plant-based Products Health Differences
- Session 4: Dairy Methodologies and Background

FEEDBACK ON THE SESSION PRESENTATIONS

Session 1 on Dairy and Gut Health

This session was organised and moderated by Prof Jan Geurts (NL) and Maretha Vermaak (ZA).

Prof Miranda Lomer, Professor of Dietetics in Gastroenterology at King's College in London presented the first talk: 'Lactose Intolerance: insights and management strategies'. This presentation covered the mechanisms of lactose digestion and the role of lactase in the small intestine. Prof Lomer also explored lactose malabsorption and intolerance, including prevalence, diagnostic methods and symptoms, and discussed strategies for dietary management and misconceptions about dairy exclusion.

This was followed by a presentation by **Dr Hassan Vatanparast** from the College of Pharmacy and Nutrition at the School of Public Health of the University of Saskatchewan in Canada. He presented: 'The role of fermented dairy in the nexus between gut microbiome, obesity, and cardiometabolic health'.

Dr Vatanparast explored the significant relationship between fermented dairy products, gut health, and cardiometabolic wellness. He explained that the gut microbiota, which aid in digestion, immunity and metabolism, can be altered by lifestyle factors such as diet and medications. When the gut microbiota become imbalanced – a condition called dysbiosis – people are at greater risk for cardiometabolic issues, including cardiovascular disease and obesity. Fermented dairy products, however, have been identified as a potential dietary solution. By introducing beneficial bacteria and limiting harmful strains, fermented dairy can help to restore balance in the gut, supporting both digestive health and overall cardiometabolic health. This accessible dietary approach holds promise for addressing major health challenges related to gut health and chronic disease. Dr Vatanparast also discussed the recent developments on the role of gut microbiota in health, and how fermented dairy products can impact health and specifically cardiometabolic diseases.

The last presentation in this session was by **Dr Qibin Qi** from the Department of Epidemiology and Population Health of the Albert Einstein College of Medicine in New York. He presented fascinating new research on: 'Milk intake and risk of Type 2 diabetes: the role of host LCT genotype, gut microbiota and blood metabolites'. This research, led by Dr Qi, explores the link between cow's milk intake and Type 2 diabetes (T2D) risk, focusing on how genetics and gut health might influence this relationship. Milk consumption has been debated in terms of its impact on T2D, and Dr Qi's research sheds light on this by looking at the LCT gene, which controls lactase production – the enzyme lactase is needed to digest lactose. People with the lactase non-persistent (LNP) genotype (those who typically have lactose intolerance) appear to benefit most from milk intake in terms of reduced T2D risk, whereas lactase persistent (LP) individuals do not show this association.

The study used data from the Hispanic Community Health Study and validated findings with data from the UK Biobank. Among LNP individuals, higher milk intake was associated with beneficial changes in the gut microbiota (like an increase in Bifidobacterium and a decrease in Prevotella) and in circulating metabolites, such as higher levels of indole propionate, which is known to support gut health. Some of these beneficial metabolites, influenced by milk-associated bacteria, were found to mediate the relationship between milk intake and lower T2D risk.

In contrast, for LP individuals, milk intake did not affect gut microbiota or blood metabolites in the same way. This study highlights the unique, protective role of milk for LNP individuals in managing T2D risk, showing how genetic factors, diet, and gut microbiota all interplay to influence metabolic health.

Session 2 on Dairy and Brain Health / Parkinson's Disease

Session 2 was organised and moderated by Dr Stephan Peters (NL).

Dr In-Young Choi from the University of Kansas Medical Centre in the United States presented the first talk: 'Dietary impact on the cerebral antioxidant system in ageing and neurodegeneration.' In her presentation, Dr Choi explained that ageing often leads to an energy deficit in the brain, which is a key factor in cognitive decline, a concern that affects adults of 65 and older significantly. This energy shortfall also plays a role in the onset and progression of neurodegenerative diseases, making the brain's antioxidant defences crucial for maintaining cognitive health.

A major player in this defence is glutathione (GSH), an essential antioxidant that protects brain cells against oxidative stress. As we age, GSH levels decrease, and they are even lower in people with neurodegenerative conditions. Research indicates that dairy foods, particularly milk, may help to counteract this decline. In a cross-sectional study, higher milk intake was associated with increased GSH levels in the brains of older adults. Building on this, a recent controlled dietary trial showed that milk intake could boost brain GSH concentrations actively in older individuals.

Given the growing body of evidence linking higher GSH levels to improved cognitive function, regular consumption of dairy products could be a promising strategy for enhancing brain health and resilience against age-related cognitive decline.

The second presentation in this session was by **Dr Patricia Chocano-Bedoya** from the University of Bern at the Institute for Primary Health Care. She presented: 'The impact of dairy intake on cognitive health: Insights from a systematic review and meta-analysis'. Her study explored the relationship between dairy intake and cognitive health, focusing on prospective observational studies. The systematic review and dose-response meta-analysis on which she reported, included 15 cohort studies, encompassing over 300 000 participants with an average follow-up of 11.4 years. They discovered a nuanced relationship between dairy consumption and cognitive health, finding that a daily intake of about 150 grams of dairy was associated with a lower risk of cognitive decline. The type of dairy product and the population studied influenced these results as the protective effects were more pronounced for milk and in Asian populations. Their findings suggest that dairy might play a role in preventing cognitive decline, but further research is needed to determine optimal types and amounts of dairy for cognitive health.

Session 3 on Dairy versus Plant-based products health differences

Session 3 was organised and moderated by Laura Anderson (NZ), Melissa Cameron (AUS) and Isabelle Neiderer (CAN).

Prof Marian de van der Schueren from Wageningen University & Research School in the Netherlands presented: 'Dietary requirements of patients and older adults and the role of animal versus plant-based protein on patient nutritional status'. She explained that, as people age, they experience *anabolic resistance*, meaning their muscles do not respond to protein intake as effectively as before. This resistance makes it essential for older adults to consume a higher protein intake, ideally 1.0 to 1.2 grams per kilogram of body weight per day, and potentially up to 1.5 grams per kilogram for those with chronic conditions. Importantly, these proteins should be distributed across meals, with each meal containing at least 20 to 30 grams of high-quality protein. The example of whey protein in milk was emphasised, to support muscle synthesis best.

Meeting protein needs can be challenging for older adults owing to factors like reduced appetite, limited mobility, and low awareness about protein-rich foods. Studies link low protein intake with decreased muscle mass and strength, leading to mobility issues. To address this, research on interventions, including protein-rich ready meals and dairy products, showed promising results but often did not meet the recommended intake levels. Therefore, increasing awareness and understanding about the health benefits of protein in seniors is key to effective dietary interventions.

Two projects, *ConsuBETER* and *Eiwitwijs*, aim to improve protein intake among seniors. *ConsuBETER* identifies barriers and promotes protein-rich foods through educational tools, while *Eiwitwijs* helps the food industry to develop protein-rich products suited to the needs of seniors in a sustainable dietary framework. As dietary trends increasingly shift toward plant-based proteins, there is also a need to balance quality and quantity, as fully plant-based diets may not always meet the protein requirements of older adults without careful planning. The meeting underscored that tailored products and guidance can help seniors to maintain healthy dietary patterns that support their mobility and overall wellbeing.

The second presentation as part of Session 3 on dairy and plant-based substitutes from a very young age and opportunities for use, was presented by **Dr Tanis Fenton** from the Cumming School of Medicine at the University of Calgary in Canada. Dr Fenton's research explores

the shift from traditional cow's milk to plant-based beverages (PBBs) as substitutes, especially for young children. Historically, milk has been valued for its high-quality protein, calcium, and other nutrients. However, with the rise of PBBs like almond and rice milk, many parents and consumers believe these options to be healthier and more environmentally friendly. Yet, there have been cases where young children consuming mainly PBBs, especially rice or almond, have developed severe malnutrition owing to nutritional deficiencies.

PBBs often provide fewer nutrients than milk, even when fortified. They typically contain much less protein – only soy-based PBBs come close, at about 75% of milk's protein, while most others provide just an eighth. Questions have also been raised about PBBs' calcium bioavailability and their higher glycaemic index, which could impact blood sugar levels. Though milk is not essential in children's diets, its absence requires careful dietary planning to ensure that children receive the necessary nutrients from other sources.

Prof Mairead Kiely, a Professor in Human Nutrition from the University College of Cork addressed the potential risks of micronutrient deficiencies that could result from environmentally protective diets, which often aim to reduce the environmental impact of food choices. She highlights that lower intakes of essential nutrients, such as iron, zinc, calcium, iodine, and vitamins A, D, B12, and riboflavin, may be a consequence of dietary shifts towards plant-based and lower-impact foods. This risk is especially significant for nutritionally vulnerable groups – like women of reproductive age and children – who have higher nutrient needs relative to energy intake.

Kiely emphasises that, while micronutrient deficiencies exist in well-resourced countries, the risk is even greater in low-income settings, where food insecurity often affects women and children disproportionately. She raises concerns that dietary guidelines focusing mainly on environmental sustainability, without adequate attention to nutrition, could worsen these deficiencies. Her talk reviews the existing evidence on this topic and proposes strategies to create balanced dietary guidelines that safeguard both planetary and human health.

The last presentation in this session was particularly interesting. It was presented by **Julian Mellentin,** director and founder of New Nutrition Business. This presentation was presented from a marketing and consumer perspective, rather than from a nutritional background. His talk focused on: 'How consumer behaviour and beliefs are driving strategy and sales in plant-based dairy substitute categories'. Mellentin's analysis of plant-based dairy alternatives highlights key consumer motivations, market realities, and emerging challenges in the sector.

The growth of plant-based alternatives has been fuelled largely by consumers' quest for digestive wellness and the active efforts of companies to develop better-tasting, 'milk-like' options that reduce dairy-related digestive issues. Almond and oat milk, for instance, have gained popularity owing to their improved taste and texture. However, despite extensive marketing campaigns and positive media coverage, the plant-based dairy sector remains a niche, rather than a mainstream market. Sales in many categories, including plant-based cheeses and yoghurts, have stagnated or even declined.

Interestingly, Mellentin's research reveals that sustainability, often emphasised in plant-based marketing, is not a primary driver for most consumers. High product prices, coupled with consumer scepticism about the authenticity of sustainability claims, serve as additional deterrents to adoption, particularly as economic pressures tighten household budgets. Moreover, social media trends show a shift away from plant-based dairy substitutes, with renewed interest in traditional dairy products, which consumers increasingly recognise for their natural nutrient density, taste, and versatility.

Mellentin underscores the unique advantages of dairy, such as its high protein quality, rich nutrient profile, and affordability. He advises the dairy industry to leverage these qualities to attract consumers by reinforcing the natural benefits and authenticity of dairy in its messaging. Ultimately, while plant-based alternatives have gained a foothold, dairy products maintain significant consumer appeal and sustainability potential that plant-based options have yet to match fully.

The last two presentations were presented by **Prof Thom Huppertz** from the University College of Cork in Ireland and **Dr David Allison** from Indiana University School of Public Health in the USA. These presentations had a more academic approach. Prof Huppertz gave a short presentation: 'What we will not find back in food composition tables: the good, the bad and the ugly'. He started by stating that the discussion on the role of milk and dairy products in human nutrition and health is often focused on the nutrients present in milk and dairy products, their bioavailability and the matrix they form. However, milk and dairy products - and all other food products as well - contain many other constituents, which can have an impact on nutrition and health. These are not included in food composition tables and their impact may thus become overlooked. This can include proteins, peptides, lipids and carbohydrates with specific biological functionalities, but also anti-nutritional factors (ANFs), which can impair protein digestion and mineral bioavailability.

Examples of such products are phytate and oxalate which can bind minerals like Ca, Mg and Fe strongly and reduce bioavailability or anti-nutritional factors like polyphenols, which can interact with proteins and digestive enzymes and, as a result, reduce protein digestibility. These ANFs are largely absent from milk and dairy products but are often present in plant-based products. In addition, milk and dairy products can also contain other components that have been associated negatively with human health. These can include components transferred from the animal to the milk, which can comprise hormones, antibiotics, pesticides, PFAS or components like IGF-1. Levels of IGF-1 in milk and dairy products are much lower than in blood serum and, should it be present in milk, IGF-1 is denatured by heat treatment and strongly reduced by fermentation.

Prof Huppertz emphasised that per and polyfluoroalkyl (PFAS) substances in milk can also include contaminants formed during processing, such as semicarbazide. In many cases, these components are linked to (possible) negative effects. Information on these substances is often scattered and there are far fewer complete datasets available. It is important that the dairy industry should understand the mechanistic of transmittal into milk and dairy products and they need to understand the effects of dairy processing. These possibly harmful products need to be investigated to understand how they can potentially impact human health.

Session 4 on Dairy Methodologies and Background

Dr Allison presented on the very controversial topic: 'Scientific rigor, reproducibility, stability, and trustworthiness of research on dairy health effects'. His presentation examines the importance of rigorous scientific methods in dairy health research, focusing on key aspects that contribute to trustworthy, impactful findings. He highlighted four core elements: reproducibility, verification, transparency, and stability. Reproducibility refers to the ability to recreate exactly the results of a study by using the original data and analysis methods, which demand accessible raw data and a thorough explanation of analytic steps. Verification goes a step further by examining whether the reproduced results were based on valid methodologies, rather than just on matching numbers.

Transparency in research requires detailed descriptions of methods and procedures so that others can replicate the study independently, understanding each step clearly, from design through data analysis. This includes complete disclosure of factors like data transformations and outlier removal. Stability assesses how minor adjustments in data analysis might impact results, often through sensitivity analysis, ensuring that findings remain consistent under different conditions.

By addressing these aspects, the presentation emphasises ways to enhance the credibility, consistency, and societal impact of dairy science research, aiming to make it more robust and widely trusted compared to other fields.

After each presentation, there were 30 to 40 minutes for questions and discussion with the presenters. The presentations were followed by an evaluation session by all the delegates. After all four sessions, the group continued to discuss the presentations and speakers, the value and quality of the presentations and any questions or concerns that might have been raised following the presentations.

This brings this part of the report – the first six months of the year – to an end.

REPORT ON BUSINESS MEETINGS DURING OCTOBER 2024

The Business meetings that preceded the World Dairy Summit in Paris were characterised by great networking opportunities, productive goalsetting and discussion of work items.

As dietitian of CEP, I attended the normal SC meetings applicable to my role as representative of South Africa, as well as some meetings that serve as integration between several SCs and action teams.

Standing Committee on Nutrition and Health (SCNH)

Twenty-eight delegates and eight observers attended the meeting. A further 10 members attended online. The meeting was led by the newly elected Chair – Erica Hocking and Deputy chair, Moises Torres-Gonzalez.

During the Standing Committee Nutrition and Health (SCNH) meeting in Paris, France, updates were shared on:

Task Forces (TFs) and collaborations with international organisations

- *Task Force on Dairy in Protein Transition*: The TF aims to identify current narratives on the role of dairy in the protein transition and evaluating sustainability using science-based evidence. While most members are from SCNH, there is a call for expertise from other Standing Committees (e.g. SCENV, SCDPE). One key goal is to position dairy as complementary to plant-based diets, enhancing nutrient adequacy in food system transitions. Challenges were noted regarding affordability versus sustainability, highlighting that, while dairy is an accessible food, adopting sustainable practices could impact costs.
- *Task Force on Food Processing*: IDF participated in the World Congress of Food Science and Technology, hosting a session on the role of dairy processing in sustainable food systems. Presentations by experts addressed innovative practices and their alignment with sustainability goals.
- *Task Force on Plant-Based Foods*: The TF developed a framework for plant-based beverages and proposed expanding the scope to include plant-based products like cheese and yoghurt alternatives. A smaller group will refocus this work, ensuring cross-committee collaboration. It was proposed to have a small group including the Chair and Deputy chairs from different SCs, including SCNH, to refocus the purpose of this work around plant-based foods.

Engagement With International Organisations

- **World Health Organisation (WHO)**
  - IDF submitted comments on draft guidelines for nutritional labelling.
  - WHO is working on guidelines for optimal intake of animal and plant-sourced foods, and defining 'ultra-processed' foods to guide future consumption recommendations.
- The Food and Agricultural Organisation (FAO)
  - FAO is reviewing the nutritional composition of plant-based and alternative protein foods, with outputs expected by the end of 2024.
  - Background reviews on alternative animal-sourced foods will consider nutrition, environmental, and socio-economic aspects.
  - FAO is developing resources for food system transformation aligned with sustainable diets, with modular outputs to begin later in 2024. Questions were raised about FAO's experts for these reviews, and IDF plans to investigate further.

These discussions emphasised the importance of interdisciplinary collaboration and proactive engagement with global initiatives to position dairy effectively in evolving food systems.

Programme of Work

IDF Nutrition Symposium 2025: The upcoming symposium for 2025, themed *"Dairy and Plant-Based Alternatives"*, is scheduled for May 2025. It will target health practitioners, researchers, academics, and policymakers with a format similar to the 2024 event, featuring pre-recorded academic talks and live Q&A sessions across time zones. Members emphasised the need for a balanced title to attract participants beyond the dairy industry and suggested including an FAO speaker for broader relevance.

School Milk Programmes: As Action Team leader, CEP's dietitian reported on the SMP work item. The bulletin on school milk programmes, including an updated literature review, was launched during the 2024 World School Milk Day celebrations and includes findings from the 2023 IDF survey. The School Milk Knowledge Hub has also been updated with four new case studies. The work received positive feedback from the SPCC. Isabelle Neiderer commented that, during the last SPCC meeting, there was a great deal of positive feedback. The SCNH

representative on the SPCC congratulated the AT on SMPs for their excellent work on this IDF priority work item.

Dairy in Food-based Dietary Guidelines (FBDG): Progress includes a fact sheet launched at the IDF Nutrition Symposium and a webinar on Germany's new FBDG. Efforts continue on database updates, resource toolkits, and alignment with upcoming FAO and WHO guidelines. The AT was advised to monitor relevant reports and to coordinate efforts with related work streams like the School Milk Programmes.

Dairy Matrix: The AT completed its first phase with four fact sheets and a peer-reviewed paper on the Dairy Matrix concept. (Maretha Vermaak from Milk SA's CEP, is a co-author of this published article.) Future efforts, termed *Dairy Matrix 2.0*, will focus on dairy bioactives, exploring their potential health benefits and integration in the matrix framework. Members stressed avoiding reductionist approaches and ensuring that messaging aligns with the broader dairy narrative.

Sustainable and Healthy Diets: The AT developed guiding principles for integrating nutrition and environmental considerations in food lifecycle assessments (nLCA). These will be finalised and submitted for SPCC approval, concluding the work of the AT.

World Dairy Summit Updates

- France 2024: Updates included participant numbers (1 600), technical tours (four), and new sessions on attracting talent to the dairy sector and cultural expertise. Nutrition will feature in four sessions.
- Chile 2025: Scheduled for 20 to 25 October 2025 in Santiago, the summit will focus on sustainable food systems, AI for a sustainable future, and dairy as a food security pillar. Nutrition-related talks will address the role of dairy in food security, healthy diets, paediatric nutrition, and protection against malnutrition. The CEP of Milk SA's dietitian who is part of the AT, will assist in planning the nutrition sessions as part of the WDS in Chile.

These updates reflect SCNH's diverse efforts to promote the role of dairy in health, nutrition, and sustainability across global food systems.

During the SCNH meeting, updates were shared on liaisons with other IDF bodies and international organisations:

- Science and Programme Coordination Committee (SPCC): An update was scheduled for the *All Experts Meeting* on 14 October.
- Standing Committee on Identity and Labelling (SCSIL): Updates were presented at the joint meeting held on 13 October between the SCSIL and SCNH.
- Standing Committee on Marketing (SCM): Bitha Farhang (CA) highlighted that two SCNH work items – the Dairy Matrix and school milk programmes – were discussed during the SCM meeting. The SCM expressed interest in collaborating with SCNH to develop clear, consumer-friendly communication about the Dairy Matrix and suggested exploring existing resources from other countries as a starting point.

A collaborative effort was proposed to determine specific communication needs. Volunteers from the SCNH were selected and included Maretha Vermaak from South Africa.

Action: Coordinate with SCM members to explore existing materials and outline communication strategies.

Joint Meeting of Standing Committee on Marketing, Standing Committee on Nutrition & Health, Standing Committee on Environment, and Standing Committee on Dairy Policies and Economics

A joint session was held to strengthen collaboration and foster a cross-disciplinary approach. Stephan Peters (NL) acted as the moderator of the session and emphasised the shared recognition of the need for improved communication and joint initiatives. Topics of particular interest to other committees included:

- Communicating **the Dairy Matrix**, particularly addressing concerns about salt and sugar content in nutrient profiling.
- Highlighting **affordable nutrition** as a key focus.
- Ensuring that **nutrition** remains a central consideration in discussions about sustainable diets, where it is often overlooked.

The joint meeting underscored the importance of holistic, collaborative efforts to enhance the impact of the SCNH's work across disciplines.

Round-table Discussion: Country Updates

During the Standing Committee Nutrition and Health meeting, representatives provided updates on key developments in their respective countries:

- *Australia*: The Australian Dietary Guidelines are under review, including the establishment of a sustainability evidence-based committee. Key topics include ultra-processed foods (UPFs), Health Star Rating (HSR) labelling updates, and added sugar declarations on nutrition panels. There is ongoing regulation of commercial infant and toddler foods, alongside consumer research on plant-based food labelling.
- *Canada*: Health Canada launched a survey on the 2019 *Canada Food Guide*. Concerns raised include nutrient inadequacy risks (e.g., calcium) and the unclear positioning of dairy. Consultations also addressed protein quality assessment methodologies, advocating for DIAAS over PDCAAS. In addition, Canada introduced a National School Food Programme to provide meals to 400 000 more children annually. Updates include modifications to preservatives allowed in dairy and ongoing work on marketing restrictions for children.
- *China*: The government emphasised balanced diets, including increasing milk consumption alongside soybeans, and reducing edible oil. Measures to stimulate dairy innovation include collaboration with dairy companies and research institutions. Guidelines addressing overweight and obesity prevention also recommend incorporating dairy into the diets of schoolchildren.
- *Denmark*: Plans are underway to implement climate labelling for food products by autumn of 2025. Participation will be voluntary and will include both generic and product-specific labelling.
- *France*: Key updates include the delayed implementation of the NutriScore algorithm across the EU and ongoing ANSES research (French Agency for Food, Environment and Occupational Health and Safety) into Ultra-Processed Foods (UPFs) – expected in November 2024. Long-term surveys will assess health, chemical exposure, and dietary habits, with preliminary results expected in 2025–2027.
- *Italy*: The updated Reference Intake Levels now recommend increasing daily protein intake from 18% to 20% to address lower bioavailability in plant-based foods. Paediatric nutrition guidelines have also been expanded. Italy continues supporting the NutrInform battery over the NutriScore model and raised concerns about UPF classification.
- *South Africa*: South Africa is still awaiting the publication of its national consumption survey, which was completed in August 2022. Once the research is officially published, the process of updating the South African Food-based Dietary Guidelines (SAFBDGs) will begin. The current guidelines are now 12 years old. For the moment, environmental sustainability is not a primary focus, as the country continues to grapple with significant nutritional challenges.
- *The Netherlands*: Upcoming updates to the Dutch Dietary Guidelines will include revised recommendations for macronutrients, vitamins, and minerals for children (0–2 years) and lactating women.
- *New Zealand*: The National Nutrition Survey is being updated for the first time since 2008/2009, although dairy and plant-based alternatives are grouped together. Concerns persist over the accuracy of the HSR algorithm, and added sugar labelling is being implemented.
- *Norway*: The updated Norwegian FBDG recommends three portions of milk and dairy products daily. A public consultation is underway on banning the marketing of unhealthy foods to individuals under 18, with UPFs remaining a contentious issue.
- *United States of America*: The Dietary Guidelines Advisory Committee reaffirmed the inclusion of three servings of dairy and did not recommend plant-based alternatives as replacements. Low-lactose dairy was recognised as an option for lactose-intolerant individuals. Discussions on dairy fat and cardiovascular disease yielded mixed findings. In addition, the Committee proposed removing discretionary calories from USDA dietary patterns.

Task Force on Plant-based Foods meeting

This meeting, under the leadership of Laurent Damiens, was attended by 12 members, including the Project's dietitian and 16 observers, among whom were the Project Manager, Christine Leighton and South African representative Thabang Rampa.

The meeting reviewed the progress of the Task Force and discussed the future direction of its work. Initially focused on comparing milk and plant-based drinks, the scope later expanded to include products like cheese and yoghurt, addressing concerns over the aggressive marketing of plant-based alternatives. However, feedback on the current framework highlighted issues such as unclear definitions, data gaps, and inconsistent methodologies, leading to stalled progress. Participants noted that regulatory pressures and policy-driven support for plant-based agendas, particularly with the upcoming EAT-Lancet 2.0, necessitate a renewed effort to provide fact-based, actionable arguments.

Challenges identified included the lack of robust scientific evidence on plant-based products owing to their heterogeneity and limited research on health outcomes.

- The Task Force Chair concluded by acknowledging the ongoing importance of the Task Force, even in the absence of extensive research in certain areas. Key priorities were identified, including labelling, communication and addressing sustainability challenges, particularly in response to environmental criticisms. Given the broad scope of these issues, it was proposed to establish a smaller group to define clear objectives and to develop actionable recommendations.
- The group would consist of the Chair and Deputy chairs of the Standing Committees on Standards of Identity and Labelling, Nutrition and Health, Environment, and Marketing to discuss and define the group's objectives. Melissa Cameron would be the moderator.
- The initial tasks would have a common understanding of the current work on the related areas of labelling,

communication and sustainability, identifying possible gaps, defining scope and identifying clear direction of the Task Force. It is important to remain mindful of IDF's remit and the limitations on what it can undertake.

The group was expected to meet, complete assigned tasks, and reconvene the broader team in six months to review progress.

Joint meeting of SC Standards Identity and Labelling and SCNH: Overview of Discussions and Programme of Work

The Standing Committee on Standards and Labelling (SCSIL) addressed a broad range of topics during the meeting, with a focus on protecting dairy terms, advancing work on plant-based and cellular foods, and contributing to Codex and ISO initiatives. The meeting also included updates on international regulatory developments and plans for future advocacy.

Key Highlights

Protection of Dairy Terms & Cellular Agricultural Products

The Action Team finalised a position paper on 'cellular agricultural products' (previously called lab-grown products). The paper emphasises neutrality on the technologies and aligns with the Codex General Standard for Use of Dairy Terms (GSUDT).

Key areas include defining cellular agriculture, addressing allergen declarations, and clarifying how milk-related terms should apply to these new technologies. It also ensures that components derived from human breastmilk are exempt from GSUDT restrictions.

Members supported the document and its role in guiding national committees where regulatory frameworks for cellular agricultural products are evolving. The paper will remain a 'living document' for future updates as the technology develops.

The future of the GSUDT Action Team: 'The current AT', led by C Busse, is concluding its work. A new AT will be formed to oversee updates to the GSUDT adoption survey and to ensure continued advocacy for protecting dairy terms.

The New Work Item will include refining descriptors in the IDF Bulletin 507/2020 for consistency with GSUDT. This effort will address discrepancies in definitions across standards, aiming to provide clearer guidance for global adoption.

Plant-Based Foods

Discussions reviewed the evolution of the Task Force on Plant-Based Foods, noting that its scope has expanded to include cheese and yoghurt alternatives alongside plant-based drinks.

The Task Force aims to consolidate expertise from several Standing Committees to align definitions with Codex and ISO standards. Concerns were raised about inconsistent definitions and the lack of robust scientific evidence supporting plant-based claims.

Melissa Cameron emphasised the need to set clear objectives, balancing technical and practical considerations, while maintaining alignment with IDF's mandate to promote dairy.

Codex Contributions

The meeting highlighted IDF's continued engagement in Codex committees, including -

CCFICS: Food fraud guidelines were advanced, with IDF advocating to keep geographical indications (GIs) outside Codex's scope.

CCFL: IDF contributed actively to discussions on allergen labelling, added sugars, and sustainability claims. Members agreed on the importance of truthful and evidence-based sustainability claims while voicing concerns about Codex's role in this area.

CCNFSDU: Updates were provided during a joint SCSIL-SCNH meeting, with the outcomes focusing on nutrition and food standards for special dietary uses.

Camel Milk Products

Progress on Codex standards for camel milk was discussed, emphasising IDF's position that camel milk falls under horizontal dairy standards and should not lead to reopening Codex's Milk Products Committee (CCMMP). Virtual consultations are seen as a preferred approach to maintaining engagement while minimising disruptions to existing standards.

ISO Engagement

IDF reported on ongoing efforts to influence ISO standards for plant-based and cellular agricultural foods. Recent progress includes ensuring that dairy terms are respected in plant-based food definitions and monitoring the development of principles for cell-cultured products.

Regulatory Updates from Member Countries

Australia and New Zealand: Updates included developments in Health Star Ratings, added sugars labelling, and infant formula regulations. Concerns persist regarding the accuracy of the HSR system and its impact on dairy products.

- Canada: Key updates involved regulatory modernisation, marketing restrictions for food targeting children, and sustainability initiatives. Canada's stakeholder survey highlighted concerns about nutrient inadequacy and the low visibility of dairy in the 2019 Food Guide.
- France and EU: Regulatory changes in NutriScore, environmental labelling, and protections for dairy terms were discussed. Concerns were raised about the NutriScore algorithm being unfavourable to dairy, though implementation has been delayed.
- Japan: Regulatory developments included updates on claims related to functional foods and food additives.
- United States: Notable updates involved front-of-pack labelling, plant-based milk alternative guidance, and qualified health claims for yoghurt.

Next Steps

New work items will be drafted for descriptors and GSUDT advocacy, with M Morrison and E Treuil appointed as leaders of the overarching AT. IDF will remain engaged in monitoring Codex and ISO developments and will continue advocacy for the role of dairy in sustainable and nutritious diets.

Members were invited to contribute ideas for labelling-focused sessions at the 2025 World Dairy Summit.

The meeting concluded with acknowledgements for the contributions of outgoing members J Rieke and C Busse.

Joint meeting of SCNH, SCM, SCENV, SCDPE and SCSIL

The meeting aimed to identify potential cross-committee collaborations in IDF and to encourage a more integrated approach to ongoing work streams. To achieve this, committee chairs and vice-chairs provided overviews of the activities of their respective Standing Committees (SCs), followed by presentations on key areas for interdisciplinary work. These topics included carbon markets, food systems, front-of-pack labelling (FOPL), and the use of green claims (greenwashing).

Breakaway sessions were held to stimulate discussion and to generate ideas for collaborative opportunities. Discussions on food systems highlighted concerns that environmental priorities in dietary guidelines often side-line nutrition issues and emphasised the need for stronger evidence-based messaging for policymakers. The carbon markets group noted limited access to participation, especially for developing countries, and called for an IDF position on carbon markets, improved tools, and policy engagement. Environmental issues discussions raised concerns about the financial impacts of carbon pricing on farmers, trade competitiveness, and consumer affordability, with suggestions to calculate the cumulative burden on dairy farmers.

Discussions on green claims focused on combating 'greenwashing' by improving claim verification, sharing proof points, and defining terms like 'Net Zero' to ensure reliability and clarity. The FOPL groups explored the long-term impacts of front-of-pack labelling, restrictive advertising on children, and the potential to leverage the Dairy Matrix for cross-committee work. They emphasised the importance of compiling evidence on the effectiveness of FOPL and proposed holding a symposium to communicate findings to stakeholders and officials.

The session concluded with a commitment from co-chairs and the IDF Director General to evaluate recommendations, to explore actionable next steps with committee leadership, and to distribute a participant survey to assess the session's effectiveness.

IDF Task Force on Women in Dairy

Under the leadership of Dr Judith Bryans and Ms Lynda McDonald, the CEP dietitian attended the Women in Dairy Task Force meeting. The meeting theme was 'Uncovering What Women in Dairy Means for the Global Dairy Sector'. There were three presentations:

- My perspective as a Saputo employee on gender equality – Julie Paquin, Director of Governmental Affairs at Saputo
- Gender equality in the dairy farming sector – Marie-Andrée Luherne, Vice-President at Fédération Nationale des Producteurs de Lait
- Dairy development and women's empowerment: lessons from low- and middle-income countries – Isabelle Baltenweck, Programme Leader: Policies, Institutions and Livelihoods at International Livestock Research Institute

All Experts meeting

At this meeting Piercristiano Brazzale, the IDF President, gave an update on behalf of the Board of Directors; and the Science and Programme Coordination Committee Chair, Dr Jamie Jonker provided a summary of all the work done across all Standing Committees and task forces in IDF. Finally, the IDF Director General, Laurence Rycken updated the experts on all IDF business.

For the years 2023 to 2024, three bulletins and two reports, 10 fact sheets, 13 events and technical webinars and 42 contributions to international organisations were completed by the IDF experts and IDF Head Office.

A complete list of work done can be found on the IDF website.

A GENERAL OVERVIEW OF THE WORLD DAIRY SUMMIT

Attending the World Dairy Summit in Paris, France, was a true privilege. The event, themed *"Dairy for the Future – Proudly Committed to a Sustainable World,"* brought together over 1 600 delegates from 62 countries, highlighting the global reach and collaborative nature of the dairy industry. With more than 100 expert speakers, it provided valuable insights into the latest developments across various disciplines.

The business meetings were especially rewarding, offering great opportunities to connect with colleagues and professionals from different areas of the dairy sector. These interactions offered a chance to benchmark our work against global standards and to explore innovative approaches being implemented in other countries. The high energy and excellent content made this part of the summit particularly impactful.

The main programme was impressive, with sessions that were thoughtfully planned and delivered by outstanding speakers. In Nutrition and Health, my specific area, the presentations were particularly engaging, offering fresh ideas and practical insights. It was an outstanding aspect of the summit, providing depth and relevance that has not always been the case in the past.

The social events were another highlight, showcasing the very best of French hospitality. The welcome reception at the Louvre was unforgettable, featuring a live classical orchestra, delicious French cheese and wine, and exclusive access to parts of this world-famous museum. The gala dinner in the historic Y-Hangar was equally remarkable, with remarkable food and entertainment that captured the spirit of the summit perfectly.

Overall, the World Dairy Summit in Paris was a wonderful blend of professional development and cultural experiences. It remains a highlight of international dairy engagement and a testament to the industry's commitment to innovation and excellence.

HEALTH AND NUTRITION SESSIONS

These consist of presentations from the sessions on nutrition-related topics:

The social and cultural role of dairy

- Prof Jay Stock: The impact of dairy products on human evolution
- Prof Guansheng Ma: Role of Dairy in Chinese Diets
- Dr Pascale Hebel: The Place of Dairy in French Dietary Patterns

The Role of Dairy in shaping human evolution

Dr Jay Stock's presentation highlighted the profound impact of milk and dairy products on human evolution and society, offering a fascinating narrative on how these foods shaped our biology, diets, and cultures over thousands of years.

What Makes Humans Unique

Humans stand apart from many other species owing to unique dietary requirements. Our relatively small and simple digestive system means we rely on energy-dense, easily digestible foods to meet our needs, particularly to fuel our large, energy-demanding brains. Milk, with its exceptional nutritional profile, provides a vital source of energy and nutrients, especially during periods of food scarcity.

The Beginnings of Dairying

The origins of dairying date back to the early agricultural era when humans shifted from foraging to farming and animal domestication. Alongside crops, people began utilising animals for 'secondary products' like milk, cheese, and yoghurt, rather than just meat. Fermentation and mechanical processes such as separating curds reduced lactose in milk, making it more digestible and widely consumed. Early dairy evidence, such as milk residues found on pottery, traces this practice across Europe, with fermented products like yoghurt and cheese being dominant forms of consumption.

The Role of Milk in Human Evolution

Milk plays a pivotal role in human evolution by providing a consistent and energy-rich food source. One key adaptation was the development of **lactase persistence (LP)** – a genetic trait that allows some adults to continue digesting lactose. This trait evolved independently in regions like Europe, Africa, and South Asia, reflecting its immense survival value. In times of famine, milk acted as a buffer, offering essential energy and nutrients. This dietary advantage supported earlier reproduction, shorter intervals between births, and greater resilience in harsh climates. In Northern Europe, for instance, lactase persistence became strongly selected owing to frequent crop failures and the need for alternative food sources.

The Lasting Impact of Dairy on Human Growth and Migration

The influence of milk consumption extends beyond survival. Populations with higher milk consumption and lactase persistence tend to exhibit taller average heights, reflecting better energy availability and nutritional adequacy. Milk also contains growth-promoting nutrients and hormones, which most likely contributed to increases in stature and physical development in early dairy-consuming societies.

Moreover, dairying played a crucial role in human migration and settlement patterns. It served as a portable, nutrient-dense food source, enabling humans to adapt to various environments and to thrive under challenging conditions. Dairy production also influenced plant domestication, creating a symbiotic relationship between crop farming and animal husbandry.

The Legacy of Dairy in Modern Nutrition

The legacy of dairying is evident today. Countries with high milk consumption and lactase persistence continue to show links between dairy intake, energy availability, and growth. This enduring relationship between milk and human biology underscores its importance as a dietary staple throughout history.

Conclusion

Milk and dairy products have been central to human evolution, not only as sources of nutrition but as catalysts for genetic adaptations and cultural advancements. The emergence of lactase persistence, the co-evolution of agriculture and dairying, and the physical and societal growth supported by milk consumption highlight its critical role in shaping the trajectory of human development. Today, the ongoing significance of dairy reminds us of its historical importance both as a survival tool and as a dietary cornerstone.

The Role of Dairy in Chinese Diets: An Overview

Prof Guansheng Ma's presentation sheds light on the evolving role of dairy in China's dietary patterns, its nutritional significance, and the challenges it faces in the broader cultural, social, and economic landscape.

Dietary Patterns and Health in China

Chinese diets have been plant-based historically, with staples like grains forming the primary source of energy. This approach has its advantages, such as reducing the risks of non-communicable diseases (NCDs), but also leaves gaps in essential nutrients, particularly high-quality proteins, calcium, and vitamins. By contrast, animal-based diets, including dairy consumption, offer rich sources of these nutrients but come with challenges such as excessive fat intake and rising obesity rates.

Over time, dietary patterns in China have undergone a significant transition:

- Before the 1980s: Diets were predominantly grain-based.
- 1980s to 2000: A shift towards increased consumption of animal-based foods, including milk, eggs, and fish, with a corresponding decline in grain consumption.
- 2000 onwards: The diet became more animal-focused, although disparities remain between rural and urban areas.

The Current State of Dairy Consumption

Despite the growing recognition of the nutritional benefits of dairy, milk consumption in China remains relatively low compared to that of Western nations. Rural areas rely more heavily on cereals for energy, whereas urban residents have more access to animal-based products, including dairy. Milk consumption, although increasing, faces several barriers:

- Cultural preferences and physiological factors: A large proportion of the population is lactose intolerant, particularly older children and adults.
- Food safety concerns: Events like the 2008 melamine scandal severely eroded trust in domestic dairy products, prompting a preference for imported options.
- Misconceptions and limited knowledge: Many lack an understanding of the benefits of dairy or the skills to incorporate it into traditional diets.

Nutritional Value of Dairy in Chinese Diets

Dairy plays a crucial role in addressing key nutrient deficiencies prevalent in Chinese diets. A single glass of milk (300ml) can provide:

- Protein: It covers 10% to 16% of the recommended daily intake.
- Calcium: It supplies nearly 40% of the daily requirement.
- Other nutrients: This includes vitamins B2, magnesium, and potassium, all essential for overall health.

Studies show that dairy consumption contributes to improved bone density, better management of lactose intolerance (via yoghurt), and even relief from conditions like constipation.

Government Efforts to Promote Dairy

Recognising the importance of dairy, the Chinese government has taken steps to encourage its inclusion in diets:

- Dietary Guidelines: The 2022 guidelines emphasise consuming at least 300ml of dairy daily, alongside a balanced intake of vegetables, fruits, and whole grains.
- School Milk Programme: Launched in 2000, this initiative aims to improve childhood nutrition, now covering over 27 million students across the country.
- Policy and Regulation: Stricter food safety measures were introduced post-melamine scandal, restoring some confidence in domestic dairy products.

The Road Ahead

While progress has been made, challenges remain in expanding the role of dairy in Chinese diets. Efforts must focus on:

- Addressing misconceptions and increasing awareness of the health benefits of dairy.
- Ensuring food safety and building trust in domestic production.
- Making dairy more accessible and affordable, particularly in rural areas.

Conclusion

Dairy holds immense potential to bridge nutrient gaps in Chinese diets, contributing to improved health outcomes and reducing the risks associated with nutrient deficiencies. By combining education, safety reforms, and accessible programmes like the school milk initiative, China can integrate dairy further into its diverse dietary landscape while respecting cultural preferences and physiological needs.

The Place of Dairy in French Dietary Patterns

Dr Pascale Hébel's presentation explores the role of dairy in France's distinctive culinary identity, its contribution to nutritional intake, and how consumption patterns have evolved over time. The findings offer insight into how dairy fits into both traditional and modern French diets.

French Food Culture: A Unique Context

The French food model, with its emphasis on gastronomy, plays a significant role in shaping dietary patterns. French cuisine, recognised by UNESCO as an intangible cultural heritage of humanity, is a collective expression of identity built around social ties and the joy of eating. Meals in France follow a structured format, with courses carefully chosen for balance and taste, often including dairy products like cheese as an essential element.

In France:

- People spend an average of 2 hours and 22 minutes daily on food, more than most countries.
- Meals are highly social, with 76% of households entertaining guests at home and dinner remaining the primary family gathering time.
- Attention to the content of the plate has increased, especially during the COVID-19 pandemic, with more focus on being together and enjoying the meal.

Dairy and Nutritional Contributions

Dairy products play a vital role in meeting nutritional requirements in French diets, particularly for calcium and protein intake. Key highlights include:

- Calcium: Dairy contributes 53% of calcium intake in adults and 60% in children, critical for bone health.
- Vitamin B2: Provides 27% of daily intake in adults and 43% in children.
- Protein: Dairy accounts for 20% of protein intake in adults and 23% in children, alongside significant contributions to dietary fat.

Consumption of at least three servings of dairy daily helps 86% of adults meet the estimated average calcium requirement (EAR), compared to only 33% for those consuming less than three servings.

Trends in Dairy Consumption

Dairy consumption in France has undergone notable shifts:

- Yoghurt: Consumption among children is declining, while it remains stable among adults.
- Cheese: It is increasingly consumed, particularly as an ingredient in ready-made or home-cooked meals. Generational changes show younger people consuming less cheese on their own.
- Milk: Consumption has been in steady decline since 2013, particularly among younger generations, owing to factors like health campaigns and increasing awareness of lactose intolerance.

Generational Differences and the Future of Dairy in France

Generational changes are shaping the future of French dietary patterns:

- Younger Generations: More health-conscious and environmentally aware, this leads to a reduction in milk intake but greater use of cheese in recipes.
- Older Generations: Often influenced by medical advice, they focus on nutrient-rich foods, including dairy, as part of prescribed diets.

Forecasts for 2030 indicate further shifts:

- Milk consumption is expected to decline further, from 52 kg per year in 2018 to 49 kg.
- Cheese consumption is projected to increase slightly, from 18.7 kg to 20 kg annually.

Challenges and Opportunities

The evolving role of dairy in French diets highlights both challenges and opportunities:

- Challenges: The decline in milk consumption, particularly among younger people, poses questions about meeting calcium needs through other sources.
- Opportunities: Increased awareness of sustainable and healthy diets provides an opening for promoting dairy as a balanced and nutrient-dense option.

Conclusion

Dairy remains central to French dietary patterns, both as a cultural staple and as a key source of essential nutrients. While shifts in consumption reflect changing health and sustainability priorities, dairy products, especially cheese, remain prominent in the French food model. Tracking these trends will be critical to understanding and addressing the nutritional needs of future generations.

Role of Dairy in Health Sustainable Diets

- Dr Nicole Darmon: Balancing food categories to meet the four dimensions of sustainable diets – a French perspective
- Dr Sylvia Chungchunlam: Place of Dairy in Sustainable Diets – Bridging Nutrition and Economics
- Prof Mairead Kiely: Impact on Micronutrients in a Shift towards Diets from Sustainable Sources

Balancing Food Categories to Meet the Four Dimensions of Sustainable Diets

Dr Nicole Darmon's presentation delves into the concept of sustainable diets, exploring the intricate balance between health, environment, cultural habits, and economic affordability. The talk offers insights into how French dietary practices can align with these sustainability dimensions while maintaining nutritional adequacy and cultural relevance.

The Four Dimensions of Sustainable Diets

Sustainable diets must achieve harmony across these dimensions:

- Health and Nutrition: Nutritional adequacy without excess or deficiency.
- Environment: Protecting biodiversity and minimising ecological impacts such as greenhouse gas emissions (GHGE).
- Cultural Habits: Ensuring that diets remain culturally acceptable and realistic.
- Economic Affordability: Maintaining economic fairness and accessibility for all.

Trade-offs in French Dietary Practices

Dr Darmon highlighted critical trade-offs observed in self-selected French diets:

- Nutritional Quality vs Environmental Impact: Surprisingly, diets with lower GHGE often had poorer nutritional quality owing to reduced consumption of nutrient-rich foods like animal products and dairy.
- Cost and Cultural Acceptability: While low-cost diets were culturally acceptable, they often lacked adequate nutrition

Insights from 'Positive Deviance' in Sustainable Diets

The study identified 'more sustainable diets' that were nutritionally adequate, environmentally friendly, and cost-effective. Key characteristics included:

- Less meat and processed foods, reducing environmental impact.
- Increased consumption of healthy plant-based products, dairy, and eggs, maintaining nutritional balance.
- Greater diversity and moderation, ensuring alignment with public health messages to combat obesity and food waste.

Modelling Tomorrow's Sustainable Diets

Using advanced modelling techniques, Dr Darmon illustrated a 'best compromise' diet that achieved:

- 35% reduction in GHGE, primarily through reduced meat consumption.
- Economic savings of 10% compared to current French diets.
- Cultural alignment, retaining core elements like three dairy servings per day.
- Nutritional improvement, ensuring sufficient protein, calcium, and other essential nutrients.

Challenges and Opportunities

Challenges:

- Generating sustainable diets that meet all nutritional needs without significant environmental trade-offs.
- Addressing the high GHGE of animal products while retaining their nutritional contributions.

Opportunities:

- Promoting 'vegetalisation' of diets through smart rebalancing rather than total elimination of animal products.
- Leveraging public health initiatives to encourage moderation, diversity, and frugality in eating habits.

Implications for Action

To move toward sustainable dietary practices, Dr Darmon recommended practical strategies:

- Shift towards unrefined grains and increased plant-based consumption.
- Optimise dietary patterns to minimise food waste and environmental impact while maintaining cultural identity.
- Integrate sustainability considerations into public health and economic policies.

Conclusion

Dr Nicole Darmon's research underscores the importance of holistic approaches to diet sustainability. The French experience highlights the feasibility of achieving sustainable, health-conscious, and culturally aligned diets through thoughtful balance and innovation.

The Place of Dairy in Sustainable Healthy Diets: Bridging Nutrition and Economy

Sylvia Chungchunlam's presentation underscores the vital role of dairy in sustainable and affordable diets that balance nutrition, environmental sustainability, and economic considerations. Using a global lens, the discussion highlights the economic and nutritional advantages of dairy while addressing challenges to accessibility and cultural acceptability.

The Role of Dairy in Sustainable Diets

Sustainable diets are defined by their ability to balance health, affordability, environmental impact, and cultural acceptance. Dairy emerges as a key component, contributing significantly to:

- Nutrition: Dairy is a cost-effective source of essential nutrients, including calcium, vitamin D, and protein.
- Affordability: Dairy products provide high nutrient density at a lower cost compared to alternatives like plant-based beverages. For instance, dairy milk often costs less per unit of calcium compared to soya, almond, or oat milk.
- Cultural Relevance: Dairy products are widely consumed and accepted in many traditional diets globally.

Linear Programming Insights

Using a linear programming approach, the study analysed least-cost diets across different countries, balancing nutrition and affordability. Key findings include:

- **Cost Comparisons:**
  - In the USA, a nutritionally adequate diet with both animal-sourced foods (ASF) and plant-based foods (PBF) costs $1.98 per day, 45% less than a plant-only diet at $3.61.
  - In New Zealand, the ASF + PBF diet costs $1.97 daily, 26% cheaper than a plant-only diet.
  - In Indonesia, dairy accounted for 12% of the daily diet cost, providing 40% of calcium requirements for $1.57 per day.
- **Nutritional Contributions:**
  - Dairy contributes significantly to first-limiting nutrients like calcium, vitamin D, and riboflavin while remaining affordable.
  - In Tanzania, dairy provides 21% of calcium and 34% of vitamin B12 at just 15% of the daily diet cost ($0.75).

The Advantages of Dairy in Sustainable Diets

The study reinforced the role of dairy as a key contributor to sustainable diets:

- Nutritional Density: Dairy efficiently addresses nutrient deficiencies, especially in low-income populations.
- Economic Efficiency: Dairy offers more cost-effective solutions for meeting nutrient adequacy compared to plant-only alternatives.
- Cultural Acceptance: As a traditional food item, dairy integrates seamlessly into diverse dietary patterns worldwide.
- Fortification Potential: Dairy serves as a vehicle for enhancing bioavailable nutrients in populations at risk of deficiencies.

Challenges and Opportunities

Challenges:

- Accessibility and availability in low-income regions.
- Perceptions of high cost and environmental impact of dairy products.

Opportunities:

- Promote dairy as an affordable and culturally acceptable nutrient source.
- Enhance access to fortified dairy products to tackle malnutrition globally.

Conclusion

The place of dairy in sustainable diets is firmly established as a bridge between nutrition and the economy. While barriers like accessibility remain, the nutritional and economic advantages of dairy products position them as essential components of global food systems striving for sustainability and health equity.

The role of Dairy in healthy diets for all ages

- Prof Ian Givens: Effects of Dairy on Nutrition and Health over the Life Course
- Prof Sandra Iuliano: Role of Dairy in Bone and Musculoskeletal Health across the Lifespan
- Dr Raaish Oozer: Fermented Dairy, Gut Microbiome and Cardiometabolic Health

Effects of Dairy on Health and Nutrition Over the Life Course

Prof Givens' presentation explores the essential role of dairy in promoting health and nutrition across different life stages. From conception to later life, dairy products provide vital nutrients that support growth, cognitive function, and disease prevention.

Conception and Pregnancy

Dairy contributes critical nutrients for maternal and foetal health:

- Vitamin B12 and Folic Acid: Essential for preventing neural tube defects (NTDs). Dairy is a significant dietary source of vitamin B12, complementing folic acid supplementation.
- Iodine: Supports foetal neurodevelopment. Milk and dairy products contribute 34% of iodine intake in UK females, addressing iodine deficiency, which can impact cognitive abilities and memory.

Lactation

- Calcium and Bone Health: Lactation demands significant calcium intake (1 250 mg/day). Dairy provides a consistent and bioavailable source, preventing bone loss in lactating mothers.
- Nutrient Density: A daily serving of milk fulfils a substantial percentage of calcium, vitamin D, and other micronutrient requirements.

Childhood and Growth

- Milk Proteins and IGF-1: Dairy proteins, particularly casein, stimulate Insulin-like Growth Factor 1 (IGF-1), a critical mediator of bone growth.
- Stunting Prevention: Increased milk consumption in children correlates with improved height and reduced stunting prevalence globally.

Adolescence

Adolescents often experience suboptimal intakes of key micronutrients like calcium, iron, and iodine:

- Dairy Intake: Declining dairy consumption among adolescents, particularly females, exacerbates these deficiencies.
- Bone Mass: Inadequate calcium intake during adolescence can compromise peak bone mass, heightening the risk of osteoporosis later in life.

Later Life

- **Cardiovascular and Cognitive Health:**
  - The role of dairy in reducing the risk of stroke and cardiovascular diseases has been evidenced in dose-response meta-analyses.
  - Milk fat globule membrane (MFGM) is linked to improved memory and cognitive function, especially in older adults, helping to prevent neurodegeneration.
  - Vitamin B12 Absorption: Dairy helps to offset declining B12 absorption efficiency in ageing populations.

Challenges in Dietary Transition

As dietary patterns shift towards plant-based alternatives, concerns arise over nutrient adequacy:

- Micronutrient Shortfalls: Transitioning from dairy to plant-based diets can result in deficits in calcium, vitamin B12, and iodine, which are harder to replace without supplementation.
- Bioavailability: Dairy provides highly bioavailable calcium compared to plant-based sources, ensuring better absorption and utilisation.

Conclusion

Dairy's role across the life course is indispensable for health and nutrition. It supports growth in children, compensates for nutrient demands in pregnancy and lactation, and offers protective benefits for ageing populations. While plant-based diets are gaining traction, they pose challenges in achieving comparable nutrient adequacy without significant dietary adjustments or fortification.

Dairy and Musculoskeletal Health Across the Lifespan

Dr Sandra Iuliano's presentation highlights the critical role of dairy in maintaining and enhancing musculoskeletal health from childhood to old age. The research emphasises how the calcium, protein, and vitamin D content of dairy contribute to bone density, muscle mass, and fracture prevention, offering cost-effective solutions for improving public health outcomes.

Key Findings Across Life Stages

Childhood and Adolescence

- **Peak Bone Mass Accrual:**
  - Bone mass accumulation peaks during childhood and adolescence, with dairy playing a vital role in maximising accrual. A 10% increase in peak bone mass reduces fracture risk by 50% and delays osteoporosis onset by 13 years.

- Studies demonstrate significant improvements in total body bone mineral density (BMD) among children supplemented with dairy, particularly in girls consuming 750 mg of calcium per day.

Adulthood

- **Bone Maintenance:**
  - During adulthood, maintaining bone density is crucial. Dairy supplementation (e.g., 900 mg/day–1 300 mg/day of calcium) helps to preserve lumbar spine BMD in premenopausal women.
  - Long-term compliance with dairy intake is essential for sustained benefits.

Older Adults

- **Preventing Fractures and Falls:**
  - Older adults face increased fracture risks owing to declining bone density and muscle mass.
  - A landmark intervention study in aged care homes revealed that increasing dairy intake to 3.5 servings per day reduced all fractures by 33%, hip fractures by 46%, and falls by 11%.
- **Muscle Mass Preservation:**
  - The high-quality protein content of dairy aids in maintaining lean muscle mass, particularly in the arms and legs, reducing the risk of sarcopenia.
  - Older adults require 50% more protein (1.2 g/kg–1.5 g/kg body weight) than younger adults, making dairy a key dietary component.

Economic Benefits

- **Cost Savings:**
  - Modelling studies in Europe indicate that increasing calcium intake through dairy to 1,200 mg/day could save €129 million annually in healthcare costs in France alone, primarily through hip fracture prevention.
  - In aged care facilities, the cost-effectiveness of dairy intervention was highlighted, with an incremental cost-effectiveness ratio of $8,719 per fracture averted.

Public Health Implications

- **Sustainability of Interventions:**
  - The success of dairy supplementation relies on sustained consumption and the integration of strategies like fortification and menu modifications in institutional settings.
- **Global Relevance:**
  - As the global population ages, addressing musculoskeletal health through cost-effective, nutritionally dense foods like dairy is increasingly critical.

Conclusion

Dairy consumption supports bone and muscle health across all life stages, contributing to reduced fracture and fall risks in older adults while promoting bone development in youth. Adequate dairy intake (3.5 servings daily) is a cost-effective, practical intervention with significant public health and economic benefits.

Fermented Dairy, Gut Microbiota, and Cardiometabolic Health

Dr Raaih Oozer's presentation explores the multifaceted role of fermented dairy products, such as yoghurt, in improving gut microbiota composition, enhancing metabolic health, and reducing risks associated with cardiometabolic diseases. The talk emphasises the interplay of active cultures, fermentation metabolites, and branched-chain hydroxy acids (BCHAs) in mediating health benefits.

Key Nutritional and Functional Components of Yoghurt

Active Cultures

Yoghurt contains *Lactobacillus delbrueckii subsp. bulgaricus* and *Streptococcus salivarius subsp. thermophilus*, which supports lactose digestion and reduces digestive symptoms in lactose-intolerant individuals.

Nutritional Profile

High in macronutrients, calcium, phosphorus, potassium, and vitamins B2, B5, and B12, contributing to overall health.

Fermentation Metabolites

Metabolites like pyruvate and lactate are derived from the fermentation process, enhancing gut microbiota and systemic health.

Gut Microbiota and Metabolic Benefits

- **Gut Microbiota Modulation**
  - Regular yoghurt consumption is associated with shifts in gut microbiota, increasing beneficial bacterial genera and supporting metabolic health.
  - *TwinsUK* studies demonstrated that frequent yoghurt consumption correlates with microbiota profiles typically linked to plant-based diets, favouring health.
- **Reduction in Metabolic Disease Risks**
  - Epidemiological studies showed that consuming yoghurt at least four times a week reduces risks of Type 2 diabetes (14%) and non-alcoholic fatty liver disease (NAFLD).

Specific Health Impacts

- **Insulin Sensitivity and Glucose Homeostasis**
  - Human intervention studies demonstrated that yoghurt improves insulin resistance, reduces intrahepatic lipid accumulation, and aids liver health.
- **Impact of Branched-Chain Hydroxy Acids (BCHAs)**
  - BCHAs, particularly HICA, HIVA, and HMVA, are fermentation by-products shown to inhibit hepatic glucose production and to stimulate glucose uptake in muscle.

These compounds improve insulin sensitivity and metabolic regulation in preclinical models.

Challenges and Optimisation Strategies

Fermentation Variability

The BCHA content in yoghurt depends on strains and fermentation conditions, presenting an opportunity for strain optimisation.

Clinical Translation

Some studies show mixed results on the superiority of yoghurt over non-fermented dairy, indicating the need for standardised formulations and further research.

Conclusion

Fermented dairy products like yoghurt contribute significantly to gut microbiota modulation, improved insulin sensitivity, and reduced cardiometabolic disease risks. By harnessing fermentation processes to optimise bioactive compounds like BCHAs, fermented dairy holds promise for advancing public health interventions. Further clinical trials are needed to refine and confirm these benefits across diverse populations.

Health Benefits of Dairy: The Latest Findings

- Dr Fabien Pifferie: Recent Advances on Dairy Fats and Cognition: Contribution of a Primate Study
- Dr Lonneke Janssen Duijghuijsen: Lactose (in)tolerance: The Role of the Gut Microbiota
- Dr Emma Feeney: Vitamin K: An Understated Dairy Nutrient

Recent Advances in Dairy Fats and Cognition: Insights from a Primate Study

Dr Fabien Pifferi's presentation explores the role of dairy fats in supporting cognitive development and brain function. Through a detailed primate model study using grey mouse lemurs, the research investigates how maternal dairy fat intake affects the psychomotor skills and cognitive abilities of offspring.

Key Properties of Dairy Fat

Dairy fats contribute to brain health through:

- Short- and Medium-Chain Fatty Acids: Easily metabolised for energy and protection of polyunsaturated fatty acids (PUFAs).
- Favourable n-6/n-3 Ratio: Supports the accumulation of brain DHA, a critical component for cognitive function.
- Ketogenic Potential: Acts as an alternative energy substrate for the brain, particularly during development.

The Grey Mouse Lemur: A Model for Brain and Nutrition Studies

- **Characteristics: Small size, omnivorous diet, short gestation, and a manageable lifespan make the grey mouse lemur ideal for nutrition research.**
- **Study Design:**
  - Two groups of lemurs: Dairy fat-fed (DF) and vegetable fat-fed (VF).
  - The intervention included maternal diets from pre-conception through lactation.
  - Cognitive and motor tasks assessed psychomotor and cognitive development in offspring.

Cognitive and Motor Development Outcomes

Faster Motor Coordination:

- Dairy fat-fed lemurs showed quicker development of early motor coordination and graviception (orientation against gravity).
- Tasks like negative geotaxis revealed faster psychomotor responses in DF-fed lemurs.

Enhanced Learning and Memory:

- Visual discrimination tasks demonstrated earlier learning abilities and improved memory retention in the DF group.
- By three months, DF lemurs achieved higher cognitive performance than their VF counterparts.

Brain Metabolism:

- Preliminary results suggest that dairy fat-fed lemurs might utilise glucose differently, although further research is ongoing.

Broader Implications for Dairy Fat and Cognition

- Maternal Diet: Findings highlight the importance of maternal dietary fats in shaping the cognitive and psychomotor development of offspring.
- Potential in Humans: The study aligns with evidence suggesting the role of dairy fat in supporting neuroplasticity, learning, and memory in humans.

Conclusion

Dr Pifferi's research provides compelling evidence for the benefits of dairy fats in cognitive and psychomotor development. The findings underscore the potential of incorporating dairy fats into maternal diets to enhance offspring development and overall brain health.

Lactose Intolerance and the Effect on Microbiota: The Lactastic Study

Dr Lonneke Janssen Duijghuijsen's presentation highlights the relationship between lactose intolerance, lactase non-persistence (LNP), and gut microbiota adaptation. The study explores how regular lactose intake can modify the gut microbiota and reduce symptoms of intolerance.

Key Concepts in Lactose Intolerance and LNP

- **Lactose Metabolism:**
  - Lactose, a unique sugar found in milk, is enzymatically broken down by lactase.
  - Lactase activity decreases after childhood in LNP individuals, leading to lactose maldigestion.
- **LNP vs Intolerance:**
  - While 65% of the global population is lactase persistent, not all individuals experience intolerance symptoms.
  - Intolerance arises from fermentation of undigested lactose in the colon, producing gas and short-chain fatty acids (SCFAs).

Objectives of the Lactastic Study

The study aimed to assess whether increasing lactose consumption in LNP individuals:

- Induces colonic microbial adaptation.
- Reduces intolerance symptoms.

Study Design

- Participants: 25 healthy LNP adults of Asian ethnicity (aged 18–50).
- Intervention: A 12-week programme with gradually increasing lactose doses.
  - Started with 3 g lactose/day, increasing to 12 g lactose/day.
- Outcomes Assessed:
  - Gut microbiota composition and diversity.
  - Gastrointestinal symptoms and hydrogen breath tests.
  - Faecal β-galactosidase activity.

Findings and Insights

Gut Microbiota Adaptation:

- A significant increase in *Bifidobacterium* species was observed after lactose intervention.
- Beta diversity showed shifts in microbiota composition, indicating adaptation.

Improved Lactose Tolerance:

- Hydrogen breath test results revealed decreased gas production post-intervention.
- Symptom scores improved, with participants tolerating up to 24 g lactose/day.

Increased Lactase Activity:

- Faecal β-galactosidase activity increased significantly, enhancing lactose digestion capacity.

Implications for Dietary Recommendations

- Regular lactose consumption, starting with small doses, can help LNP individuals to adapt their gut microbiota, reducing the need to eliminate dairy completely.
- This strategy preserves the nutritional benefits of dairy, particularly for calcium and protein intake.

Conclusion

The Lactastic study demonstrates that gradual lactose reintroduction can improve tolerance and promote beneficial microbiota changes in LNP individuals. This approach has the potential to reduce dairy avoidance and to enhance dietary diversity in populations affected by lactose maldigestion.

Vitamin K: An Understated Dairy Nutrient

Dr Emma Feeney's presentation highlights the often-overlooked role of vitamin K in dairy - particularly cheese - and its contributions to cardiovascular and bone health. The research delves into the bioavailability of vitamin K, variations in content based on dairy production methods, and its broader health implications.

Key Functions of Vitamin K

Vitamin K is essential for:

- Blood Coagulation: Facilitates clotting processes.
- Cardiovascular Health: Inhibits vascular calcification through the activation of matrix GLA protein (MGP).
- Bone Health: Supports bone matrix development and reduces osteoporosis risks.
- Diabetes Management: Exhibits potential anti-inflammatory effects and glycaemic control.

Sources and Variations of Vitamin K

- Types:
  - Vitamin K1 (Phylloquinone): Predominantly found in plant-based foods.
  - Vitamin K2 (Menaquinones): Found in animal products, including cheese, with forms ranging from MK-4 to MK-13.
- Cheese as a Source:
  - Grass-fed dairy products tend to have higher Vitamin K1 levels and more bioaccessible Vitamin K2 forms.

Key Findings from Studies

- Cardiometabolic Benefits:
  - Cheese consumption is associated with reduced cardiovascular disease (CVD) risk, stroke, and all-cause mortality.
  - The *stepwise matrix effect* of cheese minimises its impact on blood lipids, leading to a less atherogenic lipid profile.
- Vitamin K Bioaccessibility:
  - Grass-fed cheeses demonstrated higher bioaccessibility of vitamin K compared to total mixed ration (TMR) cheeses.
  - Bioaccessibility was measured through in vitro digestion studies and human interventions.
- Impact on Vascular Calcification:
  - Grass-fed cheese consumption lowered levels of dephosphorylated, uncarboxylated matrix GLA protein (dp-ucMGP), a marker of vitamin K deficiency and vascular calcification.

Implications for Dairy Production

- Dairy production methods significantly influence vitamin K content.
  - Grass-fed diets: Yield cheeses with greater vitamin K levels and bioaccessibility.
  - TMR-fed diets: Have lower overall vitamin K concentrations.

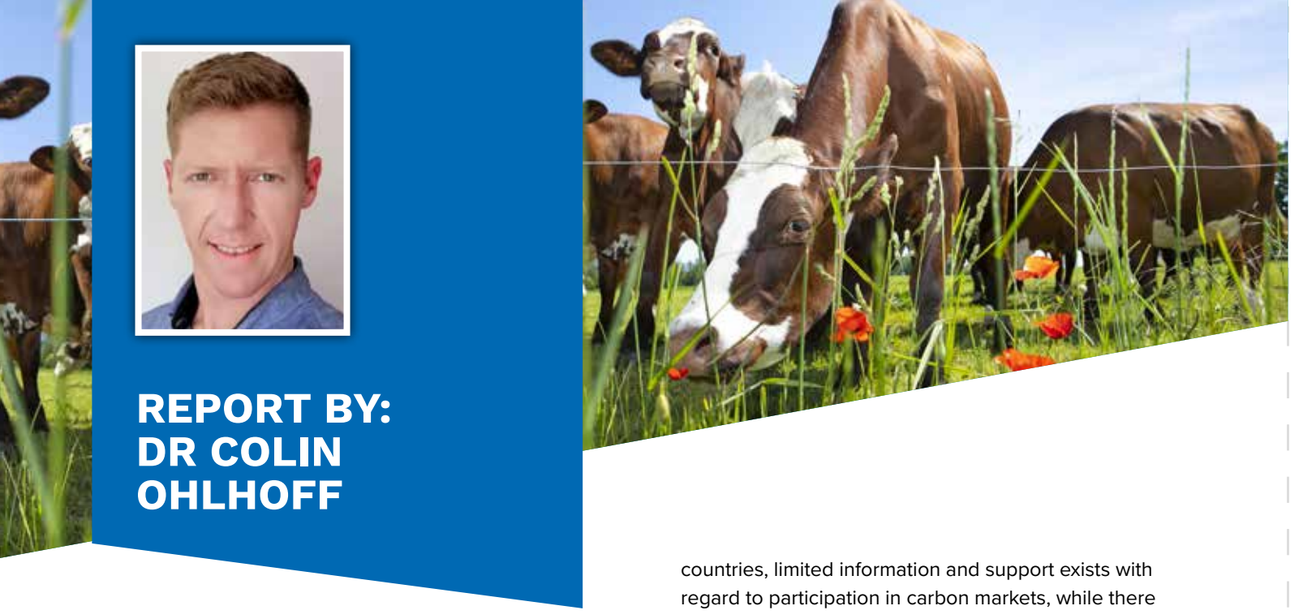
Maretha Vermaak with Chané Pretorius at the World Dairy Summit

- Enhancing grass-fed practices in dairy farming can amplify the health benefits of cheese.

Conclusion

Vitamin K in dairy, particularly grass-fed cheeses, provides a crucial yet understated health benefit. Its role in cardiovascular and bone health positions cheese as a nutrient-dense food in a balanced diet. Increasing awareness and optimising dairy production methods could maximise these health benefits.

In conclusion, I, the dietitian of Milk SA's CEP, would like to express my sincere appreciation to the South African National Committee of IDF and Milk SA for the opportunity again to attend this event. Not only is the knowledge gained of tremendous value, but also the ability to meet and network with one's peers in the international arena. Thank you for the privilege of representing the South African Dairy industry!



REPORT BY: DR COLIN OHLHOFF

REPORT ON BUSINESS MEETINGS

OBSERVATIONS AND IMPORTANT THEMES FROM THE BUSINESS MEETINGS ATTENDED

The following report reflects on discussions and feedback which were central across the Standing Committee (SC) for Environment meeting as well as the joint Standing Committee meeting which was held between the SCs Marketing, Environment, Dairy Policies and Economics, Nutrition and Health, and Standards of Identity and Labelling. The latter was the first occasion where five SCs have participated in the same forum. This was a valuable innovation from IDF, as the organisation attempts to harmonise new work and find synergies so that the expertise across the various SCs can support one another.

The structure of the combined meeting presented an opportunity for the identification of gaps and exposure to the current work items of the respective SCs. Additionally, four selected experts were afforded a short presentation slot to address the meeting and this provided diverse topics which were further discussed by participants in a dedicated breakaway session. It was encouraging to experience the enthusiasm and interest from the various SC members and suggests that IDF will continue to explore mechanisms to initiate cross-collaboration between these working groups.

The topic of Carbon credits was discussed at length and some interesting opinions and concerns were raised. It was pointed out that particularly in developing countries, limited information and support exists with regard to participation in carbon markets, while there is still notably a need for global alignment of carbon credit verification methodology. The European Union (EU) have recently established the first EU-wide voluntary framework for certification of carbon removals and storage. It was suggested that this is a positive advancement towards having recognised criteria to monitor and report on carbon capture and that it could see the facilitation of further investment into carbon removal technologies across the EU.

Importantly, it was mentioned that IDF does not currently have any formal position on carbon markets. Due to the severity of policy implications around greenhouse gas emissions in certain countries, the concept of carbon leakage is also becoming more prominent and threatening. This refers to a situation where businesses decide to relocate their production from a country with stringent GHG policies, to another that is substantially more lenient - in turn raising GHG emissions in the country with the more lenient policy position.

Broader environmental issues were discussed at length in another of the break-out groups where uncertainty around the financial impact of pricing policies make it difficult for farmers to act. The general sentiment was that escalating costs on farm, coupled to more rigorous environmental legislation presents increased risk to dairy farmers. The question was raised whether consumers would be prepared to pay a premium for all the potential mitigation measures and how this ultimately could impact access to affordable nutrition. From a marketing perspective, ‘greenwashing’ was identified as a challenge. This called for verification which was comparable and reliable while also questioning the term ‘net zero’ which perhaps should be more accurately defined.

Dr Ohlhoff moderating the Session “How to Assess Biodiversity on Farm”, 17 October 2024.

The Scientific Program Coordinating Committee (SPCC) provided feedback on the priority projects for 2025. Notably the use and reuse of water in dairy processing, which is receiving more attention with regard to environmental conservation and sustainability, has been selected as one of the new focal topics. Furthermore, an initiative has been proposed which will investigate the inclusion of dairy as part of food-based dietary guidelines towards ensuring that the nutritional benefits of dairy are appropriately reflected within global dietary recommendations. This highlights the ongoing efforts of IDF to address pressing concerns around the environment as well as global nutrition and health. These themes were prominent across the SC meetings and were also covered in detail during the conference sessions.

Current work items of interest include progress regarding the handling of liquid and solid waste. This action team aims to develop an interactive webpage which depicts the dairy processing value chain from the point of milk receiving to the point at which the final product is packaged and ready for the market. Data will be collected through selected IDF member case studies, which highlight means to address organic waste and potential food loss reduction, through targeted interventions such as - but not limited to - the measuring and monitoring of losses; the application of specific technologies during processing to reclaim product; waste reduction measures; consumer education; recycling initiatives; and innovative means to achieve waste circularity.

These case studies will then be linked to their specific position along the dairy value chain and represented in the online infographic. This will enable users to readily explore the value chain and find interventions which may inspire or guide their own waste minimisation projects and initiatives. Ultimately, this could serve as a best-practice guideline for the dairy sector in terms of dealing with organic waste and addressing food loss.

An update was also provided from the action team on ecosystem services where they are currently focused on supporting the development of the FAO-LEAP guidelines for assessing the ecosystem services provided by livestock, including dairy. The purpose of these guidelines is to establish a technical framework for assessing ecosystem services through four main approaches: modelling, biophysical analysis, economic evaluation, and socio-cultural assessment. While complex, the framework will ensure that consideration is given to both environmental and socio-economic impacts, while also addressing potential trade-offs and synergies.

Emphasis on agricultural intensification and its impact on ecosystem services is recognised, while reference is made to farming approaches and how these continue to adapt positively towards adopting ecological principles. Limitations were noted relating to policy, economic incentives and financing mechanisms which, if developed favourably, could further support the uptake of alternative livestock farming methods. Theoretically this should stimulate the delivery of ecosystem services to society. The guideline document is currently open for public review and further progress on this work will be reported as it develops.

An interesting update of work was provided by the Life Cycle Assessment (LCA) monitoring group. The IDF LCA guide was updated and published two years ago with current work focused on the development of a verification tool towards ensuring consistency and accuracy of LCA reporting. IDF recognises that there is variation in the results generated by the plethora of LCA tools available and this work aims to assess the level of variation against the recommended IDF methodology. It

is important that we create consistency in the way that we calculate LCAs as this can impact on the reputation of the sector globally, while also contributing to the high level of engagement that is already happening with regard to climate change. The action team additionally intend to further the discussions around the development of a nutritional LCA (nLCA) methodology.

IDF has previously published a position paper that supports the opinion that when different foods are compared based on their environmental impact, consideration should also be given to their nutritional value.

The roundtable discussions are always highly informative and often bring many shared challenges to the fore. It was confirmed that the Food and Drug Administration (FDA) in the United States have approved a commercial methane-inhibiting feed additive for use in dairy cattle. IDF has previously published a fact sheet on such additives and the sentiment on its application globally still seems uncertain. The product claims to reduce methane emissions from dairy cows by up to 30% and is certainly proving to be a disruptor to the market. Norway, through a voluntary trial programme on farms, reported a methane emission reduction of around 18% using the additive. It was interesting to note that Canada, through recent consumer studies, have found that the methane inhibiting compound, 3-Nitrooxypropanol (3-NOP), is generally accepted. This contrasts with some recent reports from the United Kingdon, where there has already been consumer backlash regarding its use, with concerns around toxicity as well as potential animal welfare impacts. The progression of approved usage in countries across the world will be closely monitored going forward.

International packaging legislation was discussed and included mention of the EU PPWR (Plastic Packaging Waste Regulation) and SUP (Single-Use Plastics) regulation. The latter, which was first proposed in 2018, has been enforced from this year (2024) and serves to eliminate all single-use plastic products by imposing bans on plastic items for which more environmentally sound alternatives exist and are readily available.

These regulations are also enforcing ambitious recycling targets of 65% for all packaging by 2025 while the use of recycled content in plastic packaging must reach 30% by 2030. It is likely that future collaborative work in this space for the dairy sector will include the development of suitable definitions of sustainable packaging as well as considerations around the role of plastic packaging moving forward. Front-of-pack labelling (FOPL) also received attention, particularly the ‘Nutri score’ and ‘Eco score’ initiatives for nutritional and environmental labelling.

Nutri score was mentioned as the most widely used front-of-pack label in Europe to communicate the nutritional quality of food. Eco scoring on the other hand, presents consumers with insight into the environmental impact of the food that they consume. With these being used in tandem, there is apprehension that this can overload consumers with information and that it would ultimately impact the consumer’s ability to make sustainable choices.

From the joint SC meeting it emerged that different nutrients pose varying levels of concern across countries and that there is typically no ‘one size fits all’ when it comes to front-of-pack labelling. This pointed to the need for cross-departmental efforts and skills when approaching FOPL and that lessons from past nutritional labelling efforts could be applicable to future sustainability labelling.

Feedback was provided on the MiLCA project which aims to establish a protocol for integrating mitigation actions into Life Cycle Assessments (LCA) of dairy production. The initiative focuses on enhancing the accuracy of LCAs by considering the environmental benefits of mitigation strategies.

There are numerous mitigation levers; however the current challenge is being able to reliably incorporate the outcomes of these actions into carbon footprint calculations. The protocol is science-based, has been developed by a multi-disciplinary team of experts and sets the criteria which - when applied to specific mitigation measures - will provide confirmation to all stakeholders that products are safe to consume and that the claimed GHG emissions can be validated.

This will rely on the fact that data needs to be appropriate, with various quality categories that can strengthen data confidence. These range from data reliability, whether direct measurement or estimated measurement, temporal and geographical correlation, as well as the overall completeness of the data set – being able to distinguish whether information is derived from the actual system being assessed or an alternate system. The project is currently in the implementation phase and further collaborative efforts will ensure that the methodology is refined to stimulate uptake.

EU Agricultural Commissioner, Janusz Wojciechowski addressing the delegates

REPORT ON THE WORLD DAIRY SUMMIT SESSIONS

OBSERVATIONS AND IMPORTANT THEMES FROM THE CONFERENCE SESSIONS ATTENDED

Environmental sustainability was a central theme in most of the conference sessions that were attended. The opening address by Annie Genevard, French Minister of Agriculture and Food Security, set the scene through her support of the unrivalled role that dairy continues to play towards meeting the nutritional demands of global populations. Mention was made of waste valorisation and how we need to continue using waste as a valuable by-product of dairy production.

Further, that ecosystem preservation is crucial and that this can readily be achieved through pastoral farming methods, while the future role of improved animal genetics should not be underestimated. This message was supported by Janusz Wojciechowski, former European Commissioner for Agriculture, adding that digital agricultural technologies must be embraced and that the transition to a sustainable food system is non-negotiable. He mentioned that the future of agriculture should be shaped by the “4S” principle which takes security, stability, solidarity and sustainability into consideration.

Adding to the opening ceremony were the sentiments of Arancha Gonzalez, Dean of the Paris School of International Affairs. Her thought-provoking ideas were captured in how we need to further our understanding around the interconnection of food systems where we currently live in an era of geopolitics, “we compete for food” was her statement. It was further mentioned that FAO estimates that around 32 countries would face starvation, were it not for international trade and that processed foods are the fastest growing sector in global supply chains.

The Global Dairy Leaders forum had a strong emphasis on the nutritional role of dairy, in particular, dairy protein. It was mentioned that we are only in the beginning of unleashing the potential of dairy proteins towards positive health outcomes. Antoine de Saint Afrique (CEO Danone France) stated that “dairy is the past, the present and the future” and that we must continue to be driven by science in all that we undertake.

During the Environment-focused sessions, the sentiment was mixed although largely constructive, with some extremely positive views which were countered by a few negative remarks. It was stated by Bruce Cambell that ‘agriculture’, in general, keeps pushing the planetary boundaries beyond safe levels and that the food system simply must change if we are to make any further progress towards reducing emissions.

Suggested solutions included the need for land cover change with no further expansion into forests, while the

Left: In attendance at the WDS opening ceremony. Annie Genevard, French Minister of Agriculture (15 October 2024)

restoration of peatlands would also contribute positively towards shifting momentum. Energy use reduction and limiting food loss and waste were further areas of concern which should be focused upon.

Anne Mottet presented data which indicated that ruminants have a lower feed use efficiency than monogastric livestock however they play a crucial role in the food system through the ability to transform inedible plant protein into edible animal protein. She further went on to mention that improvements to livestock production will not only be essential for nutrition and incomes but also be pivotal if we are to achieve global climate targets. The presentation also indicated the shortcomings in many countries with regard to being able to accurately account for the benefits and that a need exists to build scientific capacity, tools and specific data which are presently not available.

From an investment perspective, she suggested that dairy should be a priority sector with investment focused on targeting the reduction of poverty and improving food security and nutrition. Emphasis was placed on the role of small holder systems with them being able to better contribute to GHG emission reductions if they are suitably equipped to improve efficiency in the use of natural resources, further protecting these resources and improving overall circularity on farm.

It was a pleasure being able to serve as a session moderator for the Environment programme on biodiversity. During this session, experts indicated that finding the balance between livestock productivity and conservation goals are of utmost importance. Reference was also made to the reciprocal relationship between biological diversity and natural ecosystem functioning where, for example, genetic, species, and ecosystem diversity are intertwined with functional elements such as soil fertility, disease control, pollination and the reduction of environmental threats (both climatic and epidemiological).

Dr Raimon Ripoll-Bosch (Wageningen University) demonstrated that ecosystem services are necessary for the production and maintenance of all other biological systems and that livestock has a central role in the flow between ecosystems and society. He mentioned that we should recognise both the positive contribution of livestock agriculture as well as some of the disservices (undesired effects). Disservices specifically refer to those ecosystem processes which reduce human well-being and in agroecosystems, could include factors such as pests, diseases or added weed pressure for example. Variation between farming systems would also have different outcomes for biodiversity and ecosystem services. There were several examples which were linked to the measuring of biodiversity and how important it is to be able to identify biodiversity loss that could impact long-term farming viability.

A Dutch farmer spoke about his provision of milk to Frisland Campina and how they had begun to implement biodiversity monitoring through a system developed

Members of the IDF Standing Committee on the Environment (13 October 2024)

in collaboration with WWF. In addition to tracking milk quality and animal welfare, the programme has a set of KPIs which measure biodiversity impacts. These range from GHG emissions, the percentage of herb-rich grassland (which is indicated as a percentage of the total farm acreage), and additional focus on nature and diversity of the surrounding landscape. Importantly, it is likely that we will experience heightened pressure on the global food sector, which is considered a contributor to biodiversity loss, through national governmental policies which are prioritising sustainable food systems.

During the final morning of the symposium a few exceptional presentations, emphasising the health benefits of dairy, were attended. A variety of studies were described which focused on the effects of consuming dairy on human health over the life course and how our bone mass changes with age. Evidence was provided to highlight the vital role that dairy can play in supporting bone mass development in the early years of life. Results were shared which indicated how critical this is, especially since we cannot add bone mass during adulthood.

Prof Sandy Iuliano, (University of Melbourne) presented her work on falls and fractures in the elderly where her research showed that in older adults - if we can increase calcium intake to the recommended levels through consuming dairy foods - bone mass density can be maintained. As we get older, we generally eat less and therefore the quality of nutrient intake, as we age, is very important.

Of further interest was the study presented by Emma Feeney (University College Dublin) which focused on Vitamin K specifically. Vitamin K represents a group of fat-soluble vitamins which vary based on their lipophilic side chains. While these are found in many green leaf vegetables, they are also present in animal-derived foods.

Studies suggest that Vitamin K could be important for cardiovascular health through its role in restricting cardiovascular calcification. The presentation investigated cheese consumption and its impact on health, with the outcomes suggesting that cheese intake does not necessarily affect blood lipids in the expected negative way and that there could be a more complex “food matrix of cheese” effect which is yet to be accounted for. It will be interesting to follow the progression of this research.

Acknowledgement

Attending the IDF World Dairy Summit in Paris was an incredible privilege. This opportunity would not have been possible without the support of the South African National Committee of IDF, for which the author is sincerely grateful.

REPORT BY: BERTUS VAN HEERDEN

REPORT ON BUSINESS MEETINGS

INTRODUCTION

The IDF Business meetings provided insight into the work of more than a thousand experts from all over the world working in the different work streams of IDF. This year, greater focus was directed at joint Standing Committee Meetings to realise the interdependence of the different work streams and the multi-disciplinary approach needed in the different standing committees.

The World Dairy Summit of 2024 was an enriching experience. The well-balanced programme covered the main topics of The Dairy Outlook; the attractiveness of dairy and how to enhance this element; the economy/ marketing/technology of dairy enterprises and value chains; the role of dairy in world food security/safety; and the sustainability of dairy - with a play on the environment connectivity and how dairy is linked to challenges in all these spheres.

IDF FARMERS ROUND TABLE

Attended by 97 farmers/officials.

After being welcomed by the Chairperson, participants were grouped into smaller groups and everybody briefly introduced themselves. The Chairperson then indicated the topics to be covered during the session namely: (i) Labour; (ii) Climate change/sustainability; and (iii) Opportunities and challenges for new farmers.

Labour

Labour is an issue for farmers worldwide. Availability and wage/salary levels are two significant problems. Often, the next generation of farming families do not want to remain working on the farm; other service industries offer better pay scales, a wider choice of different career paths and an easier working environment and hours. Farmers cannot compete with that.

The following key areas were highlighted and discussed by each of the groups: How are labour and skill shortages addressed; does a diverse population help or hinder employment on farms; can AI help; how is viability affected by the labour issue; and how to bring new people into farming as part of succession.

Many countries bring in foreign workers but because of diversity, literacy shortcomings and ethnicity, developing teams and a unison approach to the working environment, often produce more negative than positive positions. Government policy frequently dictates how easy or difficult the transition is for these workers and from the perspective of the farmer, programmes could be developed to assist with the adaptation for the worker and the farmer/farm manager. Furthermore, a risk exists where a person is employed to do a certain task on the farm but is unsuited to that task, following which the farmer may not be able to terminate the position of the foreign worker. It is an important action to employ a labour unit, especially if it is a foreign worker and this should be given adequate consideration and thought. It means that the role of the farmer now has to include the management of people, whereas with family workers this process was different.

Ireland has the added difficulty of seasonal or uneven demand for labour on dairy farms over the year, due to their seasonal milk production pattern. It is true that farmers who identify labour problems on their farms and try different initiatives to engage with the problem, have greater success in their farming operations. Family farms have tended to move towards automation in order to counteract the labour shortage, for example, cow collars, milking cluster removers and so forth. These technologies are however expensive. The alternative is to become good employers with competitive remuneration structures.

With regard to attracting new people into dairy farming, young people in Japan do come into the industry, but are mostly unskilled and have no knowledge of farming or food production. In the USA there is an aging labour force, that represents a more stable and skilled group, but replacing these workers is even more cumbersome and will come to a head in the next decade. Young people are not as exposed to farming as was previously the case, so education in this area in schools and colleges is important. It is also important to find out what people are good at, so that their skills can be properly matched with their roles on the farm.

Climate change / Sustainability

The following key areas were highlighted and discussed by each of the groups: How is climate change and the increasing legislative demands on farmers impacting dairy communities; is your region/country rewarding sustainable practices; and do you have metrics in place to measure farmers' greenhouse gas (GHG) emissions.

There is considerable variation in sustainability measures. In some countries a measure/incentive of sustainability is included in the milk price. A baseline for sustainability needs to be established in different countries and filtered down to individual farms. A blanket approach will be too biased to reward micro practices aimed at improved sustainability. Sustainability measures are in place in Germany and Ireland, where milk processors are paying to implement sustainability measures on farms. Incentives, such as green energy technology and grants for solar panels, are being introduced. In the Netherlands there is just one measurement system. All processors are in this system and the farmers input their data. This system is also present in Ireland. The problem is that the data is grouped where specific on-farm green activities are lost.

Concerns were raised regarding broad guidelines/ metrics that are not fully integrated with science-based empirical studies and that could move industries into certain directions - only to realise down the track that the direction was wrong, or only partially correct.

In most countries new legislation is cumbersome to adhere to and not cost effective. Even in the countries where legislation is not yet in place, the prospect of legislation is adding to emotional stress not only to farmers, but to the total value chain. The impact of new legislation is affecting dairy communities, mostly creating a negative expectation of the future and the viability of dairy farming.

Opportunities and challenges for new farmers

The following key areas were highlighted and discussed by each of the groups: What actions are in place to attract new dairy farmers and what are we doing for the mental health of farmers (stress-related conditions).

Most farming enterprises are high on the risk scale due to the exposure to climate and the relatively uncontrolled effect thereof. In dairy farming, the composition of the product and the 24 hours per day per year farming activities exacerbate the continued exposure to pressure and risk. There is greater recognition of mental health issues nowadays and the topic is more frequently mentioned in farming association meetings and community discussions. Discussion groups are good but the persons who need them most, do not attend these meetings. Furthermore, the level of support for the dairy sector in general is not great in society. The following story needs to be conveyed better and more frequently: That 2% of the world population have to feed 100%.

In the UK mental health programmes are now in place in schools. Furthermore, pressures on farmers have not been appreciated and reduced support from the government/communities left farmers feeling more vulnerable than in the past. In 2023, 5.8% of dairy farmers in the UK left the industry.

In the EU and USA, only approximately 8% of farmers' offspring choose to become farmers. If the income is not sufficient people will not remain in farming. In the EU, 46% of farmers are in the average income category. The balance with the risk reward principle seems to be out of kilter when compared to other industries.

In New Zealand, share farming is successful in bringing new farmers into dairy farming. The share-farming system can work well for both farmer and the young person coming into farming. Initially an agreement is put in place where the young person manages the cow herd and for that, receives a share of the milk price, while sharing (managing) some of the of risk associated with a dairy herd. As the system progresses and the new farmer builds capital, he/she can buy a portion of the cow herd but then has to manage larger risk.

JOINT STANDING COMMITTEE ON DAIRY POLICIES AND ECONOMICS AND STANDING COMMITTEE ON MARKETING

The meeting then proceeded with the introduction of all the participants and the review and approval of the agenda. The main agenda points were a joint country

report as prepared by China; the marketing of the World Dairy Situation Report through excerpts of the report; and a summary of the Global Marketing Trends Report.

Due to time constraints, full reports could not be submitted. The Country Report generated a lively discussion where data from the different countries was unpacked.

The IDF country report included the market results and conditions of 18 key countries. The most recent six-month period was compared to the same period in 2023. These countries represent more than half of the world's production of unprocessed milk.

Joint Country reports

General market situation

General market conditions are a mixed bag of change on the one side and consistencies on the other side between the different countries. China is facing an oversupply of unprocessed milk that could last six months, with the potential of resulting in a slight decrease in the dairy herd size. Chile expects stable farmgate milk prices despite an expected increase in unprocessed milk production of 2% coupled with the recovery in consumption. Both Germany and France expect lower unprocessed milk production due to reduced dairy cow numbers and the outbreak of Bluetongue disease. Denmark is expecting increased farmgate prices for milk on the back of increased consumption with steady unprocessed milk production. Growth in dairy exports is expected in Italy while domestic demand for dairy products remains stable at low levels. India is seeing growth in the demand for value-added products while the Netherlands is facing extremely high butter prices with SMP prices stabilising. In the UK the forecast for unprocessed milk production is slightly up, while the USA is expecting lower unprocessed milk production than anticipated, with a slight increase in the farmgate milk price due to higher feed costs. In Norway, China and South Africa unprocessed milk production growth is the highest, at more than 3% compared to the same period last year, while in the UK, Italy and Germany, production decreased.

Trade dynamics

Import growth in India is the highest at 26% while in China imports decreased severely with 15%. At the same time, export growth in India is also the highest at 81% followed by Chile, China and France all with 10% plus growth, while in the Netherlands exports decreased at the fastest rate, -6%. Denmark and Germany are aligned with the EU trade agenda, Italy faces potential tariff challenges from the USA and China, while the Netherlands is subject to a Chinese anti-subsidy investigation. China is still in the beneficial position of zero-tariff policies in free trade agreements with New Zealand and Australia. South Africa is currently in negotiation with China to agree on relevant protocols for dairy exports, but the USA navigates limited trade negotiations in anticipation of geopolitical fallouts.

Dairy consumption trends

Dairy consumption trends are vastly different between countries and regions and often the result of domestic specific conditions and market drivers. In Chile **drinking milk** gained popularity with a 10% increase, Switzerland saw a rise in fresh cheese and drinking products consumption while in South Africa drinking milk consumption dropped by 3%. In South Africa **yoghurt** sales increased notably by 7%, but in China the yoghurt market reduced strongly by 11%.

Regarding **cream** consumption, Norway leads the way with a growth of 6%, but the opposite is occurring in Switzerland where consumption has decreased by 3%. Norway enjoys a dairy boom, with whole milk gaining popularity. Norway is expecting an increase in the farmgate milk price and the production of unprocessed milk due to no quota restrictions, while exports will remain small. There is mostly a domestic market focus for Norway. At 6% the growth in **cheese** consumption in Norway is the fastest, while in China, cheese consumption contracted by 2%.

Butter is the most favoured dairy product regarding sales growth and strong across most markets with Chile leading sales growth with 9%. In Germany, consumers opt for own-label products, while in France consumers choose cheaper dairy options. **Milk powder** sales growth in Chile is the fastest at 16% while a strong declining trend is occurring in China, -11%. In South Africa, dairy sales in general are recovering.

Natural environment sustainability action

Eleven of the 18 countries are taking specific steps towards environmental sustainability and greenhouse gas reduction in the dairy industry. These initiatives aim to balance agricultural production with environment stewardship and biodiversity conservation. These initiatives include:

- Sustainability dairy certification in Chile
- Methane emission reduction protocol in Canada
- Introduction of CO2 tax in Denmark
- The authorisation of methane-reducing feed additives in the USA
- Net zero carbon emission for dairy farms in China.

Marketing

The marketing package consists of two very distinct but different topics. The one consists of the drive to reach the youth market while promoting the nutritional value of dairy and the sustainability benefits of dairy. The other topic addresses concerns about sustainability, animal welfare and competition from alternative products. Different countries emphasise the different topics uniquely through campaigns involving sports, health, nutrition, school milk programmes, women, lactose intolerance and animal welfare.

World Dairy Situation Report

The marketing and communication of the 2024 report was presented by a representative of IDF France. The report would be presented in a separate time slot during the summit. Delegates were requested to assist in the marketing of the report since it provides a balancing ability regarding information on the world dairy sector.

Global Marketing Trends Report

The latest version of the Global Marketing Trends report is still being built. The research for the report was conducted in April 2024 but not all countries participated, effecting the allowance of additional time until 10 November 2024.

Plant-based products action team feedback

The plant-based work will continue in smaller groups with the following specific topics:

- Use of dairy terms
- Communication of plant based-products
- Sustainability issues around plant-based products

JOINT STANDING COMMITTEE (SC) ON DAIRY POLICIES AND ECONOMICS, STANDING COMMITTEE ON MARKETING, STANDING COMMITTEE ON ENVIRONMENT AND THE STANDING COMMITTEE ON NUTRITION AND HEALTH

The Co-Chairs of the meeting and the IDF Director General introduced the session by conveying that its key goal was to better educate members on what areas for potential cross-SC collaboration may exist and to break down silos within SCs' work areas. This was followed by presentations for the different standing committees on potential topics where interdisciplinary work streams could be needed.

The presentations that were given to stimulate the cross-Standing Committee collaboration included the following: For the SC on Environment a presentation on the Carbon Markets was given by the Netherlands; for Dairy Policy and Economics there was a presentation on food systems by New Zealand; for Nutrition and Health a presentation on front of package labelling was given by Canada; and for Marketing, the use and misuse of green claims was presented by Denmark. Breakaway sessions followed the presentation to facilitate suggestions regarding cross collaboration of different standing committees.

The presentation on carbon markets mainly looked at the Green Deal in Europe and concluded that it is a tsunami of EU legislation covering in the first wave climate change and in the second major wave, biodiversity collapse. One of the trends that is currently observed is that companies which are incapable of passing on CO2 costs are relocating their activities and investment to non-EU countries to safeguard competitiveness. The breakaway session highlighted that information on how to participate in carbon markets is limited; IDF should develop a position on carbon markets; more work is needed on the carbon measuring tool; and there is a need for a pricing mechanism at farmgate level with the ability to incentivise change at production level.

The presentation on food systems concentrated on the approach to move the food debate to the composition of foods regarding nutrients as per proportion of target intake. The main goal is a food system that improves the wellbeing of the world population and contributes to the United Nations sustainable development goals (SDGs). There is a need to proactively inform the debate about the challenge to achieve nutritional adequacy in the absence of a strong dairy component. Input to the debate will be fundamentally grounded in science and focused on scientific outcomes of research and trials.

The principal message for food systems should promote sustainable and resilient agriculture, a system that supports food security, environmental stewardship, maintains livelihoods and results in social benefit for current and future generations. The breakaway session illuminated the gap between the existing solid evidence on the nutrient density of dairy and the environmental impact of dairy. Dietary guidelines are increasingly driven by environmental concerns while pushing nutritional issues to the sideline. It is increasingly important to inform the environment debate to the level where all factors of dairy impact are present.

The presentation on front of package labelling was presented with the timeline for front of package labelling (FOPL) as it happened in Canada. The FOPL Act of Canada was published in the Canadian Gazette in 2018, for comments. In 2022 the final regulations were published, which included significant exemptions for dairy products. Some threshold changes regarding calcium content were made in 2023 and the aim is to implement the legislation in 2026.

Full exemptions were granted for plain whole milk and butter. In the breakaway session it was suggested that a survey needs to be done by IDF on whether FOPL has had an actual impact in countries where it has been implemented and what the impact was. It is important to share information on the subject and discuss experiences. There may be lessons learnt from FOPL that could be incorporated into sustainable labelling.

It is important to support and promote the dairy matrix and have more communication on this to arm people in an organised way to advocate dairy. The session further suggested a symposium on the dairy matrix targeting media and stakeholders. The dairy matrix describes the unique structure of dairy food, its components and how they interact and contribute to health that extend beyond its individual components.

The presentation on the use and misuse of green claims focused on the first climate lawsuit in Denmark. In August 2020 the company Danish Crown launched a campaign using the phrase “climate-controlled pork” and “Danish pork is more climate friendly than you think”. In May 2021 the Climate Movement and the Vegetarian Society of Denmark took legal action against the company. Four claims were made against the company:

- Danish Crown must acknowledge that it has violated the Marketing Act by using the statement “Danish pork is more climate-friendly than you think. “

  The statement, when assessed as a whole, contains an assertion about factual circumstances regarding the average consumer’s perception of the climate impact of Danish pork, which must be substantiated with evidence.
- Danish Crown must acknowledge that it has violated the Marketing Act by using the term “Climate-controlled pork. “

  After a comprehensive evaluation, the High Court found that, at the time of the marketing in 2020-2021, the necessary documentation in the form of such a qualitative environmental control was not available for Danish Crown to use the term “Climate-controlled pork”.
- Danish Crown is prohibited from using the expressions mentioned in Claims 1 and 2 for marketing purposes.
- Danish Crown must correct the statement in Claim 1, primarily by ensuring that advertisements with the text “Danish pork is not more climate-friendly than you think” are published in the same media and to the same extent as the advertisements containing the statement in Claim 1.

  In March 2024, Danish Crown won three of the four claims against it in court but in the public opinion (domain) and media, they lost. At the risk of deep reputational damage the company, Danish Crown, issued a press release in April 2024 acknowledging that the statements in question do not comply with the requirements of the Marketing Act. The company also accepted a ban on using these statements in any future marketing.

In the breakaway session the main topic was that we need proof when claims are being levelled at green-washing. Verification of the claims is paramount and comparable and reliable information is necessary. There is a need to share experiences on what claims can be used where and what has worked in the past. The term “net zero” may need to be better defined.

The session was concluded by the Co-Chairs and the Director General of IDF with the message that the suggestions and recommendations will be discussed with standing committee chairs to decide on the way forward.

Assessment of farm animal welfare: From the absence of suffering to positive welfare and beyond

Isabelle Veissier

Over the past four decades, farm animal welfare has made great strides from a predominantly negative approach to improving animal experience and environment - to enriching the animal experience and life. In 1992 the Farm Animal Welfare Council updated the five freedoms for farm animals:

- Freedom of Hunger and Thirst. Basic availability of fresh water and a balanced diet dependent on the age of the animal.
- Freedom from Discomfort. Providing an appropriate environment and a resting place.
- Freedom from pain, Injury and/or Disease. Employ preventative practices and being able to provide quick diagnoses and treatment.
- Freedom to express Normal Behaviour. Sufficient space and company of own kind.
- Freedom from Fear and Distress. Providing conditions and treatment with no negative experience of mental stress.

Improving the animal experience and environment included satisfying animal needs and preferences, inclusive of essential micronutrients in diets. Utilising science to provide immediate relief to stressed animals, such as pheromones to calm animals down. Providing comfortable lying areas does not necessarily stimulate animals.

The enriching process goes even further. Stimulating animals to explore, nosing and sniffing. Enriching is all about allowing the animal to acquire information from the environment, changing the environment, adding or removing structures.

The five-domain approach encapsulates the journey in farm animal welfare. These domains are:

- Nutrition: Enough water and food with a balanced and varied diet.
- Environment: Physical environment comfortable and pleasant.
- Health: Fit and vibrantly enjoying life.
- Behaviour: Able to play, be jolly, dream and express rewarding behaviour.
- Mental State: Moving from negative experiences (malnutrition, overheating, malaise, pain, dizziness, boredom, anxiety and fearfulness) to positive experiences (drinking pleasures, taste pleasures, calmness, affectionate sociable and playful. Heifers reared in a rich social environment are less disturbed by an unusual event and show less signs of chronic stress.

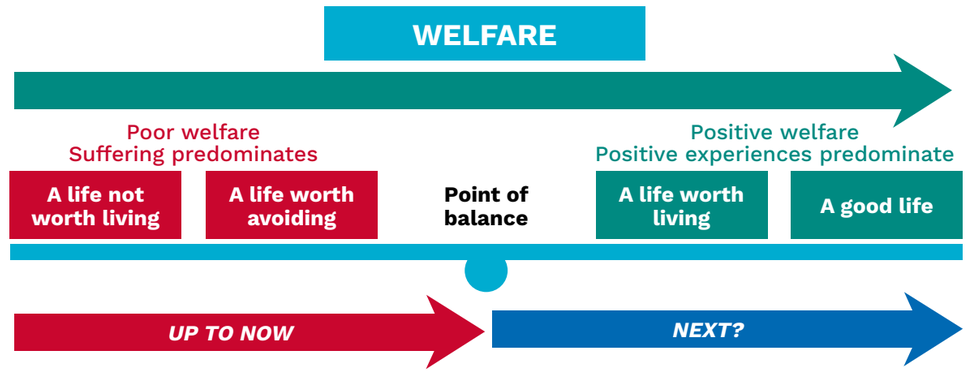
The journey of animal welfare consists of three pillars with interactions with survival, the situation and the mental state. Survival deals with nutrition, environment and health. For nutrition, it moves from restricted water and food and poor food quality, to enough water and food with a varied diet. For the environment, the change is from uncomfortable and/or unpleasant features to a comfortable physical environment that is pleasant. The last category under the survival pillar, is health, as it interacts with impaired health as a result of disease or injury versus being fit, uninjured and healthy. The next pillar deals with the situation of the animal and consists of behaviour. The welfare journey moved from no behavioural understanding and recognition with limited if any, space for expression - to where animals are able to express the situational experience through behaviour. The last pillar in the journey for animal welfare deals with the mental state of the animal. It is essentially the interaction and movement from negative experiences to positive experiences. The negative experiences are mostly induced through survival features whereas the positive experiences are from a sensory and “feel good” place.

The Welfare Continuum

The next part of the Welfare Continuum should include the revision of the animal welfare legislation by 2026, which should be based on the five-domain model for farmed animals. Farmed animals should be healthy, have sufficient space and resources to thrive, be able to express normal behaviour, enjoy nutritious food and clean water at all times and have positive mental experiences, with environments that stimulate curiosity and positive interactions.

On the welfare continuum positive welfare includes:

- A variety of feeds having pleasurable tastes and textures;
- Environmental choices that encourage exploratory and food acquisition behaviours which are enjoyable;
- Access to preferred sites for resting, thermal comfort and voiding excrement;
- Variable environments with a congenial balance



between predictability and unpredictability;
- Circumstances that enable social species to engage in bonding and bond-affirming activities and, as appropriate, other affiliative interactions such as maternal, paternal or group care of young, play behaviour and sexual activity.

Overall, the objective is to provide a range of opportunities for animals to experience comfort, pleasure, interest, confidence and a sense of control, to move along the welfare continuum to a life worth living and a good life.

REPORT ON WORLD DAIRY SUMMIT SESSIONS

CAN ASIA ACHIEVE DAIRY SELF-SUFFICIENCY?

Li YiFan, StoneX Financial Pty Ltd, Head of Dairy Asia

Synopsis

- With the increase in efficiency of large-scale farming and the integration of dairy farming and processing, China will basically achieve self-sufficiency in 2024.
- Hot and humid weather and overly fragmented markets in Southeast Asia (Thailand, Vietnam, Malaysia, and Indonesia) are major constraints to achieving self-sufficiency. Import dependence may be reduced in the future, but self-sufficiency will be difficult to achieve.

China

In the past five years (2020 to 2024) unprocessed milk production in China increased significantly from 34.4 million tonnes to 42.5 million tonnes, an increase of 23.55%. The incremental growth in 2020 was 7.5% year over year (YoY), in 2021 it was 7.1%YoY, in 2022 6.8%, in 2023 6.7% and 2024 is estimated at 1.2%. The composition of average milk solids for 2024 is estimated at 3.28% protein and 3.93% milk fat.

The lower incremental growth of the dairy herd size over the past five years if compared to unprocessed milk production is noteworthy. In the period 2015 to 2019, the herd size reduced from 8.4 million cows to 6.1 million cows. The downward trend was reversed in 2020 when the herd started to grow again with 1.6%. In 2021 the herd size stayed flat, while in 2022 growth was resumed at 3.2%, in 2023, growth was 3.1% and in 2024, growth is estimated at 1.5%. Average milk yield per cow increased from 2021 to 2024 (estimate) with 12.5% from 11.2 tonnes per year to 12.6 tonnes.

In November 2021 imports into China in milk equivalents started to decrease, from the record level of 22 000 tonnes to 16 000 tonnes in June 2024; and are expected to move sideways at that level for the next two years.

The dairy industry revitalising plan consisted of the following subsidies

- Promote large-scale farming: For operations where construction has already begun or where investment agreements have been signed for operations of 3 000 plus cows, 6 million yuan and a million yuan more for each additional 500 cows.
- Increase the contracted rate of unprocessed milk: 100 000 yuan when they sign two-year supply contracts with a dairy farmer delivering more than 1 tonne of unprocessed milk per day.
- Support for processors to invest in deep processing: For new or expanded production of cheese, whey and butter, a subsidy of 50 million yuan or 10% of the total investment cost.

At the same time the following policies were adopted on the demand side

- A school milk programme was introduced by the Chinese government focusing on primary and secondary schools in rural areas.
- Approximately 50 million students receive milk on a daily basis through the programme.
- In 2023 the volume of milk distributed was estimated to exceed 4.13 million tonnes.
- The programme promotes child nutrition and the support of local dairy farmers,
- Measures was introduced to achieve 60% self-sufficiency in Infant Formula milk powder and mergers and acquisitions were encouraged for Infant Formula producers to improve efficiency and industrial reputation.

Southeast Asia

Heat stress in dairy cattle is the main constraint in the region's ability to increase dairy output. The tropical climate of temperatures constantly reaching 34 degrees Celsius with 80% humidity is not conducive for dairy cow performance. A dairy cow under heat stress will produce significantly less milk; fat and protein levels are lower, which could affect the flavour of the milk and heat-stressed cows are more susceptible to diseases.

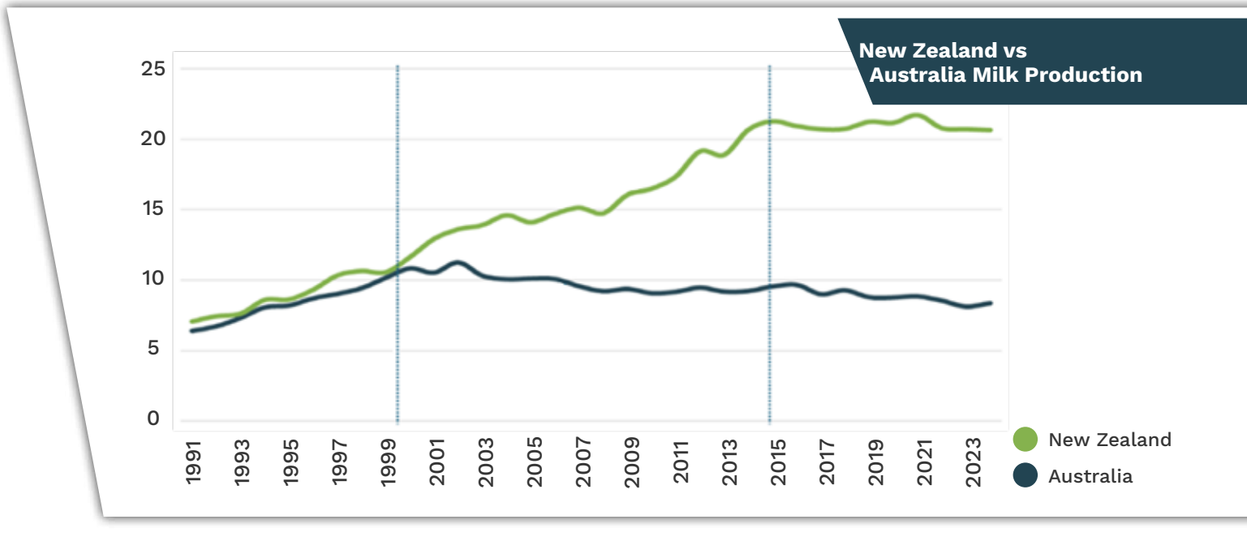
Key challenges in the region centre around limited infrastructure, smallholder limitations and market competition. The lack of proper milking and processing facilities is a drawback to get to scale production and good quality unprocessed milk. Late collection of milk and delivery due to poor road infrastructure plays out in increased cost and waste. Productivity is hampered by insufficient high-quality feed and too much reliance on imported feed. Most of the dairy farms are operated by smallholders with no - or limited access - to credit and finance. Most are making use of outdated production practices and old technology, leading to lower yields and poor quality when compared to large-scale operations. Imported dairy products are generally cheaper than locally produced dairy, making it difficult for local producers to compete on price and quality. Consumer preference is towards imported brands.

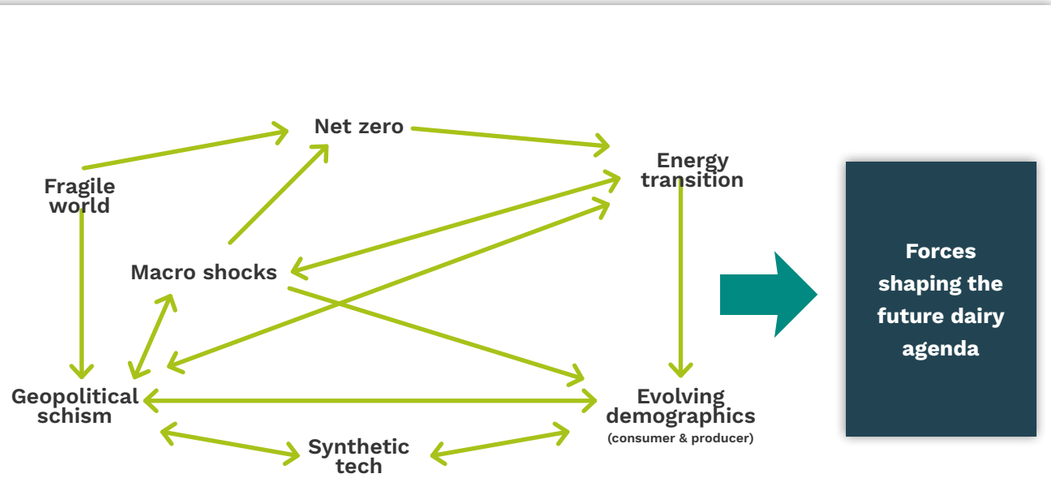
Dairy self-sufficiency is driven by government in Thailand, Vietnam, and Indonesia but in Malaysia it is market driven. In Thailand, the government guarantees a minimum price for unprocessed milk, import quotas for SMP (Skim Milk Powder) imports are set on an annual basis where importers need to apply for quotas and allocation is based on their local liquid milk purchases. In Vietnam, the State Capital Investment Corporation operates a 120 000 cows' unit over 14 dairy farms and 13 dairy factories. On average each farmer in Indonesia owns two to three cows and land fragmentation hampers farm consolidations. Import permits are issued by the Ministry of Trade and the Ministry of Agricultural needs to recommend the import request. In Malaysia, a special breed of cows that is more suited for hot and humid climates is imported and ventilation and other methods are applied to reduce heat-stress. The herd size more than doubled in the last four years and the dairy image is driven by quality and product innovation.

In Southeast Asia, the economic trade-offs are driven by the high investment requirement of expanded dairy production versus the benefits of self-sufficiency and the upfront costs. Furthermore, relying on imported feed increases production costs and the benefit of self-sufficiency needs to be balanced with these costs. Budget priorities may influence government when the choice is between dairy self-sufficiency and critical sectors like healthcare and education. The climatic conditions not suitable for dairy productions, could swing considerations away from dairy self-sufficiency.

What's up and down under: An Oceania perspective by Joanne Bills

When comparing the unprocessed milk production trajectories between Australia and New Zealand the divergent trajectories that occurred at the beginning of 2000 draw attention. The trajectories were mirror images in the 90s but changed drastically at the beginning of 2000. Production in Australia plateaued at 10 billion litres and then started to slowly decline while in New Zealand the incremental growth of the 90s continued into 2000 until 2015, whereafter production





plateaued at slightly above 20 billion litres.

A snapshot of the two countries in 2023 reveals the following statistics: The average herd size in New Zealand is 46% larger than in Australia; milk solids in Australia are 19.1% higher than in New Zealand; the milk intake for the largest unprocessed milk buyer in New Zealand is 79% of total unprocessed milk produced; and in Australia it is 17%. The major use of unprocessed milk in New Zealand is for whole milk powder production and in Australia it is for cheese production. The share of milk exported in New Zealand is 95% while in Australia it decreased from close to 70% in 2000 to the current 30%. In New Zealand, the share of national GHG emissions for dairy is 23% but in Australia only 3%.

The interplay between policy, physical structure and culture has shaped the outcome of the two industries. The major industry developments in New Zealand included consolidation at processor level in the floating of Fonterra in 2001; the adoption of an export growth strategy to China with the China-NZ free trade agreement (FTA) signed in 2008; and lately increasing policy restraints (e.g. water policy) since 2017. Unprocessed milk production plateaued on 20 billion litres per year. The major industry developments in Australia included industry deregulation in 2000; the start of the millennium drought in 2001 to 2009; retailer pressure with the $1/l milk campaign in 2011; and increasing policy restraints since 2007 (Water Act passed), resulting in a continued downward trend in the production of unprocessed milk. The China-Australia FTA come into effect in 2015, some eight years after the FTA between China and New Zealand.

The two countries also adopted different approaches to competition and industry consolidation. In New Zealand, the focus was on international competitiveness that laid the basis for the formation of Fonterra with the specific aim to balance market contestability and efficiency. Fonterra developed into the dominant player at 79% of the unprocessed milk market intake and increased competition for unprocessed milk supply in some regions, while co-operatives still collect most of the milk from farms. In Australia, the focus was on the domestic market with regional milk pools.

The Australia Competition and Consumer Commission (ACCC) required divestment in brands and factories and a mandatory Code of Conduct was introduced for processors, administered by the ACCC. The Code of Conduct basically regulates the supply agreement bev tween dairy farmers and processors. The results were increasingly fragmented supply chains, with limited supply chain investment in a dwindling milk pool. Since June 2001 unprocessed milk production has fallen by 20% nationally and in the major irrigated dairy region with 48%. Australia is dry and becoming drier. In Australia during 2008, water was de-coupled from land, allowing market trading within the same catchment area and that introduced an additional source of volatility for dairy farmers.

The New Zealand and Australian dairy industries have diverged, but aspects of their outlook are the same. In both industries unprocessed milk production has plateaued and is moving sideways with downstream value chain role players changing focus to higher-value products. In both industries greater focus will be placed on cheese for the export market and in the case of Australia, also focus on the domestic market for cheese.

Trade linkages between the two countries will remain strong since import opportunities in Australia will increase. In both countries the challenges for climate change are huge and in New Zealand, commercial drivers for greenhouse gas (GHG) reduction will be a critical platform for change in production systems. In New Zealand it seems that the policy pendulum swung too far while community pressures remain intact. In Australia early indications are that there is only limited pressure from government for change, but climate impact might change the current softer approach. The following schematic diagram encapsulates the scenarios that could be shaping future agendas for the dairy industry in these two countries and worldwide:

Failure to achieve a cohesive approach for the dairy industry to major global challenges will hurt the industry. There will be greater focus on food security and healthy diets while inequity in access to nutrition will increase. The commercial sector will be driving sustainability agendas while governments will play a lesser role with traceability and carbon mitigating practices attracting premium prices. In the primary dairy industry, production will be less intensive while higher costs of production will limit global supply, opening the door for advances in synthetics that cater for a different demographic.

The approach to climate change will be a defining challenge to achieve a cohesive approach in the coming decade. One approach adopted by New Zealand is to reduce the impact of climate change and GHG emissions while Australia focusses more on adapting to climate change and employing mitigating practices. Research and Development funding in New Zealand is focusing on innovation while in Australia, Research and Development funding is focused on mitigation. In Australia legislation is indicating no emission trading systems (ETS) for any sector, while in New Zealand the agricultural sector is not included in the ETS.

REPORT BY: DR NDUMISO MAZIBUKO

Introduction

This report gives a glance at the 2024 International Dairy Federation (IDF) Business meetings and the World Dairy Summit (WDS). It is based on the IDF Business meetings and WDS sessions attended. The WDS of IDF is an annual meeting of the global dairy sector, bringing together approximately 1600 participants from all over the world. The summit is composed of a series of scientific and technical sessions. The days preceding the WDS, are normally reserved for the IDF Business meetings.

This year, the meetings took place between 11 and 14 October 2024, followed by the IDF WDS, which took place between 15 and 18 October 2024. The 2024 WDS was held under the theme “Dairy for the future” with three main topics covered, which are “sustainability, food security, and attractiveness”. The Summit also included the conference, panel discussions, side events, poster sessions, networking, and technical tours. The section that follows highlights some of the messages taken from the sessions attended as listed below.

REPORT ON BUSINESS MEETINGS

The IDF Business meetings participated in, include the IDF Joint Steering Committee on Dairy Policies and Economics and the Steering Committee on Marketing, as well as the Joint meeting of the Standing Committee on Marketing, Dairy Policies and Economics, Nutrition and Health and Environment. These were attended as a member and with an observer status. The discussions touched on the IDF Country Update for 2024, being the updated market results and conditions in 18 countries (also including South Africa) for the six-month period to June 2024, compared to the same period in the previous year.

These countries represent over half of the world’s milk production, and an even larger share of the world trade in dairy products. The presentation highlighted that the global dairy market is experiencing a mix of changes across various countries. In Chile, a slight increase of about 2% in production is expected, with stable prices and an anticipated recovery in consumption. China is facing an oversupply that may last for more than six months, with a potential levelling off or slight decrease in dairy herd size. Denmark is anticipating price growth due to increased consumption and steady production, while Germany is expecting lower milk production because of reduced dairy cow numbers and the outbreak of bluetongue disease.

France’s milk production may be impacted by the spread of diseases such as bluetongue and epizootic hemorrhagic disease, leading to higher commodity prices and opposing trends for butter and SMP, which could persist for the latter half of the year. India is seeing growth in the demand for value-added products, and Israel’s milk production is forecasted to be similar to 2023 with a 2.5% decrease in milk price. Italy’s domestic demand for dairy products is expected to be stable at low levels, with continued growth in dairy exports.

In terms of Chile, it has ratified its EU agreement. It was also highlighted that China benefits from the zero-tariff policies in free trade agreements with New Zealand and Australia. Denmark and Germany have aligned with the EU trade agenda; Italy faces potential tariff challenges from the USA and China; and the Netherlands is subject to a Chinese anti-subsidy investigation. South Africa is negotiating with China and is also focused on animal health. The UK has engaged in trade talks with multiple countries. Canada faces rising mortgage rates and population growth, while Chile and China see improving economic trends. Denmark maintains low unemployment, Germany expects no GDP growth, and Norway’s inflation has eased. South Africa is battling high unemployment, and Switzerland’s inflation has declined. The UK’s inflation rate is fluctuating, and the USA economy shows resilience with moderating inflation.

Marketing opportunities include reaching youth and promoting the nutritional and sustainable benefits of dairy, while challenges involve addressing concerns about sustainability, animal welfare, and competition from alternative products. For different countries, there are different levels of focus on various topics. These topics include sustainability, sports, nutrition, health, local, occasion, animal welfare, lactose intolerance, women, biodiversity, young image, and school milk.

The Business meetings also covered discussions around global marketing trends and the world dairy situation report. In terms of plant-based products, it was highlighted that plant-based work will continue and that smaller groups will be formed to work on specific topics related to plant-based products, covering the Use of dairy terms, Communication of plant-based products, and the sustainability issues around plant-based products. Furthermore, there was a discussion about the Dairy Plant Registration and Retail Code of Conduct.

REPORT ON WORLD DAIRY SUMMIT SESSIONS

The 2024 WDS was held under the three main topics of “sustainability, food security, and attractiveness”. The Summit also covered the conference, panel discussions, side events, poster sessions, networking, and technical tours.

South American Dairy Industry

On the Economy and Food Security, there was a discussion on “How is South American dairy Industry production changing?”. It was indicated that structural changes are happening in South American countries, with small dairy operations either growing or moving out of business. It can be noted that it was highlighted that, “Small” means different sizes depending on the country: 50 to 100 cows in Uruguay/Argentina/Chile, and 20 to 40 cows in Brazil. It was highlighted that South America has been losing competitiveness in the last 10 years. Imports have grown more than exports in South America (excluding Venezuela). It was also mentioned that if the trend continues for 10 to 20 years, net trade could be 4 billion litres a year more negative than today. The countries in the area vary in the relevance of factors affecting growth. The main aspects are institutional factors in structural changes and international markets. Argentina has all the conditions to increase production as it did in the past, provided institutional conditions are available.

North America’s Dairy Industry

The presentations also covered Opportunities and Challenges for North America’s Dairy Sector. Although southern and more tropical countries have expanded their milk production very significantly, these have also been the parts of the world that have seen the largest growth in population. Thus, the differences in regional population growth still result in the more temperate climates of the northern and southern hemispheres having higher levels of production per capita than other areas, most notably Asia. Over the last quarter of a century, global milk production per capita has grown each year (except 2022), driven almost entirely by rapid growth in Asia.

Other areas have experienced periods of declining trends, in particular Africa and Oceania, but Latin America has also had stretches of decline despite ending the period above the starting point. The presentation above by Prof Andrew M. Novakovic highlighted that total production in Canada is on par with Mexico, but that Canada’s intensity of its per capita production is much greater, whereas Mexico’s investment of its agricultural capacity in dairy is almost as large. The latter also reflects Mexico’s investment in dual-purpose breeds that are an important source of meat as well as dairy. The USA shows a greater dairy intensity than either of its neighbours, and it is clearly on a very different production trajectory. The USA dairy product production is dominated by cheeses and beverage milk products. Cheeses are however very much on the increase and beverage milks have been declining. Some products with lower volumes have shown steep recent growth, like yoghurt, while others are declining, like ice cream. Butter and dried milk powders are growing, but much more slowly than cheeses (and whey powders).

US capacity to produce dairy products is not a serious constraint, but US products tend to be made to US standards, customs, and local preferences, which has tended to slow US penetration of foreign markets.

In terms of the perspectives on US Domestic vs. Foreign Demand, these vary considerably depending on the product and the following was highlighted:

- Domestic sales continue to claim a large majority of US production, but this is much more the case for high-fat products.
- Domestic sales of dairy products have shown persistent and steady growth, primarily driven by population growth.
- Domestic use has favoured products higher in milk fat (cheeses mostly).
- Foreign markets have picked up products high in skim-solids, to the great relief of the US dairy sector.
- Exports on a fat basis have increased but only barely (some cheeses, butter).
- Gross measures of the US reliance on foreign markets vary with the measurement system, but based on total milk solids, it is in the range of 12 to 15%.

What also emerged in terms of some considerations for future prospects, was that slow but predictable changes to climate and population will have profound impacts on dairy sector prospects, that will affect production and consumption differently around the world. Furthermore, these changes are already impacting on politics and culture, the ultimate ramifications of which are harder to estimate, but could also be profound.

In conclusion, in terms of the different countries, the following was highlighted:

- **Mexico:** Dairy is important to agriculture and to the consumer. Growth is restrained by weather and agronomic conditions on the production side and economics on the consumption side. Prospects for economic growth are positive but are complicated by unstable social and political conditions. Climate and population forecasts suggest more challenges than opportunities.
- **Canada:** Dairy is important to agriculture and the consumer. Milk production growth prospects are seriously restrained by its supply management policy. Eliminating it would likely result in Canadian dairy looking much more like US dairy, with fewer and larger farms and more growth in the prairie provinces. In that sense, the possibility of growth is considerable. Domestic demand is enhanced by prosperous households and will be improved if immigration replenishes younger families. Near-term prospects for growth are very limited but longer-term opportunities are considerable, although that will require difficult changes.
- **USA:** The US is heavily invested in dairy both in production and consumption. Globally it is a juggernaut with no rivals to produce as large a volume at so competitive a price. What it enjoys in advantages it suffers in terms of sophistication as a global marketer, but that has been and is changing. Future climate and population prospects will require adjustments but portend nothing that the dairy industry at large has not already dealt with, and quite successfully. Policy prospects that could hinder production growth or hinder trade expansion, one or the other, loom on the horizon, but prospects remain exceedingly positive, especially in comparison to other global actors.

Constraints and Initiatives in Africa and East Asia

The section below covers the discussions around the net importer regions that were highlighted during the World Dairy Summit, underscoring constraints and initiatives in Africa and East Asia.

The presentation by Alain Sy Traore and Bio Goura Soule both from Senegal, a new member of IDF, covered the *"African dairy sector: issues and challenges of a sector in quest for performance"*. What came out of the presentation was that in Africa there is continuous growth in terms of agricultural production**.** It was highlighted that in other countries in Africa, there is low productivity of dairy cows and pastoral systems are still dominant in certain regions. Furthermore, there are collection difficulties, linked to the very high atomicity of the supply of local milk and the weakness of the infrastructure. Furthermore, there are problems with the standards and health safety of dairy products from local processing units in some African Countries.

However, it was noted that there is still demand for dairy products supported by strong demographic growth and the evolution of the eating habits of a growing fringe of wealthy consumers.

The presentation by Li YiFan, covered the question *"Can Asia achieve Dairy Self-sufficiency?"***.** What came out from the Economic and Policy Trade-Offs for Dairy Self-sufficiency in Asia, was that expanding dairy production requires substantial investment in infrastructure and technology and that countries must evaluate if long-term benefits justify upfront costs. Furthermore, limited national budgets may force governments to choose between dairy investments and other critical sectors like healthcare or education; and relying on imported feed can increase production costs due to transportation and tariffs, necessitating a balance between these costs and the benefits of self-sufficiency. Subsidising local dairy farmers can stimulate growth but may lead to market distortions and dependency. Relying solely on market dynamics can create instability for farmers and tariffs on imported dairy can protect local producers, but may result in higher prices for consumers.

In conclusion, it was highlighted that in terms of China with the increase in the efficiency of large-scale farming and the integration of dairy farming and processing, self-sufficiency can be achieved. Regarding Southeast Asia, it was indicated that the weather is hot and humid and overly fragmented markets are major constraints to achieving self-sufficiency. Import dependence may be reduced in the future, but self-sufficiency will be difficult to achieve.

Outlook of the Oceania (Australia and New Zealand) dairy industry

In terms of the Outlook for Oceania, it was highlighted that the New Zealand and Australian dairy industries have diverged, but aspects of their outlooks are similar and show:

- Stabilisation in milk production and focus on the higher-value product.
- Greater focus on cheese for domestic & export markets.
- Trade linkages will remain strong as Australian import opportunities increase.

It has also been highlighted that the challenge of climate change is significant and that commercial drivers for GHG reduction will be key; and that New Zealand farmers have the skills and infrastructure to respond. Furthermore, there is limited government pressure for change in Australia.

Global Dairy Industry Outlook

In a discussion with the Organisation for Economic Co-operation and Development (OECD) and the Food and Agriculture Organisation (FAO) economists, it was indicated that more than half of the growth in production is anticipated to come from India and Pakistan, which will jointly account for over 30% of world production in 2033. In the People's Republic of China (hereafter "China") and many African countries, noticeable production growth is also projected. Production in the second largest milk-producing region, the European Union (EU), is forecasted to decline slightly due to the stagnating demand, production constraints due to environmental policies, and the expansion of alternative production systems (e.g. organic, pasture-based), which together cause a decline in cow numbers.

In Oceania, production is expected to continue a moderate growth, more slowly than in North America, due to policies on sustainable production and the expansion of organic production and pasture-based production systems. Globally, the projected growth in the number of cows is expected to be moderate. Over the projection period, yields across the world are expected to grow steadily with the strongest growth expected in Southeast Asia and some African countries, albeit from a low base.

The USA is forecasted to remain the country with the fastest growing production of skim milk powder (SMP), while the EU, the biggest producer of cheese, is expected to continue its long-term growth of cheese production. With lower international demand and declining milk production, EU whole milk powder production (WMP) is expected to continue its downward trend over the next decade.

The risk of animal disease outbreaks in some countries could threaten production and trade and limit the development of dairy sector growth, especially in Western Europe. Despite its position as the world's largest milk producer, India has so far, played only a minor role in the global dairy market. As such, any further integration of India into the international market could have a strong impact. This seems increasingly plausible, as some Indian dairy companies are actively exploring the prospects of exporting to neighbouring countries.

The share of processed dairy products, especially cheese, in overall consumption of milk solids, is expected to be closely related to incomes, with variations due to local preferences, dietary constraints and urbanisation. The largest share of total cheese consumption, the second most consumed dairy product, occurs in Europe and North America, where per capita consumption is expected to continue to increase over the projection period. Butter consumption has seen a recovery in North America and Southeast Asia due to shifting preferences. Consumers may be influenced by recent studies that have shed a more positive light on the health impact of butter consumption, contrary to earlier messaging.

Global Marketing Trends

A presentation on the Global Marketing Trends highlighted that, over the 2018 to 2024 period, the global dairy market has grown strongly in value in many countries. However, this trend is somewhat misleading, as it is largely due to the inflationary context. Furthermore, dairy products consumption was mainly driven in the 2018 to 2023 period by high consumer expectations in terms of product quality, convenience, health safety and composition (protein, fat). The three major issues for the future of dairy markets included the environment and climate, animal welfare, and health and nutrition.

Drs Colin Ohlhoff, Ndumiso Mazibuko and Mark Chimes (Inset: Ms Mona Lisa)

Attractiveness of the Global Dairy Industry

In terms of the attractiveness of the dairy industry, it was highlighted that in Japan, a “new dairy farmer training system” has been pioneered in Hokkaido and has a proven track record. In Hokkaido and elsewhere, new farmers have been taking advantage of the system in recent years. Furthermore, in Hokkaido, it is easy for new farmers to start farming because those who have stopped management vacate their farms. In other areas, even when dairy farming is discontinued, often farmers continue other forms of farming (such as rice farming), making it difficult for new farmers to enter the sector.

Government has established a subsidy system, which pays new farmers per month for up to seven years, encouraging new farmers to participate. However, it was highlighted that the profitability of dairy farming is deteriorating, and the number of dairy farming cessations is increasing. It was emphasised that the stability of management is essential, and that stabilisation policies by government are also necessary.

Overall in terms of attractiveness, it was clearly indicated that training played a critical role in the dairy industry. Furthermore, in several countries, it was essential to create programmes that attract new entrants into the dairy farming space and to attract labour that can be skilled in dairy.

Concluding remarks on the 2024 Business meetings and the World Dairy Summit

In terms of the overall sessions of the Business meetings and WDS, the discussions were very robust, and the speakers went into detail in terms of the areas presented and discussed. The topics covered were sustainability, food security, and attractiveness. As highlighted in this report, numerous comprehensive presentations were presented on the Outlook of dairy production in South and North America. It emerged from the discussions, that South America has been losing competitiveness in the last 10 years and that imports have grown more than exports (excluding Venezuela). In terms of Argentina, it has all the conditions to increase production as it did in the past, provided institutional conditions are there. In Canada, dairy is important to agriculture and the consumer, and milk production growth prospects are seriously restrained by its supply management policy.

The USA is heavily invested in dairy both in production and consumption. In Mexico, dairy is important to agriculture and the consumer; and growth is restrained by weather and agronomic conditions on the production side and economics on the consumption side. It was indicated that in other countries in Africa, there is low productivity of dairy cows and pastoral systems are still dominant in certain regions. In terms of China, it was said that with the increase in the efficiency of large-scale farming and the integration of dairy farming and processing, China can achieve self-sufficiency. It was highlighted that more than half of the production growth is anticipated to come from India and Pakistan, which will jointly account for over 30% of world production in 2033. In the People’s Republic of China and many African countries, noticeable production growth is also projected.

Acknowledgments

I would like to express my sincere appreciation to the South African Milk Processors Organisation (SAMPRO) for the funding and opportunity to attend the Business meetings and the World Dairy Summit.

REPORT BY: THABANG RAMPA

Introduction

The first attendance of IDF Business meetings and the 2024 IDF World Dairy Summit provided a clearer picture on the different dairy-related topics such as greenhouse gas emissions, sustainability, nutrition and marketing. It brought a grasp of the serious dairy-related discussions taking place within IDF by the large-scale membership of global decision-makers and industry leaders, dairy experts, scientists, technical specialists, farmers and other dairy stakeholders. It further provided an in-depth scientific overview of the dairy value chain and that it is unknown from the dairy regulatory perspective.

A noted highlight was the innovative World Dairy Summit App, which was a great tool for communication, summit programme guidance and for submitting questions during the question-and-answer items of breakout sessions.

REPORT ON BUSINESS MEETINGS

TASK FORCE ON PLANT-BASED FOODS – 12 OCTOBER 2024

No extensive deliberations took place except on whether the Task Force needed to be continued or not. The outcome of the brief deliberations was that the Task Force has a role to play in the labelling of plant-based foods from the Codex General Standard on the Use of the Dairy Terms (GSUDT) point of view. The decision taken was that the Task Force must be kept; and the Chairs of the related relevant Standing Committees must deliberate further and identify the purpose of this Task Force, which would then provide its scope going forward.

STANDING COMMITTEE ON RESIDUES AND CHEMICAL CONTAMINANTS – 12 OCTOBER 2024

The work in progress by this Standing Committee is on methane reducing additives, with the top priority being discussion on contaminants from food contact materials.

The update on the work of the Codex Committee on Contaminants in Foods (CCCF) was on the discussion regarding the consideration of the review of the Code of Practice for the reduction of Aflatoxin B1 in raw materials and supplementary feeds for milk-producing animals.

The following countries reported on the roundtable information:

France

The Aflatoxin M1 detection on soybean resulted in the tighter monitoring of Aflatoxin B1 in raw milk following imports of soybean meal from Nigeria.

The public consultation has been launched by the European Food Safety Authority (EFSA) for opinion on bromide ion in milk. This is because of the exceedance of the Maximum Residue Levels (MRLs) of 0.05% prescribed in the pesticide regulation found in 49 to 64% of milk samples in the EFSA project.

Japan

The Japanese institution is currently developing a quick and simple analytical method for the analyses of residues of non-steroidal anti-inflammatory drugs (NSAIDs). NSAIDS are widely used in veterinary medicine and pharmaceuticals to treat inflammation. However, the NSAIDs residue levels found in milk is unknown.

United Kingdom

EFSA is currently re-assessing all the main classes of brominated flame retardants (BFRs) wherein opinions for tetrabromobisphenol A (TBBPA) and

Standing Committee on Standards of Identity and Labelling, with Ms Thabang Rampa centre in front

hexabromocyclododecane (HBCDDs) have been completed and none raised concerns for dairy. However, the latest opinion on polybrominated biphenyls (PBBs) concluded that current dietary exposure to polybrominated diphenyl ethers (PBDEs) in the European population is likely to raise a health concern, with the most important contributors to chronic dietary exposure being meat, fish and dairy.

EFSA has published a draft opinion assessing the toxicity of bromide for humans and animals, the existing MRLs for bromide, and the possible carryover from feed to food of animal origin. The possible transfer rate of bromide from feed to food of animal origin could not be quantified due to the limited data. The monitoring data revealed that the current MRLs for bromide were exceeded in some food commodities. The opinion recommended a tolerable concentration of bromide in feed for lactating and dairy cows of 11mg/kg due to its possible migration into milk as the MRLs safety screening indicated that the tolerable daily intake is exceeded in some EU diets.

United States

FDA (Food and Drug Administration) has announced a new post-market assessment programme in which chemicals from intentionally added substances (e.g. colours, packaging substances) and unintentionally added substances (e.g. metals, environmental contaminants) in the food supply are to be assessed. Since the programme is in its developmental stages, it is yet to be seen how substances will be prioritised for assessment, and what the assessment process will be.

Programmes of work highlighted by different countries were as follows:

- EU: The European Chemicals Agency is working on identifying aromatic BFRs in foods with the aim of assessing whether to impose restrictions on them.
- USA: FDA is currently reorganising its structure.
- Canada: The reporting of over 200 types of per- and polyfluoroalkyl substances (PFAs) is to begin by end January 2025 by manufacturing and users of specified food products.
- New Zealand: The monitoring of residues from re-used water.

STANDING COMMITTEE ON FOOD ADDITIVES

The conclusion of the long-standing work of the Action Team on the Codex Committee on Food Additives (CCFA) regarding the alignment of the General Standard for Food Additives (GSFA) with the different Codex dairy standards was announced and the Action Team is to be disbanded. On the priority list is the monitoring of work by JECFA, regarding the permissible use of specific food additives and their levels.

The reported work in progress is the revision and alignment of JECFA notes affecting dairy and its respective categories. The difficult navigation of the JECFA database was highlighted and in response this Standing Committee is to compile a recorded presentation to assist with the JECFA database navigation and in addition, a webinar will perhaps be conducted.

In the round table discussion, Japan highlighted the issuance of a guideline document on the 'no food additives used' claims which came into effect in April 2024. The issued guideline cites instances in which the use of the claim concerned is permitted and instances in which it is deemed misleading.

The United Kingdom highlighted that EFSA has recommended that the technical specifications of waxes used as food additives and food packaging materials must be updated and that detailed information regarding the Mineral Oil Aromatic Hydrocarbons (MOAH) content must be included. It was highlighted further that this recommendation impacts dairy products, since MOAH can migrate from wax to cheese which causes the final product to exceed proposed thresholds. Additionally, the United Kingdom indicated that the withdrawal of the use of a number of smoke flavourings in the EU has been authorised and that this withdrawal will impact the smoked cheese sector. The withdrawal is to come into effect on 1 July 2029 and the UK authorities are considering aligning with the EU.

STANDING COMMITTEE ON STANDARDS OF IDENTITY AND LABELLING

The Programme of Work of this Standing Committee was largely on the protection of dairy terms in the context of the GSUDT. This included the guidance on the use of dairy terms on cellular agricultural products' labels.

The proposed amendment of the IDF Bulletin on the GSUDT was considered in order to clarify the terms 'Descriptors' and 'Qualifiers' which are interchangeably used throughout the bulletin. Hence, the proposed definition for '*Descriptors*' is to be the description of the compositional modifications of a standardised dairy product e.g. 'low fat', 'fortified', 'flavoured' are to be incorporated. Additionally, the proposed definition for '*Qualifiers*' is to be the description of the physical condition and true nature of a standardised dairy product e.g. 'shredded', 'sliced', 'UHT', 'shelf-stable' are also to be incorporated. A further proposal was to incorporate the clarification of the term '*adjectival comparisons'* between milk products and non-milk products such as '-like', '-type' and 'alternative of...' by substituting the term concerned with the wording '*to making comparisons that imply nutritional or compositional equivalence*' between milk products and non-milk products and the term '*-substitute*' to be added to the list of such comparative terms.

ISO work on plant-based and cellular foods aimed at protecting dairy terms is also ongoing, wherein the focus is on developing technical definitions and criteria for plant-based and other plant rich foods and ingredients together with guidance on their labelling and permissible claims.

In addition, the Standing Committee is actively participating in the ongoing works of the Codex Committee Food Labelling (CCFL) by monitoring and participating in various electronic working groups (EWGs) working on issues such as:

- Allergen labelling;
- Food information for pre-packaged foods to be offered via e-commerce;
- Use of technology to provide food information in food labelling;
- Emerging labelling;
- Added sugars definition;
- Trans fatty acids; and
- Sustainability labelling claims.

The Standing Committee is also contributing to the development of the Codex Standard for Camel Milk and Milk products in response to the UAE proposal for a Codex Standard for pasteurised liquid camel milk and possibly powdered.

IDF NEW EXPERTS

The new attendees of the Committee Meetings were welcomed and encouraged to participate in the various IDF platforms. A brief outline of the IDF platforms and their links were unravelled to the new attendees. This included amongst others, the following aspects:

- IDF organisational structure.
- Formation of Action Teams, Task Forces and Standing Committees.
- Role and participation of IDF within ISO and Codex.
- Strategic pillars of IDF namely standards, safety and quality, nutrition, and sustainability.
- Advantages and importance of participating in the various Action Teams, Task Forces and Standing Committees.
- IDF acquisition of scientific research and data.

REPORT ON WORLD DAIRY SUMMIT SESSIONS

OPENING CEREMONY

The ceremony was opened by Janusz Wojciechowski - the EU Commissioner for Agriculture followed by Ludovic Blin - President FIL FRANCE; Piercristiano Brazzale - IDF President; Arancha Gonzalez - Sciences Po; Christophe Lafougère - GIRA; and then Badi Besbes – FAO.

The speakers shared the same sentiments of the increased global demand for dairy products and the importance of continuing to feed the world dairy sustainably.

THE WORLD OF MILK HAS CHANGED – KEY TRENDS FOR THE FUTURE

Christophe Lafougère, CEO Gira

India is to lead the milk collection at world level by 2029. A growth in cheesemaking is predicted for the next

five years which will increase the availability of its co-product, whey. The increasingly available whey would then be used to add value to milk, baby powdered formulas and to adult nutrition as milk protein.

ENVIRONMENT: CHALLENGES OF PRODUCING AND PROCESSING IN THE CONTEXT OF LIMITED GLOBAL RESOURCES

The broken food system has led to an unequal food access globally. The ecological footprint of the food system has played a role in the increasing global warming. However, this footprint can be reduced by improving farming practices, paying attention to reducing food loss and waste and a shift in food consumption, together with honesty and trust building.

ATTRACTIVENESS: ATTRACTING AND EMPOWERMENT OF WOMEN

The major employers of women globally are within agrifood systems. The gender inclusive teams have been found to make better business decisions by up to 73% of the time. The tool to socio-economic empowerment of women has been established to be dairying. In India several programmes have been set up to empower women in dairy.

SUSTAINABLE DIETS: THE SOCIAL AND CULTURAL ROLE OF DAIRY

Sustainable diets can be ensured by improving existing culturally acceptable diets. Small improvements are significant in sustainable diets such as improving nutritional quality without necessarily reaching nutritional adequacy and modest reduction of greenhouse gas emissions. Dairy has been identified to provide a bridge between nutrition and economy in sustainable healthy diets.

TECHNOLOGY: FERMENTATION: A SUSTAINABLE PROCESS, BOTH ANCESTRAL AND INNOVATIVE

Through precision fermentation, traditional fermentation processes' constraints can be removed and can be combined with the latest advances in genetic engineering to efficiently produce compounds of interest. The technology exopolysaccharides (EPS) in situ produced by lactic acid bacteria can provide an opportunity to achieve a clean label fermented milk product, natural thickeners, and high-quality fermented milk products.

FOOD SAFETY: THE ONE-HEALTH APPROACH IN FOOD SAFETY

Time is essential in food safety. An ideal time for the analysing of Shiga Toxin-producing Escherichia coli (STEC) is at its peak growth, which is at the early stages of cheesemaking. The data digitisation enables faster response time, effective recalls and continuous improvement of food safety programmes. The absence of STEC and other pathogens is not confirmed by a low level of indicator microorganisms. The new technologies such as Rapid Detection Methods and Sensor Technology are instrumental in food safety, together with real time monitoring with AI and Internet of Thing (IoT). The 'one health approach' presented at this session recognises the interconnection of human, animal and environment health.

CONCLUSION

The experience and information gained through attending the Business meetings and the World Dairy Summit provided a wider scale and clearer links of the different dairy aspects. The high level of dairy technology and evolution that exist in other countries were noted with interest. The Business meetings and the World Dairy Summit attendance provided an eye-opening opportunity to the IDF world that is full of information, which is useful in improving and aligning our national dairy regulations with the international dairy standards.

ACKNOWLEDGEMENT

Mt sincere gratitude to the South African National Committee of the International Dairy Federation for funding this invaluable opportunity for me to attend the IDF Business meetings and World Dairy Summit.

REPORT BY: DR MARK CHIMES

Introduction

The world conference of the International Dairy Federation (IDF) was held in Paris from 13 to 18 October 2024. The conference was held in the La Défense district (pronounced La Di Fahns) which is Europe's largest business district, specifically built towards the west of Paris to keep the city centre free of skyscrapers. The district also houses the La Défense Arena which is Europe's largest indoor stadium and concert hall. La Défense is to Paris what Sandton is to Johannesburg, but on a bigger and bolder scale.

This is the Paris that you do not see in the tourist brochures. It seems as if the architects were instructed to design buildings that would cause heart attacks for the poor engineers that had to build these modern monuments.

Paris is everything as you imagine it. Narrow cobbled streets lined with cafeterias and small designer shops. Sitting on the pavement, drinking coffee and watching the world go by seems to be a national sport. The city was cleaner, safer and more beautiful than I expected. The architectural detail in the old buildings is something to behold.

The opening function of the conference was held in the famous Louvre. Since it was a private affair we were given a private viewing of the most famous artworks housed in the museum, such as the Mona Lisa, the Venus de Milo and artwork by the likes of Vermeer, Caravaggio, Delacroix and Raphael. Due to the fact that only delegates attended the function, we were not trampled by the usual tourist masses that visit the museum. This made the experience even more special. The size of the building is overwhelming. The architectural beauty of the building itself is on par with the art that it displays.

At the function we had the pleasure of drinking real champagne and sampling a massive selection of France's finest cheeses. I did not realise that there were so many varieties of cheese. Some cheeses were scary to sample since they appeared decidedly rotten, but tasted decidedly nice.

The gala evening was held in an old hangar where airships used to be built. We were wined and dined on French cuisine and champagne.

Some of the South African delegates who attended the conference enjoying the French hospitality at the gala evening.

IDF STANDING COMMITTEE ON ANIMAL HEALTH AND WELFARE

The IDF Standing Committee on Animal Health and Welfare (SCAHW) held a Welfare Forum at the IDF World Dairy Summit in Paris during October 2024. This is a closed forum which only members of the SCAHW may attend to allow for frank discussions regarding welfare issues in their respective countries. Although the discussions are confidential, I can report the following.

Auditing of welfare on dairy farms

At the IDF Cattle Welfare Forum the following points were discussed by various persons representing their respective countries.

The author giving the summit the thumbs up!

In the USA, they do not only audit the dairy parlours but also assist the farmer to comply. There are penalties for animal welfare transgressions which have to be corrected. As elsewhere, there is pushback from the farmers against increasing animal welfare demands and regulations that they deem excessive or expensive to implement. On the other hand, the general public are pushing for extra welfare standards. In the end it is a case of reaching a stage where “The farmers are just angry enough and the customers just happy enough”.

In Germany they have the Q-milk System that certifies farms. Without a valid certificate, you cannot sell milk. They perform one unannounced audit every three years. The Q-Milk system scores the farms on a QM level 1 to 4 depending on the level of compliance with the audit requirements. The QM system adds value to all products produced from that parlour (milk, cheese, meat etc.). The meat from cull cows is automatically certified at the same QM level. For instance, *McDonalds* can claim all the labels on their final products, for the milk, cheese and meat originating from these farms, for consumer assurance and marketing purposes.

In Sweden, ARLA Foods uses a compulsory self-assessment system where the farmers complete the survey themselves. The audits include fair employment conditions as well.

Canada encourages welfare training for employees. Welfare transgressions can cause brand damage and lead to the buyer refusing to accept milk from the farm. If there is suspicion of abuse, they will suspend accepting milk from the farm, investigate and resolve the issue before the milk will be accepted again. They apply the principle that you have to crawl before you can walk and run.

Animal welfare round table

The publication of ISO 34700 Animal Welfare will allow for animal welfare to be certified. The question remains whether one person is truly equipped to audit all the aspects such as animal health, milk quality, the environment, animal welfare, animal housing, hygiene and sustainability. Several parameters within the audits are subjective, especially when it comes to welfare. How do we standardise subjective assessments? Furthermore, there are disparities in terms of formal versus informal dairy farms. Farmers in the formal industries feel that they are held to much higher standards than farmers in the informal industry, yet receive the same price for their milk. There must be price incentives or rewards for complying with a higher level of animal welfare.

Foot-and-Mouth disease

During the meeting each country representative had the opportunity to report on a pressing issue within their dairy industry. I presented South Africans’ struggles with regard to FMD in a dairy producing area and asked for inputs and advice. It became apparent that no other country has dealt with an FMD outbreak in dairy cows where the animals were not culled, but vaccinated to live. Allowing dairy farmers to continue producing milk in the face of an FMD outbreak has not been tried anywhere else. The countries that have had to deal with an outbreak of FMD in dairy parlours slaughtered the animals on the affected farms. One delegate stated that the only treatment for FMD is to use a “sanitary rifle” (i.e. culling the herd). Judging by how well we have managed to contain the FMD outbreak in a major dairy producing region of South Africa without mandatory culling, makes us the global experts on this approach.

Other issues raised

- The consensus amongst the delegates was that biosecurity plans are generally in place but implementation is poor. This sentiment applied to all the countries.
- Commercialisation always comes before the science. Increasing pressure on fewer farmers to provide food for a growing urban population has led to an intensification of farming practices. This led to the commercialisation of farming techniques and systems before science could show a better way to do it. Welfare issues started to arise, and proves the case where commercialisation happened first. Science is only now trying to play catch-up.
- There is a gap in the market for rearing bobby calves since beef farmers, in general, do not want to rear bobby calves.
- The SCAHW are in the process of finalising the following documents:
  - Heat stress in dairy cows
  - AMR in dairy
  - Management of calves from birth to weaning.

The meeting was concluded with the remark that animal welfare is fast becoming mainstream and is likely to dominate the discussions around dairy for the near future. The dairy industry needs to be proactive. “If we want people to still be drinking real milk in 20 or 30 years, we need to give them a reason to drink milk, not just shoot down their reasons not to drink it.”

The author giving the Summit the thumbs-up

IDF STANDING COMMITTEE ON FARM MANAGEMENT

The farmers’ meeting was dominated by payment schemes and how the milk price is determined. What constitutes quality milk and what metrics should be used to determine the milk price and incentives? Do we measure milk composition, food safety, organoleptic qualities, sustainability such as welfare, soil stewardship, greenhouse gas emissions, etc.? The most common quality metrics currently in use are protein, butterfat, SCC and bacterial counts. There are additional metrics that may be used, such as staff welfare, are they farming organically, is it green farming etc.

Due to consumer pressures some milk processors are offering premiums for metrics that do not necessarily affect the quality or yield of fresh milk, but rather what they perceive the public would be willing to pay a premium for. In the European Union, cows are frequently kept in barns all year and not only during the harsh winter months. The consumer prefers that cows have access to pastures in the summer months to exhibit normal behaviour. As a result, dairy farmers are paid a premium of 2c/kg milk if the cows are allowed access to pastures for a certain minimum number of weeks per year. Carbon footprint is another metric used to determine milk price premiums in the EU. If you reduce your carbon footprint, you get a higher price for your milk. The question was raised of what the target should be to qualify for the premium. Do you qualify by merely reducing your carbon footprint or do you need to reach carbon zero first? Or should it be a tiered price, as is the case with somatic cell counts? It needs to be mentioned that some of these premiums are paid by the government of the EU.

Welfare and sustainability

With welfare becoming more mainstream the question arises of how to measure cow happiness? Norway bases the milk price on protein and butterfat levels, but will pay extra for supplementing above the minimum welfare requirements. If you are willing to do extra things, even though it is not in the rules, they will pay you extra - for instance, providing a level of welfare that is not stipulated in the regulations, such as supplying the animals with balls to play with or brushes to scratch themselves. The USA base their milk price primarily on the final product yield such as butter, cheddar, dry whey, etc. Their component composition premium is focused on non-fluid uses.

ARLA, on the other hand, will pay an additional premium of 0,03c/kg milk for each point that you score above 80 points on their dairy parlour audits. India bases their milk price purely on fat and solids-not-fats (SNF). There are plans to introduce SCC and bacterial counts at some stage. India faces unique animal welfare issues since cows are considered holy and may not be slaughtered. As a result, unwanted animals such as bull calves and old cows are frequently set free to roam the streets and fend for themselves. This saves the farmer the cost of feeding the animals. They even have “cow shelters” where roaming cows that collected on the streets are kept to live out their days. This does require funding, which is frequently lacking. The same does not apply to buffaloes since buffaloes may be slaughtered.

Farmer resilience

The question of farmer resilience was raised. What areas require attention? Financial risk obviously causes stress. This impacts the welfare of the farmer, which in turn has

We got to sample a selection of France's finest cheeses. What a gastronomic experience!

Japanese products on display

an impact on the welfare of the personnel, as well as the animals. Worldwide farmers struggle with the same concerns, namely feed and fertiliser costs, climate change, access to labour, access to finance, access to technology etc. In addition, they have to deal with "regulatory creep" where new regulations are constantly added and few, if any, are removed. Succession planning is proving to be a growing problem since there are fewer and fewer family members growing up on farms and their children are less likely to want to take over the farm.

This is due in part, to frequent policy changes that cause uncertainty and lead to less long-term investment. In addition, land is expensive and can frequently be better used for other industries, reducing the land available for dairy. Add to that the consolidation of farms and you have fewer dairy farms with fewer people remaining in the industry, reducing the number of potential buyers of dairies. It was mentioned that a farmer cannot be in the green (such as environment and sustainability) if he is in the red (mental and/or financial stress).

An interesting topic of discussion was reducing the water fraction in milk, on the farm, by reverse osmosis. This will reduce the storage requirements on the farm as well as the transport costs. This water is of very high quality and can be sold as bottled water to offset the costs. It could also be used in food processing, making soft drinks, brewing beer etc. A working system has been developed by Mr Kees, a farmer of the Netherlands. The required water fraction can then be added back to the milk as required at the processing plant. However, milk processors are not yet geared to receive condensed milk, and it is yet to be seen if this idea will gain traction.

The meeting concluded with the statement that a good herdsman is still better than a machine.

EXPERTS' VIEWS ON GLOBAL DAIRY MARKET TRENDS

Global outlook

Generally, all the speakers were upbeat on the outlook for world dairy production, with particularly the outlook for dairy exports having great potential. The global population is expected to grow by one billion people by 2040, with the largest growth expected to take place in Africa. The world produces 1.5 times more food than we need, yet due to unacceptable levels of waste there are still food shortages in some areas of the world.

The food system is broken with obesity being a problem in western societies, while other regions experience famine. 80% of countries cannot produce sufficient dairy themselves and are dependent on importing dairy from other countries. The growth in demand for dairy, and the growth in production capacity, are not necessarily in the same region. This is especially true for Africa and Southeast Asia where the consumption of dairy is increasing faster than local production. The appetite for dairy protein is expected to continue to grow.

In the post-COVID world, the aim is for self-sufficiency by trying to localise the production and supply of food. During the COVID-19 pandemic, the world experienced how countries prioritised their own vaccine needs above those of other countries. Food would be an even more powerful weapon during times of scarcity. However, finding suitable alternatives to produce animal feed and milk, where it is consumed, is difficult without a detrimental effect on the environment and competition with human food sources. Southeast Asia has additional problems with a lack of land to produce crop feed for their cattle. Heat stress, due to high temperatures and humidity, makes the region unsuitable for dairy farming. Although India is the largest producer of dairy in the world, dairy is viewed as a livelihood and not necessarily as a business. The animals are fed crop residues, not planted pastures.

As production is increasing, so too is the price of feed, since crop residues are becoming less sufficient. The price of fodder has risen faster than the price of milk. Africa comes with its own set of challenges. The low productivity of dairy cows in pastoral systems still dominates in most regions. Not to mention the lack of infrastructure. Africa is not one country and there is massive variation in production and consumption across different regions. In Africa and Asia, more than 70% of milk produced is informal. Urbanisation will drive formalisation of the dairy industry. However, it is expected that Europe will fulfill the high-end market in Africa initially, due to the cultural approach to cattle in Africa.

The consumption of dairy across the world is changing. The lower income groups tend to drink their milk, whereas the higher income groups are drinking less fresh milk and tend to consume their dairy in other forms such as cheese, butter, yoghurt etc. People in the northern hemisphere are consuming increasing amounts of cheese in its various forms and as a result are using more milk. In India, the cheese consumption is expected to increase by more than 1.3 million tonnes by 2029. Increased cheese production has resulted in an increase of whey produced.

The US and EU have experienced an increase of more than 900 kilotons of cheese, resulting in a 62 kiloton increase in whey production. Finding novel applications for whey is at the order of the day. Processors are thinking outside the traditional dairy markets and focusing for instance, on the geriatric nutritional market with nutritional supplements aimed at an aging world population. Sport supplements are another growing field. The dairy of the future will be different from the dairy of yesterday, but it will still be dairy.

Sustainability

Food is a basic human need, and it is important to distinguish between emissions for livelihood versus emissions for luxury goods. Worldwide, dairy accounts for 30% of livestock greenhouse gas production. Increased production has led to an increase in total emissions despite better efficiencies. From 2005 to 2015, the dairy industry saw an increase of 18% in the production of greenhouse gases, whilst at the same time milk production has increased by 30%, leading to a net reduction of 10% in terms of greenhouse gases. However, the dairy industry needs to be honest about its environmental impact and guard against greenwashing and causing a loss of trust through obfuscation, false narratives, promises not being kept etc.

3% of dairy farmers own 34% of dairy animals worldwide and produce 63% of the world's milk. The remaining 97% of farmers own 66% of the cows but produce only 27% of the milk worldwide. The greatest gains in terms of efficiency and production are to be made in the low production group. The higher the milk production per animal (and the larger the herd), the lower the carbon footprint per unit of milk produced. Yet, most of the research and development funding is spent on the top 3% of farmers. With the majority of cattle in Africa and Asia in the hands of small farmers, self-sufficiency is not necessarily the answer and might lead to increased greenhouse gas emissions. Investment in improved production and efficiency is required.

In conclusion, global exports are likely to grow. Therefore, the countries with surplus production can be confident of an export market. There is great potential for South Africa to grow its export market.

REPORT BY: CHRISTINE LEIGHTON

Introduction

The World Dairy Summit (WDS) of the International Dairy Federation was held at the Centre of New Industries and Technologies (CNIT) in La Défense in Paris from 12 October to 18 October. The summit was titled: Dairy 2024: The future.

The summit was attended by 1 613 participants from 62 different countries.

This year (2024), the 120th anniversary of IDF was celebrated under the Louvre pyramid, as part of the opening ceremony.

The author reports on Business meetings and selected WDS conferences/presentations attended.

OBSERVATIONS AND IMPORTANT DISCUSSIONS FROM THE BUSINESS MEETINGS

The need has become apparent for joint meetings between different standing committees (SCs), as many topics receive attention across the various standing committees. The Standing Committee on Marketing (SCM) is positioned to assist other standing committees in identifying potential communication messages that need to be disseminated to different target audiences.

At the 2024 WDS, the SCM participated in three joint Business meetings. The joint meeting with SC Dairy Politics and Economics is an ongoing joint meeting.

IDF introduced a new joint meeting with SCM, SC Nutrition and Health, SC Dairy Politics and Economics and SC Environment.

REPORT ON MID-YEAR BUSINESS MEETING

INTERNATIONAL MILK PROMOTION (IMP) GROUP: MIDYEAR MEETING REPORT – 26 JUNE 2024

The IMP midyear meetings were held in Santiago, Chile, from 10 to 13 April, 2024. During the same period, the Global Dairy Platform (GDP) meetings took place in Miami from 7 to 9 April. However, the Project Manager did not attend these due to budget constraints.

This report provides an overview of the key discussions and insights from the IMP midyear meetings, emphasising the importance of effective communication in promoting a healthy, balanced, and sustainable diet.

Meeting Programme

The programme for the IMP meetings consisted of four main sections, each featuring a workshop:

- Focus on Sustainability/Communicating Sustainability
- Focus on Nutrition
- Artificial Intelligence in Communication
- IMP Trophy Awards

Key Takeaways

The central message of the meetings was that a balanced diet respecting planetary health is essential. This should be communicated effectively to inform health professionals and consumers about maintaining a healthy, balanced, and sustainable diet. Additionally, consumers are increasingly seeking information about sustainable farming practices, leading many countries to launch communication campaigns highlighting these efforts.

Presentation Highlights

Focus on Sustainability

Australia: Australia conducted research to understand consumer dynamics and perceptions regarding trust in the dairy industry. The research aimed to:

- Understand the drivers and barriers to industry trust.
- Identify the importance of dairy foods.
- Explore the link between industry trust and food importance.
- Segment consumers based on their dairy consumption patterns.
- Identify marketing KPIs related to the target audience.

The research identified three primary reasons consumers reduce dairy consumption:

- Health concerns
- Animal rights and treatment of animals
- Environmental impact

While consumers generally trust and enjoy dairy products, there are concerns about animal welfare. The ideal dairy industry should be transparent about its practices related to animal welfare and sustainable farming. The research segmented consumers into six groups based on their dairy consumption frequency and reasons for consumption. Younger, socially conscious consumers were found to be more sceptical about the industry's transparency. Effective communication can help inform this target group about the positive actions of the dairy industry. Overall, Australians are less supportive of milk, but cheese and other dairy products are gaining popularity.

USA: The Dairy Management Inc (DMI) in the USA introduced a consumer campaign titled "A Farmer is More Than a Farmer." This campaign aimed to demonstrate the small actions consumers can take towards responsible climate management. The campaign highlighted that many young Americans had never seen a real cow or visited a farm, leading to misconceptions about dairy farming. By emphasising the broader role of farming, the campaign successfully raised awareness about sustainable farming practices.

Consumer Perceptions of Ultra Processed Foods (UPF)

The International Food Information Council presented research on consumer perceptions of UPF, published in January 2024. Key insights included:

- Consumers are concerned about the health risks of UPF but lack the ability and motivation to avoid these foods.

Christine Leighton, presenting at the Summit

- Health-conscious consumers are worried about the nutritional values and chemicals present in UPF.
- The primary motivations for eating UPF are convenience, price, and taste.
- Consumers generally underestimate their UPF intake.
- Plant-based substitutes are often seen as UPF, especially by non-vegans and non-vegetarians.
- There is limited willingness and ability to reduce UPF consumption.

Research conducted in the USA indicated that more than half of consumers believe processed foods can be part of a healthy diet. However, there is a lack of understanding about what processed foods are and their potential health implications. The research also emphasised the need for diets to include more fruits and vegetables, less sugar, and fewer processed foods.

Climate Milk

In Norway, a processor introduced "Climate Milk," regular milk with packaging detailing the sustainable farming practices used to reduce emissions by changing the feed of the cows. However, the product failed due to poor communication, as consumers perceived the milk as tampered with. The packaging was too far removed from regular milk package designs and provided information that confused consumers. Better communication in simple language is necessary to

bridge the gap between farm practices and consumer understanding.

Artificial Intelligence in Communication

A communications agency presented the potential of AI in creating multilingual advertisements tailored to different cultures. AI can significantly reduce production costs while delivering culturally relevant messages. This includes using AI to create advertisements in different languages, with culturally specific elements such as lip-syncing and music, without the need for filming each version separately.

Nutrition

Various countries presented case studies on nutrition, ranging from food-based dietary guidelines to communication with health professionals. CEP presented a case study on the CPD (Continuing Professional Development) activity of the Project and how successful this has been for CEP.

IMP Trophy Presentations

The three finalists for the IMP trophy were Norway, Canada, and Australia. Below are brief descriptions of their campaigns:

Norway: Their campaign, "Milk – A Natural Package of Nutrients", focused on the nutritional value of milk. The creative execution showcased milk in various settings, emphasising its versatility and nutritional benefits. Key elements included:

- Maintaining a year-round presence in media with small budgets using short formats (15 seconds).
- Clear messaging about the product with the milk glass in focus.
- Highlighting nutrients and packaging in close-ups.
- Showing different ways to enjoy milk relevant to different target groups.

Canada: The "I Do That" campaign by Dairy Farmers of Canada (DFC) aimed to address climate crisis concerns. The campaign used multiple platforms and influential sources to communicate the sustainable practices of dairy farmers, highlighting the truth about dairy farming. Trusted sources, such as dairy farmers themselves, were used to validate the new beliefs about dairy.

Australia: The Australian Grand Dairy Awards campaign aimed to promote excellence and quality in Australian dairy products. The campaign used cost-effective methods, including social media content and influencer engagement, to drive preference for Australian dairy. Key components included:

- Social media content ready for use by award winners.
- An influencer campaign featuring prominent Australian social media content creators to promote the winning products.
- A cheese-board competition using food creators with strong social media followings.
- Short videos promoting the best Australian dairy products, achieving excellent reach, awareness, and engagement with the target audience.

Switzerland: Switzerland's "Green Swissmilk" campaign focused on the "Swissmilk Green" production standard introduced in 2019. The campaign aimed to raise awareness about sustainable production practices, especially among younger generations. Key elements included:

- The introduction of the "Swissmilk Green" production standard, which raised the bar for animal welfare, feeding, sustainability, and social issues.
- A campaign logo to increase awareness.
- A humorous approach using a comedian and a cow to convey the messages effectively.

REPORT ON BUSINESS MEETINGS DURING OCTOBER 2024

STANDING COMMITTEE OF MARKETING BUSINESS MEETING

Discussion points at the Standing Committee on Marketing

Innovation awards discussion: The IDF Dairy Innovation Awards have taken on a fresh format this year. Instead of being a stand-alone event, the awards are now seamlessly integrated into the Innovation Session during the closing session of the WDS. To maintain their integrity, the awards have been divided into three panels. Last year's winners were highlighted across nine categories, which set a strong precedent for this year's entries.

There was also some discussion about the awards and their categories. It was confirmed that the SPCC and National Committees would be reviewing the awards and their criteria. Entries for the Innovation Awards may not be entered into the Yves Boutonnat International Milk Promotion (IMP) Trophy awards. Sustainability is a key theme, and IDF's alignment with FAO's definition was reaffirmed, covering aspects like SDGs, nutrition, and social and economic activities.

This year saw 153 entries submitted for the 2024 IDF Innovation Awards. Human nutrition and dairy farming

2024 IDF Dairy Innovation Awards Announced

practices emerged as the most popular categories. A key takeaway from past experiences was the introduction of entry limits per country, which led to greater global diversity among the submissions. Some finalists created 15-second summary videos, which were well received. Members suggested sharing these videos with the SCM to promote learning opportunities, and Sebastian Dates gave the assurance that this could be arranged without issue.

In an exciting development, the award entries will be made public in IDF for the first time. This move aims to showcase innovative projects and products while paving the way for the launch of the IDF Innovation Hub. This new platform will feature award cases, links to presenting companies, and more. Looking ahead, there are plans to create an Innovation Report next year, similar to the Dairy Sustainability Outlook, which will spotlight the most compelling cases submitted. The team also discussed the importance of keeping the content of the Innovation Hub dynamic and engaging.

The SCM's role in this effort will be critical, as their content could feed into the Innovation Hub's marketing section. An action team was formed by members of the SCM to support the development of marketing content for the Hub. Their aim would be to focus on creating compelling materials to bring the Innovation Hub to life.

Updates on liaisons with international organisations

European Milk Forum (EMF)

Dominique Poisson provided an overview of EMF, which involves 10 member countries collaborating on challenges in the dairy sector through a unified European strategy. Key updates include:

- EU-Funded projects
  - A yoghurt initiative involving five countries, including a campaign titled "Yogurt, It's Great Inside" promoting yoghurt's health benefits and versatility, with tailored market strategies.
  - Projects focusing on sustainable milk production (Austria and France) and organic dairy production (France and Denmark).
- Privately funded projects:
  - Nutrition-focused initiatives such as conferences and symposiums.
  - Sustainability projects addressing animal welfare, soil, water management, and climate change.
- Knowledge sharing:
  Expert videos on sustainability and a youth programme are in development, with a 2024 to 2030 strategy outlined. Christine Leighton requested that these videos be presented at the next IDF SCM meeting, and Dominique Poisson agreed.

Global Dairy Platform (GDP)

Bob Musinski provided details about the GDP Annual Meeting on 14 October, including:

- Discussions on the Dairy Sustainability Framework and a meeting about the documentary "A World Without Cows", which offers a balanced perspective on the role of dairy.
- Updates on the *Pathways to Dairy Net Zero* initiative, focusing on GHG protocol development in developing countries and efficiency improvements among members, with notable progress in some regions.
- Registration for the GDP IMP Annual General Meeting will open at the end of the month.

Priority work items of the Standing Committee on Marketing

- Country Reports: Efforts to improve global collaboration included enhancing the Country Survey, with leaders aiming for greater participation and earlier deadlines. The survey will now include midyear updates on consumption trends, with a yearly status quo report for consistency. Country Reports are presented by member countries in alphabetical order. In 2024, China prepared the Country Report, which was presented at the joint meeting with SCM and SCDPE.
- Dairy Matrix communication action team: Nutrition and health developed fact sheets on the Dairy Matrix (DM). In addition, a significant amount of work and very useful and beneficial information is developed by the SCNH. The SCM needs to engage with the content on the DM to translate scientific data into global communication strategies. It was agreed to form a task team with members from the SCM and SCNH. The aim is first to identify what has already been done by different countries and then to develop five messages that would best communicate the DM. There will also be collaboration between EMF (European Milk Forum), GDP (Global Dairy Platform), and IDF to collaborate on the DM for the IUNS event in Paris in 2025.
- School Milk Programmes: The SCM is to identify needs from the existing SMP bulletin, but with a focus on how to approach key decision-makers to ensure that milk remains an important item in the SMP. There is a need to focus on the key influencer that has the purchasing decision. Introducing milk at a young age is not only important for overall growth and development, but also for long-term consumption of milk and dairy throughout the consumer lifespan.
- Greenwashing and Marketing: Fighting misleading narratives (new topic at SCM).
- Governments introduced stricter regulations on environmental claims. Recognising the threat of "deceptive marketing", IDF proposed a task force to craft credible, fact-based strategies to address emerging policy changes. This group will ensure that the dairy industry's sustainability claims remain authentic and impactful and mitigate greenwashing claims.
- During the Business meetings, the action team on plant-based foods agreed that continuation of the work is needed. The action team will work in smaller groups that feed back into a larger group. The three smaller working groups are: (a) environmental sustainability, (b) terms and labelling, and (c) communications.
- The SCM also liaises with the Standing Committee on Animal Health and Welfare to identify common issues regarding animal welfare in different countries that could be of importance for communication messages. This is still a work in progress.
- The joint meeting with the Standing Committee on Dairy Politics and Economics highlighted the importance of Country Reports and the examination of the World Dairy situation. The Global Marketing Trends report, a survey that is conducted every three to four years among member countries, was presented at the meeting as well as at the summit. The country report is one of the most downloaded reports on the IDF website. This year China evaluated the survey results and developed the presentation and fact sheet, which can be downloaded from:

https://shop.fil-idf.org/collections/publications/products/factsheet-of-the-idf-42-2024-executive-summary-of-idf-country-update-2024

INTERNATIONAL MILK PROMOTION (IMP) GROUP, BUSINESS MEETINGS

Although the key IMP meeting takes place midyear over three days, a meeting is convened at the IDF WDS. The main focus was to discuss administration matters such as finances and also to plan the upcoming midyear meeting in Australia, in April 2025.

At the WDS IMP meeting, invitations to attend the IMP meeting are extended to countries that are attending the WDS as observers. During this part of the meeting, a number of case studies were presented to demonstrate the work of generic marketing campaigns.

Several case studies were presented and three are discussed:

Denmark: Danish School Milk Initiative

In Denmark, there has been a noticeable decline in school milk consumption enrolment. Many municipalities have responded by removing school milk programmes. However, to counter this trend, there have been efforts to provide free school milk to pre-schoolers and grants to schools. In addition, there is a push towards launching comprehensive school meal programmes, supported by a joint task force to ensure that these meals align with the Food-based Dietary Guidelines (FBDG). These meals can include dairy products, but not necessarily milk.

In California, schools provide two meals per day, both of which include milk. This model is being examined for its potential application in lower-income schools. Studies have shown that children tend to eat more on Mondays and Fridays.

Denmark is considering incorporating these insights and comments into their strategies to improve consumption at schools, aiming to adapt and implement effective solutions to support the health and nutrition of their students.

Canada: More Goodness

Canada has launched the "More Goodness" initiative to build loyalty to Canadian dairy and to encourage higher consumption. At the heart of this campaign is the Quality Milk logo, symbolising the premium nature of 100% Canadian milk. To drive this mission further, the "More Goodness" rewards programme has been introduced, incentivising consumers to purchase Canadian dairy products. This data-driven programme rewards customer loyalty and involves various partners who integrate this initiative into their marketing efforts.

The programme operates on the 'Acquire: Engage and Consume' (ACE) strategy, aiming to engage consumers effectively and to enhance their dairy consumption. Successful implementation of this programme requires ease of entry and participation, making it accessible for everyone. Key learnings from similar successful programmes emphasise the importance of aligning with the target audience and forming strategic partnerships. For instance, partnerships with pizza chains leverage their customer databases to promote the programme, driving higher dairy consumption.

Consumers can redeem their rewards only at participating retailers, ensuring a seamless and rewarding experience. This initiative aims to make Canadian dairy the preferred choice for consumers, promoting its benefits and encouraging a healthier lifestyle through increased dairy intake.

Nordic Nutrition Recommendations (NNR)

In the latest draft of the NNR, the recommended dairy intake has been adjusted from 350g/day–500g/day to a more consistent 500g/day. This adjustment was based on extensive research involving 400 scientists and a comprehensive risk analysis.

Key points:

Dairy: The final recommendations include a specific guideline for dairy, setting the intake at 500g/day.

- Germany: Recommends two portions of dairy per day.
- Switzerland: Recommends four portions per day for vegetarians.
- Plant-based alternatives: Only soy-based products are recommended in Switzerland.

These recommendations aim to balance nutritional needs with health guidelines, ensuring that the dietary habits align well with both health and environmental considerations.

JOINT MEETING STANDING COMMITTEE ON MARKETING (SCM) AND STANDING COMMITTEE ON DAIRY POLICIES & ECONOMICS (SCDPE)

Joint Country Reports – SCDPE and SCM

The Country Report was prepared by China in 2024. Melinda (Mingyu) Yang gave a detailed presentation on the data gathered from the countries that submitted information.

A fact sheet follows the Country Report and will be prepared by China and shared with the task team on Country Reports. This is the most downloaded fact sheet on the intranet.

World Dairy Situation Report

Marketing and Communication of the Report 2024 was presented by Jean-Marc Chaumet (FR). The report could be purchased and free copies were available to participants.

The Bulletin: The World Dairy Situation Report can be purchased for 500 Euros.

Global Marketing Trends 2024

Isabelle Penta Costa (FR) presented a summary of the Global Marketing Trends report. The research was conducted in April 2024. Although not all countries participated in the research, additional time was allowed until 10 November for submission. CNIEL would incorporate additional submissions.

A more detailed report was presented at the Summit by Christine Leighton during a plenary session. The final report will be available from March 2025.

Joint meeting Standing Committee on Marketing (SCM), Standing Committee on Nutrition & Health (SCNH), Standing Committee on Dairy Policies and Economics (SCDPE) and Standing Committee on the Environment (SCENV)

This was the first meeting of this nature, which included four standing committees. The purpose of the meeting

was to introduce the work of each standing committee with regard to sustainability. Various speakers were tasked with presenting during the meeting:

- SCENV: Carbon markets
- SCDPE: Food systems summit
- SCNH: Front-of-pack labelling
- SCM: Use and “misuse” of green claims

The committees gathered to share updates on their ongoing initiatives and to explore opportunities for collaboration. The Standing Committee on Marketing (SCM) highlighted its collaborative work with the Standing Committee on Nutrition and Health (SCNH) on projects like the Dairy Matrix and School Milk. They also discussed emerging topics such as greenwashing, understanding Generation Alpha, and utilising AI as a tool for marketing and communication. In addition, through the IMP initiative, SCM is working on the *Purpose of Dairy Document*, aiming to create a robust framework for communicating the role of dairy in nutrition and sustainability. It was suggested that this framework should target policymakers explicitly, with the involvement of the Standing Committee on Dairy Policies and Economics (SCDPE) for review and input.

Breakout discussion sessions were held to stimulate brainstorming on each of the presented topic areas, to invite new topic suggestions, and to cultivate ideas for future IDF cross-SC collaboration needs. The attendees were divided into different groups and given 30 minutes to discuss the topic matter. The first breakout session groups addressed: Carbon markets and food systems; and the second breakout session groups addressed: Front-of-pack labelling and Green claims.

Front-of-pack labelling discussion from breakout groups

Canada’s experience with Front-of-pack labelling (FOPL) offers valuable insights into navigating policy and advocacy in the dairy sector. Initially, the FOPL proposal covered 89% of dairy SKUs (stock keeping units), with dairy accounting for half of the “impacted” SKUs overall. However, through targeted efforts, the final proposal was reduced to only 27% of dairy SKUs. Butter was excluded as its fat content is self-evident, salt labelling was omitted for cheese owing to its functional requirements, and plain milk was exempt, though flavoured milk still carries a label.

The dairy industry played a significant role in shaping the outcome by engaging extensively with policymakers, including Parliament and not just the Administration. They used hands-on advocacy strategies, such as presenting shopping bags of products for “show and tell”, to illustrate the implications of the proposal. They also suggested more neutral image approaches, like using a magnifying glass instead of stop signs.

Support was also secured from health organisations, who signed a joint letter advocating for exemptions for specific dairy products. The “dairy matrix” was leveraged extensively, with Canada compiling a robust body of evidence to support the nutritional value and unique properties of dairy.

A recommendation has been made to create a “Canada FOPL Manual,” documenting the advocacy process. This would include detailed steps taken, links to materials shared, key personnel and branches involved, the rationale behind final dairy carve-outs, and the dairy matrix evidence that proved effective in securing favourable outcomes.

Greenwashing discussion from breakout groups. Greenwashing labelling forms part of FOPL

The challenges regarding front-of-pack labelling (FOPL) and related claims highlight the complexities of balancing legal compliance with public perception. A notable example is Denmark, where most legal claims were successfully defended in court but failed to resonate with public opinion, ultimately driving change regardless of legal victories. This demonstrates the importance of not just meeting legal standards, but also of addressing broader public sentiment.

Another challenge lies in developing messages that are both impactful and compliant with terminology from organisations like FAO and a country’s dietary guidelines. Even when aligned with established standards, messages can face scrutiny, making it difficult to ensure that they are considered safe and effective.

The CO_2 neutral label for milk has also come under criticism, raising concerns about its implications for achieving Net-Zero Initiative (NZI) goals. This highlights the growing need to navigate green claims carefully to avoid public or regulatory backlash.

A suggestion has been made for IDF to consider creating a living document to track examples of green claims that have been implemented successfully versus those that have been challenged.

In summary, there is a need to collect more proof points to help bolster claims. Claims need to be verified, and terms like ‘Net Zero’ need to be better defined.

Carbon market breakout group

The discussion on carbon markets highlighted several key challenges, particularly for developing countries, where access to information about participation remains limited. A suggestion was made to address this by organising a future WDS session or webinar on the topic and creating a two-page summary of the insights shared for broader dissemination.

There is also a pressing need for improved carbon measurement tools and for IDF to establish a clear position on carbon markets. This position paper would serve as a foundation for outreach to policymakers, ensuring that advocacy efforts are well structured and sequenced.

Market verification emerged as a critical requirement owing to significant variations between countries. Establishing pricing mechanisms and systems to incentivise sustainable changes is equally important. In addition, there are concerns about the loss of credits in certain systems and whether this undermines the “polluter pays” principle.

Opportunities for sustainability branding were identified, which would require collaboration with the SCM. These efforts could enhance the visibility and impact of sustainability initiatives, aligning them with market and consumer expectations.

REPORT ON WORLD DAIRY SUMMIT SESSIONS

WORLD DAIRY SITUATION 2024

Global marketing trends report

As Chair of the Standing Committee on Marketing, the author was tasked with presenting the results of the Global Marketing Trends (GMT) report during the plenary session of ‘Dairy Outlook 2024’. The GMT survey is conducted among the IDF countries and is repeated every three to four years. The 2024 report, the fifth edition, covers trends from 2018 to 2023, taking into account the impacts of COVID-19, economic crises, and climate change. In the latest survey, 17 countries participated in 2023, compared to 22 in 2022.

The presentation explored the changing patterns of dairy consumption worldwide for the period 2018 to 2023. The survey was managed by CNIEL and the data was also interpreted by the research team at CNIEL.

The research is monitored by the Standing Committee on Marketing and the Standing Committee Dairy Policies and Economics since 2014 and focuses on understanding the drivers and barriers of the food market, especially dairy consumption, across member countries.

Key findings from 2018 to 2023 showed significant growth in the global dairy market, driven mainly by inflation rather than by a genuine increase in demand. Consumers’ high expectations for product quality, convenience, and health considerations, such as protein and fat content, influenced dairy consumption. While the pandemic boosted demand temporarily, the market has mostly returned to normal levels.

The dairy sector faces three main challenges:

- Environmental and climate concerns
- Animal welfare
- Health and nutrition

The food market experienced significant value growth in many countries from 2018 to 2023, driven by changes in consumer purchasing habits, demand for convenience, meal kits, and inflation. Countries like Chile, China, Japan, and Denmark saw slower growth in the dairy market compared to others.

COVID-19 had both positive and negative impacts on dairy products. Positively, high product availability and a shift to home-cooked meals were observed. Negatively, inflation rose, incomes fell, borders closed, and lockdowns reduced out-of-home consumption.

From 2018 to 2023, dairy product value was influenced by inflation, population changes and demand for high-quality products. Despite inflation boosting the market artificially, certain countries like South Africa saw increased demand for UHT milk, and the USA experienced a boosting effect on the dollar. In contrast, countries like Chile, China, and Japan saw lesser value increases in dairy products.

The liquid milk market faced declining volumes owing to changing consumer habits, demand for plant-based alternatives, and inflation. However, positive trends were observed for cheese consumption, driven by demand for convenience and natural population evolution. The anti-dairy debate highlighted concerns about the

environmental impact of dairy farming, animal welfare, and the health and nutritional value of dairy products.

Sustainability remains a significant issue for the dairy sector, with concerns about greenhouse gas emissions, natural resource usage, and environmental impact. Uncertainties like geopolitical and economic instability, climate change, and rising vegetarian and vegan diets pose challenges to the dairy sector.

The top risks for the dairy sector include intensified geopolitical tensions, high interest rates, global debt risk, the worsening of China's real-estate sector crisis, and extreme weather impacts. The main concerns for 2024 are high food prices and a high demand for food categories over the next decade.

The survey results concluded that the COVID-19 crisis boosted dairy demand temporarily, but the market has since stabilised. Despite strong growth in value, largely owing to inflation, the dairy sector faces critical issues related to environmental impact, animal welfare, and health. Long-term prospects remain optimistic, although geopolitical conflicts and climate change pose challenges. The dairy industry is expected to address food security, resource sustainability, and rural development.

Marketing: Communicating dairy for future generations

The Project Manager presented an introductory presentation to the session (in her capacity as Chair of the SCM). The presentation was titled: "Consumer of the future".

A summary of the short presentation is provided here: The future consumer: Gen Z in focus

Gen Z makes up 32% of the global population and is reshaping markets with their focus on inclusivity, diversity, mental health, and sustainability. They prioritise authenticity, intentional purchases, and fulfilling careers, influencing family buying decisions.

Five key trends are identified in this target audience:

- Health-conscious living: Mental and physical health are equally important, with brands promoting balanced lifestyles gaining favour.
- Personalised nutrition: 8 in 10 consumers want tailored food, demanding clean labels and transparency.
- Sustainable choices: 70% prefer ethical brands, expecting eco-friendly practices and humane animal treatment.
- Snackification: On-the-go meals are replacing traditional dining, creating opportunities for innovative, health-conscious snacks.
- Digital engagement: Gen Z seeks immersive digital experiences, valuing AI-driven personalisation and interactive technologies.

The key takeaway was that, in order to connect with Gen Z, brands must prioritise creativity, authenticity, and innovation while aligning with their values of sustainability, mental health, and personalisation. Adapt or risk losing relevance in a Gen Z-driven market.

The marketing session took place in two parts:

Part 1: Communicating sustainability in dairy industry marketing -
Presentations showcased strategies to communicate sustainability initiatives effectively to varied audiences in different countries. Examples included campaigns emphasising net-zero commitments (Canada), consumer trust via transparency (Australia), creative storytelling (France), and digital engagement targeting younger generations (Switzerland and France). Each approach emphasised partnerships, innovative communication, and aligning with consumer values like health and environmental responsibility.

Part 2: Artificial Intelligence in marketing -
The second session explored the integration of AI in marketing and market research, highlighting tools and strategies like generative AI, audience segmentation, content ideation, and predictive analytics. Key considerations for AI implementation include data quality, ethical use, explainability and human oversight. Case studies demonstrated how AI optimises marketing through faster processes, personalised interactions, and deeper insights while addressing concerns like IP (intellectual property) and confidentiality.

Part 1: Breakthrough communication on sustainability in the future:

Bridging industry and the segments – Pamela Nalewajek (Canada)

The presentation, "Breakthrough communication on sustainability", discusses strategies for promoting sustainable practices in the dairy industry. It highlights the commitment of the Dairy Farmers of Canada to achieving net-zero emissions by 2050; the challenges of engaging diverse stakeholders; and the importance of partnerships with organisations like Tree Canada and Ducks Unlimited. The presentation emphasised factual storytelling, measurable impacts, and consumer influence, aiming to protect dairy consumption, showcase sustainable practices, and bolster trust in Canadian dairy products.

Communicating Australia's commitment to sustainability to consumers – Kendra Campbell

The presentation outlined the sustainability efforts of the Australian dairy industry, focusing on transparency, consumer trust, and environmental responsibility. It discussed the impact of campaigns like "Dairy Matters", which emphasises health, sustainability, and ethical practices. Results highlighted increased consumer trust (from 68% in 2018 to 83% in 2024) and greater awareness of the industry's commitment to sustainability and animal welfare. Digital campaigns, influencer engagement, and partnerships have been instrumental in fostering these positive perceptions.

Engaging Consumers with sustainability in France – Adrien Dinh

Creative storytelling, such as producing a manga (storytelling booklet that delivers dairy messages in a creative manner to teens) and TV commercials, can make topics like sustainability engaging. Unique entertainment is the most effective way to get your advertisement to resonate with the target audience.

Celebrating Dairy within Gen Alpha – Stefan Arnold

The presentation focused on engaging Generation Alpha with dairy campaigns through digital tools, personalisation, and gamification. The way to engage with this audience is to speak in their language, in their groups, in their images, their topics and their daily life. It highlights the success of "Swissmilk Planets", a game that attracted 170 000 users, emphasising its appeal with innovative design and interactivity. The strategy underlines the importance of platforms like TikTok and YouTube, sustainability themes, and aligning with Gen Alpha's preferences.

Soignon: How do we hype up and inspire the next generation? – Dominique Huth

Soignon is a goat milk product from France, consisting of 5 300 farms and 1 million goats. 520 million litres of goat milk are collected annually.

The presentation discussed strategies to inspire the next generation in the dairy industry, and to familiarise them with goat's milk products. It emphasises sustainability, inclusion, and digital engagement. It showcases the history, strong identity, and market growth of the brand Soignon through innovative formats like stop-motion videos, recipe content, and active CSR initiatives. The efforts focus on targeting younger demographics while promoting generational renewal and inclusion, aligning with modern consumer priorities for authenticity and reduced waste.

Part 2: The power of Artificial Intelligence as a communication tool

AI in research: What's in it for humans? – Jame Gutierrez
The presentation elaborated on how Ipsos integrates AI to revolutionise market research. It discusses innovative tools such as AI-driven platforms for segmenting audiences, analysing customer behaviour, and forecasting trends. Case studies showcased how these advancements speed up processes and provide richer insights into consumer needs. Ethical concerns about data privacy, algorithmic bias, and transparency were also addressed. Ipsos emphasises future opportunities like personalised consumer interaction and precision in predicting market shifts. Data must be relevant, representative and timeless.

The formula suggested was: Human interaction (imagination, creativity and curiosity) + Artificial Intelligence (efficiency, inspiration and opportunities).

When using AI, company profiles must be correct; the AI service should be fit for purpose; the AI service must be trustworthy, ethical and transparent; human oversight of the AI system must be considered; and be aware of the data governance protocols.

The future of research through AI: Faster and more cost-effective research processes; more personalised and engaging research experiences for participants; deeper and more nuanced insights from complex data sets; enhanced ability to predict and model future trends and behaviours; greater integration of multiple data sources for holistic understanding; improved accuracy and reliability of research findings; and more ethical and privacy-conscious research methodologies.

International Milk Promotion group (IMP) Yves Boutonnat trophy presentations:

The last presentations in the marketing session showcased the three finalists of the IMP Trophy Competition.

IMP is a permanent task force of the Standing Committee on Marketing (SCM), through its affiliation with the International Dairy Federation. The IMP group consists of approximately 20 member organisations involved in generic marketing.

During the key IMP group midyear meeting, members have an opportunity to enter the IMP Trophy Competition.

Each participating country enters a case study for

consideration against a set of criteria, and three finalists are identified. The three finalists are invited to present their entries at the World Dairy Summit each year and the winner of the IMP Yves Boutonnat Trophy is announced at the WDS Gala dinner.

The winner was Canada, with their campaign called 'I Do That' and the follow-up winners were Australia with their campaign Australian Grand Dairy Awards, and Norway with their 'Milk: a natural package of nutrients'.

The Australian and Canadian campaigns focused on communicating sustainability initiatives by the dairy sector in their respective countries. The Norwegian campaign focused on communicating the health benefits of dairy in milk and other dairy products.

Nutrition & Health: The role of dairy in healthy diets for all ages

Short summaries of some of the very interesting presentations on sustainable diets: The role of dairy in healthy and sustainable diets.

Balancing food categories to meet the four dimensions of sustainable diets: a French experience – Dr Nicole Darmon

This presentation looked at strategies for creating sustainable diets in France, focusing on balancing health, environmental impact and cost. It used a "positive deviance" approach, identifying diets that are nutritious, low-impact, and affordable. The study showed that more sustainable diets reduce meat consumption, increase plant-based foods, and include dairy, without raising costs. The results also suggested reducing food waste and incorporating more local, seasonal foods to minimise greenhouse gas emissions and to improve nutritional quality.

The place of dairy in sustainable healthy diets: bridging nutrition and economy – Dr Sylvia Chungchunlam

The presentation looked at the role of dairy in sustainable and nutritious diets, focusing on balancing nutrition, cost and environmental impact. Studies compare animal- and plant-based diets, highlighting dairy's cost-effectiveness and nutrient contribution, such as calcium, vitamin D, and protein. Linear programming is used to optimise diet affordability in various regions, including the USA, New Zealand, Indonesia, and Tanzania. Challenges like accessibility and cultural perceptions were discussed, alongside dairy's advantages in fortification and bioavailability.

Nutrition and Health: Health benefits of dairy, the latest findings: Recent advances on dairy fat and cognition: contribution of a primate study – Fabien Pifferi

This presentation was particularly interesting. It explored the positive effects of dairy fat on brain development and cognitive functions using mouse lemurs as a research model. It compared the impact of plant fat vs animal fat (dairy) on the cognitive function of rats. Videos were included that showed early learning abilities in rats fed with a dairy fat. Key findings suggest that dairy fat enhances psychomotor development in rats, motor coordination, learning, and memory compared to vegetable fat. The study attributes these effects to favourable fatty acid ratios and ketogenic properties of dairy fat, which improve brain energy use and neuroplasticity.

Summary Celebrating dairy innovation and concluding remarks

The Innovation Awards showcased the winners of the awards. Award entries were made public in IDF for the first time, showcasing innovative projects and products.

All awards had to be linked to the SDGs.

There were 153 total entries for the 2024 IDF Innovation Awards. The most popular categories were human nutrition and dairy farming practices. Finalists had to submit 15-second summary videos.

Link: IDF Dairy Innovation Awards - IDF - IDF is the leading source of scientific and technical expertise for all stakeholders of the dairy chain

Milk South Africa
Melk Suid-Afrika

milksa.co.za