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Planning and Outlook for the SDGs Exhibition Area at Deqing Geographic Information Science and Technology Museum — Inheritance and Innovation, Jointly Building a Sustainable Future

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Abstract: The planning for the SDGs Exhibition Area at Deqing Geographic Information Science and Technology Museum aims to integrate international experience with innovative Chinese expressions. The exhibition will present the 17 Sustainable Development Goals (SDGs), along with their corresponding targets and indicators, through maps, diagrams, timelines, and other visual tools. It highlights both global contributions toward achieving the SDGs and distinctive Chinese elements. Featuring two thematic sections, the exhibition will demonstrate China's accomplishments in SDG implementation alongside children's visions for a sustainable future. The latter section incorporates entries from the Barbara Petchenik World Children's Map Competition and futuristic city models created by younger generations. Designed to enhance public awareness and engagement in sustainable development, the exhibition is scheduled to open by October 2026.

Keywords: SDGs, targets, indicators, United Nations, maps, GIS, exhibition planning, Chinese elements, inclusion

1. Introduction

When mentioning "promoting the 17 Sustainable Development Goals (SDGs)," it is essential to introduce the efforts made by Prof. Menno-Jan Kraak, ICA President for the period of 2015-2019. In 2015, Prof. Kraak and members of the ICA created a series of 18 A0-sized posters titled "A Map Perspective on the SDGs", which have been exhibited at the UN Headquarters since 2016 (Kraak, 2017).

Subsequently, ICA and the UN collaborated to publish the book titled "Mapping for a Sustainable World" in January 24, 2021, with Prof. Kraak serving as the chief editor (Kraak et.al., 2021). The book offers invaluable guidelines for creating geographic databases pertinent to the Sustainable Development Goals (SDGs) by introducing fundamental principles of map design and usage, discussing established best practices and conventions, and explaining how various mapping techniques support the comprehension of the SDGs.

Furthermore, although being advanced in years, Prof. Kraak still carries on promoting the role of cartography and GIS in supporting reasonable geospatial decisions and achieving the SDGs on multiple occasions. For instance, during the 2024 International Conference on Geographical Remote Sensing and Sustainable Land Development on 14th December 2024, he did an inspiring keynote speech titled "Maps Supporting Sustainable Development".

(a)

(b)

Figure 1.1 18 A0-sized "A Map Perspective on the SDGs" posters exhibited at the UN Headquarters (Kraak, 2017)

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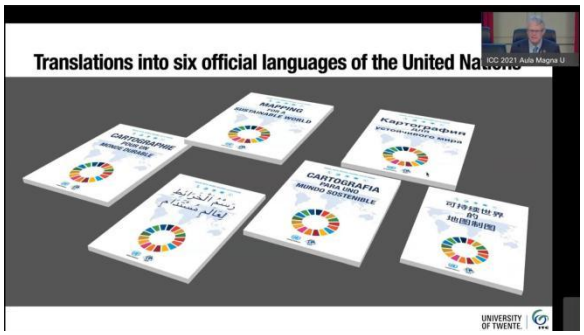

(a)

(b)

Figure 1.2 Prof. Menno-Jan Kraak introduced the book *Mapping for a Sustainable World* during the 30th ICC (Taken by a curatorial team member on 10th December 2021. (a): Livestream of Prof. Menno-Jan Kraak's speech regarding the book *Mapping for a Sustainable World*; (b) Q-A session of the speech on-site)

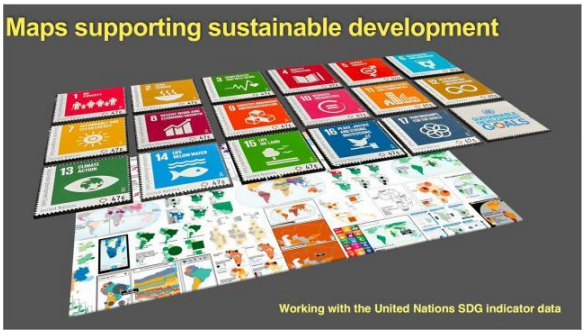

Figure 1.3 A Screenshot of Prof. Menno-Jan Kraak's keynote speech "Maps supporting susutainable development" during the 2024 International Conference on Geographical Remote Sensing and Sustainable Land Development (Kraak, 2024)

Deqing Geographic Information Town (hereinafter referred to as "the Town") is renowned as the Davos of the GIS field and serves as the venue for the First United Nations World Geospatial Information Congress (UNGWIC). In May 20, 2022, the United Nations Global Geospatial Knowledge and Innovation Centre (UNGGKIC) was also established in the Town, becoming the first specialized technical center initiated by the UN Secretariat to be operated in China (The United Nations Department of Economics and Social Affairs Statistics Division, 2024). Given the Town's special status globally and within the UN, and inspired by Mr. Ni Han, Director of the Town's Scientific and Technological Workers Association, planning for the "adding a permanent Chinese-English SDGs exhibition area at Deqing Geographic Information Science and Technology Museum" began in early July 2024.

Figure 1.4 UNGGKIC (Taken by a member of the curatorial team on 06 July 2024)

The Deqing Geographic Information Science and Technology Museum owns two levels, with an exhibition area of approximately 7,100 square meters. It is mainly divided into the Entrance Hall, the Navigation and LBS Hall, the Aerospace and Remote Sensing Hall, the GIS and Internet GI Services Hall, the Surveying and Mapping Geographic Information Engineering Services Hall, the Map and Geographic Information Culture Hall, Beautiful Deqing—Practicing the UN 2030 Agenda for Sustainable Development, as well as the Future Cinema (deqing.gov.cn, 2021). Through various forms and means such as graphic and text displays, science popularization galleries, audiovisual presentations, and interactive experiences, the museum showcases the development and achievements of the geographic information industry, the science and technology museum allows the public to recognize, understand, promote, and love maps and geographic information (deqing.gov.cn, 2021).

(a)

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(b)

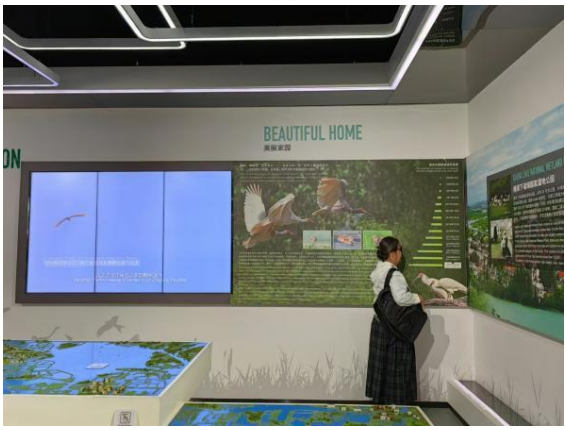
(c)

(d)

Figure 1.5 Deqing Geographic Information Science and Technology Museum (Taken by a member of the curatorial team on 06 July 2024. (a): The front door; (b): The Entrance Hall; (c): The GIS and Internet GI Services Hall; (d): Our Goal—Plant the seeds of technology, polish the business card of hometown, and reap the fruits of dreams.)

The core concept of "establishing a permanent Chinese-English SDGs exhibition area at Deqing Geographic Information Science and Technology Museum" involves expanding the existing "Beautiful Deqing - Implementing the UN 2030 Agenda for Sustainable Development" Hall. Specifically, this initiative aims to transform the current standalone "17 SDGs" infographic shown in Figure 1.6(a) into a comprehensive exhibition space that systematically presents SDGs, their associated targets, and indicators through cartographic displays and statistical visualizations. The planned exhibition area will be approximately 3550 square meters, i.e., one level of the museum. The guiding principle and planning strategies will be introduced in Section 2 of this paper.

(a)



(b)

(c)

Figure 1.6 Current exhibition at the Beautiful Deqing—Practicing the UN 2030 Agenda for Sustainable Development Hall. (Taken by a member of the curatorial team on 07 July and 23 October 2024. (a): The "17 SDGs" logo picture; (b): The "Beautiful Home" Section; (c) A screen that plays the video titled "Implementation of the 2030 Agenda for sustainable development".)

Initiated in mid-August 2024, under the leadership of Mr. Jianhui Wang, the Chairman and General Manager of Suzhou Surveying and Mapping Institute Co., Ltd., with affirmation from Prof. Liqiu Meng (The Director of the Erasmus Mundus Cartography M.Sc. Program) who remarked "This is highly meaningful and socially beneficial", and support from Director Pengde Li of UNGGKIC acknowledging the motivation behind the exhibition planning, the curation process steadily progressed.

In the middle of August 2024, a curatorial team member

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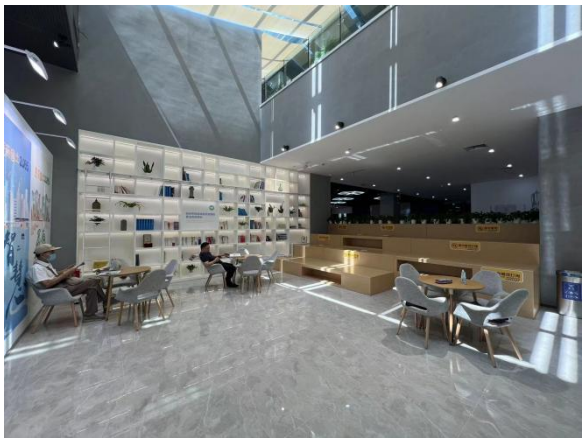
conducted visits to two key institutions: Suzhou Urban Planning Exhibition Hall (host of the 28th UNESCO World Heritage Committee Session, notable for its integration of cartographic displays and data visualization in chronicling Suzhou's urban evolution) and Hangzhou Urban Planning Exhibition Hall (housing the National Territorial and Spatial Planning Reform Achievement Exhibition alongside the Hangzhou Bureau of Planning and Natural Resources' Legal Publicity Center, both employing cartographic-statistical syntheses to document Beautiful China's developmental trajectory).

In late November 2024, the preliminary "Exhibition Planning Proposal" was completed and submitted to the local government of Deqing County.

Figure 1.7 The exhibition board "Construction of a Converging Point for Belt and Road Initiative" (in Chinese) at Suzhou Urban Planning Exhibition Hall (Taken by a member of the curatorial team on 17 August 2024)

(a)



(b)

Figure 1.8 "National Territorial and Spatial Planning Reform Achievement Exhibition" ((a), in Chinese) and "Hangzhou Bureau of Planning and Natural Resources Law Popularization and Publicity Front" ((b), Chinese-English) at Hangzhou Urban Planning (Taken by a member of the curatorial team on 23 August 2024)

2. Guiding principle and planning strategies

2.1 Guiding Principle

The guiding principle of the exhibition planning is "**Inherit and Promote**". Specifically, it can be described as "**Inherit international experience and innovate Chinese expression**". **Figure 2.1** (Chinese-English exhibition layout examples) partially demonstrates this guiding principle.

2.2 A Main Section and two Featured Sections

From Figure 2.1, it is evident that the exhibition area will be divided into three sections: one Main Section and two Featured Sections.

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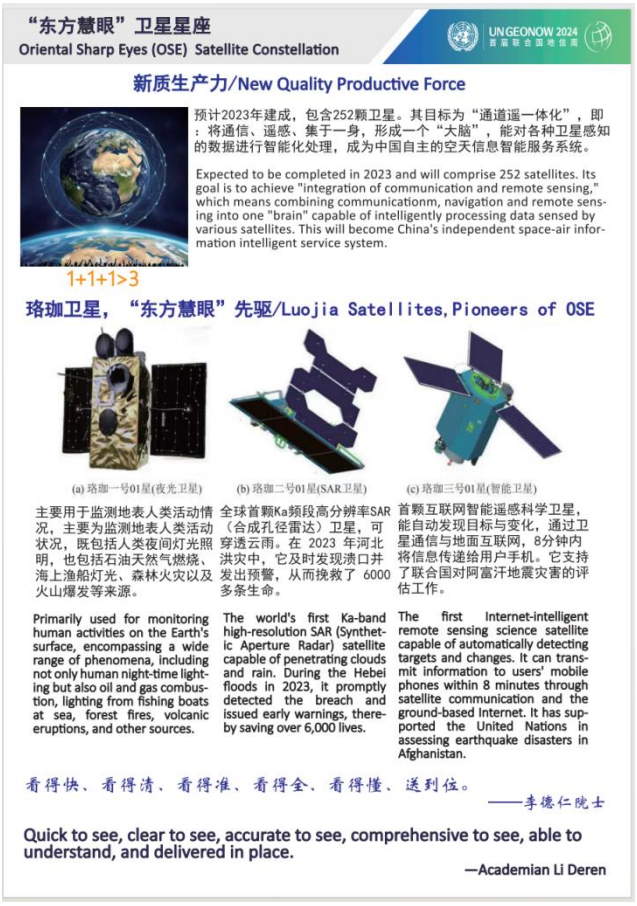
(a) “SDG 4: Quality Education” of the Main Section



(b) “Featured Section 1: China's Commitment to Achieving Sustainable Development” (Regarding Oriental Smart Eyes Satellite Constellation)

The design principle of “Inherit International Expertise" is exemplified through the adoption of Prof. Menno-Jan Kraak’s poster series “A Map Perspective on the SDGs” in the exhibition layout design. The Main Section will draw inspiration from the book *Mapping for a Sustainable World*, employing visualization techiques such as thematic maps, statistic charts, timelines, and photographs alongside interactive media like touchscreens to systematically present the 17 SDGs, their associated targets and indicators. This section will further illustrate methodologies for geographic communication — such as global progress toward the SDGs — through deliberate manipulation of visual variables (color hue/saturation, geometric forms, proportional scaling) complemented by cartographic and graphic design techniques.

In 2022, Sanda Ojiambo, Executive Director of the UN Global Compact, emphasized that achieving the SDGs is unattainable without China’s participation and the active engagement of Chinese enterprises (Liu, 2022). Accordingly, Featured Section 1 — titled “China’s Commitment in Achieving Sustainable Development” — will present the following aspects:

- A spatial distribution map of China’s sustainable development research institutions and corporations;
- China’s policy contributions and strategic roadmaps for advancing the SDGs, including the Carbon Peak and Carbon Neutrality initiatives;
- Breakthroughs in the field of geospatial technology dissemination, such as the planned Oriental Smart Eyes (OSE) satellite constellation for multi-angle photogrammetry and remote sensing data acquisition;
- Case studies of research institutions supporting SDG implementation, notably the Moganshan Geospatial Information Laboratory and the International Research Center of Big Data for Sustainable Development Goals (CBAS).

Furthermore, Featured Section 1 will also present key details of two flagship events organized by the UNGGKIC since its establishment in China:

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1. The First UN Geo-Information Week (UN GEONOW 2024), which took place in the Town from 21st to 24th October, 2024;
2. Next-Generation Sustainability: Advancing the Future with Geospatial Intelligence Leadership Training and Global Leadership Forum, which took place at the University of Melbourne from 1st to 3rd April, 2025.

This sub-section will highlight:

- Quantitative engagement metrics, such as the number of presentations per conference session;
- National/institutional affiliations, gender ratios, and age distribution of the participants;
- Core themes and outcomes aligned with geospatial innovation for sustainability.

The curatorial plan of this sub-section has been acknowledged by the Director of UNGGKIC.

(c) "Featured Section 2: Envisioning a Sustainable Future"

Figure 2.1 Chinese-English exhibition layout examples ((a): SDG 4 of Main Section; (b): Featured Section 1; (c): Featured Section 2.

Featured Section 2 is titled "Envisioning a Sustainable Future". This section aims to enhance the global citizenship awareness of younger generations, as the Generations Z and Alpha overlap with the era when the SDGs were proposed. This section will display entries from the "Barbara Petchenik World Children's Map Competition" (iacai.org, 2025) and models of "Future Cities" built by teenagers exhibited at M+ Museum of Contemporary Art in West Kowloon Cultural District, Hong Kong, China. This section will also embed a workshops where children can draw and build their own "Future Sustainable World".

Figure 2.2 Models of "Future Cities" displayed at M+ Museum of Contemporary Art in West Kowloon Cultural District, Hong Kong, China (Taken by a member of the curatorial team on 07 December 2024)

It is worth emphasizing that the second design principle, "Innovating Chinese Expression", specifically advocates for the integration of Chinese cultural elements. This approach parallels the incorporation of Chinese motifs in the 2008 Beijing Summer Olympic Games' opening ceremony (China.org.cn, 2008) and the adoption of African tribal aesthetics at the 31st ICC. Members of the exhibition planning team contributed to the creation of The *Suzhou Atlas* (SinoMaps Press & Editorial Committee of Suzhou Atlas, 2023), a publication focused on sustainable development that systematically employs Chinese cultural elements. Having been officially published, this atlas now serves as a key reference for both cartographic and spatial design within the exhibition area.

3. Outlooks

The year 2020 started the "Decade of Action" for attaining the SDGs (Kraak et. al, 2021). However, the COVID-19 pandemic posed severe challenges to the world. UN Secretary-General António Guterres warned in July 2023 that the world is significantly off track from achieving the SDGs by 2030. Only 12% of the goals were on track, while 30% have either seen no movement or regressed below the 2015 baseline (The United Nations, 2024). To this end, Guterres called for countries to strengthen the "Global Campaign to Achieve the Goals". The curatorial team hopes to enhance public participation in sustainable development by promoting awareness of the SDGs, their targets and indicators. Additionally, In anticipation of the completion of the "Deqing Geographic Information Peaking Three-Year Action Plan" and the convening of the Third UNWGIC, this exhibition area is expected to open in October 2026.

In the future, the planning team hopes to promote the

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exhibition outcomes to other domestic venues and schools related to the SDGs, and introduce them to the UN Headquarters, developing countries along the "Belt and Road", and other interested countries. When hosting similar exhibitions, these countries can incorporate their contributions to achieving the SDGs and their unique elements. The curatorial team will also seek to invite Guterres or other SDGs-relevant UN Officers to endorse the exhibition area.

During the 32nd ICC, the curatorial team will display the most up-to-date exhibition layout visualization, as well as some thematic maps depicting global progress towards the SDGs, in the form of oral and poster presentations. The presentations will also include a targeted questionnaire for cartographic and geospatial professionals, seeking actionable strategies to harness this exhibition area as a catalyst for accelerating SDGs engagement ahead of the 2030 deadline and after 2030.

4. Acknowledgement

First and foremost, we pay tribute to Prof. Menno-Jan Kraak and his team for their great contributions to promoting the SDGs, their targets and indicators. Prof. Menno-Jan Kraak learned about the exhibition planning on 23th October 2024. Recently, he offered instructions on which parts should be omitted as well as which parts need to be emphasized for this paper. He also commented the exhibition planning as "a good initiative". We have planned to meet with him in person for direct advice, not only regarding the exhibition, but also about online and offline cartographic education. Secondly, we sincerely thank the current President of ICA, Prof. Georg Gartner, who provided guidance on how to use entries from the "Barbara Petchenik World Children's Map Competition" in the exhibition area and forwarded our request to Mr. Jose Jesus Reyes Nunez, Vice-Chair of ICA Commission on Cartography and Children. Special thanks go to Mr. Thomas Schulz, Secretary-General of ICA, who listened to a report on the progress of the exhibition planning during AsiaCarto 2024 and warmly welcomed us to participate in the 32nd ICC. We also express our gratitude to Jonathan King, a student of the Erasmus Mundus Cartography MSc Program 2020 cohort, for his early expression of support for the exhibition planning.

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