



SMA

SUSTAINABLE MOUNTAIN ALLIANCE

**ANNUAL REPORT
2024**

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INTRODUCTION

The Sustainable Mountain Alliance (SMA) is a Swiss based non-profit association launched in 2021. This Annual Report serves to outline the SMA's principal activities in 2024.

Our vision: to facilitate the transition to sustainable sports and tourism in the mountain environment.

Our mission: to provide a collaborative platform that identifies and supports inspirational, innovative solutions and a regenerative economy in the mountains, the most sensitive environment to climate change.

MOUNTAIN SOLUTIONS ACCELERATOR



In March 2024, the SMA launched the Mountain Solutions Accelerator, to identify, assess and support sustainable solutions for the alpine sport and tourism industries.

Criteria

The Accelerator calls upon solutions that meet the following criteria:

- Innovatively advance a regenerative sport and tourism economy in the mountains;
- Conserve the mountain ecosystem;
- Reduce greenhouse gas emissions;
- Contribute to achieving the Sustainable Development Goals (SDGs).

Impact Verticals

The Accelerator aims to support Solutions across six Impact Verticals against which data is collected on Key Performance Indicators (KPIs) on an annual basis to track positive impact and identify areas of continual improvement to minimise negative impact:

1. Carbon (CO₂eq) avoidance and removal
2. Waste reduction and the circular economy
3. Water Preservation
4. Mountain Biodiversity and Ecosystem protection and regeneration
5. Mountain People – Culture, Heritage, Employment and Engagement
6. Science, Research and Data

Process

1. **CALL FOR SOLUTIONS:** A global Call for Solutions is made (across all 6 impact verticals or on individual verticals).

Solutions Application Form:



2. **ASSESS AND SELECT SOLUTIONS:** Solutions that respond to the Call for Solutions are subsequently assessed by an expert scientific, institutional, expert jury of SMA mentors through a detailed and recurring selection process.
3. **ACCELERATE SOLUTIONS.** The Accelerator provides ongoing support to the solutions including :

- Quarterly check-ins with SMA staff and mentors
- Direct 1;1 mentoring (financial, technical, marketing, ...) via SMA Mentors Network
- Access to SMA Investors Database
- Access to exclusive opportunities via SMA partners network
- Visibility : provide a platform for Solutions to be presented at conferences and events

Mentors Application Form:



Mountain Solutions Accelerator 2024 Cohort

Following a global call for solutions, the assessment and selection was made of four solutions:

[Cirkel Supply](#)



Cirkel Supply is a premier apparel rental company based in Châbles, Switzerland. Rental of ski and outdoor wear has been found to emit 76% less CO₂ than a linear sales eq. Cirkel's rental service is estimated to avoid 1.6million kg CO₂ in Switzerland by 2027 and by 2027, Cirkel intends to create at least 15x jobs and help 300+ hotels and tourism partners lower the impact of their guests' trips.

Dimpora

dimpora

dimpora® is a revolutionary textile membrane that makes fabrics completely waterproof and breathable without harming the environment using a patented CoreLayer Technology that does not contain PFCs, known as forever chemicals.

You. Smart. Thing

 **You. Smart. Thing.**

You. Smart. Thing. (YST) is a leading travel demand management and journey planning platform for destinations, events, and venues. Our travel assistant service improves audience experience and accessibility, whilst reducing the disproportionate carbon footprint created by travel. Web-based technology captures valuable travel data enabling clients to understand, act upon, influence and monetise travel behaviour. The solution is highly configurable and scalable to solve specific mobility challenges in the mountains faced across sports and cultural events, local authorities and transport sectors by overlaying ski lift data, public transport mapping and other complex data fields.

SCIENCE TO ADVOCACY

Throughout 2024, multiple engagement and outreach activities occurred involving SMA Board and Committee members. A snapshot of those activities is included below.

ChangeNow 2024



ChangeNow is positioned as 'the most impactful event for the planet'. The SMA was an official partner of ChangeNow to ensure there was a special focus on the mountains at ChangeNow 2024 on 25 March in Paris. This consisted of a 'Mountain Meet Up' where representatives of the outdoor industry gathered to discuss sustainability within mountain sports.



SMA then moderated a high level panel on the Winter Olympics and Paralympics 2030 that brought together distinguished representatives to discuss the challenges related to the upcoming Mega Event.

SMA's Media partner, MountainChangeMakers recorded the event here: [Change Now 2024 - Table ronde JO 2030](#)



Sustainable Snow Summit 2024



Midway through the SIEPPUR research project on 25 April 2024, the virtual Sustainable Snow Summit brought together more than 90 Nordic snow sports experts and practitioners to discuss sustainable snow management strategies and good practices from venues across Europe.

Snow-How Webinars



As part of the SIEPPUR project, a series of Webinars were hosted that focused on snow storage; production and transport; and grooming and handling. All sessions were led by SIEPPUR's scientific partners Dr. Fabian Wolfesperger from WSL Institute for Snow and Avalanche Research (SLF) and Erik Melin Söderström from Peak 63 who shared good practice examples from their most actual findings within the SIEPPUR project as well as other expert contributors.

To access the webinars, see here: [SIEPPUR Sustainable Snow-How - YouTube](#)

Global Sustainable Sport Workshop

The SMA was invited to speak in a Workshop Series hosted by Global Sustainable Sport on the topic of 'Protect Our Winters - Protecting what we love' alongside Antoine Pin, Director of POW Europe and Gillian Rosh, Grand Coordinator, POW Europe.

SIEPPUR Sustainable Snow Management Project



The [SIEPPUR project](#) has served to identify, develop and promote sustainable practices in snow management from production, storage, transport, grooming to handling. Funded by the European Union Erasmus +, the project began in December 2022 and will conclude in May 2025 with a Final Conference on 7 May 2025 in Innsbruck, Austria.

The project is led by the International Biathlon Union (IBU) with the partnership of Peak 63, the Swiss Federal Institute for Forest, Snow and Landscape Research (WSL), Svenskt Skidskytte AB (SSAB), the Polish Biathlon Association (PZB), the Slovenian Ski Association (SZS), and the SMA as communications partner.

With climate change impacting access to snow throughout the world, there is an urgency to identify sustainable environmental practices in snow management. By increasing the natural resource efficiency of the involved sport organisations, operational capacity will be improved and a lowering of snow operations' environmental impact.

To achieve sustainable snow management, it is essential to transform the operational processes used by venues. The research found that a key component of understanding the transition to more sustainable snow management techniques is the incorporation of

governance practices that enable effective decision-making, infrastructure development, and technology adoption and development. Key factors that must be addressed include:

- Understanding the microclimate of each venue to evaluate the site-specific snow production potential and the snow reliability.
- Assessing water availability for snowmaking and addressing hydrological constraints, as well as influencing venue-specific technical factors.
- Resolving potential ecological conflicts arising from snow management infrastructure and practices.
- Overcoming socio-economic barriers, including financing and societal acceptance of resource intensive venues.

The project identified the following solutions for the various dimensions of snow management.

SNOW PRODUCTION

- Climate transition plans, particularly for mid-low altitude resorts
- Efficient optimisation of existing infrastructure e.g. use snow making water supply infrastructure to run a small hydro power plant
- Snow production using:
 - Zero energy use through pressurised air e.g. NESSy ZeroE snow lance
 - 100% renewable energy, aiming for 1-2 kW per hour per m³
 - Model commitments to resolve ecological constraints for snowmaking to prevent over-extraction from limited water sources.
- Sustainable water reservoirs e.g. natural cooling using ponds and cascades.

SNOW STORAGE

- Minimise volume loss by using professional cover solutions that are cheaper
- Use e-machines or HVO (hydrotreated vegetable oil) fuels to replace fossil fuels in any storage-related machine use.
- Energy efficiency in storage (2-3 kW per hour per m³)
- Regulations defining land use for snow storage.

SNOW GROOMING

- Use e-groomers for shorter tracks with longer tracks groomed using predominantly renewable energy.
- Automated snow height measurement systems to optimise grooming operations.
- Monitor usage and wear of trails to avoid unnecessary grooming or use of unsuitable grooming machines.
- Leverage weather forecasting tools to optimise grooming schedules and minimise fuel consumption.

SNOW HANDLING

- Clear protocols: how and under which circumstances (weather, snow conditions) hardener will be applied.
- Amount and method of spreading clearly tracked and defined.
- Recommended nitrogen input to alpine meadows as fertilizer: 1 to 10 g/m² per year.
- Tools (e.g. containers on the back of machines) to distribute hardener homogeneously and fast independently of the operator. This generally reduces the amount of hardener used.

- Sun cover shields with textile sheets, ground insulation and terrain preparation to prevent melting.

SNOW TRANSPORT

- Minimise distances to move snow: wise choice of storage location/multiple smaller storages.
- 100% renewable fuel used for transport machines
- Shave snow with an excavator shovel
- Use tractors with trailers or small agricultural vehicles
- Slide snow using tarpaulins
- Pneumatic snow conveyance systems
- For tracks, add isolating plates underneath the ground to prevent heat transfer and providing a supporting layer for heavy trucks.

SPORT AND TOURISM

ZERO Project ‘Zero Emission Ride Objective’



The SMA supports the ZERO Project ‘Zero Emission Ride Objective’ in collaboration with the World Snowboard Federation, Protect Our Winters (POW) and Sport and Sustainability International. The 36-month project involves research, advocacy and sport professionals from 11 partner organizations and from 9 different countries. The project aims to develop innovative practices of grassroots snowboarding to increase accessibility and participation of young people in sport activities while empowering them in the fight against climate change toward ‘zero emission rides’.

The Big Climb

The SMA has been an official partner of The Big Climb since its establishment. The Big Climb Kilimanjaro 2024 took place from 3 to 13 August 2024 focusing on Diversity, Equity and Inclusion (DEI). Climbers took the 7-day Rongai route. To underline its mission, The Big Climb partnered with The Explorers Club, Nations Federal Credit Union (UNFCU), Fjällräven Hanwag - Outdoor Footwear, UNFCU Foundation, PDAid Foundation Association, Fjall Raven, and the Marangu Rotary Club.



The Big Climb Kilimanjaro 2024.



The Big Climb Kilimanjaro 2024, youth participants



The Big Climb Kilimanjaro 2024, tree planting with the local school

The Big Climb supported youth from the Bronx, Queens, Kibera, Maasai Plains, Marangu, Bukoba, and Dar es Salaam to undertake the climb. Youth conducted an Outward Bound training camp prior to the climb, where they conducted a 'solo' exercise, 36 hours alone in a forest, with little in terms of coverage and rations, and where they were asked to reflect on their past, present and future.

During the training camp, youth visited a school close to their campsite and planted some trees with students. Exploration is about encouraging youth to push boundaries, test themselves, and believe that 'no mountain is too high'.



Young Explorers Climb 2024

In 2024, **The Young Explorers climb** was launched with the President and members of The Explorer's Club accompanied by young Explorers. This climb took place one week after The Big Climb 2024.

SUSTAINABLE LUXURY PROGRAMME

The objectives of the programme 'Sustainable Luxury by the SMA' are:

- To facilitate the shift to responsible, sustainable luxury solutions within the mountain environment through identification of committed, ethical and sustainable luxury products and partners from within the sport and tourism sectors.
- To act as a catalyst to promote societal change, influencing behavioural norms of what is desirable, typical or expected to enable the transition to Sustainable Luxury lifestyles and products in the mountain environment.



The SMA is a member of Positive Luxury's Impact Network supporting SMA members in becoming Butterfly Mark certified. Independent and globally respected, Butterfly Mark certification is awarded to luxury brands, retailers and suppliers that meet the highest standards of verified ESG+ performance

GOVERNANCE 2024

BOARD

CO-FOUNDERS



Ingrid Beutler

SMA Co-founder, International lawyer, geographer and political scientist
Dedicated to protecting the mountain environment. Former elite cyclist. Expert in creating global sustainable change in sport, law and policy. Facilitator of partnerships, progress and innovation.



Anne-Cécile Turner

SMA Co-founder, Sustainability Expert
Specialist in systemic change and system-thinking approaches. Passionate about creating real change in the world. Leader in Water and Ocean preservation.



Pierre Germeau

SMA Co-founder, Sport Industry specialist
Expert in Sustainability and Communication. Thinking outside the box since 20 years. Mountain addict since the last century.



Sarah Lewis OBE OLY

Global Sports Leader. Expert in Snow Sports working in the industry for 35 years.
Committed to making society better through sport. Olympian in alpine skiing. Passionate about enabling opportunities for future generations to experience the mountains as I have enjoyed.



Dr. Heidi Sevestre

Glaciologist, fellow international of The Explorers Club, working at AMAP, the Arctic Monitoring and Assessment Programme, Working Group to the Arctic Council.
Avid science communicator and leader of several expeditions to cold places every year. In 2023, Heidi won the inaugural Shackleton Medal for the Protection of the Polar Regions.

COMMITTEES



SCIENTIFIC COMMITTEE



Dr. Pascal Emanuel Egli

PhD in Geography, Environmental Engineer ETH Zurich, mountain athlete
Interested in subglacial hydrology and glacier-climate interactions, as well as glacier surface collapse features. Passionate mountain runner, 2018 World Cup champion in Skyrunning, and ski mountaineer. Environmental Engineer specialized in flood risk modelling, local protection and natural hazards in general. Dr. Egli speaks and writes 6 languages fluently.

STRATEGIC COMMITTEE



Ben Lesage

Global Coordinator at Sustainable Ocean Alliance (SOA)
Passionate about Mountains and the Oceans. Expert in technology and innovation. Worked for the innovation studio of BNP Paribas in San Francisco. Author of the first study dedicated to Ocean Technology startups.



Anna Hellman

Sports leader and adviser catalysing sport, academia, corporate and public sectors for good.
Former Director of ThinkSport, a non-profit founded by the Canton of Vaud and the International Olympic Committee, gathering the sport innovation B2B network. Previously, Anna worked for Além International, served as Executive Director for SportAccord Convention, and was COO for The World Sports Forum.



Cédric Girard

Strategy, Marketing, ESG consultant
Former CEO of Global Sports Week. Supports sport leaders in their positive impact journey. Leadership roles in the sports industry (Nike, Decathlon), consumer goods (Coca-Cola, Unilever) and hospitality (Louvre Hotels). Positive impact projects in Sport, Nutrition, Health and Innovation.

SMA MEMBERS

Since its establishment, the SMA has collaborated closely with numerous diverse stakeholders including civil society organisations, United Nations entities, governmental entities, academic institutions, international sports federations and international sports event organisers and their athletes.

Members are requested to sign the SMA Membership Commitment Form that serves as an ethical commitment to supporting the mission and vision of the SMA. The current members of the SMA include:

- Beauty Disrupted (beauty solution)
- Butterfly Help Project, Nepal
- Gear4Guides, Central Asia, Balkans and Georgia
- Kilimanjaro Trail Run (Red Knot Racing Co.), Tanzania
- Mira Rai Initiative, Nepal
- Nu Cycle, Amsterdam (waste solution)
- The Big Climb, Kenya
- Verbier Zero, Switzerland
- Cirkel, Switzerland (ski clothing rental solution)
- Dimporta (textile membrane, Switzerland)
- You.Smart.Thing (transport app, UK)

Media Partners

- [Point Nemo](#), Film production company, Italy. Producers of Ice Stupa film.
- [Mountain Changemakers](#), France.

FINANCES

The activities of the SMA are supported by the voluntary contributions of its Board and Advisors. Some limited funds are available to support the SIEPPUR – Sustainable Snow Management project funded by the EU Commission.