

CONNECTING TECHNOLOGICAL INNOVATION TO DECISION MAKING FOR SUSTAINABILITY

Co-hosts Statement

Why we launched the Global Science, Technology and Innovation Conference Series (G-STIC)?

Humanity is at a cross-roads. Rapid developments, fuelled by technological innovations, have helped to bring unprecedented wealth to many parts of the world over the last century and nearly unlimited opportunities for personal development and increased wellbeing. But this expansion has come at a cost to the planet and the people. The natural resource base on which all development depends, is getting depleted, overused, and polluted. Disparities in wealth have increased dramatically. And there remain inequalities in education, health, political freedom and other dimensions of development within and across countries and groups. In an increasingly connected world, billions yearn for progress and have the legitimate aspirations of having the same opportunities as the well-off members of the global society. This hope is embodied in Agenda 2030 and the Sustainable Development Goals (SDGs) - a global sustainability agenda with 17 ambitious goals, agreed in 2015 by 193 countries within the United Nations framework, to guide the world towards a better future for all.

Achieving the SDGs by 2030 is just not possible with the current development model. The resource base that fuel human development for all, now and in the future, poses a natural limit to the growth potential of our economic system under business-as-usual conditions. A paradigm shift is needed, not only regarding our current development patterns – production and consumption processes but also how we transform the future. We need a new story line, a narrative that takes into account the natural boundaries of the planet we all share, while at the same time embracing the opportunities that new technologies offer us.

To help shape these societal and technological transitions at the critical juncture we are at today, the five independent technological research institutes that we represent, jointly launched the Global Science, Technology, and Innovation conference series (G-STIC), to work across national and sectoral boundaries and identify innovative and feasible solutions to strengthen and direct technological innovation to help the world achieve the SDGs.

G-STIC aims to catalyse the process of better harnessing science, technology, and innovation to achieve the SDGs by 2030 and to improve human well-being and prosperity broadly

The SDGs are first and foremost about leaving no one behind. They are about eradicating poverty, eliminating hunger, providing energy services to all, working towards a more equitable and sustainable world where it is good for all to live in a healthy and thriving environment.

We are convinced that business as usual will not deliver the SDGs by 2030. Technological innovation offers a great opportunity to transform current production and consumption processes, and realize a

worldwide transition to sustainability that can open doors to development and enhancement opportunities for all. But for this to happen, we also need to strengthen and transform our effort towards innovation. We need to ensure that the science and technology enterprise is directed and harnessed effectively to bring about the kind of changes we desire, especially for those who have been left behind. This will require new ways of developing new technologies and deploying them more effectively at scale. This in turn will require not only innovative policies and business models but also innovative forms of cooperation across national borders and among a variety of actors – governments, businesses, academia and civil society. The G-STIC aims to catalyse this process of better harnessing science, technology, and innovation to achieve the SDGs by 2030 and improve human well-being and prosperity broadly.

G-STIC 2017, the first in series of annual conferences, aimed at identifying and promoting market-ready, innovative technological solutions needed to achieve the SDGs – implementable solutions that are scalable and sustainable both from a societal and economic perspective. G-STIC 2017 focused on integrated solutions that work across disciplines and sectors, and assessed how to accelerate and make more effective their deployment to help resolve the myriad of challenges that lie ahead. G-STIC 2017 has provided deep insights, in particular paying attention to underserved and marginalized communities, and has identified holistic solutions that can be applied now and work for small-scale farmers and rural households as well as multinationals and start-ups.

The discussions highlighted that, to realise these technological opportunities, we need to break down institutional barriers, revisit established concepts, change laws, regulations and habits. Above all, it is vital to work across sectors, to promote new business models and value chains, to demonstrate how the combination of integrated solutions and new business models works, and rethink local, national and global policy making. That requires commercial and political leadership to advocate and make the changes that are good for people, planet and prosperity.

In addition to focusing on integrated technological solutions that have the potential to substantively contribute to achieving the SDGs, G-STIC 2017 has also addressed 4 aspects that are of fundamental importance to the SDGs: Gender mainstreaming, youth engagement, climate and ICT.

Four key findings clearly emerge from the first G-STIC conference:

- (1) Many technologies needed to achieve many SDG-related targets are readily available. Following demonstration to show effectiveness under real-life conditions, we need to develop strategies for deployment at scale to a level necessary to achieve the SDGs. For this, suitable policy and institutional environments, models, targeted incentives and partnerships are needed, which themselves are underpinned and strengthened by deep and sustained business, political and citizen engagement.**
- (2) Widely distributed and bottom-up technological solutions that are appropriate for communities' needs and circumstances are to drive the realization of the energy and food SDGs, two key SDGs for achieving Agenda 2030.**
- (3) Circular economy is an essential element of the new narrative, with Industry 4.0 a key enabler to achieve it and resource recovery and use from waste streams, such as waste water and CO₂, the new normal.**
- (4) ICTs are an indispensable tool to enable the achievement of the SDGs.**

By capturing real-life experiences and knowledge of policymakers, technology researchers, business and industry captains, and civil society, G-STIC 2017, through co-creation processes, aimed at jumpstarting transitions to more sustainable production and consumption processes, with a clear purpose to connect technological innovation to policy making for sustainability.

By communicating these G-STIC 2017 key findings and messages to decision makers at local, national and international level and to industry leaders, it is our ambition to help them set up the institutional, regulatory, policy, and business frameworks that are favourable for realizing a new sustainable development paradigm and achieving the SDGs. At the same time, we also hope that the G-STIC can contribute to deepening citizen engagement, especially the youth, and help harness the power of a myriad of individuals across the world in shaping our future through directed and mindful technological innovation.

The G-STIC 2017 co-hosts,

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Chairperson summary

The first conference in the G-STIC series was convened from 23rd October to 25th October. Over 1000 participants, representing policymakers, technology researchers, business and industry captains, and civil society attended the meeting. The text below is a summary of the major messages emerging from the meeting from the perspective of the chairperson, Ir. Dirk Fransaer. Other outcomes include: (1) the background papers, key findings, and other documents from the thematic and topical sessions, available on the G-STIC website, (2) the recording of the presentations, also available on the website, (3) communities of practitioners built around the various sessions, and (4) the outreach material through videos and social media emerging from the conference.

All these materials as well as the established communities of practitioners provide an excellent starting point to ensure that the messages of G-STIC 2017 are heard by policymakers and industry leaders alike, and to start preparation of the second G-STIC conference planned for 2018.

1. G-STIC aims to catalyse a new sustainable development paradigm: working across sectors and industries, and thinking outside the (policy) box

As clearly stated by the G-STIC 2017 co-hosts, business as usual will not deliver the SDGs by 2030! A bold approach using innovative technological solutions is vital to overhaul production and consumption processes and to open doors to new development and growth opportunities. Illustrated by numerous examples given at G-STIC 2017, innovative technological solutions can be good for the economy, the planet and the people, potentially lifting hundreds of millions of people out of poverty and raising overall human well-being.

G-STIC 2017 focused on integrated technological solutions to complement the current multitude of solutions. Integrated technological solutions not just deal with **one** sustainable development challenge, but tackle multiple challenges at the same time to achieve significant social and economic benefits. They are based on the holistic framework offered by the very concept of sustainability itself, taking the environmental, the social and the economic dimensions into account at the same time. Integrated technological solutions are regionally differentiated and adapted to local, regional, or national needs.

In addition, G-STIC 2017 also addressed four aspects that are of fundamental importance to all the SDGs: gender mainstreaming, youth engagement, climate, and ICTs. For three of these cross-cutting themes, the messages emerging from the stake-holders' contributions are summarized below. Findings and messages related to ICT's cross-cutting potential are discussed in the next section of this Chairperson Summary.

1.1 Youth engagement

To ensure that all learners acquire the knowledge and skills needed to promote and support sustainable development, thereby contributing to achieving the SDG 4, G-STIC 2017 identified these key actions

- Transform the education system globally by means of advanced, personalized learning platforms to enable the youth to develop the mindset and skill sets needed to implement a circular economy, to appropriately use technologies and to ensure a people-centric, planet-sensitive and context-specific innovation approach.
- Innovate the delivery of integrated technological solutions through the active participation of youth in the technological development and dissemination cycle.
- Adopt a paradigm shifting approach to technology solutions by replacing consumption patterns, along with space and energy needs, with process improvements, innovations and policies that allow to maximise utility from resources while staying within planetary boundaries.
- Meaningfully engage stakeholders in shaping mission-oriented applications of integrated technological solutions in ways that promote technology justice, foresight, participatory assessments, and continuous learning and adaptation of innovation ecosystems.
- Facilitate an inclusive digital and internet environment that provides a level playing field for technological innovation in a safe and secure manner, to enable sharing of experiences and knowledge without necessarily serving markets or vested interests, and maximizing profits.
- Use integrated technological solutions as a tool to leave no one behind, instead of further reinforcing inequalities between and within countries.

1.2 Gender mainstreaming

To raise the participation and engagement of women with integrated technological solutions for sustainable development and to engender the innovation and technology space, aligned with the SDG 5 targets, G-STIC 2017 identified these key actions

- Ensure a gender-responsive approach to the technological innovation cycle;
- Promote the technological education and literacy of women, and encourage innovation and entrepreneurship among women and girls;
- Develop technological innovations and markets in such a way that they advance gender equality, and the empowerment of women and girls in particular;
- De-risk high impact innovations that benefit marginalized women.

1.3 Climate change

To transform and reorient technological development under the new realities of climate change, and sustainably increase productivity, enhance resilience (adaptation), reduce or even remove greenhouse gases (mitigation) where possible, G-STIC 2017 identified these key actions

- Provide input to national technology roadmaps in support of individual countries' National Determined Contributions, by identifying and prioritising high-potential transformative climate technologies for both mitigation and adaptation, and supported by strong and coherent national RD&D commitments.
- Ensure that climate technology innovations have clear links to supporting government policies and incentives, to private sector business interests and expertise, and to local and international financial support.
- Enhance experience sharing and capacity building related to proven and innovative climate technologies that have been utilized successfully in other countries and that feature similar

innovation potential, including for deployment and up-scaling of integrated technological solutions.

- Establish national systems for holistic innovation, to develop and use hard and soft climate smart technologies, and to promote North-South and South-South collaboration.

2. Four key findings on technological innovation emerged from G-STIC 2017

2.1 Widely distributed bottom-up systems enabled by technological solutions that are appropriate for community needs and circumstances are needed to achieve SDG 2 (zero hunger) and SDG 7 (affordable and clean energy)

2.1.1 Concept

As mentioned before, the G-STIC focus on the planet, the people and the economy has been the guiding principle for the selection of G-STIC 2017 conference topics. While experts involved in the energy-related sessions have resolutely focused on energy-positive communities, the agriculture experts unanimously singled out agroecology as the focal point. For both themes, the experts judged widely distributed technological solutions **that are appropriate for community needs and circumstances** and that can easily be applied at the scale of households and small businesses, will be able to provide billions of people with access to energy and food rather than the highly industrialized and centralized systems that usually attract more attention during technology-oriented conferences.

2.1.2 Examples

Energy positive communities

Energy-positive communities operate on a local, modular structured, sustainable energy system that generates and delivers renewable energy to cover the living and comfort needs within local communities. The positive impact of such demand-driven energy systems on local communities goes beyond the delivery of energy services. They also help reduce poverty, increase employment and improve quality of living through advancements in health, water supply, education, mobility, etc., and has a positive impact on global climate targets as well.

A clear outcome of G-STIC is that to achieve the energy-related SDGs, demand-driven, energy-positive community approaches are as important as, if not more important than, supply-driven centralized systems. Hence a paradigm shift is needed to ensure that (1) local, regional, national and international energy planning, provision, etc. give at least the same amount of attention to energy-positive community approaches compared to centralized energy systems, and that (2) the technologies used to deliver energy to end users reflects both a decentralized, bottom-up as well as a centralised, top-down approach.

Agroecology

815 million people were still chronically malnourished in 2016. Achieving SDG 2 and eliminating hunger is a challenge that the world community can address if a shift is made from input-intensive crop monoculture and industrial-scale animal feedlots towards more resilient and diversified agroecological practices

Agroecology applies ecological principles to the design, technology and management of agricultural and food systems. Its technologies and practices adapt to local conditions, diversify farms and farming landscapes, increase biodiversity, nurture soil health, etc. such that farms can provide their own soil organic matter, pest regulation or weed control without resorting to extensive use of external chemical inputs.

The solutions identified by the agroecology experts to overcome the barriers to a shift towards agroecological practices include (1) reorienting agriculture policies and significantly increasing funding to support agroecology, (2) dismantling incentives and subsidies for industrial and high-emissions agriculture, (3) refocusing research and development to bottom-up approaches that recognize farmers' knowledge, and (4) extending efforts towards agroecology, while at the same time strengthening existing farmer knowledge and innovation.

2.2 A transition to a new industry framework based on a circular economy approach and enabled by smart manufacturing technologies is vital to realise maximum resource productivity, using recycled materials, wastewater, CO2 and bamboo as resources

2.2.1 Concept

Circular economy represents a fundamental alternative to the currently predominating linear take-make-consume-dispose model that is based on unlimited resource extraction but disregards the natural boundaries of planetary resources. Even if that model has brought unprecedented economic growth and welfare, it has run out of course. To help achieve SDG 9 (sustainable industrialization) and SDG 12 (sustainable production and consumption), a new model is needed to ensure that material usage per unit of functionality can be minimized and to manage materials to reduce waste and avoid pollution. The value chain needs to be revisited based on circularity principles, and customers need to be provided with services rather than throw-away products.

From an industry viewpoint, circular economy generates needs for advanced sorting and recycling solutions, efficient materials processing solutions and manufacturing methods that are designed for circularity. These needs can be covered by technologies typically labelled as Industry 4.0, an aggregate of smart manufacturing technologies.

As consumers increasingly prefer access to services (e.g. mobility) rather than own the goods that provide it (e.g. cars), this change in customer behaviour triggers a need for new business models such as Products as a Service (PaaS), sharing platforms, peer-to-peer interactions, industrial symbiosis, etc. Many of these are based on the availability of efficient ICT tools including apps, websites, online user platforms, and databases.

2.2.2 Examples

Forwarding circular economy approaches through the concept of Industry 4.0

The various technologies covered by the concept of Industry 4.0 are crucial to facilitate a transition from a linear to a circular economy. Industry 4.0 refers to a broad set of smart manufacturing and automation processes enabled by technologies such as the Internet of Things (IoT), Big data & analytics, rapid prototyping (3D printing), augmented reality and blockchain technology. To further the transition towards a circular economy using these technologies, a closer cooperation between

the technology and business communities is needed. That in turn requires the creation of enabling policies and of appropriate institutional, business and financial environments.

The mining of raw materials and the management of waste materials, which are at the beginning and the end of the currently predominating linear economy, are key entry points from which to forward the integration of the Circular Economy and the Industry 4.0 technology and business spheres. Allowing to turn waste into "new" raw materials in increasingly smarter and automated ways, Industry 4.0 facilitates a shift from waste thinking to materials management for circularity.

Wastewater as a resource

Wastewater treatment doesn't have to be a major cost to local governments. By recovering the energy from the waste streams, they can lower sewage treatment costs. If water, energy, nutrients and other useful materials are recuperated from the waste stream, they can even build the wastewater treatment process into a cost-neutral or cost-positive one.

This demands however a new approach to wastewater treatment, involving different governmental departments (including water, energy & agriculture), adapting laws and regulations (to allow spiking wastewater with organic waste, for example), and changing waste collection infrastructure (to concentrate waste streams, for example).

CO₂ as a resource

In a similar way, technological innovation can be used to turn CO₂ from a nuisance into a resource. G-STIC 2017 showcased feasible solutions to harness CO₂ as a resource by transforming CO₂ into chemicals, fuels and materials. Although further research and innovation efforts are needed in several applications, some of the technologies are ready for the market. What is mostly missing to enable these technologies to penetrate the market at scale is the legislative and regulatory environment, a sufficient number of incentives and a fair carbon price.

Bamboo as a resource

Bamboo grows abundantly and easily in the tropics and subtropics, even on the poorest soils in harsh weather conditions (be it more slowly). Bamboo fibre and poles are successfully used in an increasing number of applications, from textiles and furniture, wood panels, laminates, biofuels, pulp & paper, up to prosthetics and water pipes. G-STIC illustrates how bamboo can also be an alternative resource in many commercial applications, supporting the creation of new jobs and extra income for local people, and acting as a significant carbon sink.

2.3 ICTs are a key technology enabler for achieving the SDGs and create opportunities for strengthening sustainable lifestyles and production processes

2.3.1 Concept

ICT solutions such as smartphones, mobile apps, cloud services, social media, or connected devices have transformed our societies and have created a strong impact on everyday life. And new technologies such as artificial intelligence, blockchain technology and big data continue to create an even stronger impact. ICT technology increasingly interacts with many different sectors of society, such as health, education, mobility, energy, agriculture, manufacturing, water, climate, cities, etc.

This holds a large number of innovation opportunities for smart solutions contributing to the achievement the SDGs.

2.3.2 Examples

Connectivity

About 3.9 billion citizens are still not digitally connected today. Connecting them through broadband and mobile devices is a key goal for the telecommunications industry in the years to come, which will provide a clear opportunity to forward the SDGs by bringing applications such as e-learning, e-health, e-finance or e-commerce within reach of a much broader community.

But the digitalization of our societies seems to reinforce existing social and economic inequalities, empowering specific groups while disempowering others. In particular, the inclusion of women is an aspect that needs to be addressed. That is not just the case from a user or connectivity perspective, but also when looking at the innovation and development of new ICT technologies.

Collaborative innovation

ICT can greatly contribute to sustainable lifestyles. Living Labs (operating as a full-scale urban laboratory and proving ground for inventing, prototyping and marketing new applications enabled by ICT technologies) play a crucial role in this regard, also delivering clear opportunities for the youth to engage through Smart Campus Living Labs. In addition to realising the means to test and experience innovations in real-life circumstances, these user-centered and open-innovation ecosystems provide a broad learning environment that enables to identify drivers and barriers to behaviour change or even to explore new legislative alternatives.

By co-creating and testing early in the development cycle, feedback loops enable to quickly adapt solutions to real user needs and ultimately result in higher adoption rates for the solutions under development. Actively nudging, incentivizing, informing or educating users can help persuade them to shift to a sustainable consumption behaviour, contributing to SDG 12.

To help create opportunities for strengthening sustainable lifestyles and production processes, G-STIC 2017 proposes these key actions: (1) connect the unconnected, (2) create joint innovation opportunities for the ICT sector and other industry sectors that impact achievement of the SDGs, identifying opportunities that work (not necessarily using the most advanced technologies) and supporting rapid replication and upscaling, (3) ensure that innovation and implementation is done in partnership with all relevant stakeholders, creating multi-stakeholder platforms (Living Labs) for the partners to implement and test, (4) ensure that solutions empower people to change consumption behaviour and make their lifestyles more sustainable, (5) ensure that governments, the public and the private sector embrace ICT/ICA innovation, as this is a key requirement to make the transition to more sustainable consumption patterns and production processes a reality, and (6) provide cyber-security measures to ensure that people and their data are protected, and to minimize the risks of deliberate acts of cyber-warfare in a highly networked economy and society.

Smart Water and Water Watch

The digital revolution is providing a huge potential to manage water resources more efficiently. State-of-the-art hardware and software can provide near-real time system intelligence, improve

decisions across the operating spectrum through e.g. bid date analytics and cloud computing, enable new levels of automation and control and, ultimately, create new platforms for utilities and government to engage with customers. Data- driven and process-based models can offer precise monitoring, forecasting and visualization capacities, that are key to far-reaching water system innovation.

The Smart Water session illustrated how Instrumentation, Control and Automation (ICA) technologies, combined with information derived from remote sensing, are already revolutionizing how water resources are managed. The proposal for a “water watch” to improve the availability of data, was brought forward at G-STIC 2017 to address the issue of data ownership and help monitor the achievement of the water related SDGs.

The session identified three components that are required to move from ICT technology to smart solutions: (1) the creation of data platforms, (2) the availability of open data, and (3) citizen participation.

2.4 Numerous technologies needed to achieve many SDG-related targets are readily available. What needs to change are the business models, the policy environment and the institutional and incentives structures - requiring business, political and citizen engagement

Examples discussed at G-STIC-2017 include urban building and design, electric mobility and drinking water and irrigation.

Electric mobility

For a long time, transport has been an environmental problem that eluded scientists and policy makers alike. With electric mobility technology steadily becoming available, solving transport problems comes in view even if the policy and investment environments are slow to adapt to the requirements of the technology.

Electric mobility technologies, when integrated and aligned in a broader framework and combined with renewable energy sources or exponential technologies such as big data and autonomous driving, are likely to cause a substantive global transition to more sustainable economies especially if this is supported by new business models such as car sharing.

Regarding electric mobility, it is particularly important to note that policy changes need to take place in an integrated manner to realize synergies across different (business) sectors and disciplines. Fuel and vehicle taxation and regulation are a vital backbone of any comprehensive policy package, but need to be complemented with local policy measures such as urban planning, investments in public transport, pedestrian and cycling infrastructure. Long-term continuity and stability of policies is needed, as many e-mobility investments only become cost-effective when assessed over the medium to long term and require long-term investment decisions by industry and consumers.

Drinking water & irrigation

The G-STIC session “Tech for development: drinking water and irrigation” clearly illustrated that the technological solutions to make substantive progress in providing safe drinking water to all (SDG 6, target 6.1) and improving irrigation water use efficiency (SDG 6 target 6.4) are readily available. In fact, many technological solutions have already been tested and proven to work in a

wide range of local circumstances while others, such as rainwater harvesting, desalination, wastewater treatment & reuse, nanotechnologies, etc. are becoming market-ready.

Irrigation uses 70% of global freshwater resources with a low water use efficiency specially in South Asian region where it is less than 40%. If, by 2050, we want to produce enough food to ensure that none of the estimated 9 billion people must go to bed hungry, a better use of available water resources and technologies are imperative. G-STIC 2017 showcased innovative technological solutions (e.g. subsurface drip irrigation, measurements of evaporation and soil moisture content) that can drastically increase irrigation efficiency. It illustrated the action that has been taken to make these advanced technological solutions socially acceptable and context-specific, as well as institutional and regulatory changes that are needed to apply these advanced technological solutions at scale, and their impact on greenhouse gas emissions and energy consumption.

Even if common technological solutions for water sourcing, storage, supply and distribution are readily available, their affordability, efficiency, accessibility and sustainability remains a key challenge. For the provision of drinking water to all, new business models (such as franchising) and new resource management approaches are needed that not only consider source augmentation, but also (groundwater) resource protection as well as the efficient delivery and the involvement of stakeholders.

Urban design and Buildings

A systemic approach based on integrated technological solutions is needed to address and optimize the multiple benefits that low energy buildings bring. Many of these solutions, such as local-climate sensitive designs for new buildings and energy retrofitting of existing buildings, already exist today. New technologies are rapidly developing in the areas of integrated lighting, IoT-related automation for Building Energy Management, and integration of renewable energies in buildings.

Market forces alone cannot achieve the diffusion of these technologies and the build-up of the required technological know-how. Comprehensive and mandatory building codes for new buildings, retrofits and new housing developments are important in this regard. Enabling investment and innovative financial mechanisms are necessary to encourage and support the use of these integrated technological solutions. Addressing split-incentives issues and harmonizing benefits between developers, owners and residents are essential to enable a transformational change.

3 G-STIC 2017 aims at jumpstarting integrated technological solutions and co-creation processes with a clear objective to connect technological innovation to decision making for sustainability

G-STIC 2017 focused on discussing integrated technological solutions that work across industrial sectors and take a holistic approach to technology innovation. As Ir. Dirk Fransaer (Managing Director VITO, the prime institute for cleantech in Belgium) stated: “Achieving the energy SDGs is an engineering problem, as our world has energy in abundance. The real question is how to capture the energy and bring it to the people and businesses where it is needed. The same however cannot be said about natural resources, as these are in limited supply. The question here is how to use them as efficiently as possible, and how to find feasible alternatives.”

By design, G-STIC aims at capturing and embedding **the real-life experience and knowledge of policymakers, technology researchers, business and industry captains, and civil society** into its **findings**. G-STIC aims at building a bridge between the technology research and innovation communities, and industry leaders and the policymakers responsible for setting technology transition policies at the local, national and international level and in the relevant industrial sectors. To achieve this, G-STIC has developed an extensive participatory preparatory process where the best minds in any given technological field are brought together to discuss and reach consensus on the key technological solutions. The findings are brought forward to the yearly conferences and are enriched during the conferences by active discussions with conference participants. After the conference, they are distributed and presented to the relevant policy audiences. G-STIC aims at bringing new ideas, concepts, and business practices to the policy debates in government and industry circles alike, to enable the achievement of the SDGs and the transition to more sustainable societies and economies.

4 Thematic summaries

Key findings from the 8 thematic and 4 topical sessions are available on the G-STIC 2017 website (<http://2017.gstic.org>). A wealth of practical actionable information and insights based on real-life experiences emerged from G-STIC 2017. The thematic and topical chairs have summarized them in thematic/topical brief that form an integral part of this chairperson summary.