

Libraries for Sustainable Development Goals (SDGs)

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Abstract

The member countries of the United Nations have agreed upon Sustainable Development Goals (SDGs) in order to develop a global society. Significantly, libraries can support achievement of the Sustainable Development Goals. Libraries should 1) be a center of research and education communities; 2) develop people' capabilities to read and write as well as media, information, and digital literacy; 3) provide access to information and communication technology for all people; 4) build networks and collaborations between libraries and learning centers both nationally and internationally; 5) preserve and provide access to the national cultural heritage; 6) organize library activities and information services to promote sustainable learning; and 7) develop libraries to be energy-saving and environment-friendly.

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Introduction

Several types of libraries in Thailand have provided services enabled people to use body of knowledge recorded in various forms. National Libraries collect and maintain national information resources. School libraries support teaching and learning in schools, promote and build reading habits, and stimulate imagination and inspire children and young people. Higher education libraries or college and university libraries support self-directed learning outside classroom and promote advanced research for students and faculties. Public libraries promote reading habits, research, and spend free time usefully of people in a community, regardless of gender, age, education, and religion. Finally, special libraries in various organizations support learning of people in such organizations.

Clearly, data, information, and knowledge are important in daily life, education, self-development, and work. Besides, information and knowledge is vital for various organization to make decisions and operate. In fact, the nature and need of information have changed; libraries need to shift towards serving wider community applying digital tools in order to promote education and learning, both formal and non-formal, informal education, research and development, and preservation of culture and traditions, recreation and entertainment in the digital age to support sustainable development of the country.

Sustainable Development Goals (SDGs)

UN 193 country members have jointly adopted the 2030 Agenda for Sustainable Development Goals, a global social development for sustainable social, economic and environmental development.

Sustainable Development Goals (SDGs) have 17 goals (United Nations, n.d. a). Each goal is classified into sub-goals for clarity in action. There are 169 SDG targets connecting and supporting each other. Therefore, it is necessary to drive all goals at the same time. A total of 247 indicators start out to monitor and assess progress of SDGs development based on five dimensions as follows (United Nations, n.d. b).

People: to end poverty and hunger in all their forms and dimensions and to ensure that all human beings can fulfil their potential in dignity and equality and in a healthy environment

SDG 1 End poverty in all its forms everywhere

SDG 2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture

SDG 3 Ensure healthy lives and promote well-being for all at all ages

SDG 4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

SDG 5 Achieve gender equality and empower all women and girls

Prosperity: to ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature

SDG 7 Ensure access to affordable, reliable, sustainable and modern energy for all

SDG 8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

SDG 9 Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

SDG 10 Reduce inequality within and among countries

SDG 11 Make cities and human settlements inclusive, safe, resilient and sustainable

Planet: to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations

SDG 6 Ensure availability and sustainable management of water and sanitation for all

SDG 12 Ensure sustainable consumption and production patterns

SDG 13 Take urgent action to combat climate change and its impacts

SDG 14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development

SDG 15 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Peace: to foster peaceful, just and inclusive societies, which are free from fear and violence. There can be no sustainable development without peace and no peace without sustainable development

SDG 16 Promote peaceful and inclusive societies for sustainable development provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Partnership: to mobilize the means required to implement this Agenda through a revitalised Global Partnership for Sustainable Development, based on a spirit of strengthened global solidarity, focused in particular on the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people. SDG 17 Strengthen the means of implementation and revitalize the global partnership for sustainable development as shown Figure 1.



Fig. 1 5 Ps of the SDGs

In Thailand, SDG targets have been implementing. Most SDG targets are below target values. Seven goals are below the risk target, which are SDG 2 Zero hunger, SDG 3 Good health and well-being, SDG 6 Clean Water and Sanitation, SDG 11 Sustainable cities and communities, SDG 12 Responsible consumption and production, SDG 14 Life below water, and SDG 16 Peace, Justice and

strong institutions. None of the targets is below the critical target. Obviously, Thailand has a progress in driving SDGs in all dimensions. However, there are still several key challenges, especially the integration between relevant organizations both at the policy and practice level. Furthermore, the coronavirus (COVID-19) pandemic has affected the implementation of SDGs, resulting in being unable to achieve target values (Office of National Economic and Social Development Council, 2021). Thailand's actions to drive towards SDGs still need to be expedited, especially goals at the risk target in order to achieve in all dimensions by 2030.

The ultimate aim of SDGs is equality in human beings. Everyone has right to a good quality of life regardless of their society, cultural, or ethnic background since all human beings are global citizens. Libraries, as collections and services of all forms of information and knowledge, have a significant role to support SDGs by facilitating access to information and providing services and activities related to SDGs.

Roles of library for SDGs

Knowledge and information are important for human potential and social development in several dimensions. Libraries, a knowledge repository of society, must be able to adapt to social changes in order to support improvement of quality of life. In fact, libraries should be in learning ecosystem of a society according to SDGs.

International Federation of Library Associations [IFLA] (2022a) recognizes importance of SDGs. In fact, libraries around the world can support sustainable development and enhance quality of life by providing access to information and knowledge using technology. As every library and information service institution is a vital source of information and knowledge, IFLA calls on professional associations and libraries around the world to contribute to the United Nations Sustainable Development Goals (SDGs) through a project called “IFLA Library Map of the World,” which encourages member libraries to share basic information. There is also the “IFLA Library Map of the World SDG Stories” project, which encourages libraries around the world to share their stories about their contribution to SDGs. Currently, 55 libraries from 33 countries have shared stories about supporting sustainable development as shown Figure 2.



Fig. 2 IFLA Library Map of the World SDG Stories

(IFLA, 2022b)

Accordingly, American Library Association [ALA] (2021a) has established a working group to jointly plan a strategy to guide libraries in the United States and other libraries around the world to support those goals. Australian Library and Information Association [ALIA] (2018) has been promulgating the United Nations' Declaration on Sustainable Development since 2015. The association and members have been engaged in various activities to support sustainable development in accordance with their roles and responsibilities. Three main roles of libraries are: 1) supporting freedom of information access; 2) providing examples of libraries that have been successful in supporting sustainable development; and 3) helping to publicize and communicate information about SDGs to the public.

In Thailand, Higher Education Institute Librarian Club (2020) together with the International Librarian and information scientists organized the 2020 annual general meeting and academic conference, “SDG from Vision to Librarian Action.” Which aimed to create access to international and national roles and visions for SDGs as well as present guidelines for libraries of higher education institutions to support the Sustainable Development Goals through the perspectives of librarians, educators, and practitioners in libraries and information services institutions (Higher

Education Institution Librarian Club, 2020). However, other types of libraries can support sustainable development, which can be classified according to dimension of sustainable development goals as follows:

People

People dimension is to improve people's quality of life, human development, focusing on eliminating poverty and hunger, creating equal opportunities and reducing inequality in society. Libraries can support by promoting and supporting education, learning, research, access to information, and lifelong learning for all in accordance with the United Nation's goal of making the world a better place.

SDG 1 No Poverty

Libraries can use their information resources and librarians' expertise to support research aimed at no poverty in society. For example, Los Angeles Public Library (LAPL) offered high school level open education services for users to earn higher wages (American Library Association, 2020).

SDG 2 Zero Hunger

Libraries can end hunger by supporting research in agriculture and food production as well as providing related data, information, and resources to support food security and sustainable agricultural development, such as the Pioneers for HOPE project founded by Lana Mariko Wood (health science and scholarly communication librarian), California State University-East Bay (Wood, 2020). This project raised funds to support healthy and safe meals for students and library users on campus. Likewise, LAPL partners offered lunch meals to children during summer and organized a good quality-feeding program (American Library Association, 2020).

SDG 3 Good Health and Well-Being

Libraries can support good health and well-being by providing access to medical and public health information and research available in libraries as well as supporting effective use of medical information resources for research and medical innovations improving people health and well-being. For example, a library in Scotland launched a “Health on a Shelf” project in collaboration with relevant organizations to provide better access to health information, leading to benefit and confidence in their

health, even more need less health and economic services (Scottish Library and Information Council, n.d). In fact, libraries can support health and well-being of its users in a variety of ways as follows (Walton, 2018).

1. Provide physical spaces that support both physical and mental health to users, such as designing a Well-being Zone or setting up a corner, living room, or room with comfortable seats. So that users can relax, play board games, listen to music, watch movies, and read books.
2. Encourage users to use all forms of information resources for recreation, such as books, magazines, electronic books, online magazines (e-Magazine), movies, and other online media. While librarians give an advice and create collections or suggest resources for recreation.
3. Organize activities and program to help users maintain good physical and mental health, such as playing games in the library, holding tea parties, and veterinary therapy activities. For example, LAPL partners and local dental organizations provided dental services, eye measurement, influenza vaccination, and health insurance services (American Library Association, 2020).

SDG 4 Quality education

Libraries can promote education for self-improvement by being a center of research and education community providing access to access information, ideas, and works as well as serving as a gateway to knowledge, ideas, and culture (IFLA, 1999). Indeed, libraries can promote education to reduce disparities in access to information and technology equally and thoroughly (Atta-Obeng & Dadzie, 2020; Ezeani et. al., 2017) as follows.

1. Providing information and knowledge services that support academic research to produce a new body of knowledge. Collecting information, news, information, ideas, experiences, wisdom, and knowledge, and then create searching tools and provide services in accordance with users' needs in order to have access to information, knowledge and keep up with important events in a timely manner. For example, Kasetsart University Library allowed students from other institutions and the public access to library spaces without any fee. In addition to allowing the public can access to library spaces and information resources without any fee, Chiang Mai Rajabhat University (CMRU) library provides open access to information through online institutional repository and website. Moreover, CMRU library provides equal access to information for general students and students with disabilities or

students with special needs. As academic services, CMRU library has developed teachers, students, and school libraries to enhance quality of learning in reading, writing, and critical thinking skills in Chiang Mai and Mae Hong Son.

2. Teaching information literacy skills to enable users to effectively seek, manage, communicate and use information in daily life, decision making, work, and social development. This included developing other skills, such as lifelong learning skills, digital skills, critical thinking skills, and problem solving and self-determination skills. In which, most university libraries have taught information literacy and digital citizen skills through a continuous training program every year as well as support lifelong learning and self-learning through social media.

3. Expand educational opportunities for all regardless gender and age by supporting education, teaching, and learning, such as learning spaces, reading areas, and internet service. This allows users to enhance self-learning skills. For example, public libraries are lifelong learning spaces where people can come and study to increase their knowledge, stimulate imagination, and create a new point of view by themselves. In addition to support for teaching and learning in the education system, public libraries can also provide lectures, training, and educational services, such as learning activities for children and youth, activities to develop reading and writing skills, English usage, and computer skills. Not only providing a library card for students so that they can use library's resources to pursue graduation but LAPL also teaches early children basic reading and writing skills to help parents prepare their children for kindergarten (American Library Association, 2020). In 2019, Croatian government formally adopted sustainable development policy and recommended to be applied national education policy to all primary and secondary schools. Those schools organized program called "Green Literature," which is a reading promotion activity connecting literature and sustainable development. The goal is to develop environmental and digital knowledge. This program has provided students with an understanding of SDGs through discussion topics from literature and poetry in order to motivate students to contribute to sustainable development through literature reading, discuss and exchange with a critical thinking process (Elaturoti, 2018). National Library of South Africa (NLSA) provided reading areas, research areas, and important and necessary information to support the education sector, especially people, youth, and new generation to gain potential as leaders in their communities.

Involvement of national libraries in driving and provoking learning; consequently, people can make progress for themselves (Maepa & Marumo, 2016). Likewise, the National Library of Kenya also has a “Learning Circles” program for adults. Together with four public libraries in Kenya; Nairobi Public Library, Nakuru, Narok, Murang and Peer-to-Peer University (P2PU) provide free online learning for 6-8 weeks. People have access to knowledge and build necessary skills to pursue higher education and careers, such as web design, HTML/CSS, writing resume, data analysis using Microsoft excel (IFLA, 2018).

4. Providing information and communication technology (ICT) services to assist in accessing data and information and to develop people's capacities at no cost, leading to opportunities to develop themselves and their professions. For example in Botswana, public libraries support the national vision by providing people ICT, developing computer skills of library users, and enabling them to succeed in business, education, and work. In India, a mobile library for primary and secondary schools in the most disadvantaged communities of Haryana allows rural students to have access to technology and learning resources. Moreover, National Library of Kenya is actively promoting and pushing youths in slums access to technology to increase learning potential and academic achievement. Indeed, National Library of Kenya organizes "Kids on the Tab" project that encourages teachers to use tablets and download online teaching materials to use in classroom. Such documents and online courses are supported by eLimu (educational agency), which produces media; book, interactive media, music, games to build language, science, and technology skills (EIFL, 2019)

SDG 5 Gender equality

Libraries can promote gender equality by being safe places for all for meeting, event, and lectures like women's rights and health. In fact, libraries can provide several educational services encouraging lifelong learning as well as skill training and equal access to information for women and children or for all. For example, National Library of Uganda offers ICT training specifically designed for female farmers to provide access to weather forecasts, crop prices, and established online marketplaces in local languages (United Nation, 2021). While Louisiana State University established “Safe Space Campaign” to raise awareness and educate all to support equality regardless of taste, gender, identity expression (Louisiana State University Libraries, 2022). CMRU Library organizes

activities to promote understanding and gender equality by using “the Pride Month” theme in PLEARN magazine. Not only National Library of France allows access to the Actu Bibliothèques archives but also provides an opportunity to meet invited female writers, collaborators, and moderators. There are exhibitions about women who play a role in social activities, such as Claire Bretecher, publishing a three-month magazine “De ligne en ligne,” written by a librarian, and presenting the chronicle category. In addition, a reference service on gender equality-related questions, such as women's rights, women and society, and culture guidelines for women victims of violence, is also available (Gaffet & Espy, 2016). To empower girls, LAPL provides workshops, such as biodiversity, a set of instructions or computer programs (Coding) (American Library Association, 2020).

Prosperity

Substantially, libraries are public sphere institutions (Va°rheim, 2015), where are community spaces contributing to advancement of communities in education, economy, and culture.

SDG 7 Affordable and Clean Energy

In addition to supporting access to data, information, and best practices on clean energy management to local communities, libraries can move forward to a green library. Libraries can improve physical spaces, buildings, and facilities. Such as Daniel J. Kaufman Library & Learning Center of University of Georgia has been awarded gold-level certification from the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program (ACRL, 2021). To reduce energy consumption, Kasetsart University Library has installed rooftop solar cells and has recycled 6,080 liters of wastewater per month from air conditioners for watering plants in the sprinkler system. As well, EIS system is also installed to monitor library building's energy consumption. LAPL uses solar panels to save energy and builds a library building according to the LEED standard.

SDG 8 Decent Work and Economic Growth

Libraries can support library users' academic and professional development to become a quality workforce. Indeed, libraries may provide education, teaching, and learning support in a variety of ways, such as creating subject guide or providing information resources related to each occupation and professional development (University of New Mexico Libraries, 2022). In addition to supporting

students' work to generate their income, gain real work experience, and has a good attitude towards libraries, CMRU Library promotes and creates careers by collaborating with the Government Savings Bank to organize professional development activities for people in the community. Likely, alliance of LAPL and local organizations, municipalities, and chambers of commerce offer both online recruitment services and one-on-one assistants for small business owners.

SDG 9 Industry, innovation and infrastructure

Industrial development, innovation, and infrastructure are all essential for sustainable development. Libraries can support by developing libraries and librarians with the necessary skills to support industrial development and entrepreneurship as well as providing access to necessary technologies for work, which might be programs encouraging entrepreneurship or innovative thinking. For instance, the University of Pittsburgh Library has an Entrepreneurship librarian, who work in research and educational supporting a department whose job is to provide informed advice for business decisions, new business (startup), small business operations during the COVID-19 pandemic to library users and small business owners and people in the community (Levine, 2020). In addition, LAPL provides Creative Space (Makerspace) to support innovation for the community. Indeed, staff and volunteers have used 3D printers to develop masks for people working on the outpost against COVID-19.

SDG 10 Reduced inequality

Reducing inequality means reducing inequalities within and among countries. The most important inequality is disparity in accessing to information and technology. Libraries can help reduce such disparities by providing digital equality for all citizens to access to information and communication technologies. There should be library staffs available dedicated to help and educate public so that people can have and develop digital skills regardless refugees, immigrants, minorities, indigenous peoples and people with disabilities. For example, NLSA provides free access to information and communication technology. In addition, there are activities to promote reading as well as a space for supporting research in order to develop desirable skills and qualifications of new generation to a job market. NLSA also provides information related to global warming, health information, and educate about how to access government electronic services (Maepa & Marumo, 2016). American Library Association (ALA) and Association of College and Research Libraries (ACRL) worked with other organizations to provide

seminars and training courses on financial literacy to library personnel and users since 2011. Courses cover subjects, such as financial planning and student financial aid (Dawes, 2013). Likewise, LAPL is a free library for all. LAPL welcomes everyone regardless status. Everyone has equal access to resources and learning. While Toronto Public Library provides refugees with access to resources, activities, and services both online and onsite using social media to facilitate and connect with refugees. Public Library of Toronto posted a summary of services available to refugees on its blog, such as requesting a library card, learning English, finding a job, using computers and the Internet. Toronto residents share information and are welcomed on the weblog as well. There are Library Settlement Partnership (LSP) services to help refugees settle in Canada. All these service are free. They also provides cultural experiences for refugees to connect with the community, such as Sun Life Museum and Arts Pass for refugees to learn and experience the city's arts and culture (Toronto Public Library, 2020).

SDG 11 Sustainable Cities and Communities

All types of libraries, especially public libraries contribute to a flexible and inclusive community. Indeed, public libraries are a community center and provides open, secure, equitable and inclusive information and public spaces for all people and groups even in emergency and crisis situations, such as being a shelter for infected people in the COVID-19 pandemic. Moreover, public libraries are social space, resulting in building good relationships with communities, government and private organizations. Public libraries contribute to improving people's quality of life by providing community services. Being a source of knowledge for communities, public libraries provide informal education and organizing various programs, such as reading promotion activities, career development programs, trainings, and exhibitions. Additionally, public libraries promote democracy by reducing social inequality. Being a social space, both libraries' internal and external environments must be beautiful, clean, comfortable, modern, open, not crowded, natural light, spaces for children, elderly, or those who need special assistance. There can be 1) common learning spaces, such as reading corners, coffee corners, music corners, and community skills training corner, 2) multi-purpose spaces for creative work like space for exhibition, performing, or community activities, 3) specific group spaces, such as meetings, seminars, trainings, 4) recreational spaces, such as a movie room and outdoor gardens. The most important thing is to represent an identity or characteristics of that community in

a library environment as the library is a part of a community (Duangbao, 2021). For instance, Bangkok City Library arises from one of missions of Bangkok; an important policy to build the city into "City of Learning" Bangkok has been selected as the World Book City in 2013 by UNESCO. Bangkok City Library has a neo-classical architectural design that combines western style with Thai decoration, emphasizing on airiness under the concept of "Light of Wisdom."

Furthermore, libraries can promote and preserve culture by being a cultural place or a center of local information and knowledge by collecting, storing, preserving, and retrieving cultural resources of community in all forms. In fact, libraries can organize activities for disseminating arts and culture of local community and collaborate with local organizations and communities to preserve and disseminate local information using facilities of libraries. Access to culture increases awareness and understanding of that community's culture, enabling further cultural preservation and creation. For example, a public library in the most disadvantaged area of Medellín, Colombia has become a center of social development, providing a space for education and culture. There is "Library Parks" providing educational tools and useful activities for community. It is also a center of urban development and energy and environmental conservation activities (IFLA, 2012). While Portal to Texas History of University of North Texas maintains a variety of information related to the history of Texas, holding more than 1.75 million records (University of North Texas Digital Projects Unit, 2022). National Library of China has also established a subway library called "M subway library," providing electronic books in order to promote culture and create a sustainable reading culture (IFLA, 2019a).

Planet

Planet dimension is to conserve natural resources, environmental protection, climate changes, as well as promoting sustainable production and consumption for the next generation of global citizens.

SDG 6 Clean Water and Sanitation

Libraries can create guidelines to reduce environmental impact of daily operations; water management (both clean water and wastewater) and sanitation systems within the library (ALA, 2022). Libraries can also provide drinking water filling points to reduce the amount of plastic waste, change the equipment in bathrooms to reduce water consumption, create campaign to realize an importance of

water saving, and improve library buildings to be Green Buildings or Sustainable Buildings (ALA, 2022). LAPL developed clean water and sanitation systems.

SDG 12 Responsible Consumption and Production

Libraries should acquire environmental friendly resources and library equipment, such as using recycled materials rather than plastic, supporting products or shops those supporting environmental conservation and fair trade. As information and knowledge providers, libraries can help educate and campaign users to be a part of sustainable consumption by giving advice, public relations, supporting energy and environmental conservation, and moving towards a green library (Salisbury University Libraries, 2021). As LAPL is a part of city to actively contribute to the Mayor's sustainable development plan.

SDG 13 Climate Action

In addition to providing information resources and research information on climate change or other relevant topics to make policy decisions, libraries can raise awareness about climate change. For example, university libraries collaborate with university stakeholders to organize trainings or seminars on climate change or sustainable development and invite professors, researchers, and students who are doing research on such topic as a speaker or a panelist. Moreover, libraries can organize programs to make better understand how to cope with climate change as well as DIY activities from waste materials (Romero, 2020). In fact, Kasetsart University Library encourages personnel to compensate for carbon footprint and improve air quality in the library by installing an air quality monitoring system. CMRU Library has installed an air quality monitoring system in the library building to monitor dust and air quality values as well as developed “Save Zone” by using hand-made air filters to reduce the cost. Government school library in Bilbao District in Bogota, Colombia has collaborated with science teachers to develop an environmental education program for more than 1,200 students. LAPL supports scientists collecting and sharing information for monitoring water and air quality, heat, and cloud formation.

SDG 14 Life below Water

Life below water covers a wide range of relevant issues, such as marine pollution, management and conservation of marine resources, equal access to marine resources, and impact of climate change occurring on marine resources and coastal fisheries. Libraries can raise awareness about usage of

marine resources. In particular, libraries of higher education institutions that offer curriculum related marine resources. For instance, University of Michigan Library supports all sustainable development goals as a part of Research Guides. University of Michigan Library provides information resources related to marine resources, information sources providing Marine Data. For example, FishBase database (<https://www.fishbase.de/search.php>), the Coral Triangle Atlas (<http://ctatlas.reefbase.org>), list of involved organizations, and SDG news updates. The library subscribes to News Feed from Google News Feed and presents that news on a library dashboard for each Sustainable Development Goal to serve users and to facilitate access to various resources from around the world.

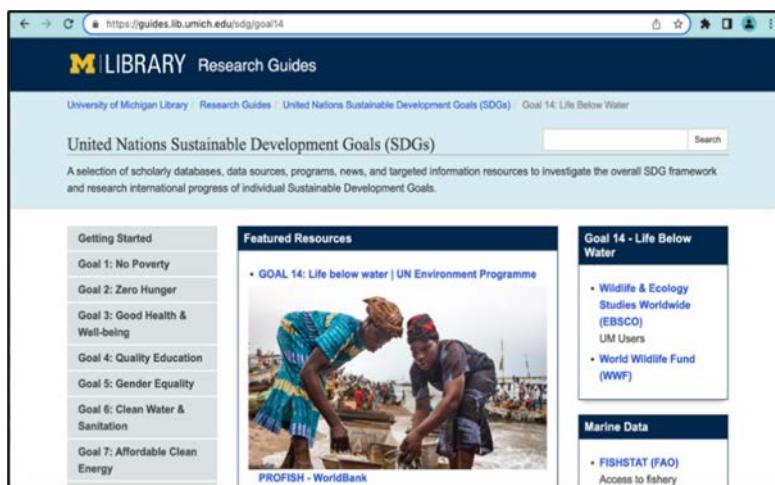


Fig. 3 Example of SDG 14 Life Below Water by University of Michigan Library

Additionally, LAPL assists scientists and researchers in identifying coral sites for better ecosystem understanding and effective conservation.

SDG 15 Life on Land

Libraries can support utilization of terrestrial resources and preserve ecosystems by providing related information resources and research information, such as wildlife hunting and using and managing land and water (IFLA, 2019d). Natural Resources Library, St. Paul University of Minnesota (<https://www.lib.umn.edu/spaces/natural-resources>) developed subject guides to facilitate users to be

able to access resources on related topics, such as Environmental Science and Policy, Sustainability, and Natural Resource Conservation. Likely, National Library of Singapore joins with supporters to build a children's green library to provide a special collection on energy and environment conservation and organize educational projects for better understanding about global warming. In addition, the children's green library building is built from recycled materials to be a good model for saving energy and reducing waste (IFLA, 2019d). LAPL provides information and research on sustainable ecosystem conservation like collaborating with local partners and organizations to monitor mosquito habitat and biodiversity trends.

Peace

SDG 16 Peace, Justice and Strong Institutions

Libraries can provide access to government information, civil society, other institutional information as well as training needed skills to access and utilize such information. Libraries can also be a neutral political space to encourage everyone to have a right and freedom to express their opinions (IFLA, 2019a). Such as NLSA hold an exhibition during an election period and organize activities to educate about elections in collaboration with South Africa's Independent Electoral Commission (IEC) aiming at equipping citizens with knowledge and understanding of electoral practices affecting security and peace of people in South African society (Maepa & Marumo, 2016). While LAPL organizes activities to encourage youth to find solutions to local problems, such as homeless youth and media literacy. In addition, libraries of higher education institutions provide academic services to communities. The national library can drive the goal of peace and justice by providing spaces and places for people to learn, interact, and express their opinions on justice, equality and peace issues.

Partnership

SDG 17 Partnerships to achieve the goal

Strengthening collaborations and partnerships of all sectors at all levels is necessary to achieve SDGs. Libraries can join and build network with international professional library organizations, institutions and organizations both public and private, leading to collaborations at national and

international levels. As Australian Library and Information Association is in partnership with all types of libraries and information service institutions within the country and gained support from Australian Government, private sector, non-profit organization, as well as other international organizations, such as IFLA (Australian Library and Information Association, 2018). Besides, Shoalhaven City Council in Australia has collaborated with Nowra High School on a project called “Gen Connect” to enable students and teachers to contribute to the elderly in the community to access information online. This project match students with the elderly to learn in accessing and using technology every week. While New Zealand has a government-funded project Boekstart (Bookstart), where public libraries work with nurseries, health care centers, and kindergartens to provide books and skills training to 75,000 young people annually (IFLA, 2012). Additionally, Los Angeles Public Library Alliance and local organizations collaborate with other organizations like NASA, Environment Protection Agency, International Rescue Committee, United States Citizen and Immigration Services to enhance its work.

The national library can creates a network and collaboration, resulting in expanding services, working with experts, and useful resources. For example, Kenya National Library Service (KNLS) is in partnership with non-profit Practical Action and Berkley Foundation from the UK established knlsKibera Community Library in Kibera, the largest slum in Nairobi, Africa. As National Library of the Netherlands organized “Dutch BookStart” Program together with Dutch Reading Foundation in 2018 to help children improve their language skills (IFLA, 2020). While National Library of Sri Lanka organizes Skills Online Sri Lanka Program (SOSLP) Employed for the Unemployed in partnership with Commonwealth of Learning (COL) and government training programs for government employees by Coursera providing more than 7,500 grants and giving people access to 5,000 lessons learned, such as bringing technology to all aspects of business, entrepreneurship, web development, leadership, problem solving and logical thinking (IFLA, 2022). National Library of the Netherlands organizes a “Library and Basic Skills” project to be an informal learning resource. In addition, National Library of the Netherlands is in cooperation with Dutch Tax Authority to provide equipment and information and communication technology as well as to develop courses for digital skills and provide online tax advice and tax refund, and transactions with digital governments (IFLA, 2020). Actually, National Library in Thailand have created several applications to serve as a channel to access information conveniently and

quickly, responding to needs of modern users as well as create equality and reduce inequality in Thai society. Moreover, they also organize reading promotion activities and develop capabilities of children continuously in order to create interest and realization the importance of reading, recreation, cultivating reading habit as well as promoting family time. In addition, Thai public libraries together with Thai Library Association established a Re-Learning Space@Library in Uttaradit and Surat Thani in order to expand opportunities for development and upskill and reskill as well as enhancing professional skills and digital innovation, and encouraging local communities to create re-learn spaces (Thai Library Association, 2022).

Conclusion

Remarkably, all types of libraries can support SDGs. Libraries can support education and promote learning in order to achieve SDG 4 equality quality education and promote lifelong learning opportunities for all. Libraries can support valuable information to the SDGs goals for various organizations, both at a policy and practical level in order to effectively drive Thailand towards SDGs. Guidelines for libraries to support SDGs are as follows.

1. Be a center of research and education community by supporting free access to research, data, and information. The advancement of technology and speed of the Internet enhance searching and accessing digital information resources quickly and easily. Libraries are therefore valuable information source that can be used to further develop various innovations. In fact, libraries should have a policy of free access to information or Open Access in order to eliminate gaps in accessing information in various fields.
2. Encourage people to be able to read and write as well as developing media literacy skills, information literacy skills, and digital literacy skills.
3. Facilitating all citizens have access to information and communication technology, which support learning activities for all. Significantly, libraries, a learning resource in a community, should provide computers or electronic devices to facilitate library users to search for information as well as the internet access point so that users can use their own electronic devices to access information and create digital content. Besides, libraries should introduce remarkable and valuable online information

and media sources to empower people to take advantage of using digital technology in their daily lives socially responsible and have innovative ideas, keeping up with the world.

4. Build libraries and learning centers network both nationally and internationally, enables sharing of information resources and reduces cost and redundancy of information resources. Other collaborations are creating academic services, online information literacy skills, digital literacy, and media literacy courses, and developing professional knowledge. Starting network activity from recognizing new roles of libraries to a society, developing knowledge and exchanging academic and professional experiences, and then planning both policy and practice together to develop information resources and library services management.

5. Preserve and provide access to a national cultural heritage for all, be a cultural place or a center of local information and knowledge by collecting, storing, preserving, and retrieving for cultural resources of community in all forms as well as organize activities for disseminating arts and culture of local community.

6. Organize activities and information services to enhance users' professional skills and lifelong learning skills. Libraries can build relationships with users and a community to promote and push forward goals of sustainable education and learning (Fourie, 2012).

7. Develop libraries to be energy efficient and environmentally friendly by improving library building, reducing paper use, using electronic information and online services, and the environmental conservation interior (Latimer, 2011; Brodie, 2012), such as a building with natural light and effective air circulation, process for eliminating rubbish and garbage, design of information service equipment. Online information services help users to access information and knowledge from anywhere, reducing energy and resources use, reducing the amount of printed waste. Using more electronic information instead of printed materials is therefore a necessity in the future (Kruse, 2011; Dempsey & Palilonis, 2012; Flinchbaugh & Murtha, 2019)

Sustainable Development Goals is a global collaboration. Thailand is one of the United Nations member countries with intention to improve quality of life, eliminate poverty, protect environment, make peace, and create wealthy within 2030. The library is one of the country's organization playing a vital role and has high potential to drive SDGs. Obviously, libraries can encourage people to learn at

their own pace as well as build and develop 21st century learning skills and digital skills. Therefore, to achieve Sustainable Development Goals objectives, libraries in Thailand should focus on setting goals and objectives that are in line with all dimensions of Sustainable Development Goals: people, planet, prosperity, peace, and partnerships. Especially, networks and collaborations, libraries should build network with various organizations contributing to achievement of sustainability at the national level and international level.

References

American Library Association. (2020). **ALA task force on United Nations 2030 sustainable development goals.** Retrieved June, 26, 2022, from <http://www.ala.org/aboutala/ala-task-force-united-nations-2030-sustainable-development-goals>

American Library Association. (2021). **ALA task force on United Nations 2030 sustainable development goals.** Retrieved June, 26, 2022, from <https://www.ala.org/aboutala/ala-task-force-united-nations-2030-sustainable-development-goals>

American Library Association. (2022). **Sustainability and libraries: green libraries.** Retrieved from June, 26, 2022, <https://libguides.ala.org/SustainableLibraries/Green>

Association of College and Research Libraries (ACRL). (2021). **Academic library building design: resources for planning: green/sustainable building.** Retrieved June, 26, 2022, from <https://acrl.libguides.com/c.php?g=459032&p=3138052>

Atta-Obeng, L. & Dadzie, P. S. (2020). Promoting sustainable development goal 4: The role of academic libraries in Ghana. **International information & library review.** 52(1), 1-16. DOI: 10.1080/10572317.2019.1675445

Australian Library and Information Association. (2018). **Australian libraries support the sustainable development goals.** Retrieved June, 26, 2022, from <https://read.alia.org.au/australian-libraries-support-sustainable-development-goals>

Brodie, M. (2012). Building the sustainable library at Macquarie University. **Australian academic & research libraries.** 43(1), 4–16.

Dawes, T. A. (2013). Libraries, ACRL, and financial literacy: helping students make sound decisions. **College & research libraries news.** 74(9), 466-467. DOI: 10.5860/crln.74.9.9007

Dempsey, M. E., & Palilonis, A. (2012). Reuse, recycle ... reduce: a greener library with print management. **Library hi tech.** 30(3), 408–417. DOI: 10.1108/ 07378831211266555

Duangbao, S. (2021). Physical environment of public libraries in the 21st century. **Journal of humanities and social sciences review (JHSSR)**, 23(1), 124-136. Retrieved May 31, 2022, from <https://so05.tci-thaijo.org/index.php/hspbruacthjournal/article/view/252774/171254>

Flinchbaugh, M., & Murtha, M. E. (2019). Biz of acq-going green at a library near you: transitioning from print to electronic resources at the University of Baltimore law library. **Against the grain**, 29(4), 64.

Elaturoti, A. B. (2018). Sustainable development: the role of school libraries. **Library philosophy and practice (e-journal)**, 2196. Retrieved June, 26, 2022, from <http://digitalcommons.unl.edu/libphilprac/2196>

EIFL. (2019). **Online learning in African public libraries: EIFL builds a strong base for online learning programmes in African public and community libraries**. Retrieved May 29, 2022, from <https://eifl.net/eifl-in-action/online-learning-african-public-libraries>

Ezeani, C., Ukwoma, S. C., Gani, E., Igwe, P. J., & Agunwamba, C. G. (2017). **Towards sustainable development goals: what role for academic libraries in Nigeria in assuring inclusive access to information for learners with special needs?** Paper present at IFLA World Libraries and Information Congress: Libraries, Solidarity, Society, 2017, August 19-25. Wroclaw, Portland.

Fourie, I. (2012). A call for libraries to go green. An information behaviour perspective to draw interest from twenty-first century librarians. **Library hi tech**, 30(3), 428–435. DOI: 10.1108/07378831211266573

Gaffet, M., & Espy, C. (2016). **The role of national libraries in contributing towards the sustainable development goal of gender equality. IFLA WLIC 2016 – Columbus, OH – Connections. Collaboration.** Community in Session 115 - National Information and Library Policy., (pp. 1-16). Retrieved May 29, 2022, from <http://library.ifla.org/id/eprint/1487>

Higher Education Institute Librarian Club. (2020). **Annual and academic meeting 2020 on SDG from vision to librarian action**. Retrieved June, 26, 2022, from <https://tla.or.th/regist.ai/index.php?r=register&project=2563-002>

International Federation of Library Associations and Institutions (IFLA). (1999). **IFLA statement on libraries and intellectual freedom.** Retrieved June, 26, 2022, from <https://repository.ifla.org/bitstream/123456789/1424/1/ifla-statement-on-libraries-and-intellectual-freedom-en.pdf>

International Federation of Library Associations and Institutions (IFLA). (2012). **How libraries contribute to sustainable development & the SDGs.** Retrieved May, 31, 2022, from IFLA website <https://www.ifla.org/wp-content/uploads/2019/05/assets/alp/103-fbradley-alp.pdf>

International Federation of Library Associations and Institutions (IFLA). (2018). **Library in Kibera, Africa's largest informal settlement, improves access to education.** Retrieved May 29, 2022, from <https://librarymap.ifla.org/stories/Kenya/library-in-kibera,-africa%e2%80%99s-largest-informal-settlement,-improves-access-to-education/123>

International Federation of Library Associations and Institutions (IFLA). (2019a). **Access and opportunity for all: how libraries contribute to the United Nations 2030 Agenda. Hague: IFLA.** Retrieved May 29, 2022, from <https://www.ifla.org/wp-content/uploads/2019/05/assets/hq/topics/libraries-development/documents/access-and-opportunity-for-all.pdf>

International Federation of Library Associations and Institutions (IFLA). (2019b). **Dutch bookstart programme enhances language development and leads to better education.** Retrieved May 29, 2022, from <https://librarymap.ifla.org/stories/Netherlands/dutch-bookstart-programme-enhances-language-development-and-leads-to-better-education/133>

International Federation of Library Associations and Institutions (IFLA). (2019c). **Libraries can drive progress across the entire UN 2030 agenda.** Retrieved June, 26, 2022, from <https://www.ifla.org/wp-content/uploads/2019/05/assets/hq/topics/libraries-development/documents/sdgs-insert.pdf>

International Federation of Library Associations and Institutions (IFLA). (2019d, June 26). **Powering sustainable development.** Retrieved May 29, 2022, from <https://www.ifla.org/powering-sustainable-development/>

International Federation of Library Associations and Institutions (IFLA). (2020). **Dutch libraries are equipping citizens with the digital skills needed to access government digital services.**

Retrieved May 29, 2022, from <https://librarymap.ifla.org/stories/Netherlands/dutch-libraries-are-equipping-citizens-with-the-digital-skills-needed-to-access-government-digital-services-147>

International Federation of Library Associations and Institutions (IFLA). (2021). **Library map of the world.** Retrieved June, 26, 2022, from <https://librarymap.ifla.org/map>

International Federation of Library Associations and Institutions (IFLA). (2022a). **National library facilitates skills development programme to help citizens acquire skills for employment.**

Retrieved May 29, 2022, from <https://librarymap.ifla.org/stories/Sri-Lanka/national-library-facilitates-skills-development-programme-to-help-citizens-acquire-skills-for-employment/173>

International Federation of Library Associations and Institutions (IFLA). (2022b). **IFLA library map of the world.** Retrieved June, 26, 2022, from <https://librarymap.ifla.org/map>

Kruse, T. (2011). Greener library printing and copying. **The bottom line: managing library finances.** 24(3), 192–196. DOI: 10.1108/08880451111186053

Latimer, K. (2011). Collections to connections: changing spaces and new challenges in academic library buildings. **Library trends.** 60(1), 112–133.

Levine, M. (2020). **Making PITT work: entrepreneurs have a friend in librarian LaMonica Wiggins.** Retrieved June, 26, 2022, from <https://www.utimes.pitt.edu/news/making-pitt-work>

Louisiana State University Libraries. (2022). **Safe spaces at LSU libraries.** Retrieved June, 26, 2022, from <https://www.lib.lsu.edu/about/diversity/safe-space>

Maepa, M. E., & Marumo, K. (2016). **The contribution of the National Library of South Africa towards the achievement of Sustainable Development Goals (SDGs).** Paper presented at: IFLA WLIC 2016 – Columbus, OH – Connections. Collaboration. Community in Session 115 - National Information and Library Policy., (pp. 1-11). Retrieved May 29, 2022, from <http://library.ifla.org/id/eprint/1534>

Office of National Economic and Social Development Council. (2021). **Progress report on thailand's sustainable development goals 2016-2020**. Bangkok: Office of National Economic and Social Development Council.

Romero, S. (2020). Sustainability and academic libraries: meeting the mission with speakers, clothing swaps, and green supplies. **American library magazine**. Retrieved June, 26, 2022, from <https://americanlibrariesmagazine.org/blogs/the-scoop/sustainability-and-academic-libraries/>

Salisbury University Libraries. (2021). **Sustainability academic resources guide**. Retrieved June, 26, 2022, from <https://libraryguides.salisbury.edu/sustainability>

Scottish Library and Information Council. (n.d.). **HEALTH on the shelf: Health and wellbeing in public libraries in Scotland. Glasgow: Scottish library and information council**. Retrieved May 31, 2022, from <https://scottishlibraries.org/media/3008/health-on-the-shelf.pdf>

Thai Library Association. (2022). **Sustainable continuing learning center: relearning space @ library**. Retrieved May 31, 2022, from Thai Library Association website <https://www.relearningspace.com/index.php/th/history-th>

Toronto Public Library. (2020). **Toronto public library and government collaborate to welcome and support syrian refugees**. Retrieved May 31, 2022, from <https://librarymap.ifla.org/stories/Canada/toronto-public-library-and-government-collaborate-to-welcome-and-support-syrian-refugees/153>

United Nation. (2021). **Contribution of libraries to the SDGs**. Retrieved May 31, 2022, from <https://sustainabledevelopment.un.org/partnership/?p=10909>

United Nations. (n.d. a). **History**. Retrieved June 8, 2022, from <https://sdgs.un.org/goals>

United Nations. (n.d. b). **Transforming our world: the 2030 agenda for sustainable development**. Retrieved June 8, 2022, from <https://sdgs.un.org/2030agenda>

University of Michigan Library. (2022). **United Nations Sustainable Development Goals (SDGs): goal 14**. Retrieved June, 26, 2022, from <https://guides.lib.umich.edu/sdg/goal14>

University of Minnesota Library. (2022). **Natural resources library St. Paul**. Retrieved June, 26, 2022, from <https://www.lib.umn.edu/spaces/natural-resources>

University of New Mexico Libraries. (2022). **Sustainability study: recommended economics literature databases**. Retrieved June, 26, 2022, from <https://libguides.unm.edu/SUST/econ>

University of North Texas Digital Project Unit. (2022). **The portal to Texas History**. Retrieved June, 26, 2022, from <https://texashistory.unt.edu/about/portal/>

Va°rheim A (2015) **Public libraries worked in the Tohoku mega-disaster**. Proceedings from the Document Academy 2(1): Article 10.

Walton, G. (2018). Supporting student wellbeing in the university library: a core service or a distraction?. **New review of academic librarianship**. 24(2), 121-123. doi: 10.1080/13614533.2017.1418240

Wood, L. (2020). Empty shelves: how your academic library can address food insecurity. **College & research libraries news**, 81(7), 322. DOI: 10.5860/crln.81.7.322