ISDE President's New Year Message 2026

Dear colleagues and friends of ISDE,

As we enter 2026, the scale, speed, and consequences of global change are becoming unmistakably clear. Societies everywhere are experiencing the effects of climate disruption, ecological degradation, growing inequality, and increasing systemic risk. At the same time, scientific and digital capabilities are advancing at a remarkable pace, giving us unprecedented ways to observe, analyse, and understand our planet. These advances hold great promise, but they also carry new responsibilities. The expansion of artificial intelligence and planetary-scale digital infrastructure, for example, is placing additional demands on energy and water systems, even as environmental limits tighten and risks become more interconnected.

In this context, the central challenge we face is no longer access to information. It is our collective ability to integrate knowledge, build shared understanding, and exercise sound judgement in the face of complexity and uncertainty. This is why Digital Earth matters more than ever. What began as a long-term vision is now emerging as an essential shared capability for understanding our planet, coordinating action across sectors and borders, and supporting responsible decision-making at scale. Digital Earth is not a substitute for political judgment or societal choice. Instead, it provides an enabling foundation for making those choices more informed, transparent, and accountable.

During 2025, the International Society for Digital Earth advanced a Strategic Vision that frames Digital Earth as a common good. This vision promotes a federated and interoperable approach, shaped through collaboration among governments, researchers, Indigenous communities, youth networks, civic organisations, and multilateral institutions. This framing is important because the challenges before us have always been systemic in nature. What has changed is their scale, pace, and degree of interdependence, as well as the growing inadequacy of siloed data, fragmented governance, and narrowly scoped digital solutions. Climate change, water and food security, disaster risk, health resilience, the demand for digital infrastructure, and social inequality are deeply intertwined. Addressing them requires coordinated approaches designed explicitly to work across these connections.

This transition from vision to implementation was affirmed at the ISDE Council meeting held during the World Science and Technology Development Forum in late October. Council endorsed the phased operationalisation of a polycentric governance model through Regional Coordination Hubs, working alongside Regional Chapters and linked taskforces and collaboratories aligned with the Twelve Digital Earth Frameworks and the Digital Earth Enablers. Council also called for the preparation of a Draft Digital Earth Enabler Activation Plan by February 2026, setting out taskforces, partnership pathways, and integration with ISDE events and publications. Together, these decisions mark a clear shift from aspiration to coordinated delivery and establish 2026 as a year of purposeful action.

Turning the vision of Digital Earth into practice requires shared structures that enable trust, collaboration, and learning across regions and disciplines. The Strategic Vision's Twelve

Frameworks provide this foundation. Organised across complementary tiers that span foundational systems, enabling infrastructures, and human-centred applications, they offer a coherent way to organise knowledge, align disciplines, and connect ambition to outcomes across the sciences, technologies, arts, cultures, and policy domains that shape how societies understand and act on the world.

The Digital Earth Enablers bring this structure to life. Organised into six clusters, they support interoperability; trust, provenance, and traceability; foresight and planning; learning and participation; implementation; and meta-governance. Together, the frameworks and enablers establish a shared pathway from vision to delivery. They enable collaboration that is technically robust, culturally informed, ethically guided, and institutionally grounded. In this way, Digital Earth advances not as a single system or platform, but as a collective endeavour that brings scientific insight, technological innovation, cultural knowledge, and creative expression together to address complex challenges in an integrated and constructive manner.

At the same time, the scientific and technological context in which Digital Earth is advancing is evolving rapidly. AI-enabled world models and generative simulation are moving from research environments toward practical tools for scenario exploration, policy rehearsal, and anticipatory governance. Advances in multimodal sensing and generation are strengthening how motion, context, and causality are represented and communicated to decision makers. Geospatial foundation models are expanding our capacity to translate vast volumes of Earth observation data into actionable insight across disaster response, land management, and agriculture.

New capabilities are also reshaping how we observe the Earth system itself. Onboard artificial intelligence for satellites is beginning to transform how Earth observation data are filtered, prioritised, and processed, with direct relevance for emergency response and resilience. At the same time, there is growing recognition that understanding the Earth in isolation is no longer sufficient. Research into space weather highlights how solar activity influences terrestrial systems, from atmospheric dynamics to infrastructure vulnerability. International scientific discussions are now underway around future observation missions at the Lagrange 5 position, which would enable sustained monitoring of solar activity that shapes conditions on Earth.

This emerging perspective places Digital Earth within a broader Sun–Earth context and reinforces why the first of the Twelve Frameworks defines Digital Earth as a dynamic, complex adaptive system. Its behaviour emerges from interactions across multiple scales and domains, rather than from terrestrial processes alone. It also underscores the importance of federating the sciences, integrating geophysical, atmospheric, helio-physical, ecological, population health and social knowledge within a shared and interoperable framework.

As these capabilities advance, the need for Digital Earth to serve as a trust and compliance infrastructure intensifies. Provenance, transparency, ethical governance, and accountability must be embedded by design. This is why the Digital Earth Enabler programme and the alignment of taskforces with the frameworks are central to ISDE's mission. ISDE's Digital Earth programme for climate governance and regenerative economics, announced at COP30, demonstrates how these foundations work in practice. Looking toward COP31, ISDE is focused on turning ambition into accountable progress through shared, credible, and auditable data-to-decision pathways.

Digital Earth is often described as a system-of-systems. It is also a community of communities. In 2026, ISDE's role is one of stewardship. Our responsibility is to safeguard a vision that remains inclusive, scientifically grounded, ethically guided, and operationally credible, while continuing to learn, adapt, and evolve as conditions change. The work ahead is demanding, but it is also deeply hopeful, because it is work in the service of shared understanding, intergenerational responsibility, and shared futures.

I invite you to join us in this work and to engage with ISDE's activities throughout 2026, from regional initiatives and task forces to our global forums. This shared effort will culminate at the Digital Earth Summit in Melbourne, Australia, in November 2026, where our collective vision and commitment will translate into dialogue, collaboration, and practical action to advance Digital Earth.

With appreciation for your commitment, and with optimism for the shared journey and transformative impact we can achieve together in 2026.

Richard Simpson

President
International Society for Digital Earth

1st January 2026