SWISS FOOD & NUTRITION VALLEY

Pioneering future-proof food systems. Together

STATE OF PLAY

IMAGINING THE PACKAGING OF THE FUTURE

11 JUNE | BERN
POST-EVENT REPORT

Together with Valley Partners

Nestlé

Tetra Pak®
PROTECTS WHAT'S GOOD

With support from

Bern Economic Development Agency

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01 SWISS FOOD & NUTRITION VALLEY

150
VALLEY PARTNERS

6
KEY STAKEHOLDER GROUPS

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ECOSYSTEM EVENTS IN 2023

Pioneering future-proof food systems. Together.

Swiss Food & Nutrition Valley (SFNV) is a purpose-driven, nationwide, not-for-profit association that strengthens and promotes food system innovation, with international engagement.

Our diverse Valley partners collaborate to address the most pressing challenges in food, agriculture and nutrition, and co-create innovative solutions that drive better planetary and human health.

02 THE SFNV IMPACT PLATFORMS

Sustainable Packaging
Innovative solutions to turn the tide on waste

Future Farming
Finding new ways to feed the growing global population.

Food Systems 4.0
Digitalizing the food supply chain.

Sustainable Proteins
From rethinking traditional agriculture to cultured meat.

Precision Nutrition
Exploring the relationship between genes, nutrition and health.

“Our Impact Platforms focus on five key areas where Switzerland has the expertise and technology to develop scalable solutions. They provide a structure to help us co-create and innovate through collaborative projects.”

Marta Antonelli
Head of Impact Platforms, SFNV

Key activities at a glance

EVENTS

WHITE PAPERS

WORKING GROUPS

ONLINE FORUMS

03 THE EVENT

IMAGINING THE FUTURE OF PACKAGING

11 JUNE 2024 | BERN, SWITZERLAND

60 ATTENDEES

6 STAKEHOLDER GROUPS REPRESENTED

23 VALLEY PARTNERS PARTICIPATED

8 EXPERT SPEAKERS

WHAT

SFNV's State of Play events bring together actors from across the Swiss innovation ecosystem to assess where Switzerland stands in relation to each Impact Platform topic and drive collaborative innovation.

This time, the team joined forces with Valley partners Nestlé and Tetra Pak to deep dive into the topic of sustainable materials for food packaging.

Contributions explored the trends and opportunities, the regulatory environment and two of the most promising approaches - alternatives to wood fibres and high-performing bio-based polymers.

Feel the energy in the room

Watch our event recap video

04 WHY SUSTAINABLE PACKAGING?

Packaging is essential to keep food safe, extend shelf-life and facilitate storage and distribution - ultimately strengthening food supply chains and advancing access to nutritious food. But packaging solutions also need to be implemented in a way that minimises their climate impact and drives circularity.

8M TONNES

PLASTIC WASTE DUMPED IN OUR OCEANS ANNUALLY [1]

EQUIVALENT IN ELEPHANTS

1.5M

5%

PACKAGING'S CONTRIBUTION TO FOOD'S GREENHOUSE GAS EMMISSIONS [2]

80%

FOOD PACKAGING NOT SUITABLE FOR RECYCLING [3]

189 kg

PACKAGING WASTE PER PERSON IN THE EU [4]

40%

OF THAT WASTE MADE UP OF PAPER AND CARDBOARD [4]

1. Worldbank.org. 2018 | 2. The Climate Case. Source: https://www.circularity-gap.world/2022 | 3. From pollution to solution, UNEP 2021 4. Packaging Waste Statistics, Eurostat Statistics Explained. 2023.

"Well designed and well implemented packaging solutions have a crucial role to play in shaping more sustainable food systems – from reducing food loss and waste to ensuring that 10 billion people have access to safe and nutritious food.

- CHRISTINA SENN-JAKOBSEN
SWISS FOOD & NUTRITION VALLEY

"Our commitment to sustainability constantly drives us to explore new materials and technologies. This event was all about taking steps to get closer to a circular economy in packaging.

- INGEMAR JACOBSSON
DIRECTOR MATERIAL SOLUTIONS, TETRA PAK

"Innovation is key to delivering our ambition of getting to 100% recyclable or reusable packaging. This event was designed to drive R&D collaboration across the ecosystem and accelerate the development of new solutions.

- ROB HOITINK
GLOBAL R&D PACKAGING LEAD, NESTLE

05 PACKAGING'S ROLE IN ACHIEVING THE SDGS

SDG 2: Zero hunger
Food packaging protects and preserves food, extending its shelf life and allowing it to be safely transported to where it's most needed.

SDG 3: Good Health & Wellbeing
Packaging prevents contamination, assuring food safety and promoting good health.

SDG 12: Responsible consumption & production
Today, one third of all food is wasted. Sustainable packaging protects and preserves food, reducing food waste while keeping its environmental impact to a minimum.

SDG 13: Climate action
Sustainable materials reduce the CO2 emissions resulting from production and disposal processes. By investing in recyclable, edible or biodegradable packaging materials, and integrating lifecycle thinking into packaging design, companies can foster a more circular economy,

Innovation in food packaging is a significant lever for change, exemplifying the interconnectedness of the SDGs and the potential to attain them through concerted, cross-industry efforts.

06 SPEAKER INSIGHTS

FELIX GRÜNEWALD

PARTNER, MCKINSEY

> We are seeing a lot of innovation that is enabling the sustainability transition. This awareness, especially in plastic packaging, has led to both regulatory changes and a decisive shift in consumer behaviour.

KEY TAKEAWAYS

- 90%+ consumers are willing to pay for more sustainable packaging.
- Growth is higher in products with ESG claims.
- Since 2020, consumer priorities have shifted: The appearance of packaging is less important, while environmental impact is increasingly important to Gen Z, Millennials and urban consumers.
- Plastic-to-paper or fibre-to-fibre and new plastics, like bio-based and biodegradable are key innovations.
- There is no single sustainable packaging solution winner yet - innovation will be the decisive factor.

06 SPEAKER INSIGHTS

DR. GILBERTO SIQUEIRA

RESEARCH SCIENTIST, EMPA

> Food waste is a huge issue. Nanocelluose coating offers a great opportunity to keep food fresh while cutting down on single use plastic.

KEY TAKEAWAYS

- Nanocelluose is a renewable, biodegradable and bio-compatible polymer suitable for chemical modification that can be extracted from biomass.
- Using food residues to protect food closes the cycle of waste. Carrot pomace (residue) is rich in cellulose, and can be used to produce nano cellulose for a coating that significantly extends the shelf life of fruits and vegetables.
- Scaled up to pilot prodution, nano cellulose coated cucumbers remained in tact for up to 16 days compared to 3 for uncoated ones.
- This approach can also be used to create aerogels for thermal insulation in food packaging.

06 SPEAKER INSIGHTS

PROF. DR. SELÇUK YILDIRIM

ZHAW, CENTRE FOR FOOD PRODUCTION AND PACKAGING

> Our research shows that it's possible to valorize Swiss food industry side streams, transforming waste into valuable, sustainable packaging materials.

KEY TAKEAWAYS

- Packaging should be functional, affordable and sustainable.
- Adding side streams to bio-based materials improves their mechanical properties and reduces costs.
- Side streams can be compounded with bio-based materials to create biopolymer pellets to be used in various packaging production methods such as injection moulding, film extrusion, thermoforming, and 3D printing.
- It will be important to improve the barrier properties of bio-based materials to make them suitable for broader applications.

06 SPEAKER INSIGHTS

HAZEL O'KEEFFE

PARTNER
KELLER & HECKMAN

> Bio-based plastic packaging could play a significant role if there's a shortage of post-consumer plastic waste to meet food contact legislation requirements.

KEY TAKEAWAYS

- European Union Packaging and Packaging Waste Regulation (PPWR) received a favourable vote from the European Parliament and is awaiting final endorsement from the Council.
- The Regulation focuses on reducing packaging waste, making all packaging recyclable by 2030, increasing the use of recycled plastics, and addressing substances of concern in packaging.
- The Regulation includes strict limits on PFAS, as well as heavy metal restrictions. The European Commission is to prepare a report on substances of concern by the end of 2026.
- The new Regulation means potential opportunities, notably for bio-based materials.

06 SPEAKER INSIGHTS

INGEMAR JACOBSSON

DIRECTOR MATERIAL SOLUTIONS, TETRAPAK

> Our latest innovation would not be possible without collaboration with suppliers, academia, customers, NGOs and recyclers.

KEY TAKEAWAYS

- Packaging is key to feeding a growing population - it ensures food safety and availability and reduces food loss. It needs to be part of the solution.
- Tetra Pak’s ambition is to deliver a food package made solely of responsibly sourced renewable or recycled materials, fully recyclable and with the lowest possible carbon footprint.
- In November 2023, Tetra Pak launched the world’s first aseptic beverage carton with a paper-based barrier, inreasing the renewable content by 90%.
- Full ecosystem collaboration is necessary to accelerate innovation.

06 SPEAKER INSIGHTS

ROB HOITINK

R&D PACKAGING LEAD NESTLÉ

> Imagine having to choose between three types of chocolate wrappers: recyclable paper, biodegradable plastic, and recycled plastic. Which one would you choose? Understanding consumer sentiment is such a key part of developing sustainable packaging solutions.

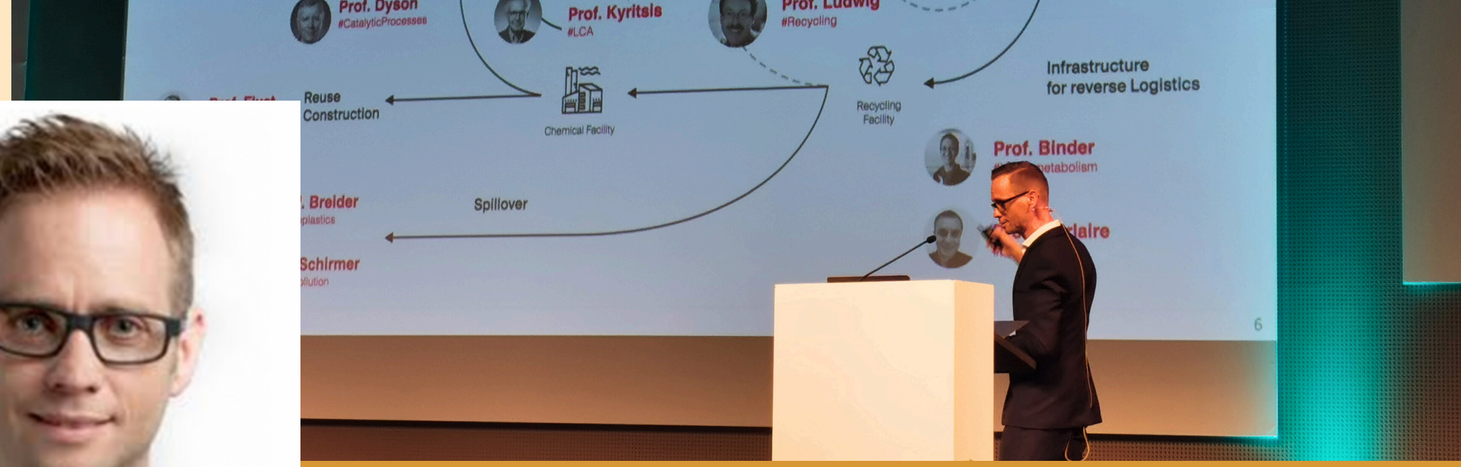
KEY TAKEAWAYS

- Nestlé's packaging sustainability strategy is a way to future-proof its business.
- We need to develop the next generation of sustainable packaging, with a focus on delivering safe and nutritious food and adapting to different product types and geographies.
- Nestlé is pioneering packaging paperization and compostable coffee capsules.
- Technology is vital to build a vibrant ecosystem that drives packaging innovation.
- There's no one-size-fits-all solution. A multi-pillar appoach is needed.

06 SPEAKER INSIGHTS

PROF. HOLGER FRAUENRATH

ECOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE



> We need to look at the entire value chain and lifecycle of sustainable polymers. And most importantly, we need to start from the product and ensure it genuinely meets consumer expectations.

KEY TAKEAWAYS

- Plastics production doubles every 15 years, driven by low cost, light weight, performance, durability, and design freedom.
- Plastic waste and microplastics pollution are among most serious challenges faced by mankind.
- Some sustainable polymers do not meet industrial processing requirements, final product performance, and consumer expectations.
- EASY technology addresses these shortcomings with scalable modification and formulation, high melt strength, elasticity, and extensibility, and industrially relevant melt processing techniques.

06 SPEAKER INSIGHTS

PROF. TOMAS ANDERSON

HEAD OF KEY ACCOUNTS, RISE

> There is clearly hope. We will soon be commercialising new solutions. We believe that combining food technology with packaging innovations can both help extend shelf life and reduce waste.

KEY TAKEAWAYS

- RISE focuses on scaling up research and testing food safety in packaging and processes.
- Focusing on food production, consumption, packaging, and reducing waste, it emphasizes using residue streams from farms and processes to create sustainable packaging solutions.
- RISE is developing bio-based dispersion barrier solutions with enhanced moisture and grease barrier properties, with a focus on single-use cellulose fiber-based molded products.
- RISE is collaborating with other companies to use alternative fibers, such as straw and seaweed, in sustainable packaging materials.

07 MEET THE STARTUPS

Six Swiss and European startups took to the stage to pitch their innovations.

AGROSUSTAIN

Produces an edible coating to extend the shelf life of fruits and vegetables as well as biostimulatns for field application.

Find out more

ALGREEN

100% bio-based, invisible and edible film to prevent fresh meat dehydration and achieve protein preservation.

Find out more

BLOOM BIORENEWABLES

Creating the first true alternative to petroleum by transforming the natural materials found in biomass.

Find out more

B'ZEOS

Seaweed-based granules that can be used to create sustainable, bio-based packaging.

Find out more

NOTPLA

Disappearing packaging made from sustainably sourced seaweed species.

Find out more

PLASTICENTROPY

An enzymatic process to manage plastic waste and produce valuable chemical byproducts.

Find out more

08 5 KEY TAKEAWAYS

Sustainable packaging is the future
Growing awareness of sustainability and regulatory changes are driving shifts in consumer demand and behaviour.

A multi-pillar approach is needed
We need less packaging, better packaging, a better system, and a vibrant ecosytem to drive it all forward.

PPWR will have big implications
Bio-based plastic packaging could play a significant role in meeting regulatory requirements.

Plastic pollution is a serious challenge
But sustainable alternatives need to match industrial processing requirements and consumer expectations.

There is hope!
Innovators are already scaling up sustainable packaging alternatives that extend shelf life and reduce waste.

09 OUR NEXT ONLINE IMPACT PLATFORM EVENTS

1 JULY 24

SUSTAINABLE FARMING

Despite offering clear benefits for both farmers and the environment in the longer term, adoption remains relatively slow. What more can we do to help farmers mitigate the initial risks and costs of adopting regenerative practices today, to continue to scale these approaches in future?

Join us for free

23 SEPTEMBER 24

PRECISION NUTRITION

Precision Nutrition is an emerging area of research that focuses on the relationship between genes and other individual-specific information, nutrition and health. We know that we need to move away from a one-size-fits all approach. But how exactly can we harness the huge potential of solutions in this space?

Join us for free

21 OCTOBER 2024

SUSTAINABLE PACKAGING

Building on the State of Play event explored in this report, this event will provide both Swiss and international experts with an opportunity to continue to explore the trends and opportunities in this space and how we can scale the most promising approaches.

Join us for free

JOIN US ON OUR JOURNEY

Tell us about the Impact Platform topics you're interested in and we'll be in touch as soon as more events are scheduled in!

GET UPDATES

10 KEEP IN TOUCH

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