

- TEEN(Tripartite Environmental Education Network) Joint Project -

**Case studies on Environmental Education in  
China, Japan, and Korea  
for mutual learning and networking(2020-2024)**

# **2020 Environmental Education at the Local Level**



The Korean Society for Environmental Education



Ministry of Environment

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## Preface

Since China, Japan, and Korea formed the Tripartite Environmental Education Network (TEEN) in 2000, we have pursued the development of environmental education through mutual exchange and cooperation among three countries.

TEEN has held an annual meeting sequentially by three countries every year and carried out joint project, which has led to the achievements such as the establishment of a TEEN homepage and the development of environmental educational materials. From 2020 to 2024, a new joint research under the major theme of 'Case studies on EE in China, Japan and Korea for mutual learning and networking' are set to be carried out, initiated by the host country of TEEN annual meeting each year. In 2020, initiated by Korea, case studies were conducted by collecting examples of 'Environmental Education at the Local Level' and by promoting the networking of related parties. We collected cases of environmental education in 4-5 regions in each of the three countries and shared those cases at the 21st TEEN Annual Meeting('20.10.15-16) and communicated with local environmental education officials.

This booklet is the outcome of the 2020 TEEN Joint Project, consisting of five cases in each of Korea and China, and four cases from Japan. The content includes the introduction of the region by local case, the vision and status of environmental education in each region, the environmental education policies of the local governments, the environmental education centers or facilities in the region, and the locality of EE in the region.

Through this booklet, we hope that China, Japan, and Korea will be able to increase our understanding of each other's environmental education and to find implications for the development of environmental education in their own countries. In addition, we hope that all the processes and outcomes of this project will contribute to making the China-Japan-Korea environmental education network stronger and broader.

We would like to appreciate for the hard work of Chinese, Japanese, and Korean researchers and local environmental education officials who participated in this joint research, and to thank the Chinese and Japanese governments for supporting TEEN Joint Project.

2020. 12

2020 Korea TEEN committee of KOSEE

Ministry of Environment, Korea

**CHINA 1.****Yunnan Province**

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**□ Introduction of Yunnan**

- Yunnan is one of the most beautiful provinces of China, located in the southwest border of China, where connects with four provinces and neighbors with three countries. As the most important channel linking China to South Asia and Southeast Asia, Yunnan has over 47 million populations and 25 native ethnic minorities settled here for generations. It is a province with 394 thousand km<sup>2</sup> and looks like a peacock spreading his tails in the map. In this magical land, rich and unique biodiversity is supported by its special geological conditions and favorable climate environment. Yunnan features the most complete primary ecosystem and vertical ecological series and it is also the best representative area in global temperate ecosystems. As one of 34 worldwide biodiversity hotspots, Yunnan is honored of 'Kingdom of animals', 'Kingdom of plants' and 'Kingdom of nonferrous metal'.
- Yunnan had made a good effort on protecting the biodiversity system. It launched and implemented the first local biodiversity protection regulations in China, and has built 'Southwest China Wildlife Germplasm Bank' except establishing 166 nature reserves that's why 90% typical ecological system and 85% precious species including Asian elephants, Yunnan snub-nosed monkey, and West Black crown gibbon or similar are effectively protected.
- Kunming, known as the Spring City, is the capital of Yunnan Province with 6.432 million populations and 21501km<sup>2</sup> area. Dian Lake, the 'Sparkling Pearl Imbedded in a Highland', the biggest freshwater lake, sits here and has 2920 km<sup>2</sup> drainage area. Around the lake, there are 18 ecological wetlands and a closed ecological zone with about 200m width and 80% vegetation coverage has been preliminary built.
- In May 2021, the representatives around the world will gather in Kunming City of Yunnan to attend the Fifteenth Meeting of the Conference of the Parties to the Convention on Biological Diversity (COP15) with subject to 'Ecological Civilization-Building a Shared

Future for All Life on Earth’ organized by the UN to make a new prospect of ‘harmony between humankind and nature’.

## □ Vision and Status of EE in Yunnan

- In 1996, the State Environmental Protection Administration of China, State Education Commission of the PRC and Publicity Department of the CPC Central Committee jointly released 「The National Action Programme for Environmental Publicity and Education(1996-2010)」, which proposed to gradually develop the activities of building ‘Green School’ across the country in 2000. In response to this Guideline, Yunnan Province implemented the program of establishing green school in 2000 and developed the green community and environment education base setup at the same time to carry out the environment education activities in school, community and environment education base or similar sites and continually push forward the provincial level environment education progress. Through these efforts, Yunnan province has made success in building 1011 provincial level green schools, 334 provincial level green communities and 69 provincial level EE bases totally.
- Yunnan made it available to open environmental protection facilities and urban sewage treatment facilities to public in 2017 and first three facilities were determined to open to the publics then. In Mar. 2018, the first open to public activity was accessible that students, enterprises and social organizations were organized to see how the environmental protection facilities operate and therefore effectively prevent ‘Not In My Back Yard’.
- Except these purposeful ecological EE campaigns, the ecological environment departments at all levels of Yunnan province made further development on the basis of Environment Day, World Earth Day, Biodiversity Day or similar important environmental protection activities to work together with relevant departments and organizations to implement ecological environment publicity and education activities with diversified contents and modes. These events include continuous on-going activity of ‘face to face’ ecological environment publicity and education in administration organ, village, community, school, enterprise, and entity; ‘Yunnan Environmental Protection Lecture’, ‘Yunnan Mobile Environmental Protection Lecture’, ‘Yunnan Mobile Environmental Protection

Exhibition’, and ‘Thousand People Environmental Protection Lecture’ or similar activities to explain the ecological environment laws, regulations, rules and major policies for enterprises and entities and organize various ecological environmental protection lectures and speeches in primary schools and colleges regarding to the biodiversity.

- Different medias are used sufficiently to publicize biological environment protection. For example, Yunnan Broadcasting Station opened some environmental protection publicity programs including ‘Voice of Environmental Protection’, ‘Green Focus’, and ‘One Minute Environmental Protection’ or similar to popularize relevant biological environmental protection knowledge.
- It also designed, fabricated and distributed various populous folds, posters and charts to publics, and environmental protection popularization films, animated cartoons and image films to advocate green production and living mode. As long as Kunming City was confirmed in the last year as the site hosting COP15, a further round of biodiversity popularization and publicity for environmental protection education activities have been planned and carried out in the whole province.

## Governance (Partnership) for EE in Yunnan

- Over years, Yunnan Province has established a systematic all-round cons on environmental protection education from upper to lower level as guided by CPC committee at provincial level and provincial government and led by ecological environmental protection departments at all levels and closely cooperated with education, housing and urban construction administrative departments or like. In this background, the enterprise, entities, schools, social organizations, environmental protection volunteer associations, experts and scholars, and mass are all devoted themselves into the environmental protection education. They focus on the green building efforts, establishment of environmental protection education bases, open environmental protection facilities to public and implementation of various environmental protection popularization campaigns or similar.
- Under the leadership of Yunnan Provincial Party Committee and Yunnan Provincial Government, the ecological environment department,

education department, housing and urban construction department at provincial level respectively take charge of the implementation and instruction of relevant policies to organizational support the implementation of environmental protection education. They have released administrative papers and mobilized to carry out plans, trainings and strength the efforts on overall planning and instruction of environmental protection education. The ecological environment departments at all levels are responsible for implementing ecological environment education and coordinating education, housing and urban construction departments at all levels to engage in such work and organize diversified environment education activities by taking the chance of World Environment Day and Earth Day or similar major environmental protection days.

- The enterprises and entities engaging in provincial environmental protection facility open activities greatly support the sustainable development of the environmental protection education base in Yunnan through creative design and operation mode of environmental protection education activities. Depending on the unique ecological environment and tourism resources, Yunnan Province Environmental Protection Education Bases make efforts on planning and designing the activities in response to needs of different visitors to cause public share fruits of environmental protection, and maximally fulfilling the social service function of environment education facilities. The ecological environment protection philosophy is successfully delivered to students at different ages by means of developing ecological environment education programs, lectures and activities from kindergarten to university. The social organizations, association of volunteers, experts and scholars are actively cooperating with ecological environment departments through participating in publication activities and holding public welfare lectures or similar efforts.

## □ EE Policies of Yunnan

- Yunnan Province Government and Provincial Party Committee formally started up the Initiative to Protect Colorful Yunnan' in 2007. This Initiative, with the subject to 'Colorful Yunnan·My Homeland', aimed to implement 'seven goals' of environmental legal practice, environmental governance, environment information disclosure,

ecological protection, green city building, environmental protection knowledge dissemination and energy saving. With the issuance of Implementation Opinion on Endeavoring to Lead the Ecological Progress, and Implementation Opinion on Comprehensively Enhancing Eco-Environmental Protection to Completely Win the Battle Against Pollution or similar papers, Yunnan Province definitely strengthened efforts on environmental protection publicity and education to improve the public participation as one of such efforts and guiding green life of public. It reinforced the publicity and education about ecological progress, advocated simple and moderate, green and low-carbon life style. The government at all levels of Yunnan Province paid high emphasis on and greatly support the eco-environmental protection education by setting up special funds, including programs of making home green, environmental protection facility open to public, and construction of ecological wetland and related work.

- At present, Yunnan province is proposing to incorporate ecological EE into its 'the Fourteenth Five-Year' Eco-Environmental Protection Plan Outline in accordance with actual needs of Yunnan and the way to develop environmental protection publicity and education during 'the Fourteenth Five-Year' period. Yunnan Province Eco-Environment Department, Yunnan Province Education Department and Yunnan Housing and Urban Construction Department lead the EE of Yunnan Province and Yunnan Province Ecological Environment Protection Publicity and Education Center is responsible for the implementation of relevant EE programs.
- 'Yunnan Province Ecological Environment Protection Publicity and Education Center' is Class I non-profit public institution directly subordinated to Yunnan Province Eco-Environment Department mainly responsible for publicizing eco-environment policies, laws and regulations, organizing green initiatives and undertaking the eco-environment subject trainings in the whole province, developing environmental protection publicity and education exchange and cooperation, boosting public participation and raising environmental awareness of publics. It also takes charge of organizing expert committee, monitoring public opinion, coordinating provincial environmental protection facility opening to public, communicating with provincial level green entities, and environmental protection volunteers, and environmental protection communities, and editors

of Green Yunnan, and new media reporter station. The Center has 12 permanent staff and 20 outsourcing staff.

## □ EE centers and EE facilities in Yunnan

- Dian Lake is the mother lake of Kunming. In 1980s, as the water quality declining, Dian Lake has been listed as the focus of Three Rivers (Huai River, Hai River and Liao River) and Three Lakes (Tai Lake, Chao Lake and Dian Lake) Project of China. For this purpose, Kunming City commenced a series of ecological recovery and construction programs, including the wetland water purification project. At present, total 18 ecological wetland gardens have been built surrounding Dian Lake, and one piece of about 200m average width and 80% vegetation covered closed ecological zone have been preliminary completed. With these efforts, the water quality of Dian Lake was highly purified and the lake shore ecological functions and diversity were much recovered. It is seen now with 290 species of aquatic plant, 23 species of fish and 138 species of bird.

### ▪ Jinning South Dian Lake National Wetland Park

- Jinning South Dian Lake Wetland Park is located at southwest corner of Dian Lake in Kunming of Yunnan province with total areas of 1220km and 91.43% wetland coverage. The South Dian Lake Wetland Park Planning Zone enjoys rich biological diversity and specificity, where grows 226 species of plants, subordinated to 81 families and 179 generas, and 39 specifiers, 51 families and 62 generas of which grown depending on the wetland. There are 23 vertebrate orders, 49 families and 168 generas lived in the park, of which 6 orders 7 families and 21 generas are fishes, 3 orders, 7 families and 20 generas of amphibious reptiles, and 14 orders, 35 families and 127 generas of birds. The park is built in the largest passage for migrating birds for the West China preserved relative complete wetland biological system and featured rich wetland biodiversity that played special and important biological functions to improve and purify water inflowing into Dian Lake and biodiversity and conservation and was greatly helpful for science popularization and education of ecological environment.



## ▪ Laoyuhe National Wetland Park

○ Laoyuhe National Wetland Park lies in the Yunnan Province Kunming Dian Lake National Tourist Resort with total areas of 734.31ha. and 75% wetland coverage. It is the demonstration project for lakeside ecological restoration and construction of Dian Lake. As one of the most popular wetland parks in Yunnan province, Laoyuhe Wetland is a natural ecological barrier for pollution load inflowing into Laoyuhe river. It is also the wetland with best natural performance, richest structure and results on biological self-purification capability and environment education, the Park is now rated as ‘Yunnan Province Science Popularization and Education Base’ and ‘Kunming City Environment Education Base’ respectively.



○ As an important environment education base of Kunming City, the operator of Laoyuhe Wetland puts science popularization and education boards at the entrance square of wetland, science popularization square and beside main passages. It then built the 1800m<sup>2</sup> greenhouse science park to introduce the wetland water quality purification process and procedure, Dian Lake protection knowledge, law and regulation, knowledge of wetland protection and wetland animals and plants. It commits itself to wetland ecological environment education to attract more people to involve in Dian Lake protection and governance. Tsinghua University, Yunnan University, Yunnan Normal University and many other colleges and universities in and out of Yunnan Province have been devoting into Laoyuhe wetland monitoring and taking this wetland as their teaching base. Many middle schools and primary schools in Kunming also choose Laoyuhe Wetland as their environmental education base to organize visit in the wetland regularly. Laoyuhe Wetland, the public open environmental education base for free, attracts over 2 million visitors every year, whom are educated accordingly in the process of visit.

## ▪ Xishuangbanna Tropical Botanical Garden Environment Education Center, Chinese Academic of Sciences

- This Center is situated in Xishuangbanna Prefecture of Yunnan Province. The Environment Education Center has 16 employees and serves for environment education, science communication, policy publicity, science popularization facility, website building, database building and maintenance, organization of trainings of Xishuangbanna Tropical Botanical Garden. It is comprised of Xiyuanpu Garden History Exhibition Hall, Caixitao Memorial Room, Museum of Tropical Rainforest Ethnic Culture or similar science popularization halls and rooms. Meanwhile, it is also built with exhibition hall, room, cultural and creative product shop, coffee bar, meeting room, artist workshop, multifunctional hall, lab, playroom or similar facilities. Besides that, it provides support for the development and maintenance of science popularization facilities in the Garden.
- The Center has organized diversified environment education activities, such as ‘Growing *Parashorea Chinensis* Wang Hsie’ program for local middle school and primary school, ‘hands with hands science exploration camp’ for exploring rain forest with students from other cities, and ‘art meets science’ painting exhibition for tourists, and ‘Youth Science Festival’ for post graduates and young scientific researchers. For every important festivals and holidays, the Center will also hold featured sciences popularization activities, such as ‘My *Victoria amazonica* and my boat’, ‘Interesting palms’ or similar. In a meanwhile, the Environment Education Center would also organize to make science communication and publicity to publicize and report major creative achievements and researching progress by deeply cooperation with many medias including CCTV. Furthermore, it undertook serial trainings held by the Garden, including Advanced Ecology and Field Training in Conservation Biology, Environmental Interpretation Training Class, Primary School Science Teacher Training Class and other trainings consistent with three tasks of the Garden. It is also responsible for compiling training rules and teaching materials, and providing instruction and assistance for training work of other



institutions.

## ▪ Zaidi Shicheng Nature School

- Founded in 2015, Zaidi Shicheng Nature School was located in Dian Lake famous scenery-Shicheng Scenic Spot, where stands on the mountain and near the water. The school advocates the concept of sustainable co-existence between mankind and nature to deal with the latest environment problem in this era and develop regional natural biology and life culture experience activities, which help enlighten and change environment awareness of urban citizens and guide and promote environmental protection practice.
- The school has outdoor playground, including orchard and vegetable field, and provided open kitchen and dormitory with song of birds. It provides curriculums of four-season classroom, farming, camping, natural exploration, geology, woodworking, pottery, plant dying or similar craftwork and deep immersed winter and summer camp. All curriculums are four seasons oriented designed on the basis of natural observation and life practice in Shicheng. The school is built and function designed in harmony with the environment and intends to be a good example for practical sustainable life style. In 2017, it was rated as the demonstration base for nature school capability construction under Publicity and Education Center of Ministry of Ecology and Environment of PRC.



⊙ Contact person of Shicheng Nature School

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## □ Characteristics of EE reflecting locality of Yunnan

- Yunnan enjoys unique geological conditions and favorable climate environment that breeds rich and special biodiversities. The environment education work of Yunnan, in combination with biodiversity protection, public accessible environmental protection facilities, construction of ecological wetland, environment education base and natural protection zone or similar. It also provides featured

environment education between November to March of next year for black-headed gull who spent winter in Kunming, and Asian elephant specially lived in Yunnan and Yunnan snub-nosed monkey or all kinds of animals and plants protection publicity education.

- We suggest you to visit Laoyuhe National Wetland Park because this is a featured ecological wetland introducing plants purifying water quality in Kunming. This wetland is also open to public, where puts on publicity boards, supports min-program and special worker to guide and introduce the wetland purification process that played important role to raise awareness of public to protect Dian Lake and its surrounding biological environment. Firstly, it established complete environment education organization system and would make more efforts on construction of environment education facilities and site in 16 prefectures and cities, and 129 counties (districts) and played a combined role at province, prefecture and county level to boost the environment work in Yunnan to step up to a new level. Secondly, a new way has to be developed in the environment education facility and site construction by closely matching with the life of people and constantly keeping innovation on environment education facility and its building mode with creative contents. Thirdly, it should make further use of network platform to make information disclosure and enable public to know, participate in and supervise the EE. Finally, it should organize localized ecological environment education in accordance with ecological environment of Yunnan. It is highly recommend to incorporate environment education into the 9-year compulsory education system of children with special teaching material for instruction and education.

## Achievements or impacts of EE on Yunnan

- Until now, Yunnan has involved in green environment building for over 20 years, and more than 3400 green schools have been built at all levels and classes, and 19 schools of which won state-level award and 1011 rated as provincial green schools and 24 international ecological schools. During this period, the province has rated more than 600 green communities in 9 batches, among them 7 winning national awards, 334 provincial levels. Yunnan province has built over 80 diversified environment education bases at all levels,

including 4 comprehensive practice bases for middle school and primary school rated by the State, and 69 provincial level environment education bases. More enterprises, schools and communities are participating in environment education system. Through efforts on green building activities in schools, communities and environment education bases, public are guided to know, join in the environmental protection, which greatly raise the awareness and qualification of public on environment.

- In Nov. 2017, Yunnan province started the program of opening environmental facility to public, totally 54 institutions accessible. Since the commencement of program, totally 54 institutions in 12 prefectures opened to public for over 300 times, and receiving more than 20000 persons to visit. For over three years, public are encouraged to know, support, participate in environmental protection that arouse and raise the responsibility on public environment to actively join in and supervise the environment. This is the best effective way to cause publics know, participate in and supervise the environment and improve ecological environmental protection awareness of the whole society.

#### Contact Point for further networking

- At present, Yunnan province hasn't foreign partner cities for EE exchange. It is hoped to keep exchange with EE workers in Japan and Korea and maintain EE exchange and visit on this partnership so that we could get further improvement on our local EE.
- If you need to visit our ecological wetland or public EE base, please contact Yunnan Province Ecological Environment Protection Publicity and Education Center

⊙ Yunnan Province Ecological Environment Protection Publicity and Education Center  
+ 86-871-6415-4608, 497747688@qq.com

**CHINA 2.****Tianjin City**

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**□ Introduction of Tianjin**

- Tianjin, a coastal city, is one of China's four municipalities directly under the central government. It governs 16 districts with a total area of over 11,696 square kilometers and a permanent resident population of over 15.61 million, with an urbanization rate of 83.48%. Tianjin is one of China's top 10 GDP in the first half of 2020 and a permanent host city of the Summer Davos Forum.
- Tianjin is located in the Pacific west bank, on the northeast of North China Plain, downstream of the Haihe River basin. Bohai Sea is on the east, and Yanshan on the North. Capital Beijing is 120 kilometers away to the west, is an important fort to defend the capital city, also is the estuary of five tributaries including Haihe River south canal, Ziya River, Daqing River, Yongding River and north canal. It stands at the junction of these tributaries and estuaries, known as the 'downstream of nine rivers' and 'major hub of rivers and seas'.
- As an important member of the Jing-Jin-Ji (Beijing-Tianjin-Hebei) Collaboration Development, Tianjin has always insisted on strict legal standards to protect the ecological environment. It enacted Regulations of Tianjin on the Prevention and Control of Air Pollution and 47 relevant supporting documents, Regulations of Tianjin on the Prevention and Control of Water Pollution or like, and Discharge Standard of Water Pollutants for Municipal Wastewater Treatment Plants(DB12 /599-2015), and Emission Control Standard for Industrial Enterprises Volatile Organic Compounds(DB12/524-2014), and other 12 local standards.
- Since 1970s, the Chinese government takes it as a strategic task to actively develop environmental publicity and education and to raise the nation's consciousness about the importance of environmental protection. China has accomplished ideal result from the continuous efforts on promoting environment publicity education and popularize environmental protection knowledge to the public. For the purpose of adapting to and boosting the development of Tianjin environmental protection work, in 1985, Tianjin government founded an

independent environment publicity education agency, Tianjin City Environment Protection Publicity and Education Center to enhance the overall instruction and management over the environment protection publicity and education work of Tianjin. These years, Tianjin has focused on Green series building for its EE progress and created green schools (kindergarten), green communities, green families and EE bases. It greatly raised the environment awareness of community citizens and teenagers through various activities, including 'Little Guardian of Environment', 'Juvenile Environmental Protection Articles Soliciting and Painting Competitions', 'Saving Resources, Protecting Environment and Little Master Protecting the Earth', 'Environmental Protection in Community', 'Environmental Protection Classroom in Community', 'Old Community and New Green Life', 'Cool China' low-carbon initiative', 'Low-carbon Family·Fashion Life' or similar green events.

## □ Vision and Status of EE in Tianjin

- Tianjin has concentrated on building the beautiful Tianjin and broadly setting up environment publicity and education platform for environmental protection purpose. By use of WeChat and Microblog or similar new media platform, and in support of green school, green community, environment education base and environmental protection facility opening to public programs, Tianjin holds diversified publicity education campaigns to lead the attention of public on ecological environment protection and advocate low carbon green life style in the society, especially in environmental days like World Environmental Day on June 5th, or Environment Education & Publicity Week.
- It has successfully sponsored six sessions public welfare publicity campaigns of 'I am little director of environmental protection' and publicize the ecological civilization concept to students and teachers through environmental protection class, speech contest and knowledge competition or like to attract over 100000 students and teachers involving in. The World Environmental Day on June 5th, or Environment Education & Publicity Week of Tianjin are the best chance to publicize environment knowledge to public. For example, it has successively carried out environmental protection carnival in Water Park receiving more than 100 thousand visitors every year,

while it also organizes enterprises, entities and governments to actively take measures to make environment publicity and raise environmental protection awareness of public during the Week. Tianjin also makes efforts to popularize environment concept and provide environment education in colleges and implement various activities attracting college students including ‘College Student Environmental Protection Debate’, ‘Environmental Protection Idea Competition’ and ‘Tianjin City College Student Environment Science Innovation and Practice Capability Tournament’ or similar events and therefore created an environment that everybody concerns about ecological environment protection in colleges and universities of Tianjin.

- In 2013, Tianjin City Ecology and Environment Bureau opened a service account in Microblog, and in 2014, its account in WeChat was accessible working as an effective information and image platform for the bureau and made it possible to achieve ecological environment public opinion spreading and guiding. These platforms are playing more and more important role in publicity of environment information, knowledge and concept to tell the environmental protection story of Tianjin efficiently, make public accessible to environment information and protect their public environment health right.
- Since 1997, Tianjin has continually developed the building of green school with the tenet of ‘teaching one child to affect one family and even the whole society’, which mobilized kindergartens, primary and middles schools to join in the construction of green school. In 2001, Tianjin kicked off the program to build green community and advocate simple, adequate and low carbon life style. Until now, Tianjin has achieved success in building 489 city level green schools (kindergartens) and 257 city-level green communities. From 2000, Tianjin started to construct environment education demonstration base and totally 11 city-level bases are built, which claimed an ever-growing share in environmental protection science popularization and guiding juveniles to engage in environmental protection practice activities. In 2017, for further arousing consciousness of public responsibility on environment, and taking full advantages of environmental protection facilities in EE, Tianjin implemented four-types environmental protection facility opening to public programs and through three years efforts, Tianjin totally

caused public accessible to 47 entities running environmental protection facilities, including environment monitoring facilities, domestic sewage treatment facility, municipal refuse disposal facility and hazardous waste and waste electrical and electric products disposal facilities, accounting for 100% opening rate in its jurisdiction area and successfully meeting requirements of Ministry of Ecology and Environment. It built a new public accessible platform for environmental protection and causing a strong social response.

## Governance (Partnership) for EE in Tianjin

- Government sector: International and Education & Publicity Department of Tianjin City Ecology and Environment Bureau, Tianjin Ecology & Environment Comprehensive Support Center.
- Social groups: Tianjin Ecological Morality Education Association, etc.
- The government sector will launch policies and make planning to lead social public accessible to environmental protection, while social groups could organize public to join in EE campaigns.
- The government sector will communicate and coordinate with relevant departments and bureaus to run environment publicity and education programs, while social groups could organize public to implement EE events.

## EE Policies of Tianjin

- Tianjin has a special EE competent authority to take charge of routine work under the support of municipal financial budget to maintain the implementation of EE. Tianjin government launched 「Tianjin Environment Education Regulations」 on Nov. 1, 2012 to lead the environmental education of Tianjin.
- It would release Tianjin City Ecological Environment Education Work Plan every year. International and Education & Publicity Department of Tianjin City Ecology and Environment Bureau, Tianjin Ecology & Environment Comprehensive Support Center. For the need of institution reform and integration of similar entities including Tianjin City Environmental Protection Publicity and Education Center, Tianjin Ecology & Environment Comprehensive Support Center is established with independent legal person position and fully

supported by municipal financial budget. This Center is subordinated to Tianjin City Ecology and Environment Bureau and is comprised of Publicity and Education Department to undertake environmental protection publicity and education activities and relevant training or like.

## □ EE centers and EE facilities in Tianjin

- By far, Tianjin has created 11 city-level EE demonstration bases (five of them are rated as state-level primary and middle school EE social practice bases), 47 environmental and domestic sewage and waste treatment facilities open to public during World Environment Day with diversified environmental protection public welfare activities. They raise public awareness on environment protection through ‘bringing in and going out’ strategy and let public further know environmental protection and arouse their enthusiasm to participate in environment protection. With the opening to public of four types environmental protection facilities and domestic sewage and garbage treatment facilities, public could experience the profession and strictness of environmental work in person and are mobilized to engage in the environment protection work as the volunteers to spread their experiences on environment protection to their families, friends and neighbors, which effectively resolve the issue of ‘Not in my back yard’. Through these efforts, more and more publics would like to actively devote themselves into environmental protection and pay more concern and efforts to protect the environment.



## □ Characteristics of EE reflecting locality of Tianjin

- Diversified EE campaigns have been serial brand events like ‘I am a Little Director of the Ecological Environment’ and ‘Tianjin Environment Culture Festival’, etc.
- The construction of EE bases and opening of environmental protection facilities to public all support the implementation of EE against public.

- Creative mode of EE should be encouraged to expand public accessibility to EE and takes full advantage of broad spreading and high influence new media to support EE online.
- Tianjin City Ecology and Environment Monitoring Center

## Achievements or impacts of EE on Tianjin

- The EE activities in Tianjin are seen sustainable, remarkable and increasing involved. Tianjin has been running the "I am a Little Director of the Ecological Environment" campaign for six years since 2014. This is the largest campus environmental education activity in Tianjin, and also the brand event in Tianjin.
- This is a school oriented environmental protection publicity welfare campaigns of Tianjin, and through joint efforts of district government, departments and schools, it successfully guided students to learn environmental protection knowledge and make a think on the corresponding issue, therefore raise public awareness and qualification on environment and ecological morality by various environmental protection activities, including 'Environmental Protection Class', 'Environmental Protection Class Meeting', environmental protection knowledge contest and 'I am a Little Director of the Ecological Environment' theme speech or like. Students are taught to actively and subjectively respect, live in harmony with and protect the nature. During six years, totally over 100 thousand pupils directly joined in this activity and 43 of them were selected and granted with the title of city-level 'Little Director of the Ecological Environment', or three levels prize in knowledge competition, while best organization award, excellent organization award, best instructors and excellent instructors or like are also be evaluated and granted.
- With efforts of EE implementation, public's environment awareness are apparently raised so that they could subjectively practice low carbon life, join in protecting the environment and boost ecological environment improvement of Tianjin constantly.

## Contact Point for further networking

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**CHINA 3.****Shenzhen City**

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**□ Introduction of Shenzhen**

- Shenzhen, also known as ‘City of Roc’, is a sub-provincial city of Guangdong Province, a special economic zone of China approved by the State Council. It is a national economic center and an international city. By the end of 2019, Shenzhen has direct jurisdiction over nine districts covering a total area of 1997.47 square kilometers, comprises urban area of 927.96 square kilometers and a permanent resident population of 13,438,800.
- Shenzhen, located in South China, south of Guangdong Province, and eastern bank of Zhujiang Estuary. It faces Daya Bay and Dapeng Bay on the east, Zhujiang Estuary and Lingdingyang Bay on the west, the Hong Kong on the south across Shenzhen River. Shenzhen is one of four largest central cities in Guangdong-Hong Kong-Macao Greater Bay Area, also the international science and technology industry innovation center and one of three largest financial centers of China.
- Shenzhen is a city surrounded by mountains and oceans. It has 317 rivers of different sizes, which belong to the Dong river, Bay and the Pearl River estuary system. There are 5 rivers with a basin area of more than 100 square kilometers, including Shenzhen River, Maozhou River, Longgang River, Guanlan River and Pingshan River. Futian District Mangrove Nature Reserve with 368ha. area located at the central hinterland of Shenzhen and is the only nature reserve with smallest coverage in the downtown of a city. It neighbors with Mai Po Reserve in Hong Kong, the Ramsar Site of International Importance. Every year there are 189 species and over 100000 migrating birds (including Egret, *Larus saundersi*, Nordmann's Greenshank, great egret and little egret, etc.) stopping here on the South migration way or spending winter in the Reserve. It is a green passage inside Shenzhen, not only the heaven for the rest of birds and kingdom of plants, but also the wonderful place for people going hiking, watching birds and sea and experiencing the nature.
- Recent years, Shenzhen has thoroughly implemented the President Xi Jinping’s though of ecological progress, and overcame difficulties

by all strength to resolutely battle against the pollution. It takes actions like water pollution prevention, and Shenzhen blue sky protection campaigns, achieving outstanding results and significant environmental improvement. In a meanwhile, Shenzhen government takes full advantages of EE to support pollution prevention as one of battle targets. The government makes success on continually raising public environmental protection awareness by creating green projects, building brand environment public welfare campaigns and environment-focus memorial day to constantly drive public EE undertaking.

## □ Vision and Status of EE in Shenzhen

- Under the leadership of municipal government, Shenzhen City, in 1998, firstly kicked off the environment community cultural construction demonstration activity and organized the city-wide ‘green school’ building campaigns. In 2002, Shenzhen City Building Green Home Campaign Instruction Committee was established, which then issued the Notice on Implementing Building Green Home Serial Activities in Shenzhen to further carry out ‘building green home series’ and EE base building events, including green institution, green community, green school, green kindergarten, green shop, green enterprise, green hospital, green bus, green family, green hotel or similar in Shenzhen except the former green school and community campaigns. Until 2020, Shenzhen has totally built 1241 green entities, including 452 schools, 116 kindergartens, 38 institutions, 44 hotels, 55 shops, 101 enterprises, 125 bus lines, 17 hospitals, 7 streets, 90 communities, and 196 families, 26 EE bases to greatly help EE concept and practice deeply and widely promote.
- From 2004, Shenzhen firstly built nature school in the whole country and total 15 nature schools have been created until 2020. In June 2020, Shenzhen led to implement ‘national nature school hand in hand’ program aiming to work with over 50 state-level nature school demonstration units across the country to accomplish national nature education advantage benefiting, and coordinated development. Shenzhen built brand environmental protection public welfare events like Shenzhen Youth Environmental Protection Festival, Green Life Environmental Protection Festival, which have been successively held for 15 sessions, serving for creating ecological environment

cultural environment for teenagers and publics continually by means of environmental protection science and technology, poetry, reciting, drama, reading share or similar.

- In 2019, National Development and Reform Commission issued the General Plan for Green Life Building Actions and proposed to take seven green life building actions at the state level that are energy saving institutions, green families, green schools, green communities, green travelling, green shops and green buildings and defined the leading organizations for such actions. In the next step, Shenzhen will sufficiently make conclusion for the experiences of the past 20 years green building series campaigns and generate the future general plan for Shenzhen green life building actions in order to promote it to the whole society on the basis of green life building program. It is expected that the green life building actions will achieve excellent results until 2022 and through the broadly promotion of green life mode and setting typical feature of green life so that create an environment of advocating green life in the society.

## □ Governance (Partnership) for EE in Shenzhen

- For many years, Shenzhen has established an environmental publicity and education pattern with government dominated and school, social community, enterprise and public widely participated in. Through government procurement service, Shenzhen city government keeps strengthening the cooperation and communication with environmental protection volunteer organization, non-profit organization, school, environmental protection enterprise and expert to effectively promote the environment education in the whole city by their profession and appetency. For example, Shenzhen Futian District Mangrove Ecological Garden was built and completed by Shenzhen City Futian District Water Supply Bureau in 2015, which then was entrusted to Shenzhen Mangrove Wetlands Conservation Foundation for operation and management in order to implement the mangrove growth environment restoration and public nature education. This is a pioneer for the operation of municipal garden by social organization. Under this background, with the completion of Shenzhen Futian District Xiangmi Garden, it was entrusted to 'Friends of Park'(an NGO organization) by Shenzhen City Futian

District Urban Management Bureau.

- Shenzhen government and relevant functional departments, including Ecological Environment Bureau, Water Supply Bureau and Urban Management Bureau at all levels all set up relevant publicity and education departments to take charge of the EE publicity and education in different fields. Over these years, they organize and carry out green school building activities across the city by developing special teaching material for EE, enhancing EE education penetration, and launching EE social practice to further cultivate ecological cultural quality of students.
- With the economic progress and urban construction progress and raising of public environmental protection awareness in recent years, the ‘NIMBY’ attracts more attention and the construction of Waste-to-Energy Power Plant, sewage treatment work, 5G base stations or similar are facing huge public pressure. For making sure of urban infrastructure construction, both the government and enterprises are trying to eliminating public prejudice and misunderstanding by implementation of EE. For this reason, enterprises would like to organize EE team, make public accessible to environment processing facilities to cause them experience, witness these facilities and relieve doubts by exhibition, visiting and explanation. Many of them win success in EE, including Shenzhen Energy and Environmental Protection Co., Ltd. Yantian Waste to Energy Power Plant, Shenzhen Water (Group) Co., Ltd. Yantian Water Purification Plant, Shenzhen Mawan Power Company Limited, Shenzhen Municipal Waste Disposal Center, Shenzhen Institute of Building Research Co., Ltd. and other enterprises are taking responsibility of ecological environment governance and greatly developing public environment education. Their efforts help build healthy enterprise image and promote sustainable development of enterprise.
- Shenzhen is a city of volunteers and under the leadership of Shenzhen Communist Youth League Committee, there are totally 1.86 million registered volunteers, including 180 thousand in the field of environmental protection. With deepening of water pollution prevention, Shenzhen achieves a historical breakthrough on improvement of river water quality. For making sure of the long lasting stability of river water quality, upon the instruction of

Shenzhen Communist Youth League Committee, Shenzhen Volunteer River Chief Federation emerged and creatively set up seven volunteer service stations along seven major river basins of Maozhou River, Dasha River, Pingshan River, Buji River, Yantian River, Guanlan River, and Longgang River of Shenzhen, including 92 regular volunteer service monitoring points. They organize volunteers riding tour along rivers, and Juvenile Water Saving and River Protecting Classroom or similar diversified river protection publicity activities, and create environment of river protection participated by the whole society. In 2019, Shenzhen Volunteer River Chief Federation won the 'Green Team Award' in the 9th session of national 'Mother River Award'.

- For the time being, there are 119 registered environmental protection welfare organizations, including Shenzhen Mangrove Wetlands Conservation Foundation, Shenzhen OCT Hua Ecological Environment Protection Federation, Compassion Relief Tzu Chi Foundation, ShenZhen Spring Environmental Protection Volunteer Association and Shenzhen Blue Ocean Conservation Association, who played important role in EE of Shenzhen. Founded in 2012, Shenzhen Mangrove Wetlands Conservation Foundation (MCF) is engaged in the protection of representative mangrove in South China seacoast wetland. Since 2015, MCF started to cooperate with government and schools to develop nature education curriculum based on the nature education center set in municipal garden/school and provide it to public, society and school in respect of nature education. By far, it has involved in the construction of 6 nature education centers and nature schools. It trains nature commentators to provide public humanized, individualizing and pleased guidance and let them know the ecological code of wetland and give them opportunity to connect with the nature. MCF also actively commences international cooperation and undertakes the 17th C/J/K EE Seminar, and Shenzhen-Hong Kong Seacoast Wetland Conservation Forum.
- On Nov. 18, 2012, Shenzhen OCT Hua Ecological Environment Protection Federation was official established. It advocates ecological civilization concept and hold the tenet of promoting ecological construction and environmental protection. Upon different modes of cooperation, it sponsored the implementation of wetland ecological construction and environmental protection welfare projects, scientific research and science and technology development, talent training

and academic exchange. It has successfully carried out activities regarding to nature education, zero waste, ecological lecture and green forum.

- Nature education projects: Until Dec. 2019, Shenzhen OCT Hua Ecological Environment Protection Federation cooperated with Publicity and Education Center of Ministry of Ecology and Environment, has aided 56 nature schools and trained over 1000 nature education tutors and developed 28 nature education teaching materials in 22 provinces (autonomous regions and municipality directly under the central government).
- Zero waste project: Up to Dec. 2019, in OCT Wetland “Zero Waste Ecology Park”, there are totally 660 volunteers participating in 1917.5hours welfare activities and turning over 20tons organic wastes into fertilizer. In this project, 6 schools agreed to join in zero waste campus demonstration and it changed life choice of over 3000 citizens and affecting more than 10000 people.
- Hua·Ecological Lecture: Until Dec. 2019, OCT Hua regularly invited seniors and experts from government, environmental protection and NGO to give lecture in this project, which were participated by more than 10000 persons in 48 sessions, and shared to over ten thousand environmental protection enthusiasts via live stream.
- Hua·Green Forum: Hua·Green Forum has been successfully held for 5 sessions with theme of “Green Economy”, “Nature Education”, “Zero Waste”, “Environment and Sustainable Development Education”, “Biodiversity Focus and Built Sustainable City” respectively. There were over 2000 guests from more than 10 countries and area including China, US, Italy, Netherland, Columbia, Denmark and Singapore or like present in the forum, and nearly ten thousand people share the forum online.

## □ EE Policies of Shenzhen

- These years government of Shenzhen at all levels attach high emphasis on EE and list its expenditure into financial budget of the government. Recently, with the movement of city’s pollution prevention, Shenzhen city government has built many ecological environment science popularization exhibition halls and museums, such as Maozhou River Exhibition Hall, Nanshan District Garbage

Classification Experience Gallery, Futian Mangrove Ecological Garden Science Popularization Exhibition Hall, Nanshan District Dashahe Kafeyou Environmental Protection Book Bar or like. For promoting the public open environmental protection facilities, environment education base and nature school construction, Shenzhen City Ecology and Environment Bureau is endeavoring to implement the support plan to drive environmental protection facilities open to public, environment education base and natural school building and activity allowance. This year, Shenzhen updated its environment protection rules and the EE becomes an important part in building public activity system to make great break in boosting EE legislation.

- At the moment, Shenzhen is preparing to make early study on environment publicity education planning during the 14th five-year program, and proposed to formulate and issue Outline of Five-Year Development Planning for Shenzhen City Environment Publicity Education in 2021.
- Shenzhen City Ecology and Environment Publicity Education Information Center, directly subordinated to Shenzhen City Ecology and Environment Bureau, is the competent authority for environment education in Shenzhen and take charges of the environment publicity education of the whole city, including news and publicity, large environment protection theme publicity activities, green life building activities, environment education work research or like. This 10-person environment education team consists of leaders and workers, including 1 director for environment education, 1 film director, and 1 director for news and public opinion. Meanwhile, the branches of Ecology and Environment Bureau at different districts also set up special department to take charge of environment education.

## □ EE centers and EE facilities in Shenzhen

### ▪ Neilingding Futian National Nature Reserve

- The Mangrove Nature Reserve, located at the estuary of Shenzhen River, east coast of Shenzhen Bay was officially created in 1984 and classified as state level nature reserve with 368ha. Neighboring with Mai Po Reserve in Hong Kong, the Ramsar Site of International Importance, it is the smallest national nature reserve of China. It has been listed among international important protection members by

International Union for the Conservation of Nature and Natural Resources. The Mangrove Nature Reserve is also one of Man and Biosphere Reserve Network. There are 3 families and 16 species mangrove plants in Futian Mangrove, mostly *Kandelia candel*,



*Bruguiera gymnorrhiza*, *Aegiceras corniculatum*, *Avicennia marina*, Black-faced spoonbill, *Larus saundersi* or like. The dense mangrove forest is located in the estuary of Xinzhou River in the east and Sea Coast Ecological Park in the west, forming one piece of about 9-km long “Green Great Wall” along the coast of sea with total area of 367.64ha. There are 194 species of birds in Futian Mangrove, including 24 rare and endangered species, such as Dalmatian Pelican, *Aquila heliaca*, black-faced spoonbill, *larus saundersi* or similar. There are over 100 thousand migrating birds rests in Shenzhen Bay, where is an important stop in the international migrating birds passage in Old World.

## ▪ OCT Wetland

○ The OCT Wetland situates in north area of Shenzhen OCT Bay with 685000 m<sup>2</sup> flooring area, including about 500000m<sup>2</sup> water area, which connects with water system of Shenzhen Bay sharing ecological resources. It also faces Mai Po Reserve in Hong Kong across the sea as an important integral with ecological system of Shenzhen Bay coast wetland. In 2016, OCT Wetland was officially approved by National Forestry and Grassland Administration as the national wetland park (trial) with the smallest area, and also the first state level wetland park in Shenzhen. It proposes the prospect of ‘being the international leading public participated ecological protection and nature education demonstration base’.

○ In 1990s, OCT Wetland was used to be a beach when land reclamation for Shenzhen Bay Binhai avenue, and affected by dump of garbage, disorderly domestic sewage drainage, and illegal construction or similar issues, the ecological environment of



wetland kept deteriorating. As entrusted by Shenzhen city government, OCT group received this wetland in 2007 to commence the water governance project with three steps of “wetland closure management, water quality improvement and wetland ecological improvement” on the basis of wetland protection-cored principles of “protection, restoration and improvement”. This work lasted for 5 years with investment over RMB 200 million, and nearly 40000 m<sup>2</sup> mangroves were planted, 80000 m<sup>2</sup> land vegetation were restored and 15000 m<sup>2</sup> beach construction was completed.

- In 2012, OCT wetland restoration was completed and formally opened to the public, which attracted tens of thousands of migratory birds stay here and became the fascinating scene in the center of city. The OCT Wetland restored does not create a life passage between animals and plants in wetland and in Shenzhen Bay, but also have a positive effect on protecting diversity of specie, regulating climate, degrading pollutants, and beautifying surrounding environment or similar. It successfully revitalized the wetland and set the example for coastal wetland protection and restoration in the center of city.
- With the principle of wetland protection, OCT Wetland opens to public so that people could enjoy welfare this natural space free from charge by reservation. At the same time, OCT plays the education function of wetland and implements EE programs including nature education, zero waste, ecological lecture and green forum or similar as supported by social welfare organizations to popularize environmental protection awareness, create nature education platform to provide public opportunity to come to the nature and explore the wetland.

## ▪ Futian Mangrove Ecological Park

- Futian Mangrove Ecological Park is invested and built by Futian District Government and operated by Shenzhen Mangrove Wetlands Conservation Foundation. It is a municipal park integrated mangrove wetland protection, science popularization education and people leisure and entertainment. This Park



was formally opened on Dec.

28, 2015 to the public free from charge. It is located in the south of Guangzhou-Shenzhen Expressway of Futian, and the east of Futian Mangrove National Nature Reserve. It faces Xinzhou River in the east and Shenzhen Bay in the south with flooring area about 38ha., and Mai Po Reserve in Hong Kong, the Ramsar Site of International Importance across the sea. As an important section of Shenzhen Bay wetland, it is of significance to the local ecological system.

- The site of park was used to a vitalized land in Shenzhen Bay but severely destroyed in the process of urban development. For restoring the regional coastal wetland ecological environment, upon the coordination between Futian district government and municipal departments related, the land for park was finally determined and approved by means of land recovery compensation or similar measures. This park was finally completed in 2015 after demolition, planning ,design and construction processes and lifted the veil and showed boundless energy.



- The Park is designed with field based nature education course system to provide interesting and enlightening nature education activities. There are six course now (Mangrove exploring trip, Bird park exploring, little key of Shenzhen Bay, Beauty of mangrove, Appearance of the green monster, Calendar of flowers), and five public activities for all ages (building floating island, planting of mangrove, cleaning the beach, removing monsters (alien invasive species) and garden soil reconstruction), 4 education pathways, including poetry pathway, flower calendar pathway, bird watching pathway and mangrove pathway.

## ▪ Nanshan District Garbage Classification Discovery Hall

- Nanshan District Domestic Waste Classification Science Popularization Discovery Hall lies in Xili Ecological Park of Nanshan District, Shenzhen. It was opened in May 2020 and built with 1300m<sup>2</sup> total construction areas. This hall consists of three floors, of which F1 is the science popularization area; F2 is the interaction area and F3 is the observation deck. It is comprised of four zones, reception



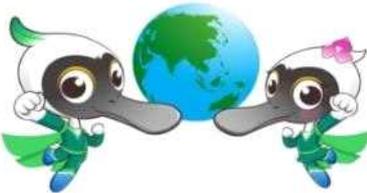
center of waste classification hall, Science Popularization Zone I (reason to classify waste); Science Popularization Zone II (way to classify waste); Science Popularization Zone III (classify waste together). This hall is operated by Compassion Relief Tzu Chi Foundation so citizens could reserve to visit it free from charge.

## ▪ Yantian Waste to Energy Power Plant

- Yantian Waste to Energy Power Plant lies in Qinglinkeng, Yantian District, Shenzhen. It is the first science popularization education base serving for waste disposal and classification knowledge spreading for the purpose of environment protection in Shenzhen. It is also the only modern environment protection power plant integrating ‘municipal solid waste disposal’, ‘science popularization education’, ‘industrial tourism’ and ‘leisure and entertainment’.



## □ Characteristics of EE reflecting locality of Shenzhen

- Shenzhen is surrounded by the sea and mountains and enjoys unique geological position and climate that contributed precious nature resources for the environment education of Shenzhen. The EE of Shenzhen mainly focus on the protection of coastal mangrove wetland and birds, rivers and the biodiversity in the highest mountain–Wutong Mountain.
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- Meanwhile, Shenzhen City Ecology and Environment Bureau chooses the endangered specie black-faced spoonbill as the cartoon image of city, which are attracted to the wetland during winter because the ecological environment of Shenzhen more and more favoring their stay. We suggest J/K environmental educators come to Shenzhen to visit above-mentioned sites because each of them is seen as the feature and highlight for EE of Shenzhen.

## □ Achievements or impacts of EE on Shenzhen

- Since the 18th national congress of the CPC, Shenzhen municipal

government has issued a series and policies and taken effective measures in ecological environment protection and ecological progress. After ten years efforts, the ecological environment of Shenzhen has been thoroughly improved and the clean water, green sea coast and blue sky have become a new image of Shenzhen. At the same time, for expanding the way of public participating in the EE, the government of Shenzhen is endeavoring to build EE sites (halls or places) with different themes, including the construction of sponge city, water pollution control, waste classification and wetland protection. Until 2020, Shenzhen built 15 nature schools, and 12 of them were made in recent 5 years. There are 26 EE bases and half of them built in recent 5 years. In 2019, Shenzhen added three enterprises accessible for environmental protection facility open to public. Nanshan Waste Classification Discovery Hall and Maozhou River Water Control Museum opened in 2020. Every year, these EE sites could receive about 500000 persons for visit or curriculum totally.

#### Contact Point for further networking

- At present, Shenzhen hasn't any foreign partner cities for EE exchange. In the future, we'd like to expand communication with C/J/K environment education in following aspects:
  - Organize to implement multilateral communication and training with EE educators;
  - Make effort to find foreign partner cities for EE exchange with J/K recommended city, or join in EE mutual learning networking.
- The J/K environment educators are expected to visit Shenzhen and you may contact with Shenzhen City Ecology and Environment Publicity Education Information Center.

⊙ Shenzhen City Ecology and Environment Publicity Education Information Center

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**CHINA 4.****Jinan City**

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**□ Introduction of Jinan**

- Jinan is the capital of Shandong Province, a coastal economy developed province in East of China, as the local center of politics, economy, culture, science & technology and education. Jinan leans on Mount Tai in the south, and is across the Yellow River to the north. Two main water systems of Yellow River and Xiaoqing River are distributed in the territory of Jinan, and lakes include Daming Lake and Baiyun Lake or like. Jinan is a well-known ‘Spring City’, famous for four spring groups, including Baotu Spring, Black Tiger Spring, Five Dragons Pool and Pearl Spring, where is seen with over 100 springs. In addition, Daming Lake, Qianfo Mountain and Baotu Spring are three famous scenic spots of Jinan. The tree and flower representing Jinan is willow and lotus.
- In 1997, Jinan City Environment Education & Communication Center was established on the basis of New Environment Newspaper. Jinan made more efforts on environment education and achieved improvement based on the ‘green building’ programs (green community, green school, environment education base, little guardian of environmental protection, and green family, etc.) since 2000. Over 20 years, the EE in Jinan has developed from the green building in the beginning to series EE campaigns under the active support of NGO, environmental protection alliances and media reports, people here are fully mobilized to participate in different environmental protection events. The environment condition and major ecological protection projects of Jinan have won recognition of citizens.

**□ Vision and Status of EE in Jinan**

- Implementation of ‘green building’ programs  
‘Green building programs are always important measures of Jinan to raise environment protection awareness and concept of public and improve the green progress of the city. It united relevant departments to carry out green building programs like green

community, green school, environment education base, little guardian of environmental protection and green family or similar. Jinan also actively participates in the international ecological school programs, waste volume reduction programs, little environment reporters, long river program, and nature school program or similar environment education programs. At present, Jinan has 30 schools winning honors of International Ecological School Green Banner in Jinan, 3 schools rated as state level green school, 133 with provincial level green school and 591 municipal level green schools. Until now, Jinan has successfully built 2 state level green communities, 55 provincial level green communities, and 197 municipal green communities, 2 state level primary and middle school social practice bases, 10 provincial level environment education bases and 35 municipal environment education bases. There are 1208 students awarded with the title of Little Guardian of Environmental Protection and 1000 families winning the title of Green Family.

#### ○ Organizing Training of Key Environment Educators

In the support of key environment educator training mechanism, the school-community-base are closely connected to renew their environment education idea and cultivate the backbone force of EE. For further promoting EE level, Jinan, with the help of famous domestic EE experts, well-known local environmental protectors and NGOs, organizes the training for over hundred key environment educators. Through the combination of EE and course of middle and primary school, they successfully incorporate the new idea and method in the training to their routine EE.

#### ○ Advancing the open of environmental protection facilities to public

Jinan government encourages Jinan environment education bases and entities involving in environmental protection facility opening to public programs to positively join in various EE campaigns and further expand the disclosure of information to maintain smooth reservation of these facilities. It is required to make balance among the variety, quantity, coverage rate and open frequency of entities, and keep public at least once two months accessible to such entity. The relevant environment NGOs and volunteers are called to participate in the opening program of environment education base and environmental protection facility by actively designing teaching material and plans of activity to increase the participation and

attraction of publics. They are also encouraged to support improving the ‘two-way education’ to both receive public visit and go out for publicity by cooperating with ecological environment departments to make publicity in schools and communities. Now, Jinan has built 2 state level primary and middle school social practice bases, 10 provincial level environment education bases and 28 city level EE bases. There are 26 environmental protection facilities and urban sewage and waste treatment facilities have been ‘online + offline’ accessible to publics.

- Cooperating with NGOs to innovate education mode and empower the backbone educators

It works to further cultivate local environmental protection NGOs and implement the ‘Ten Rules of Conduct’ ecological classroom, ‘Leave No Trace Campus’ or similar activities. The ‘Jinan ecological environment education mode’ has been recognized and promoted across the province by Shandong Province Ecology and Environment Department.

- ※ The ‘Ten Rules of Conduct’ refers to ‘Rules of Conduct for Citizen’s Eco-Environment Behaviors(trial)’, which was compiled by the Ministry of Ecology and Environment of China, Office of the Spiritual Civilization Development Steering Commission, Ministry of Education, Communist Youth League Central Committee of City and All-China Women's Federation.

#### 1) ‘Ten Rules of Conduct’ Ecological Classroom Training Activity

Shandong Province carried out the ‘Ten Rules of Conduct’ Ecological Classroom Training Activity first and aimed to promote the new EE mode. In 2019, it worked with Education Bureau to hold 13 sessions of Ten Rules of Code ecological training activities, participated by teachers of primary and middle schools, sectional environment monitoring administrators, principals of EE bases and environment publicity and education backbone educators in enterprise and community, totally over ten thousand persons.

#### 2) Enriching Jinan’s EE Classroom Campaigns

It sufficiently takes advantage of NGO and societal public to explore natural education features of Jinan and implement the Spring Groups featured ‘Black Tiger Spring Leave No Trace (LNT) Classroom’ and Lake-in-City featured ‘Da Ming Lake LNT classroom’ and Wetland

and River featured ‘Long River’ classroom. The ‘Leave No Trace Campus Classroom’ or ‘Leave No Trace College’ program works for students at different ages and provides wetland courses and biodiversity course of World Wide Fund for Nature or World Wildlife Fund (WWF) to students at primary and middle schools free from charge.

#### ○ Ecological Farm Based Environment Education Activities

For the purpose of ecological environment education, Jinan integrated ecological progress into full process of rural revitalization. With the theme research of ‘rural environment education base construction and rural ecological revitalization’, it explored a new way of poverty-alleviation to incubate ecological farm in rural area and promote rural ecological environment education development. Some villages including Changqing Matao Village, Zhangqiu Shijia’ai Village, and Laiwu High-Tech District Guojia Village are selected as the demonstration villages for rural environment education base. They turned the rural ecological resources into the capital to achieve ‘rural revitalization’ through tourism and ecological poverty alleviation to drive rural environment education base construction. This is greatly helpful for encouraging rural masses participating in environment improvement and popularizing green life style.

#### ○ Concentrating on Making ‘Environmental Protection Alliance’ of Jinan Powerful

Those helpful enterprises and social groups are encouraged to join in ‘environmental protection alliance’. Relevant events including saloon and seminars will be held once two months to break barriers among members of alliance, build the shared ecological environment education platform and scale up power of EE educators. This will arouse the participation enthusiasm of enterprises, NGOs and environmental protection volunteers. Meanwhile, the government pulls alliance and entities for developing ‘experience, game and local-based’ environment projects and explores and supports those typical EE activities inside the alliance.

#### ○ Organizing to Create Low Carbon Demonstration Entity

It guides local environmental protection NGOs to participate in building low-carbon community and low carbon industrial park, including stipulating construction plans and defining target and

implementation plan for this proposal.

## □ Governance (Partnership) for EE in Jinan

- They are Ecology and Environment Bureau, Education Bureau, Commission of Communist Youth League of Jinan, the Women's Federation and Civil Affairs Bureau or similar sections and agencies of Jinan government and schools, communities, women and children activity center or other public welfare entities. Some other NGOs, social groups, college students environmental protection alliance, and environmental protection volunteers are all actively joining in EE activities.
- The Ecology and Environment Bureau of Jinan combines efforts with Education Bureau, Commission of Communist Youth League of Jinan, the Women's Federation and Civil Affairs Bureau to firstly carry out 'Green Building' program in Shandong province and instruct and support basic units in policy to work effectively.
- They are vigorously supporting and growing local NGOs, like 'Leaven No Trace'(LNT), 'Green Qilu' and 'Lukuai Public Welfare' to introduce them into 'Green Building' campaigns and cause green community, school and EE base to act as the main site for environmental protection publicity education and develop the 'experience, game and local-based' environment projects attracting people to publicize 'Ten Rules of Conduct' or push forward similar major ecological environmental protection progresses.
- It has put more efforts on Jinan EE classroom activities and led NGOs including 'Leaven No Trace'(LNT) and 'Green Qilu' to accelerate the trial implementation of these activities. They have successively put into effect of 'Leave No Trace Campus', 'Air Observation Team', 'Long River' or similar projects in trial, and jointly operated activities of 'Leave No Trace Forest', 'Orderly Agricultural Development' and Nature Notes or like with Yezi nature school. It also leads the 'Lukuai Public Welfare' to develop EE activities in EE bases and communities and explore local environment teaching materials, encouraging and helping them play more important role in attracting public participation.
- The government sectors jointly issue policy and document to pull all walks of life for actively participating in ecological environment

activities, and on the other hand, support to incubate local NGOs and use their advantages to run projects. Meanwhile, the environmental protection alliance was established to reinforce the connection among government, enterprise, NGO, school, community, base and media and public to encourage more helpful social groups to join in and build a shared ecological environment education platform and arouse the enthusiasm of enterprise, NGO and environmental protection volunteers to participate in. The government encourages relevant alliance and entities in developing 'experience, game and local-based' environment projects and explores and supports those typical EE activities inside the alliance.

## □ EE Policies of Jinan

- Many sectors of Jinan mutual cooperate to carry out serial EE campaigns. For example, Jinan City Education Bureau, Communist Youth League Central Committee of City work together to perform campaigns including green school building, Spring City Little Environmental Protection Guardian, Environmental Protection Science Popularization Drama and nature note competition or similar. Jinan City Civil Affair Bureau is united to develop serial environment education activities including green community building, and Women's Federation to carry out green family or similar activities. The Ecology and Environment department has been many times granted with award to typical EE entities and included aspects of green building, environment education and public participation into assessment on the government efforts in environment.
- Jinan City Ecology and Environment Bureau worked together with Education Bureau, Communist Youth League Central Committee of City, Working Committee, Civil Affair Bureau and Women's Federation to issue 'Notice for Implementation of Green School Building Serial Activities', 'Notice for Implementation of Evaluating Green Family and Spring City Environmental Protection Little Guardian Events'. In 2020, Jinan City Ecology and Environment Bureau issued the Notice on Developing Jinan City Environment Education Serial Activities, and then the Notice on Issuance of Implementation Plan for Opening Environmental Protection Facility and Municipal Sewage Garbage Treatment Facility to Public

together with Urban Management Department and Water Supply Department.

- Jinan City Ecology and Environment Bureau is the competent authority for EE work, and Jinan City CEEC(Center for Environmental Education and Communications) under the Ecology and Environment Bureau is responsible for publicity and education of environment related issues.
- Jinan City CEEC is an authority under full budget management and control of the city government. It is comprised of General Affair Department and Publicity and Education Department with 13 staff, of which 1 is director, 1 vice director and 11 management and technology staff. This Center mainly take charges of compiling the environmental protection publicity plan of the city and organizing the implementation these plans. It will also organize to form environment protection publicity network, carry out publicity (memorial) activities and shoot for environmental protection. It also cooperates with relevant departments to promote environment protection publicity and education.

## □ EE centers and EE facilities in Jinan

### ▪ Four-Season Nature School of Yezi

- The Four-Season Nature School of Yezi is located in the mountain of southern Jinan. This school is also an ecological farm with subject of ecological sustainability and health environmental protection. It is an education site integrating nature school, ecological farm, and rural restaurant. This school is devoted into providing a close to nature site and course for 3-14 years teenagers and families. Teachers and students from College of Life Science-Shandong Normal University, Shandong University and Jinan University or many similar colleges and universities are engaging in volunteer activities in the farm for a long period.
- After nearly 4 years research and improvement, the school provides seven serial courses in weekends and holidays, which have been



the popular choice for families of Jinan and a best way for students to go into and learn the nature. It includes 24 solar terms based nature curriculum; plants and insets focus nature note curriculum; five-sense exploration based nature game curriculum; and discovery and beauty supported nature art curriculum; and folk-custom and intangible cultural heritage basis nature handcraft curriculum; outdoor and environmental protection focus leave no trace mountain curriculum; and also the sustainable agriculture and food system backed ecological and organic agriculture curriculum. From 2019 to 2020, there are totally over 9000 persons participating in these courses and activities.

## ▪ Jinan City Lixia District Environment Education Base

- In 2014, Jinan City Lixia District Environmental Protection Bureau, depending on the Hongshanxi Environmental Protection Park, invested over RMB 2.6 million to establish the environmental protection focus science popularization education base with 260m<sup>2</sup> flooring area. This base aims to spread environmental protection concept, participate in environment control, improve ecological progress, and create low-carbon environmental protection education site.
 
- The Base, since opening (as a public welfare program), has received visit of social groups and public welfare organizations, totally 500 sessions and nearly 50000 persons until now. The Base was rated as city level environment science popularization education base in June 2016, and in Nov. 2016, it was rated as “Primary and Middle School Research and Study Practice Education Base” and “Jinan City Science Popularization Science Base”, and in 2018, as the provincial level environment education base. It is now applying to be the provincial level science popularization base.
- This base is the first professional environment education science popularization base of Jinan that could teach through lively activities in little environmental protection games and stories. It leads to unify public strength and participate in environmental protection work, raise environment awareness of publics and help form good habits on low-carbon life and energy saving.

## □ Characteristics of EE reflecting locality of Jinan

- Jinan organizes key environment educator training by working with school-community-base mode. It creates fully covered and multiple-site environment education base to integrate EE with life of local people and explored a new mode to combine leisure and EE of citizen. It developed a new path to alleviate poverty and incubate the ecological farm in rural area to construct an ecological agriculture and LNT forest focus ecological sustainable and environmental protection environment education base that help achieve multiple effects in environment development, tourist attracting, employment and income increasing. This is a replicable mode for environment education and publicity promotion after boosting poverty alleviation in ecological way. Jinan also encourages to grow local environmental protection NGO and implement ‘Ten Rules of Conduct’ ecological classroom, and ‘LNT campus’ or similar activities, called for enterprises and entities from all walks of life participating in environmental protection public welfare work and strengthening the ‘environmental protection alliance’ of Jinan.
- Jinan pays more efforts to incubate local NGOs and volunteers to jointly operate ‘low carbon demonstration construction’ projects according to features of local ecological environment. It encourages NGOs to make research on local featured environment teaching materials and continually mobilize students from primary and middle school to join in Jinan environment education activities, including Jinan Spring groups featured ‘Black Tiger Spring LNT Environment Classroom’ and lake-in-city featured ‘Daming Lake LNT environment classroom and wetland and river featured ‘Clean River’ classroom and ‘Yellow River’ classroom or like. Jinan invests a lot in EE and takes full advantages of local resources to develop Jinan city EE base and Yellow River side ecological EE research and study to open up the ‘Yellow river side’ ecological research and study field.
- Shandong Province Jinan City Hui Nationality Middle School

## □ Achievements or impacts of EE on Jinan

- Through great efforts, the Jinan yields positive results from EE activities either in concept or action, government or folk life, city or country, it cultivates a lot of backbone environment educators and citizens

are more like to join in such event now.

○ From concept to action

It launches the international ecological school building campaign and defines the code of conduct for electricity saving, and sets up resource recovery station to drive garbage classification program and refuses white waste staying in the campus. It also invites EE expert to make lecture in school and dispatches over 90 teachers to accept various trainings to broaden views in response to “bring in and going out ” strategy and enhance the EE achievements. It founds green organizations including Water Technology, Roots & Shoots, YMP, green report, green courts or like to improve ecological quality of student by various green activities, and finally lead to actions for protecting environment.

At present, Jinan has 30 schools winning honors of International Ecological School Green Banner, 3 schools rated as state level green school, and 133 with provincial level green school and 591 municipal level green schools. Until now, Jinan has successfully built 2 state level green communities, 55 provincial level green communities, and 197 municipal green communities, 2 state level primary and middle school social practice bases, 10 provincial level environment education bases and 35 city level environment education bases. There are 1208 students awarded with the title of Little Environmental Protection Guardian and 1000 families rated as Green Family.

○ Create new education mode by unifying power from government to folk, and NGOs to growing their strength

As the environmental situation changes, the third party environment control, environment monitoring and public participation has recently played an increasingly important role in ecological environment protection that greatly relieve pressure of insufficient manpower of environmental protection department on monitoring and management, and improve the environment management and pollution control capability of enterprise.

Early in 2016, Jinan has concluded the green building experiences and led local environmental protection NGOs, such as ‘Leave No Trace’ and ‘Green Qilu’ to join in environment education, and develop local environment teaching materials and new EE implementation

mode.

Of these efforts, for environment education purpose, it successively implemented the ‘Leave No Trace Campus EE Classroom’ together with LNT to expand class from inside to outside, from primary and middle school to college. Besides, there are also other activities and courses, including nature education environmental protection practice activities, nature education activity in summer vocation, organizing public welfare river classroom and ‘Long river’ activity for Yellow river and serial environment education courses of WWF. Supported by ‘Green Qilu’, it carries out air observation team activities, and ‘Walk, water, wonderful’ water quality research activities or like. Together with ‘Yezi nature school’, it holds orderly agricultural development, leave no trace forest and nature notes or similar activities. From 2014 to Dec. 31, 2019, it has accumulatively held 964 campaigns for above-mentioned purpose attracting 85749 participants with 160862 hours. This produces high influence over millions of citizens and tourists.

- From city to rural areas---Implementing EE theme activities in ecological farm

Jinan City Environmental Protection Publicity and Education Center has launched “Four-season farm and be with you” environment education theme activity in recent years and invited EE educators and volunteers as teachers in over hundred public welfare EE activities held every year.

In 2019, it sponsored EE activities including 51 biodynamic farming, 112 nature education, 36 intangible cultural heritage, 46 LNT mountain and forest. Since establishment for five years, it helped over hundred villagers to participate in this renewable agriculture program.

## Contact Point for further networking

- ⊙ Shandong Province Jinan City Hui Nationality Middle School, Yang Changzai, 18553157199
- ⊙ Green Qilun Environmental Protection Public Welfare Service Center, Guo Yongqi, 18654515717

**CHINA 5.****Wenzhou City**

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**□ Introduction of Wenzhou**

- Wenzhou, abbreviated as ‘Wen’ or ‘Ou’, is a prefecture-level city in Zhejiang province, one of the 27 cities in the center of the Yangtze River Delta. Located in the southeast of Zhejiang Province, bordering the East China Sea and adjacent to Fujian Province on the south. Wenzhou is an important commercial city and regional central city in the southeast coastal area of China approved by the State Council. By the end of 2019, permanent population of the city reached 9.3 million.
- Over the past 40 years of China's reform and opening up, the ‘Wenzhou model’ has gained worldwide reputation and brought prosperity to the city, but the downside is the pollution. In recent years, with the continuous effort in ecological civilization construction, the people in Wenzhou showed their care about better environment. The city has built a solid networking in regards to environmental protection. There are more than 120 environment protection organizations and 30,000 volunteers had been firmly working on ecological civilization field via public welfare events etc.

**□ Vision and Status of EE in Wenzhou**

- Overall target : Through environment related education to the public, comprehensively enhance public awareness of environmental protection, taking steps including raise public awareness, call for support and participation to finally achieve “environment protection for all of the citizens”.
- Objective 1 : More than 1,000 schools in the city integrated environmental education into the classroom to promote environmental education to students;
- Objective 2 : Relying on the volunteers from Ecological environment public welfare trainers Group of Wenzhou Environmental Volunteers' Federation, carry out environmental educations for villagers, company employees and students of the city, hundreds of environmental education courses for the society every single year,

and introduce and exhibit environmental education projects in local cultural halls, rural areas, enterprises and schools.

## □ Governance (or Partnership) for EE in Wenzhou

- As the competent authorities of EE- municipal Bureau of Ecological Environment and Education Bureau is supervising local schools and environmental protection organizations to undertake the work of EE.
- The Ecological Environment Bureau and the Education Bureau are responsible for guiding and enacting local environmental education work, carrying out green school evaluation and so on. School science teachers or teachers with environmental education background explain to the students about water, gas, soil, garbage classification and other environmental education courses, will also be combined with research projects, to carry out extracurricular practice in the environmental education base.
- The department of ecological environment organizes the training of EE and build up teams of professional teachers. They also carry out public EE activities, provide financial support and guidance.

## □ EE Policies of Wenzhou

- Wenzhou Ecological Environment Bureau and Education Bureau provide support in funds, promotion, platforms, policies and other resources for local EE.
- According to the standards for constructing “green schools” of Zhejiang Province, schools are required to carry out EE courses. Based on the relevant documents, government encourage environment protection organizations to carry out EE, such as print and distribute the notice of “Recruitment of the Ecological Environment of Public Lecturer” ([2019] No.9 Wenzhou Ecological Volunteer Federation) as well as a notice of “The First Phase of the Ecological Environment of Public BBS and the Ecological Environment of Public Lecturer Training” ([2019] No.12 Wenzhou Ecological Volunteer Federation) etc. Certain criteria for EE educators and related arrangements need to meet the requirements from the government. Annual plan indicates that in each year there will be targets settled to support establishing “green schools” as well as ecological civilization education bases. Also, funds will be

provided to ensure environment protection volunteers carry out EE related projects. For example, 100 EE courses will be conducted by the Municipal Environmental Volunteers' Federation in 2020, and the project will be guaranteed with specific funds.

- Wenzhou Ecological Environment Bureau is in charge of local EE affairs, and its subordinate unit- Wenzhou Environmental information Publicity and Education Center is the main sector in charge.
- Responsibilities of Wenzhou Environmental Information Publicity and Education Center: responsible for enacting and implementing the municipal ecological environment publicity and education plan, coordinating and guiding the municipal ecological environment departments at all levels to carry out environmental publicity and education; Responsible for coordinating the news media to publicize and report the ecological environment in a timely manner; specifically responsible for municipal environmental press conferences and other matters; assisted in guiding the monitoring and response of the municipal ecological environment network public opinion; Responsible for the formulation and implementation of the ecological civilization education base and other 'green series' to create the plan, responsible for the ecological environment publicity and education materials editing and archive management, etc. Under the vertical organization chart, there has a publicity section and information section. There are 8 staffs in total.

## □ EE centers and EE facilities in Wenzhou

- There are more than 680 EE sites in The city, mainly including beautiful Wenzhou experience sites, units open to environmental protection facilities, ecological civilization education bases and 'green school', which demonstrates an citywide networking of EE.

### ▪ A typical EE base is Window of Beautiful Wenzhou

- Ecological Civilization Education base of Wenzhou, which is operated and maintained by Wenzhou Environmental Information Publicity and Education Center. There are guides on site and the base could provide training regarding to water control, air control, soil control and beauty creation,



etc. and also adopted VR and other "science and technology+ environmental protection" into EE.

## ▪ Wenzhou Sewage Treatment Plant and Nanpian Sewage Treatment Plant

- Wenzhou Sewage Treatment Plant and Nanpian Sewage Treatment Plant have also set up EE venues centering on water ecological culture. Promoting 'water and life, water and technology, water and ecology' as the main duty, different tour routes and popular science contents are tailor made for different groups of visitors. Visitors can have a detailed understanding of water cycle, water type, sewage type, sewage treatment process and other related knowledge. It utilizes interaction and edutainment and became a fascinating EE base.

## □ Characteristics of EE reflecting locality of Wenzhou

- We have a team of more than 120 environmental protection organizations with more than 30,000 environmental protection volunteers—'million people' volunteer team; Establish Wenzhou Environmental Protection Volunteers' Federation to strengthen the management and service of "one million people" team; Integrate the environmental education resources of the whole city, set up a quality team of public welfare lecturers, carry out ecological environment public welfare forums through training in environmental protection business and teaching skills, and discuss how to improve the teaching level and ability of lecturers.
- There are more than 680 EE bases in The city, mainly including beautiful Wenzhou experience sites, units open to environmental protection facilities, ecological civilization education bases and 'green schools', these are all forming an environmental education network covering the whole city.
- EE will be strengthened through activities such as the establishment of 'green schools', the EE project called "In a beautiful China I am an practical action taker" and Wenzhou's 'Ecological Culture Month' etc.
- Integrate the Ouyue culture and Wenzhou people's spirits. For example, the EE is carried out on the theme of how to protect the

Nanxi River, how to help the ‘five-water governance’, and how to carry out garbage classification in Wenzhou etc.

- Wenzhou Central Sewage Treatment Plant, Window of Beautiful Wenzhou-Wenzhou Ecological Civilization Education Base.

## □ Achievements or impacts of EE on Wenzhou

- The number of EE lecturers are increasing, at the same time EE event participants are increasing as well. Which led the overall public EE level has shown improvement. Since 2018, the city’s ecological environment promotion base have received more than 10,000 batches of more than 300,000 visitors.
- First of all, the awareness of the students in Environmental protection are increasing. On the basis of EE courses and environmental protection practice courses of the schools, the awareness in related field has been comprehensively enhanced. In the form of ‘Small hands holding big hands’, influence families improve their environmental protection awareness.
- The public satisfaction keeps rising. The awareness and sense of fulfillment in environmental protection has showed a significant increase, and the government also urged to speed up environmental speed up. As a result, the satisfaction score of the ecological and environmental quality has been continuously improved, it ran from 65.01 score in 2015 to 81.77 in 2019.
- EE accelerated the practice of ‘green living and production’. The lecturers of ecological environment public welfare carried out EE for local residents and villagers, facilitate the pilot project of ‘zero-pollution village’ in Yuantou village, Yongjia county as well as the pilot project of green lifestyle and production in Danan street, Lucheng district. Those pilot projects will influence and beneficial the whole society to accelerate into green lifestyle and production.
- Establish an EE brand. The environmental education system with ‘team, base and platform’ will continue to play its role, which will further guide the public to participate in environmental protection and enhance the awareness of ecological environmental protection. The public's appeal for a better ecological environment will also encourage the local environmental protection authorities to make continuous efforts to improve the ecological environment quality of Wenzhou.

- In terms of public participation, EE helps promoting the concept of ecological civilization. Organize Wenzhou environmental protection volunteer association, mobilized 120 volunteers and more than 30000 volunteers to participate in environmental governance, environmental protection instruction in Yongjia county, green environmental protection volunteer association to carry out the pilot village 'zero pollution', promoting 'long river' civil organization to grow and develop. At present there are more than 4000 members within 'long river', has become a powerful Allies in environmental protection supervision. Make full use of the new media platforms including WeChat, Weibo and Tiktok to fully disclose environmental information, and as a result the environmental information disclosure index has ranked first in China for two consecutive years. By integrating 510 green schools, 78 ecological civilization education bases, 54 units open to environmental protection facilities, and 45 beautiful Wenzhou experience sites, we have created two excellent road maps of the south and north bases, formed more than 680 positions of ecological environmental protection propaganda and education, and preliminarily formed a new pattern of ecological civilization education network.
- Promote the improvement of urban environmental quality. With the in-depth promotion of environmental publicity and education, the people's awareness of environmental protection has been enhanced and their appeal for a better ecological environment has become stronger. This, in turn, motivate the public supervise local government to speed up the control on environmental pollution in order to meet the people's demands for a better ecological environment. In 2019, 100 percent of the ten sections of Wenzhou's national water supply met the requirement of standard. The average concentration of PM2.5 in urban areas was 28 g/m<sup>3</sup>, 36.4% lower than 2015. The good air quality occupied 97 percent, which is an increase of 11.3 percentage comparing to the year 2015, making it one of the top 20 national key cities in terms of air quality for two consecutive years.

## □ Contact Point for further networking

- ⊙ Wenzhou environment protection volunteer association  
+ 86-577-8836-3307

**JAPAN 1.****Okayama City**

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 Introduction of Okayama

- Okayama City is located on the coast of the Seto Inland Sea in Chugoku region, the western part of Japan. It is a city with abundant nature with warm climate and little rain, with plains down south and hills up north. As it prospered as the ancient state of "Kibi" to forming of a castle town in the early modern period, the city has developed as a hub for vast reclamation, development, and transportation. Currently, it has a population of 720,865 and an area of 789.95km<sup>2</sup> (as of October 1, 2019). Being the prefectural capital of Okayama, it is a regional hub city with a thriving business and merchandising, as well as various urban functions such as medical care, welfare, and education.
- The world's first 'Tactile blocks paving' was installed in 1967. For agricultural products, rice, barley, white peach, muscat and other grapes are famous. The city of Luoyang, China and Bucheon, Korea are our sister cities. The freshwater fish, Kissing Loach (Ayumodoki or *Parabotia curtus*) and *Rhodeus atremius suigensis* inhabit from the time when Japan and the continent were connected, and they are listed as protected species by law.
- Okayama is a Regional Centres of Expertise(RCE). An RCE is a regional network of existing institutions and individuals, committed to using education which is accredited by the United Nations University Institute for the Advanced Study of Sustainability. In year of 2014, the final year of UN Decade of ESD, Okayama hosted the World Conference on ESD, and has been continuing to work on ESD and SDGs.

 Vision and Status of EE in Okayama

- Environmental education is included in the Basic Environmental Plan.
    - The 2nd Okayama City Basic Environmental Plan
- Target Environmental Image : 'Okayama, a sustainable city in harmony with abundant nature'

Goal ;

A city where an environment is created through collaboration with citizens and a comfortable urban environment is realized

A city coexisting with the rich natural environment

Low carbon and earth-friendly behavior are realized by making the right choice

A realization of safe living environment and a recycling-oriented society

- environmental education and ESD are included in the following plans
  - Okayama City Promotion of Consumer Education
  - Okayama ESD Project Basic Concept 2015-2019
  - The 6th Okayama City General Planning
  - The 2nd Okayama City Basic Educational Planning
  - Basic Policy of Okayama City Community Center

## □ Governance (Partnership) for EE in Okayama

- Various institutions and organizations such as schools, social educational institutions (community centers, environmental learning facilities, etc.) civic groups, corporations, governments (environment, consumer life, agriculture, forestry and fisheries sectors of city, prefecture, and nation) are involved.
- There are multiple networks for each facility and field of studies. 'Kankyo Hiroba (Okayama Prefecture Environmental Learning Collaboration Promotion), a network of environmental educators throughout Okayama Prefecture, is the most active among all, whose office is operated by the Okayama Prefecture Environmental Conservation Corporation / Environmental Learning Center Asu-Eco.
- As for the ESD, there is the Okayama ESD Promotion Council, whose participants consist of approximately 300 educational, administrative, civic groups, corporations and other organizations and institutions. The office is at the Okayama City Hall (SDGs/ESD Promotion Section)

Website: Okayama ESD Navi <http://www.okayama-tbox.jp/esd/>

- When environmental problems such as water pollution and garbage in lakes and marshes occurred during the 1980s to the 90s, related organizations and government agencies collaborated to purify the water and take more actions for recycling, after some civic movements.
- With the establishment of environmental learning bases, collaborative efforts are being made by managing facilities, training environmental educators, improving the quality of environmental education programs, as well as interaction between people who are engaged in environmental issues. (Kankyo Hiroba)
- In 2005, Okayama has become the Regional Centres of Expertise on ESD (RCE) of the United Nations University, and with the city of Okayama setting up a secretariat, it created a network that broadly connects 'sustainable development' and 'education'.

## □ EE Policies of Okayama

- Relevant departments (environmental bureaus) in prefectures and cities are in charge of environmental education. The SDGs / ESD Promotion Section is in charge of ESD, and the Board of Education manages environmental learning facilities and supports their activities. The prefecture budgets for some projects of Okayama Prefecture Environmental Learning Center Asu-Eco.
- Environmental education is included in one of the goals of the Basic Environmental Plan. For ESD, there is the Okayama City ESD Promotion Ordinance.
- Environmental Bureau Environmental Conservation Section: Basic Environmental Plan air and water quality, global warming, biodiversity conservation
  - Environmental Business Section: waste / recycling / resource cycle
  - Civic Collaboration Bureau: SDGs/ESD Promotion Section, ESD
  - Board of Education Guidance Section: environmental education in schools
  - Lifelong Learning Section: environmental education in social education
  - Other departments are also related to environmental education.

## □ EE centers and EE facilities in Okayama

### ▪ Environmental Learning Center ‘Asu-Eco’

- Operation : operated by the Okayama Prefecture Environmental Conservation Corporation.
- Main Business : dissemination of environmental education, learning consultation, training environmental educators, registration system for educators and dispatching them, on-site lectures at schools exchange among people in environmental education, creating training opportunities, etc.
- Important Programs : Creates basic programs for global warming, garbage, energy, nature, living, and ESD/SDGs.
- ※ The collaborative environmental education project is operated by an executive committee which consists of the government (prefecture), business groups, and civil groups.
- ※ ‘Okayama Environmental Education Meeting’ is held annually.
- ※ Website <http://www.kankyo.or.jp/asueco/>

### ▪ Others

- Okayama City Environmental Learning Center ‘Medaka no Gakko (School of Fish)’ <Field> Nature of waterside, village, and mountains, biodiversity
- Misaoyama Park Satoyama Center <Field> Nature and living in the villages and mountains
- Handayama Botanical Garden <Field> Plants and tree planting
- Okayama City Recycle Plaza / Reuse Plaza <Field> Garbage / resource cycle
- Waterworks Museum <Field> Water supply / resources

## □ Characteristics of EE reflecting locality of Okayama

- Collaborative efforts by citizens, schools, corporations, etc. centered on the Environmental Learning Center ‘Asu-Eco’.

- Thanks to the abundant biodiversity of rivers, environmental education on the waterfront is active.
- Practice of educational activities in various fields through a broad network of ESD/SDGs throughout the region
- Diversity of social education activities including the community centers.

## Achievements or impacts of EE on Okayama

- Citizens' awareness has improved for implementing on-site lectures by the Waste and Recycling Departments of the City Environment Bureau. They are suggested to have led to an improvement in the resource recycling rate.
- Through the 'Kankyo Hiroba' project of the Environmental Learning Center 'Asu-Eco', the number of educators has increased and the quality of environmental education programs has improved, through a series of efforts such as training the citizens to be the educators, registration system for educators, creating programs, dispatching educators to on-site lectures, creating training and exchange opportunities.
- Learning about marine debris by NPOs and high schools is continuously carried out, leading to increased awareness.
- ESD and environmental education have expanded new learning approaches which are considered to be important for environmental education, such as cross-cutting learning and workshops, including environmental learning. As a result, it led to cross-cutting networks and promoting collaborative efforts.

## Contact Point for further networking

- For ESD, it is collaborated with RCE of the United Nations University's project and world-wide network on ESD. (Since the ESD World Conference, Okayama hosts visits from Tongyeong City, and Dobong District, Seoul City, Korea.)
- ESD at community centers and exchanges there are currently conducted through the Okayama ESD Promotion Council, the Faculty of Education of Okayama University, and a network of people involved in community centers. Last year, CLC (Community

Learning Centers) in Mongolia, Nepal, Indonesia, as well as UNESCO Beijing made visits to the community center. In addition, Okayama has helped to arrange high school students visit from Tongyeong, Korea in the past.

- It is necessary to continue creating a learning situation where youth and children can be engaged learning about environment independently.
- It is suggested that implementing a collaborative program that can be used in community learning bases such as community centers, which may also lead to the globalization of Japan, China, and Korea.

- Okayama City SDGs / ESD Promotion Section  
esd@city.okayama.lg.jp
- Environmental Learning Center Asu-Eco  
+ 81-86-224-7272, asueco@kankyo.or.jp
- Okayama City Board of Education Lifelong Learning Section Community Centers Promotion Office  
+ 82-86-234-6015, kouminkanshinkoushitsu@city.okayama.lg.jp

**JAPAN 2.****Kitakyushu City**

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**□ Introduction of Kitakyushu**

- Kitakyushu is a city designated by government ordinance with a population of 930,000, located in the northernmost part of Kyushu, known for international industry and trading. Taking advantage of its location being close to other Asian countries, it has a history of supporting modernization as one of Japan's four major industrial areas. On top of a world class environment and industrial technology, an urban infrastructure such as airports and harbors, it is a city blessed with nature including a long and beautiful coastline and lush mountains.

**□ Vision and Status of EE in Kitakyushu**

- Kitakyushu City has been suffering from enormous pollution such as air pollution in the process of rapid economic development since the 1950s, but with the citizens raising their voices and unifying with corporation and government in the 1980s, the situation improved dramatically.
- From the history of overcoming pollution, the city has been promoting policies focusing on creating quality urban environment, where it was first selected in Japan as the "Environmental Model City", to challenge and pioneer for high goals set in 2008, such as drastic reductions of greenhouse gases. After that in 2018, the city was selected by the OECD for the first time in the Asian region as a model city in the world for promoting SDGs, aiming to balance the environment, economy, and society, while making the most of the city's greatest resource, "citizen's environmental effort", in order to disseminate to the environmental capitals of the world and to achieve the SDGs.

**□ Governance (Partnership) for EE in Kitakyushu**

- Kitakyushu City considers that 'city planning means community development', where the citizens are the foremost important asset of the city, promoting initiatives to foster 'human resources'. More

specifically as environmental education, education, research, and learning related to environment have been conducted in various fields and levels, including promotion of environmental learning based on the Environmental Museum, environmental education at school utilizing supplementary readers on the topic, and community activities in the Junior Eco-Club, taking advantage of the abundant natural environment, active corporate activities, and various environmental education facilities, universities, research institutions, and international organizations. In addition, we have also endeavored to promote ESD (Education for Sustainable Development) from the environmental perspective.

- On the other hand, environmental issues change every moment, so it is necessary to provide educational opportunities as lifelong learning, from children to the elderly. Moreover, as represented by SDGs and ESD, environmental education is more and more linked to various social and economic problems such as poverty, peace, and welfare, requiring more comprehensive and integrated perspective for environmental education, as well as cooperation and integration with other areas of education. Since a single entity's endeavor can only provide limited results in advancing these efforts, we promote "collaborative activities" where each entity cooperates with each other.

## □ EE Policies of Kitakyushu

- Kitakyushu City has formulated the 'Environmental Capital Grand Design' in 2004, to promote environmental conservation efforts from a broader perspective, with all participants including citizens, NPOs, businesses, and governments. This Environmental Capital Grand Design has three pillars: 'live and create together' (social aspect), 'pioneer economy with environment' (economic aspect), and 'enhance sustainability of the city' (environmental aspect), based on the basic principle to 'create a city full of true abundance and pass it onto future generations'.
- Environmental measures of Kitakyushu City including the environmental education are implemented based on the 'Kitakyushu City Basic Environmental Plan' as an administrative plan that embodies the 'Environmental Capital Grand Design'.
- The department in charge of environmental education is led by the

Environmental Learning Division, General Affairs Policy Department, Bureau of Environment, promoting environmental education for all generations, in cooperation with the Board of Education and other related departments.

## □ EE centers and EE facilities in Kitakyushu

### ▪ Kitakyushu Environment Museum

- Kitakyushu Environment Museum, operated by Kitakyushu City, is a comprehensive base for environmental learning, environmental information, and environmental activities, built on the pavilion of the Japan Expo in Kitakyushu held in 2001.
- The guide will help you understand the various exhibits related to environment, such as the history of overcoming pollution in Kitakyushu City, eco-lifestyle that is familiar to you, environmental conservation activities by citizens and companies, and global environmental issues.
- The facility is equipped with various environment-friendly equipment such as 3kW wind power generator, 6kW solar power generator (including Kitakyushu Eco House), and rainwater harvesting system, where the facility itself is a learning material.
- With many workshops and events such as crafts to enjoy learning about eco-friendly activities are held mainly on weekends, this is a facility where you can learn by "looking, touching, and having fun". Books, DVDs, panels and experimental equipment are available for rent in the information library of the museum. Recycled children's clothing is also sold here (number of visitors in 2019: 114,368).

### ▪ Kitakyushu Eco Town Center

- In addition, the Kitakyushu Eco Town Center, located in the eco town where recycling industry is concentrated, is also an environmental learning facility operated by Kitakyushu City, exhibiting products using environmental and recycling technology, promoting the city's environmental industry, providing environment related training and lectures, and supporting research and activities(The number of visitors in 2019: 96,150).

## □ Characteristics of EE reflecting locality of Kitakyushu

- Environmental education in Kitakyushu City began with a history of partnership between industry, academia, government, and private sectors to overcome pollution, provoked by learning and actions taken by citizens. The DNA of civil society has been inherited, and various stakeholders are still working on development of people who will lead a sustainable society (ESD) and promotion of SDGs.
- Supported by the citizens, the city's international environmental effort and regional energy policy have been highly evaluated both domestically and internationally, where the city has been selected as Asia's first world model city for promoting SDGs.
- Many citizens of Kitakyushu steadily continue their environmental activities, and the city holds the largest environmental event in western Japan called "Eco Life Stage" every year, as a place for citizens to present their activities. Last year, the Tripartite Environment Ministers Meeting among Japan, China and Korea (TEMM21) was held in Kitakyushu City, where the Environment Ministers of Japan and China stopped by the "Eco Life Stage" and enjoyed interacting with citizens.
- In 2020, the event will be held online, whose website is available as below. <https://event2020.ecolife-stage.org/>

## □ Achievements or impacts of EE on Kitakyushu

- Kitakyushu City has implemented the 'Kitakyushu City Environmental Capital Certification' since 2008 in order to raise citizen's awareness for environmental issues. This increases the opportunities for environmental learning by conducting a certification testing in the environmental field unique to Kitakyushu, to raise awareness for environment and expand the population base who is interested in environmental issues, as well as raising awareness of the city's efforts toward the environmental capital, and creating an opportunity for citizens to feel familiar about the eco life initiatives. The number of candidates is increasing every year, reaching 5,117 in 2019.
- In addition, the amount of household waste disposed by citizens has decreased by 34% in 2019 compared to 2003, and the recycling

rate has also increased significantly from 15% to 28%, visibly increasing public awareness.

## □ Contact Point for further networking

- Since around 1980, Kitakyushu City has been using the technology developed in the process of overcoming pollution to improve the environment in developing countries by accepting trainees and dispatching experts.
- In addition, requested by international organization such as Japan International Cooperation Agency (JICA), city officials are dispatched to Asia, Central and South America to provide technical guidance on site.
- To date, 9,420 trainees have been accepted from 165 countries and regions, and 214 experts have been dispatched to 25 countries (2020).
- In addition, the Kitakyushu ESD Council, the center of ESD promoted by Kitakyushu City as part of environmental education, is promoting mutual learning as an RCE (Regional Center of Expertise on ESD, certified by United Nations University.) in collaboration with RCEs around the world. In particular, RCE Kitakyushu has been interacting with several RCEs in Korea for more than 10 years, deepening exchanges with students and citizens of RCE TongYeong, RCE Inje, and RCE Dobong-gu to learn from each other.

⊙ Division in charge of Kitakyushu City  
+ 81-093-582-2784

**JAPAN 3.****Omuta City**

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 Introduction of Omuta

- Located at the southernmost tip of Fukuoka Prefecture, Omuta is a city with a population of approximately 114,000, surrounded by the Ariake Sea in the west, and mountains in the east. Since the Meiji era, Omuta City has rapidly developed along with the prospering Miike Coal Mine and coal-related industries, largely contributing to the development of Japanese industrialization and economy prosperity, which became a vibrant city with a population of over 200,000 people at its peak. However, the shift in energy policy from coal to petroleum during the record period of economic growth after the WWII and the closure of the mine in 1997 are causing the outflow of the working-age population, as well as birthrate declines and population aging.

 Vision and Status of EE in Omuta

- All 28 elementary, junior high, and special schools in Omuta City joined the UNESCO Associated Schools Network in January 2012 to promote ESD (Education for Sustainable Development). Omuta City aims for a sustainable city development through achievement of SDGs by enhancing ESD as "UNESCO Associated School Town of Omuta". Each school promotes ESD with various themes such as environmental education, energy and environmental education, and marine environmental education, according to the characteristics and challenges of the school.

 EE Policies of Omuta

- Omuta City celebrated its 101st year of enforcement in January 2018. Looking ahead to the next 100 years, we declared to work as the 'UNESCO Associated Schools/ESD City of Omuta' and presented nationwide and to the rest of the world, to nurture children as creators of sustainable community development, as a leading city to promote ESD by uniting schools, homes, and communities.
- At the city hall, the 'Omuta City ESD Promotion Headquarters' is set up with

the mayor as the head and the superintendent of education as the deputy head, where the entire office is working on ESD. In addition, the Omuta City ESD Promotion Council is established by various stakeholders including the local communities and corporations, working together with children to create a sustainable city throughout the community, such as providing environmental education.

## Environmental Education Measures and the Department in Charge in Omuta

- Omuta City's Environmental Department supports environmental education, energy education, and marine environmental education at each school through the 'ESD Environmental Learning and Raising Awareness Project'. In addition, the Omuta City Board of Education has set the basic measure as 'Development of Distinctive Education to Nurture Children who will Create the Future', promoting ESD such as environment education, energy education, and marine environmental education at each school, as well as expanding the initiatives within the City and outside, to nurture children who can think and take action for what they can do for the environment.

## EE centers and EE facilities in Omuta

### ▪ Ecosanc Center

- Omuta City has 'Ecosanc Center' to serve as an ECO learning and exchange base for citizens. The Ecosanc Center offers a variety of exhibition where you can see, touch, and think about the environment. In addition, there are projects where both parents and children can learn about the environment, such as recycling workshop to make the best out of unused supplies at home, as well as providing a place to interact with the theme of learning about the environment.

## Characteristics of EE reflecting locality of Omuta

- Omuta City implements environmental education, energy education, and marine environmental education as part of its ESD initiatives. In environmental education and energy education, the city takes

advantage of its experience to overcome pollution to promote learning about ‘air, water, and nature’. In marine environmental education, using the Ariake Sea that extends to the west of Omuta as a learning material, the city promotes learning to ‘know’, ‘protect’, and ‘utilize’ the Ariake Sea, to think about coexistence with the sea and take action. The Ariake Sea is a vast inland sea that fosters the lives of abundant creatures and brings blessings to people's lives. And we also learn about the environment such as the rivers and forests that connect to the sea.

- Hence, taking advantage of the characteristics of the city, our learning links the environmental education and marine environmental education.

#### Achievements or impacts of EE on Omuta

- Children's presentation of what they have learned at school, home, and communities, as well as developing educational activities and various projects by the Board of Education and environmental departments have enlightened not only the students but also citizens, provoking more activities to protect and cherish the environment. At each school, projects are in progress involving multiple related organizations, experts, and local communities, enhancing the efforts to protect the environment where schools, communities, and government collaborate and cooperate.

#### Contact Point for further networking

- Omuta City regularly exchanges with schools in Datong City, its sister city in China. Last year, teachers from a school in Datong visited Omuta City to observe the environmental education of the school in Omuta. They also visited elementary and junior high schools in the city to interact with students. Furthermore, pupils and teachers from Korea visited elementary schools in Omuta, and have kept in touch with each other since then.
- In the future, we would like to further enhance teachers and students exchanges so that they can learn from each other and refine environmental education.

● Division in charge of Omuta City  
+ 81-0944-41-2861

**Japan 4.****Shimokawa Town**

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**□ Introduction of Shimokawa**

- Shimokawa Town, Hokkaido, is a farming and mountain village located in northern Hokkaido with an area of 644.2 square kilometers, 90 percent of which is covered by forest. The town once flourished with mining and forestry, with a population of some 15,000 at its peak, but experienced a drastic decline due to closing of mines. Its current population is 3,203 (as of October 1st, 2020).

**□ Vision and Status of EE in Shimokawa**

- The town provides a consistent, 15-year forest environmental education to children, from preschoolers to high school students, in its preschool, elementary school, junior high school, and high school. Such education is given once a month for preschoolers, and once a year for elementary school students and older. Children visit forests and wood processing factories to learn about the environment.
- The education is provided to achieve the following three goals:
  - To help children grow their humanity through learning and fun in their familiar natural environment.
  - To deepen the understanding of works that utilize the local resource, forestry.
  - To help children think about the roles of forests and what can be done by local communities, and take actions voluntarily to create a sustainable society.

**□ Governance (Partnership) for EE in Shimokawa**

- A nonprofit organization, Mori no Seikatsu, is entrusted by the school board of Shimokawa Town to play a central role in implementing the environmental education.
- Concerned parties (the school board of Shimokawa Town, the forestry and policy divisions of Shimokawa Town Office,

representatives from each school, NPO Mori no Seikatsu, etc.) gather twice a year to share information to improve the forestry industry.

- The forest environmental education is conducted based on the LEAF Program, which originated in Northern Europe. The town has formed a partnership with FEE Japan (Foundation for Environmental Education), the Japan branch of one of the worldwide and the biggest NPO on Environment and which promotes this program. The representative of the NPO Mori no Seikatsu, Mr.Aso, also serves as the director of FEE Japan.

## EE Policies of Shimokawa

- The town compiles the budget for the forest environmental education, and NPO Mori no Seikatsu plays a central role in managing it. Environmental education related ordinances or schemes are not set. The department in charge of the environmental education is currently the school board of Shimokawa Town.

## EE centers and EE facilities in Shimokawa

### ▪ Mikuwagaoka

- The townowned forest of 2.3 hectares called Mikuwagaoka and the management building located by the forest are managed by the designated administrator of the town, NPO Mori no Seikatsu. As for the operating expenses, the designated administration fee is allotted for the maintenance of the facility, and an additional commission fee is paid to NPO Mori no Seikatsu for holding programs that utilize the facility. NPO Mori no Seikatsu sometimes obtains private grants as additional funds on its own accord and holds activities with them. The aim of Mikuwagaoka is to achieve user-centered management. Several meetings are held yearly to obtain opinions of the major users and review maintenance and utilization policies.

### ▪ Ichinohashi Bio-Village

- There is also Ichinohashi Bio-Village. See below for more details

## Characteristics of EE reflecting locality of Shimokawa

- The focus of the environmental education must be on forests. This is because the town has been pursuing town development centered on its forests since the 1950s. The town has been promoting circulation-oriented forest management and cascade-oriented forest usage. In the recent years, the town has also been engaged in becoming energy self-sufficient by using woody biomass. For Shimokawa Town, the forests are not only environments that need to be preserved, but also an industrial base. For reasons above, the town finds it important to deepen the comprehensive understanding of the ecological role as well as social and economic roles of forests in forest environmental education.
- If environmental educators from C/J/K could only visit one place in Shimokawa Town, Ichinohashi Bio-Village is recommended. It is a village where an industry (shiitake mushroom growing) and a living environment were created in an integrated manner, centered on woody biomass self-sufficient energy generation.

#### Achievements or impacts of EE on Shimokawa

- Individuals concerned have come to a common understanding that forest environmental education is now a part of school education. In 2005, Shimokawa Town began providing forest environmental education in stages, and made it into a consistent, 15 year education in 2009. Ten years have passed since then, and such education seems to have taken root as a common practice.
- The town faces challenges in visibilizingthe achievements of this education. It is difficult to specifically show the changes in children.
- According to the hearing survey conducted on adults that surround children, comments were made that ‘it nurtured children’s sensibility for nature’, and teenagers were reported to have said, ‘forests are important local resources’, confirming that the education certainly had an impact on children. Furthermore, it has been reported that after junior high school students learned about SDGs in class last year, when they were asked what the most important goal is for the town, almost all students chose Goal 15. However, as stated earlier, the town faces challenges in visibilizingthe achievements of this education.

#### Contact Point for further networking

- Currently, the town does not have any overseas partners to exchange information on environmental education. Environmental educators in J/C/K interested in learning about the environmental education of Shimokawa Town more in detail can deepen the comprehensive understanding of the town's efforts by contacting Mori no Seikatsu, the NPO that has been engaged in forest environmental education for the last 10 years.

◎ NPO 'Mori no Seikatsu'  
+ 81-1655-4-2606, <https://morinoseikatsu.org>

**KOREA 1.****Busan Metropolitan City****□ Introduction of Busan Metropolitan City**

- With the population of about 3.5 million, Busan is the number one port, tourism, international conference center in Korea. Busan has developed transportation of roads, railways, and sea. It has been a city of film representing Asia since the Busan International Film Festival.



Busan is located at the southernmost tip of Korea and boasts a variety of natural environments such as the Nakdong River, the sea, mountains, and estuaries. In particular, the Nakdong River estuary is a migratory bird destination, a treasure trove of ecological resources. Wide plains are placed on both sides of the Nakdong River cutting across through Busan to the South Sea. Along the coastline are fascinating beaches and rocky terrains such as Taejongdae Park.

**□ Vision and status of EE in Busan**

- Busan has been exposed to a diversity of environmental issues such as climate change, fine dust, the use of the Nakdong River as drinking water, the suspension of waste inflow, and the recovery of ecosystems in the mouth of the Nakdong River. As a result, the city of Busan has pursued EE based on its natural environment such as mountains, rivers, estuaries, and the sea.
- In 2016, through 「The 2nd Busan EE Plan」, the city undertook the expansion of EE with the vision of ‘Realization of Happy Society through Creation of Environmental Value.’ Busan aims at becoming a city where citizens with environmental literacy live happily in harmony with nature, particularly through the EE that utilizes the city’s environment. The plan contains information regarding the promotion of school EE, the reinforcement of social EE, the cultivation of and stronger support for professionals, and the establishment of the foundation for EE.

- Busan has supported 70 environmental clubs every year to facilitate school EE, operating environmental career experience programs supported by businesses, together with Busan Environmental Corporation, Busan Office of Education, and Nakdonggang River Estuary Eco Center. For the purpose of strengthening social EE, the city has developed 15 EE programs connected to tourism and experience, opening small-sized EE facilities such as Recycling Cooperation Center, Water Museum, and Forest Experience Learning Center. Also, in order to cultivate professionals, it has nurtured 149 EE activists since 2018 and cultivated about 60 social EE instructors by 2020. To set up the foundation for EE, it designated and has led two regional EE centers to play a key role in private EE, at the same time developing an EE portal for online EE.
- Based on the assessment of the achievements of 「The 2nd Busan EE Plan」, Busan is devising its 「The 3rd Busan EE Plan」 as of 2020 in order to make itself an EE city, which includes information on the vision and goals of EE, specific implementation projects, and evaluation systems. In 2019, Busan, its affiliated institutions, and civic groups worked together to declare Busan as an EE city. The slogan of ‘Realization of the Right to EE for Every Busan Citizen, Anytime and Anywhere’ is the goal of a city of EE pursued by Busan.

## □ Governance and partnership for EE in Busan

- The efforts for EE of Busan is not solely led by the city government but developed through public-private governance. The Council for the Promotion of Environmental Education of Busan City, with the Vice Mayor for Economic Affairs of Busan City as the chairman, is composed of the Head of Environmental Policy Division, the Chief of Education Bureau of the Office of Education, city councilors, EE experts, and citizens. The council deliberates and counsels on EE policies, including EE plans.
- The working-level meeting of partners and organizations for the promotion of EE refers to round-table governance where 10 staff members from the Office of Education, Nakdonggang River Basin Environmental Office, Busan Environmental Corporation, Marine Environment Research & Training Institute, Busan EE Network, and Busan Metropolitan City Environmental Education Center, which

concluded an EE MOU with Busan, gather together to implement EE agreements and to discover and to carry out follow-up EE projects. It is playing a pivotal role in conducting exemplary EE projects such as 'National EE Festival', 'Environmental Belt Tour', and 'Busan EE Festival'.

- 「The 3rd Busan EE Plan」, which is currently being promoted, and the creation of an EE city are being developed by Busan Metropolitan City Government, Busan Office of Education, Nakdong River Basin Environmental Office, Busan Environmental Corporation, Marine Environment Research & Training Institutes, Busan Environmental Education Network through communication with citizens. To declare Busan as an EE city, administrative agencies, educational institutes, experts, and citizen representatives gathered to share cases of creating EE cities and to prepare the declaration. Thereafter, holding a seminar for monitoring the implementation of 「The 3rd Busan EE Plan」 and the EE city project, Busan has continuously communicated with various institutions and citizens to build a desirable EE city.

## □ EE policies of Busan Metropolitan City

- With the enactment of 「The Ordinance on the Promotion of Environmental Education of Busan City」 in 2011, Busan City built the institutional foundation for the establishment of EE plans and operation of EE centers. In 2019 the old ordinance was revised from the perspective of participation of citizens so that any Busan citizen can experience systematic and routinized EE. (Revision of the title of the ordinance: Preparation of the grounds for the installation and operation of the council for the promotion of EE). EE in schools is supported through the enactment of 「The Ordinance of the Office of Education of Busan Metropolitan City on Environmental Education in Schools」 in 2019. Key information includes the survey of EE at school, basic planning for EE at school, EE materials development and dissemination, the installation and operation of school EE support centers, EE training for teachers, the designation of model schools in EE, and the establishment of a cooperative system among local governments, EE institutions, and EE groups.
- The Environmental Education and Industry Team and the Ecological

Geology Team installed within the Environment Policy Division of Busan Metropolitan City Government take charge of environmental education. The division is responsible for the establishment and implementation of Busan EE plans and creation of an EE city. EE is supported through the operation of Busan Environmental Education Center, Busan Eco-Friendly Life Center, and Busan Green Environment Center. In addition, the Climate and Air Quality Division operates the Center for Experiential Learning of Climate change, while the Forest Ecology Division operates the Forest Education Center and the Center for Experiential Learning of Forest.

- Moreover, diverse agencies in Busan take charge of EE based on their expertise. The Busan Waterworks Authority operates Water Museum while the Nakdonggang River Management Center manages Nakdonggang River Estuary Eco Center. Busan Office of Education operates Hak-ri Climate Change Education Center while Busan Environmental Corporation manages Recycling Cooperation Center. It should be noted that the expertise of such institutions can be reflected into EE.

## □ EE centers and facilities in Busan

- Busan City operates two regional EE centers. Other EE facilities under Busan City are the Climate Change Education Center, the Forest Education Center, Busan Marine Natural History Museum, Busan Waterworks Experience Center, Nakdong-gang Estuary Eco Center, and Geopark. They have now been formed as the basis that allows every Busan citizen to receive EE everywhere and anytime.

## ▪ Busan EE Center

- Busan EE Center was set up to support the public to develop knowledge of ecology and to contribute to institutionalizing EE based on the diversity, locality, and expertise of civic



society. The Center has carried out various activities such as the discovery of customized EE agenda, the operation of reaching-out

environmental class programs, EE networking, the development of EE textbooks and programs, and the cultivation of EE instructors.

- The Center has offered EE in a professional and systematic manner, focusing on school EE and social EE. For the former, it has run school-private collaboration support projects supported by the Ministry of Environment, operating marine EE programs every year aided by the Ministry of Oceans and Fisheries. For the latter, the Center has offered marine EE by visiting local child centers, operating various EE programs for different age groups such as ‘Eco-Friendly Class for Wise Seniors’, EE for the elderly, and ‘Top-Caliber Green Housewives’, EE for housewives participating in local culture center programs. Recently, it is preparing a variety of latest EE videos in Youtube.



## ▪ Nakdonggang River Estuary Eco Center

- Nakdonggang River Estuary Eco Center opened in 2007 to create the Nakdonggang river estuary where mankind and nature can coexist by preserving and managing Eulsukdo Migratory Bird Park, an ecological restoration zone, in a sustainable way and by offering citizens ecological exhibition, education, experience, and learning spaces. The Nakdonggang River Management Center operates the eco center whose attached facilities include Wildlife Treatment Center and Nature Experience Center. The estuary is prolific during all four seasons and is characterized by wide mudflat and dense reed fields, thereby acting as a natural habitat for diverse wildlife such as migratory birds, migratory cats, and elks. As a result, the Center has played a key role in preserving and using the estuary area, protecting and managing bird sanctuaries, promoting ecological exhibition and education, and treating and preserving wildlife.
- Taking advantage of such geological characteristics, the eco center specializes in offering ecological EE programs. It operates experience-based EE programs based on birds, mudflats, insects,



plants, and wetlands and runs Wildlife Treatment Center (help visitors experience wildlife treatment), Wildlife School, and Welcome Event for Winter Migrants. The Experience Center acts as a visiting and observing facility and an ecological education service provider that informs the public of the value of natural and ecological resources in the estuary. Wildlife Treatment Center plays a significant role in curing, rehabilitating, and releasing wildlife, thereby helping maintain ecosystems. It also operates wildlife-related education programs to raise citizens' awareness of the importance of nature conservation.



## ▪ Busan Climate Change Education Center

- Busan Climate Change Education Center is designed to create a low-carbon society by providing information on climate change and offering climate change experience education. It also aims to deliver climate change education in order to change people's recognition of such a crisis. New and renewable energy facilities such as geothermal systems, exemplary recycling devices, and fuel cells are placed on its underground floor while a lobby and a green school are on its first floor. Located on its 2nd floor is an exhibition hall while installed on its rooftop are solar energy experience facilities. 'Green School' is an experience-based program to help visitors find ways to reduce greenhouse gases and to preserve the environment. This includes a program for leading citizens to seek ways to alleviate climate change in their daily lives.



## ▪ Busan Forest Education Center

- Busan Forest Education Center is run by the Forest Ecology Division of the Busan Metropolitan Government and the Forest Interpreters' Association of Gyeongsangnam-do. In accordance with the goals of forest education, forest interpreters take charge of education while the forest ecology



division manages facilities and programs. In the Center are a forest education exhibition hall, a lecture room, a forest kindergarten, and a woodcraft experience room. The Center is designed to give information on the circulation of forest resources and climate change and to show ways to live together with nature. Under the slogan of 'Forests Are the Source of Life and Happiness', its programs help visitors understand the roles and significance of forests. The Center operates a diversity of programs such as exhibition interpretation, forest education for children, elementary/middle school students, and weekend families, woodcraft experience, and specialized forest education designed to enable elementary, middle, and high school teachers to understand the characteristics of forests and apply them in the school curricula.

## ▪ Belt of Environmental Facilities and Busan National Geopark

- With the intention of turning the whole Busan area into experience sites of EE, the city offers a tour of the belt of environmental facilities. Upon the application of schools and organizations, public buses are prepared to take them to the spots they choose among the twenty in the belt. In accordance with environment themes, such as water, waste materials, ecology, geology, and climate change, they can visit the representative environmental facilities of each theme in Busan. (It was selected as an excellent example of public service innovation by Busan City.)
- Busan has a total of twelve geological landmarks: Nakdonggang Estuary, the biggest delta in Korea where the river and the sea mix; Morundae Cliff, a sea route leading to the Ancient Museum; Taejongdae Park, a feast of rocks, that were born in a lake, confronting the sea now; Oryukdo Islands, the symbol of Busan, and Igidae Cliff; Geumjeongsan Mountain where a myth fell asleep; and Baegyongsan Mountain, a harmony of various rocks.
- Busan National Geopark is the only urban-type geopark in Korea that not only preserves geohéritages located in different places but also conveys the value of geohéritages to citizens through the development of geotrail. In combination with EE, Busan City runs the Busan National Geopark Exposition Program. The Park



has planned and run various programs such as ‘Time Travel with Geopark Interpreters’, ‘Geoschool, Reaching Out Geopark’, and Geoteering, Geopark Treasure Hunt’ to help citizens understand and preserve renowned geosites in Busan. Visitors numbered 20,470, 29,050, and 41,050 in 2018, 2019, and 2020, respectively.



**□ Achievements or impacts of EE on Busan local communities**

○ Based on the recognition of the fact that citizens of Busan themselves are the subjects to solve environmental problems, Busan city declared itself as an environmental education city in September 2019 to build the relevant system and cooperative framework. One thousand persons including those from Busan Metropolitan City Government, Office of Education, Busan EE Network, and ordinary citizens gathered and set the direction, ‘Realization of the right to EE for every Busan citizen, anytime and anywhere,’ and declared Busan as a city of EE.



○ Besides, Busan annually holds an environmental education festival to share the accomplishments in EE in the region since 2017. The Festival runs various programs such as ‘Social EE Program Contest’, ‘Climate Change Forum for Teenagers’, ‘Bus Tour for Experiencing EE’, and ‘Environmental Golden Bell’ to enable EE to reach citizens more easily.



**□ Contact Point for further networking**

⊙ Environment Policy Division of Busan Metropolitan City  
 AHN Sojin; + 82-51-888-3612, asjjjh@korea.kr

**KOREA 2.****Chungcheongnam-do(province)****□ Introduction of Chungcheongnam-do**

- Chungcheongnam-do (hereinafter Chungnam) has a population of about 2.12 million (as of August 2020), consisting of eight cities and seven counties (called gun, 郡). About 60% of Chungnam is covered with plains and hills that are 100 meters or less above sea level, around the Charyeong Mountain Range. The plains are mainly around Geumgang River, Sapgyocheon Stream, and Muhancheon Stream. The region houses Gyeryong Mountain and Daedun Mountain, whose western part is bordered by Cheonsu Bay and Garolim Bay featuring big differences between the ebb and flow of the tide, as well as a rias coast as long as 953 km.
- 
- Chungnam is home to thirty thermoelectric power plants, accounting for about 50% of such plants in Korea, as well as to large-scale industrial complexes and steel mills. So the area is exposed to environmental issues including fine dust that pose a great threat to local residents' quality of life. The region ranks 2nd in Korea in terms of energy independence (249.2%), which is mainly attributed to a number of thermal power plants. As a result, Chungnam is infamous for the biggest amount of greenhouse gases in Korea and is adjacent to the Seoul Metropolitan Area, thereby experiencing a series of conflicts from waste disposal businesses. Its key environmental issues include waste, powering past coal, fine dust, marine litter, and chemical safety.

**□ Vision and status of EE in Chungnam**

- Chungnam established and has facilitated 「The 2nd EE Plan of Chungnam」 in 2017 with a vision of 'Daily EE for Promoting Environmentally Considerate Lives' in connection with the vision and goals of 「The National EE Plan. Chungnam has promoted EE in accordance with three principles of integration, dailiness, and regionality. It deals with environmental themes, venues, and purposes in an integrative

way (integration), offering opportunities for all residents to benefit from EE (dailyness) and implementing EE reflecting regional and ecological characteristics (regionality).

- Setting up cooperative systems for EE that include local governments, institutes, and groups, handling EE for raising people's awareness of the environment, and diversifying and specifying plans for financing EE, Chungnam has worked hard to achieve the vision of 'Daily EE for Promoting Environmentally Considerate Lives'.
- In accordance with 「The EE Promotion Ordinance」, Chungnam is operating one regional EE center and eight local EE centers. Moreover, implementing a project for 'Developing a Chungnam-Style EE City Model, it has sought ways to set up cooperative networks among the local government, the Office of Education, and the private sector and finally announced a joint declaration reflecting the vision for EE cities in 2019.

## □ Governance and partnership for EE in Chungnam

- In accordance with 「The EE Promotion Ordinance」, Chungnam has operated 'The Chungnam Policy Committee for EE' to promote cooperation among EE entities. The committee, which consists of EE experts, local government employees, school commissioners, teachers, and civic groups, is a platform for sharing opinions on EE policies such as EE planning and the designation of local EE centers. Chungnam Vice Governor in administration has participated in the committee for more effective management.
- 'The Chungnam Council for local EE Centers' is composed of the Chungnam Department for Climate and Environment Policies, city/county teams for EE centers, the Future Human Resources Team for Chungnam Office of Education, one regional EE center, and eight local EE centers. They have actively promoted collaboration among local EE centers to share plans, discuss cooperation projects, and hold joint training sessions.
- 'The Chungnam EE Network' was established in 2006 to promote networking and collaboration among institutes and groups. The network, which currently consists of 39 EE organizations, acts as a venue for policy suggestions and communication, supporting members to share information and to present ways to improve EE

systems. It has also operated projects for stronger cooperation among local entities, the office of education, and businesses in the context of EE policy-making. This cooperative governance meeting, which is held four times a year, played a pivotal role in the 2019 Chungnam Declaration for EE City.

- Establishing MOUs with very diverse institutes, Chungnam has set up wider cooperative systems for EE. Signing an MOU with the ‘National Institute of Ecology’ in Seocheon, it has facilitated ecological EE, preparing and operating ‘Training courses customized for Chungnam government employees’. Concluding an MOU with ‘Korea Environment Institute’ and taking advantage of ‘KEI Cyber Environment Policy Education Center’, it opened and operates ‘Customized EE courses’. Setting up an MOU with Chungnam Office of Education, it has operated various projects such as ‘farm and fishing village experience programs’ and ‘vegetable gardening,’ creating Chungnam-style education communities via win-win cooperation between education and general autonomy, and offering diverse EE programs. Likewise, Chungnam has provided opportunities for residents to enjoy a variety of EE by establishing such public-private-university-research institute governance systems.

## □ EE policies of Chungnam

- Chungnam formulated 「The Chungnam EE Promotion Ordinance」 in 2011. This includes ‘the responsibilities and duties of the Governor for EE,’ ‘EE Plan,’ ‘EE Policy Committee,’ ‘support for school EE,’ and ‘the operation of and financial support for Local EE Centers.’ The ordinance was revised in April 2020 to offer EE to all of the Chungnam government employees for four hours or longer training per year and to provide financial support to EE institutes and groups. As a result, six cities and counties (Cheonan, Asan, Seosan, Nonsan, Gyeryong, and Hongseong) have already established EE promotion ordinances, with the other nine cities and counties planning to craft the ordinances in the second half of the year 2020. This means that all of the 15 cities and counties in Chungnam will have EE ordinances in 2020. Moreover, 「The Chungnam General Plan for Environmental Conservation (2016-2025)」 contains EE components such as ‘the development of Chungnam-style EE textbooks and programs,’ ‘the establishment of EE governance,’ and

‘the establishment of EE infrastructure in cities and counties.’

- Chungnam Office of Education formulated 「The Chungnam School EE Promotion Ordinance」 in 2019. For the purpose of facilitating school EE, the ordinance includes the responsibilities and duties of school commissioners, School EE Plan, the operation of an advisory committee, school EE support centers, the establishment of cooperative systems with local entities for the promotion of school EE, and rewarding. In accordance with the ordinance, Chungnam establishes 「School EE plans」 every year, facilitating EE in schools. Key information includes ‘EE through texts and creative experience,’ ‘support for the operation of school clubs,’ ‘the operation of Chungnam leading schools in green energy,’ ‘the empowerment of environmental educators (teachers),’ ‘the establishment of school EE support systems,’ and ‘EE based on cooperation with communities.’
- In connection with 「The 2nd National EE Plan」, Chungnam established 「The 2nd EE Plan for Chungnam(2017-2021)」, considering local contexts and characteristics. Chungnam’s EE plans reflect regional characteristics and conditions such as local circumstances, environmental issues, and environmental resources, and that are recognized as creative approaches (regionality and creativity). Moreover, a Chungnam-style EE city model was also presented to support the 2019 Joint Declaration for EE City.
- Chungnam established the Environmental Education and Cooperation Team(EE Team) belonging to the Department of Climate and Environment Policies in the Bureau of Climate and Environment in 2020 in order to comprehensively support EE in Chungnam. The EE Team currently consists of three members including one with an EE major in order to ensure expertise in EE. The team has played a pivotal role in carrying out various projects for the implementation of the EE Plan, in cooperation with Chungnam EE Network, Chungnam Regional/Local EE Centers, and university.
- The EE team has actively conducted the following projects: the promotion of EE city policies; the operation of reaching-out EE experts; the establishment of Chungnam-style EE cooperation systems; support for local EE centers; the cultivation of community EE guides; campaign for the use of mass media for EE; the establishment of online platforms as EE information centers; and global collaboration in EE.

<Interview>	<p>Yoo Yong-jae, Assistant Deputy Director Environmental Education and Cooperation Team, Department of Climate and Environment Policies, Chungnam</p>
	<p><i>I majored in EE at university and is currently in charge of EE at Chungcheongnam-do. With the recent emergence of climate change and fine dust issues, the importance of EE in resolving environmental problems has been highlighted, leading Chungcheongnam-do to pay more attention to EE. While promoting EE, I would like to work hard with local residents to examine and resolve environmental issues. My job is to set up systems and frameworks for EE in Chungcheongnam-do. Since joining the local government, I have done my utmost to establish the EE model at the government level customized for Chungnam.</i></p>

## □ EE centers and facilities in Chungnam

- Chungnam houses a total of 411 EE facilities. Private facilities number 321 while national and public facilities number 90. Among them, the Forest Resources Research Institute, Taean Oil Damage Overcoming Memorial Hall, and Anmyeondo Natural Recreation Forest are directly implemented by the local government while nine regional EE centers (1 regional center and 8 local centers) are supported by the local government. As a result, everyone can benefit from EE anytime and anywhere. Each center has its own strengths, thereby handling a variety of EE themes.

### ▪ Gwangdeoksan EE Center (Chungnam Regional EE Center)

- Gwangdeoksan EE Center is the only comprehensive EE center in Korea that was directly planned by non-profit private organizations and was constructed for ten years based on cooperation between residents and the local government. The center was designated as Chungnam's regional EE center pursuant to 「The EE Promotion Act」 and 「The EE Promotion Ordinance」. The center is in charge of EE for residents, EE R&D, support and consultation for private and school EE, and networking. Moreover, it has acted as a key entity for implementing 「The 2nd General Plan for EE」 in Chungnam.

The center, which opened in 2009, has consistently functioned as an organization for ecological education, climate change education, early childhood EE, and the cultivation of social and environmental educators, consisting of nine employees and more than 20 lecturers.

- Located under Gwangdeok Mountain, the center has operated the following education programs: Natural Forest Experience Class by Season; Ecological Environment Class designed to explore future energy and to teach ecological construction; EE Hall for Children; Green City Class; Nature Artists Creating Natural Objects; and Exploring and Monitoring Forest Ecology. In other words, under the theme of ‘Nature is My Friend’, it has operated a variety of programs. Among them are ‘Children and Nature (Spring, Summer, and Winter)’ and ‘Amusing Eco Sports’, which were chosen as exemplary EE programs by the Ministry of Environment. The Flower Library in the basement have fairy tale, science, and ecology books donated by residents, promoting the Small Eco Library Initiative connected to Nature Learning. Based on such programs, the center nurtured more than 500 environmental educators from 2009 to 2019, developing and distributing 21 EE textbooks and offering EE programs to about 170,000 residents by holding EE sessions more than 6,000 times.



<Interview>	<b>Cha Su-cheol, Director, Gwangdeoksan EE Center</b>
	<p><i>Gwangdeoksan EE Center opened in 2009 under the slogan of “Humans belong to Nature, Our Future Depends on Education.” Based on residents’ contributions, talent, and participation, it was designated as Chungnam EE Center, currently acting as a hub for public-private EE governance systems. The center is expected to present the direction of integrated EE in the era of Climate Crisis and to function as a model that contributes to regional sustainability.</i></p>

▪ **Seosan-Taeon EE Center**

- Seosan-Taeon EE Center was designated as a local EE center by Chungnam in 2016. Its former name was Korean Ecology and

Culture Research Institute attached to the local environmental NGO, Seosan-Taeon Federation for Environmental Movement. This was also appointed as a local marine EE center in Chungnam in 2017.

- The center consists of three employees and seven lecturers, offering education in the fields of ecological education, ecological art, climate change, and marine education. It has operated EE programs, providing EE information and consultation services, and developing textbooks and teaching aids. Specific programs are as follows: ‘True Seals and Storks Live in Garolim Bay and Cheonsu Bay, Respectively’, ‘Eco-Friendly Foods and Ecological Art’, ‘Let’s Play in Vegetable Gardens’, ‘Happy Weekend Class for Communities’, ‘Civic Exploration Team for Garolim Bay’, ‘Civic Groups for Monitoring Birds’, and ‘Marine EE Expert Cultivation Courses’.



## ▪ Naepo Trail in Yesan

- Naepo refers to a place deep inside inland areas where an inlet is created through waterways connected to the sea. Naepo Trail is the first and longest (about 320 km) trail in Chungnam that four local governments (Seosan city, Dangjin city, Hongseong and Yesan counties) around Gayasan Mountain created by connecting sacred places for Buddhists and Catholics, famous Donghak sites, and traces of the Baekje Revival Movement to village roads, forest trails, and riverside roads. The pilgrimage trail for sharing and introspection is designed to reflect on the present based on the region’s historic, cultural, and ecological values and to prepare for our children’s future. The trail is currently based on four themes such as the Baekje Revival Army, Saint Wonhyo’s Enlightenment, Catholic Pilgrimage, and Historic Figures and Donghak. Naepo Trail designated as a regional EE center in 2019 was awarded the grand prize in EE programs at the Chungnam EE Festival, as well as the



Environment Minister Prize in facilities at the Korean EE Festival.

## ▪ Oil Damage Overcoming Memorial Hall

- The Oil Damage Overcoming Memorial Hall opened in September 2017 to remember the process of Chungnam residents and 1.3 million volunteers from across the country overcoming the Hebei Spirit Oil Spill Accident that happened on the coast of Chungnam in 2007, as well as to be used as a venue for environmental education. The 2007 accident caused 12,000 tons of oil to spill into the ocean but a number of volunteers and local residents have done their best to make the marine environment be restored to its original state. The natural ecosystem is now restored significantly. Such activities are very meaningful in the history of Korea's volunteer services, leading the memorial hall to be constructed on the coast of Taean in Chungnam to remember the marine accident. The memorial hall has spaces for watching, listening to, and touching the traces of oil damage. Equipped with such experience-based systems, it enables visitors to directly undergo pollution control processes. This hall is also designated as Chungnam's marine EE center, thereby exhibiting items regarding the coexistence of humans and the ocean and the conservation of the marine environment and ecosystems.



## □ Characteristics of EE reflecting locality of Chungnam

- Chungnam has a number of farm villages, so that rural residents' attitude toward the environment should change to effectively manage agricultural wastes. Current farm village support projects aim to promote the sustainability of such rural communities, with farm village experience programs focusing on EE in biological and cultural diversity. Therefore, the local government has promoted 'The creation of model EE villages' by offering education programs in connection with farm village support and experience. Chungnam has created model EE villages, offering EE programs and educators while connecting such villages to schools and kindergartens. As a result, village-based EE has been facilitated, reducing agricultural wastes. In particular, one village in Seocheon has actively

participated in EE, preparing and using education aids to lead the elderly and children to take part in EE.

- Chungnam is also characterized by the highest rate of aging in Korea and is behind other regions in terms of various indices showing the elderly’s quality of life. EE could play an important role in supporting residents throughout their life cycle. The local government has expanded EE for children and the elderly, thereby promoting home-linked EE for parents. It has also worked hard to improve the quality of life for the aged by reducing their depression and restoring their self-esteem. In the same vein, reaching-out EE for children has been strengthened by cultivating senior environmental educators and supporting their activities.
- Chungnam has two national parks(Gyeryongsan Mountain and Taean Coast) and one of the four main rivers in Korea(Geumgang river), as well as the ocean, mountains, and plains. In other words, it has many areas that should be conserved ecologically, while using them for EE. Chungnam has operated ecology information services and programs in order to secure biodiversity via ecological research on exemplary regions and to link it to eco-tourism. More specifically, model regions in ecology are chosen, conducting bioblitz (residents’ research on biodiversity) and providing ecology information services and programs based on the monitoring results.

□ Achievements or impacts of EE on Chungnam local communities

- In September 2019, Chungnam declared its EE cities together with Chungnam Office of Education and Chungnam EE Network in order to establish an educational system that is designed to resolve environmental issues based on residents’ participation. Through the declaration, it aims to take the lead in EE under the vision of “Chungnam, One Happy Community Based on EE”, to establish a basic framework for EE cities, and to work hard to promote voluntary and sustainable EE. Chungnam is the first provincial government that made such a declaration in Korea. It aims to implement 31 specific projects in four areas by 2025. As follow-up measures, it plans to construct an EE training institute and to enlarge regional EE centers.



- Chungnam has implemented a system for government employees where it is mandatory for them to complete EE courses since 2020, that was the first attempt in Korea. It also revised the EE Promotion Ordinance to support the system (four hours a year) designed to raise the awareness of government employees in charge of policy-making and implementation about environmental issues.
- Chungnam launched a reaching-out EE lecturer group consisting of 60 members to offer EE services to everyone anytime and anywhere, and thereby to help residents voluntarily resolve environmental issues. The group visits target residents to provide EE services. The team consisting of EE experts by area has been offered systematic empowerment training services to provide face-to-face services to residents who have yet to sufficiently receive EE services. In 2019, the local government gave fine dust-related education services to 100 public schools in Chungnam, guaranteeing many teachers and students take part in the EE programs.

#### □ Contact Point for further networking

- Environmental issues should be globally and locally handled, requiring multiple stakeholder participation at different scales and levels to deal with them. Chungnam needs to keep up with global trends in EE and it is expected to make significant contributions to developing EE in the province by its collaboration with foreign EE groups. The 2016 Hongseong EE Festival served as an opportunity for environmental educators in Korea, China, Taiwan, and Japan to gather together through the 1st International EE Kit Expo. Every year that ends in even numbers, Chungnam plans to hold the International EE Kit Expo, as well as the Asia EE Forum for environmental cooperation in Asia. In the context of EE networking, it has regularly promoted exchanges with Japan (Kumamoto Environment Net), China (Nature's Friend), the Philippines (CEC), and Malaysia (MNS) since 2013.
- Chungnam has a special interest in EE programs for the aged in Japan and EE programs for children in China. Considering its high rate of aging, the local government has sought ways to boost the elderly's participation in EE, and to diversify EE for children. Promoting mutual exchanges with local EE centers in China and Japan, it has tried to share experiences in the operation of EE programs and the

improvement of their effectiveness.

- When any environmental educators in China or Japan are interested in EE of Chungnam, please feel free to contact Chungcheongnam-do. Chungnam will take the privileges to provide guidance on Chungnam's EE to colleagues from China and Japan, and connect you with the most appropriate EE experts or practitioners in Chungnam according to your interests.

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**KOREA 3.****Suwon City****□ Introduction of Suwon City**

○ Suwon, the biggest city in Gyeonggi province, houses the Gyeonggi Provincial Government Building and acts as the regional center of politics, administration, and economy. The city has a population of 1.2 million, consisting of a total of four administrative districts. Suwon is home to



a number of semiconductor companies including Samsung Electronics, where the share of electric and electronic industries is estimated at about 70%. Paying keen attention to the environment in the process of industrialization, the Suwon City declared itself as the first ‘Environmental Capital’ of Korea in 2011.

○ One of the most famous attractions in the city is the Hwaseong Fortress, built in 1796 during the era of King Jeongjo in the Joseon Dynasty, and listed as a UNESCO World Heritage Site in December 1997. Home to a lot of well-known natural heritages including Chilbosan Mountain and Gwanggysan Mountain which surround the Suwon area, and four streams such as Suwoncheon which flow across Suwon, have actively been applied to the environmental education (EE) programs.

**□ Vision and status of EE in Suwon**

○ Suwon City expressed its willingness to transform into an ecological city by declaring as 'environmental capital' in 2011 while resolving local environmental issues caused by rapid urbanization, industrialization, and population growth. In this process, Suwon has recognized the increasing need for environmental education. As of 2019, the city operates a total of four EE centers, expanding opportunities for EE with the participation of about 400,000 local citizens.

○ Since 2014, Suwon has crafted local EE plans on two separate occasions. Devising 「The first EE plan(2014-2018)」, it established the vision

of ‘Suwon, an EE city featuring beautiful nature, happy people, and bright future’, declaring itself as a ‘Model EE City.’

- Recently devising 「The second EE plan(2019-2021)」, Suwon offered the vision of ‘Suwon, an EE-Friendly City for a Sustainable Society’. Under the slogan of ‘EE for Access by Anyone Anytime and Anywhere’, ‘A Solid Foundation for EE through Enhanced Citizens’ Participation’, and ‘Proliferation of Suwon-style EE Highlighting Suwon’s Ecosystem, History, and Culture’, the city emphasized its pursue for the EE City, setting a goal of offering EE to 20% of its citizens by age group.

## □ Governance and partnership for EE in Suwon

- For meaningful environmental education(EE), the Suwon City Government has cooperated with local teachers, EE activists, experts, and citizens. Collaboration (governance) between various groups and citizens plays a key role in successfully making Suwon an EE city. Sharing goals and visions for restoring Suwon’s ecological environment has been the key to effectively activating such governance for EE. The Suwon City Government, public agencies, NPOs, and citizens have worked together to improve Suwon’s environment. Such an initiative is deemed to be based on their interest in and affection for the city of Suwon where they are living together.
- The Suwon Environmental Education Council consists of Suwon city government employees, city council members, school commissioners, teachers, experts, NPO representatives, and EE agency directors. The Council is regarded as a governance system for devising and revising Suwon EE plans, offering advice on the promotion of EE and the cultivation of & support for professionals, and thereby facilitating Suwon-type EE based on onsite circumstances.
- The Suwon Environmental Education Network, an organization that was naturally set up based on cooperation between eleven EE groups and institutes in Suwon, aims to create a sustainable environment by sharing vision for EE and promoting collaboration. The Suwon City Government, the Suwon Office of Education, and the Suwon EE Network have signed an MOU for private-public collaboration, sharing programs, information and human resources for building an EE city. Issue-specific Networks has often been created and operated in Suwon such as the Suwon Climate Action

Network, which serves as education, campaigns, and policy proposals to respond to climate change.

- Environmental NPOs, one of the core entities for Suwon EE, have been working to solve Suwon's environmental problems since the 1990s, and are now actively participating in EE for environmental citizens. They include the Eco Suwon, Suwon Federation for Environmental Movement, Suwon YMCA, Suwon YWCA, the Chilbosan Mountain Acorn Class, and the Sandlle Ecological Study Group. Such organizations led by activists and experts have independently implemented EE programs or operated EE projects commissioned by the Suwon City Government.
- Likewise, the Suwon City Government, the Office of Education, the EE Network, and NPG groups have actively worked together to make Suwon an EE city.

## □ EE Policies of Suwon City

- The Suwon City Government enacted the 「Suwon City EE Promotion Ordinance」 in 2012 in order to promote EE, contribute to the sustainability of Suwon, and protect its ecosystems. This includes information on Suwon Environmental Education Plan, the establishment and operation of the Suwon City Environmental Education Council, the promotion of formal and informal EE, the installation and operation of Environmental Education Centers, and financial support. The Suwon City Government has worked hard to basis for EE by enacting the EE Promotion Ordinance and setting up an EE team within its administrative organization.
- Based on 「The 1st Suwon Environmental Education Plan(2014-2018)」, the Suwon City Government declared Suwon as a model EE city, establishing and operating EE centers (Chilbo Eco Center, Gwanggyo Eco Center, Suwon Climate Change Education Center, and Suwon Center for Environmental Disease and Atopy). During the period, the city government set a goal of offering EE to about 450,000 households in Suwon, with a budget of KRW 1.8 billion (USD 1.5 million) into the project. As a result, it succeeded in providing EE to about 680,000 households (accumulation in the period).
- Crafting 「The 2nd Suwon Environmental Education Plan (2019-2021)」 in 2019, the city government drew up a budget of KRW 5.9 billion

(USD 4.9 million) to make Suwon a sustainable and EE-friendly city. The second plan has been established based on public discussions among the EE experts, NPO groups, city government employees, teachers, and citizens.

- The Suwon City Government has set up and operated an EE team in the Department of Environmental Policy, the Bureau of Environment, in order to more actively make Suwon an EE city (February 2012). The EE team consists of eight members, acting as a control tower that manages EE in Suwon. They are in charge of devising EE plans, setting up & supporting local EE centers, analyzing & assessing the achievements of EE, promoting cooperation with EE institutions, operating school EE-linked projects, offering environmental conservation information/education to local citizens, developing & operating EE programs, conducting citizens' participation-based ecosystem research, maintaining biodiversity, and facilitating global cooperation in EE. In particular, the team has operated 'Suwon's Reaching-Out EE Class' by using big-sized buses since 2017, which features school visits, environmental event participation, and summer school.
- Not limiting EE to the EE team, the Suwon City Government has implemented a diversity of EE projects across the local government in the Department of Climate and Atmosphere, the Department of Cleaning and Resources, the Department of Sewage Management, the Department of Eco-Transport. The local libraries, agricultural technology centers, and museums under the city government has also operated a variety of EE programs in collaboration with civic EE groups. It should be noted that EE has been promoted, considering the characteristics of each part of administration in Suwon City.

<Interview>	Hwang E-hwa, Assistant deputy director, Suwon City EE Team
	<p><i>I have been working for the EE Team in Suwon City Government since 2012 when the team was first established. I have managed Suwon's EE, supporting local EE centers and operating EE projects that are commissioned to civic EE organizations. What I think is important is the bridge that enables communication between EE practitioners, experts, and administrative agencies.</i></p>

## □ EE centers and facilities in Suwon

- EE centers in Suwon include the Chilbo Eco Center, the Gwanggyo Eco Center, the Suwon Climate Change Education Center (Do-Dream), and the Suwon Center for Environmental Disease and Atopy. They are set up in four districts of Suwon in order to operate EE programs reflecting local characteristics. The operation of the centers is now commissioned to local NPOs for EE in order to take advantage of their expertises.

### ▪ Chilbo Eco Center

- The Chilbo Eco Center nicknamed ‘A Tree Frog House’ opened in March 2014 as the first EE center in Suwon. Under the slogan of ‘All Living Things Respecting Life are Respected’, the center is located in the area of Chilbosan Mountain whose name comes from the legend of seven treasures in the mountain. The center were constructed by using eco-friendly materials and renewable energy as an ecological buildings.



- The center has operated a diversity of nature experience programs such as After-school Forest Class, Wildlife Adventure, and Rice-Paddy for Frogs. The Rice-Paddy for Frogs program leads citizens to participate in the rice-farming program to plant and then harvest rice for themselves. In the process, the participants experience and realize how humans and nature are mutually connected. All harvested rice is donated to difficult neighbors.
- The Chilbo Eco Center is also conducting activities for biodiversity such as ecological monitoring and conservation of endangered species habitats.

### ▪ Gwanggyo Eco Center

- The Gwanggyo Eco Center nicknamed ‘Pulbitnuri (Green World)’ opened in April 2019. The center is located in Gwanggyo Lake Park, a Suwon landmark ensuring easy access by local citizens. Located by the center is the Freiburg Observatory built to commemorate the

establishment of a sisterhood tie between Suwon and Germany's Freiburg. The center was set up with a vision of 'Creating a Sustainable Community via EE for Future Generations and Peaceful Coexistence between Humans and Nature'.

- This center is characterized by EE programs based on natural surroundings and facilities around the Lake Park. Cases in point are 'Pulbit Nature School' and 'Nuri Environmental School'. An appropriate technology program reflecting the global environment and an upcycling workshop has operated for creative EE. Considering that the park is inhabited by many migratory birds, various programs have operated to enable citizens to directly handle bird watching gear and to monitor birds. Near the center is wetlands for the endangered narrow-mouthed toads that are usually found every spring and summer, making it possible to offer EE to citizens in eco-friendly spaces.



#### ▪ Suwon Climate Change Education Center

- The Suwon Climate Change Education Center opened in April 2014 as a space for cultivating 'eco citizens' actively reacting to climate change. The center also acts as a hub for climate change education in metropolitan areas and as a professional development institution for EE experts. The center building was built by using renewable energy such as solar panel, solar heat, geothermal heat, and super insulation. As a result, about 85% of energy is self-produced or saved. The outdoor playground for climate experiences as well as the underground exhibition space are frequently visited by the students of kindergartens and elementary schools in groups.
- Its programs focus on climate change and energy. In particular, it operates climate change education programs on eco-friendly buildings and renewable energy linking to elementary school curricula, as well as climate change negotiation games. It also operates programs for citizens' participation such as 'Climate School for All', and 'Appropriate Technology Lab'.

<Interview>	<b>Dr. Sung-hwa CHO, the Director of Do-Dream</b>
	<p><i>The core value of Suwon Climate Change Education Center, Do-Dream is “Collaboration and Cohabitation”. Do-Dream is jointly operated by eight (8) EE organizations in Suwon, and actively participates in the Climate Action Network. I believe that it is most important for Do-Dream, communities in Suwon, and citizens to grow together.</i></p>

▪ **Suwon Center for Environmental Diseases and Atopy**

- The Suwon Center for Environmental Diseases and Atopy opened in April 2014, whose operation has been commissioned to the Medical School of Ajou University to ensure expertise on environmental diseases. The center aims to diagnose environmental diseases, identify risk factors, improve patients’ quality of life, and reduce medical costs. It is mainly in charge of offering patients-centered customized programs for atopy management, providing information and education for the atopy prevention, cultivating experts for the prevention and management of atopy, promoting public health via nature experience, and providing information on atopy and related policies.



□ **Characteristics of EE reflecting locality of Suwon**

- The Suwon City Government has operated EE programs linking to its long and rich history. Focusing on Suwon Hwaseong Fortress registered as a UNESCO World Heritage Site, Suwon Gwanggyo Museum has offered EE program by using Yecheon Stream and trails in Gwanggyo History Park. The city government has also worked hard to reenact the historic ‘Suwoncheon Stream Dredging’ tradition to inherit eco-awareness. Such an approach for linking history to EE not only arouses citizens’ ‘sense of community’ but also corresponds with the goal of EE for the better environment of communities.

- The city government designated Suwon Tree Frogs(*Hyla suweonensis*), Korea's indigenous and endangered species, as the mascot of Suwon city, calling them 'Suwonee'. Programs such as Suwon's Reaching-Out Eco Class, Suwon EE Textbooks: Suwonee Stories, and Suwon Tree Frog School have been provided, linking the brand to EE and highlighting the identity and characteristics of Suwon's EE.
- The Suwon City Government has expanded community EE programs, thereby fostering the 'sense of community' and understanding of how to live together with the environment. The onsite program for community recycling is an example. Local libraries also provide unique opportunities for citizens to enhance their literacy on ecology and humanities. At the same time, the city government has expanded EE via local events or festivals such as Eco-Sharing. Suwon also has urban parks with EE programs in the seasons of spring to autumn, thus local residents can access EE from anywhere anytime.
- When an environmental educator from China or Japan visits Suwon, it is recommended to visit one of the four EE facilities(centers) introduced above. Each EE center run programs reflecting the characteristics of Suwon and the core value of environmental education.



## □ Achievements or impacts of EE on Suwon local communities

- The Suwon City Government declared itself as the first model EE city in Korea in November 2014. The city government set up annual goals and strategies for the 2015 to 2018 period in order to offer EE program to 450,000 households in Suwon by 2018. Developing family participation-based EE, holding EE festivals, distributing EE textbooks and information on EE facilities, the city government exceeded its original goal and provided EE to about 680,000 households.
- The number of Suwon citizens participating in EE programs has been increasing as 2015(190,000), 2016(340,000), 2017(360,000), 2018(550,000), 2019(660,000). As of 2019, the number of EE participants is about 56% equivalent of the total population of Suwon. Such increase in the participation rate is due to the fact

that each administrative section of Suwon City and civic EE organizations implement EE programs with different characteristics of places. It can be said that the citizens can easily participate in EE anytime and anywhere in Suwon.

- A closer look at how citizens who participated in EE had an impact on the local communities are still needed. We often receive feedbacks or testimonials from EE program participants on their positive changes. For example, the elementary students who participated in the 'Bio Expedition' program at the Chilbo Eco Center also won a prize at an environmental competition by suggesting ideas to protect the endangered plant, 'Chilbo-chima' (*Metanarthecium luteoviride*) which shares its name with Chilbo Mt. The middle and high school students' environmental club, which is operated in connection with EE facilities in the region, has been working for Suwon's natural environment survey and wildlife habitat preservation activities. Such small but meaningful changes of EE participants have been a good driving force and motivation for environmental educators and civic EE organizations in Suwon.



## □ Contact Point for further networking

- The Suwon City Government and Freiburg City of Germany have established sisterhood ties, cooperating to create a sustainable city where the environment and industries are developed in a balanced way. They signed an MOU and are working together to exchange best cases of environmental policies. The two cities have promoted a diversity of environmental exchanges in the realms of reducing greenhouse gases, expanding the use of renewable energy, improving energy efficiency, promoting energy preservation, managing wastes, and also implementing EE. The Freiburg Observatory in Gwanggyo Lake Park was built by the architect who designed the Freiburg Observatory in Germany, showcasing that exchanges and cooperation between the two cities are very active.
- In 2019, we welcomed the visitors from city of Nizhny Novgorod in Russia to exchanges experiences on environmental education with Suwon City. Our friends from the Nizhni City showed great interest

in how Suwon City promotes environmental education in cooperation with civic EE organizations in Suwon.

- Although Suwon City has been actively interacting with the Freiburg City in Germany in all areas of the environment, it does not have close cooperation with Asian cities on EE. Suwon City would like to share its EE experiences with cities or regions of China and Japan. Facing the CoVID-19 pandemic, it is time to change the strategies for environmental education. We look forward to close cooperation in environmental education among the cities with EE experiences in China, Japan, and Korea.
- When any environmental educators in China or Japan are interested in EE of Suwon, please feel free to contact Suwon City. Suwon City will take the privileges to provide guidance on Suwon's EE to colleagues from China and Japan, and connect you with most appropriate EE experts or practitioners in Suwon.

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**KOREA 4.****Dobong-gu(district)****□ Introduction of Dobong-gu**

- Dobong-gu is an autonomous administrative district with the population of 330,000 located in the northernmost part of Seoul. About 48% of its area is occupied by the Bukhansan National Park. Dobongsan Mountain, the symbol of Dobong-gu, is connected to the Bukhansan, which is called the guardian mountain of Seoul. The clear water in the valley between the mountains and the dense forest are mingled in great harmony, showing off splendid scenery.
- On the other hand, a large number of mountain visitors from all around Seoul have threatened the ecosystem of Dongbongsan Mountain. About half of Dobong-gu is composed of mountains and a large portion thereof belongs to a national park designated as a green belt, so that the need for urban development has been consistently raised as a main issue for discussion.

**□ Vision and status of EE in Dobong**

- Dobong-gu is a leading district in adapting to climate change, whose electricity consumption is the lowest among districts in Seoul, causing it to be regarded as an eco-friendly district. Offering all of its members Green New Deal Education, the local government has actively promoted EE. Moreover, it has operated 'Dobong EE Center', the first local EE center in Seoul acting as a hub for EE in northeastern Seoul.
- In particular, Dobong-gu has worked together with residents to resolve environmental issues. Creating a culture of collaboration to deal with environmental issues and setting up a system where residents' ideas are reflected into policies, the local government has successfully led communities to more effectively understand policies. It has significantly increased community members' engagement by ensuring their participation by agenda such as ecology, environment, and

energy and providing more opportunities to discuss such issues.

- 「The Dobong-gu Environmental Education Plan」 established in 2020 intends to expand environmental education (EE), adopting ‘environmental education for us now and us of the future’ as the vision statement. Particularly, the district performs community-based educational programs on ecology, environment, and climate change utilizing its regional resources. Being an RCE, or a regional center of expertise on education for sustainable development, a distinctive feature of this district is its aim to become a sustainable lifelong learning city.

## □ Governance and partnership for EE in Dobong

- The EE of Dobong-gu is operated in the manner of private-public governance. Examples of such governance are ‘Dobong-gu Environmental Policy Committee,’ participated by the Head of Gu Office, heads of environment-related divisions, experts and heads of private organizations, ‘Dobong-gu Council for Educational Development,’ which seeks the development of environment and education together with schools in Dobong-gu,’ and ‘Dobong-gu Conference for Governance,’ which contributes to relevant policies by collecting diverse opinions of residents on environment and environmental education.
- The Dobong-gu Environmental Policy Committee that was set up as a means to promote its environmental policies takes charge of discussing the direction of EE policies. The Dobong-gu Conference based on collaboration acts as a venue for the Mayor of Dobong-gu, district councilors, cooperatives, and civic groups to gather to discuss various issues relating to education, environment, welfare, economy, and culture. Its integrated discussions on EE are expected to produce more comprehensive results in EE.

## □ EE policies of Dobong-gu

- Dobong-gu has continuously paid keen attention to EE to respond to climate change. In 2018, it became the first basic district in Korea that devised 「The Ordinance on the Prevention and Management of Environmentally Hazardous Elements」. The Ordinance also contains information on EE.

- Dobong-gu has prepared an institutional framework concerning the establishment of EE Plans and operation of EE centers through the enactment of the Basic Ordinance on the Environment of Dobong-gu and the Ordinance on Installation and Operation of Dobong-gu Environmental Education Center in 2019, and the Ordinance on Sustainable Development of Dobong-gu in 2020.
- The Environment Policy Division takes care of major tasks related to EE, including the establishment of EE Plan, operation of Dobong Environmental Education Center, EE programs, and environment festivals, etc. In addition, the Sustainable Development Division, Education Support Division, Parks & Landscape Division, and Resource Circulation Division also support EE affairs. These divisions promote EE in the manner that fits the characteristics of each: Sustainable Development Division supports RCE operation; Parks & Landscape Division supports ecological education; and Resource Circulation Division supports education on circulation and recycling of resources.
- Dobong-gu's EE is characterized by different business and roles by division. Many divisions promote EE based on their own expertise, thereby offering various EE to residents.

## □ EE centers and facilities in Dobong

- Dobong-gu designated Dobong Environmental Education Center as the regional environmental education center. The Dobong Environmental Education Center is the 1st local EE center designated by Seoul City(2020). Currently three full-time employees and 18 lecturers of outreach environment class operate various environmental education programs, including the three environmental education programs certified by the Ministry of Environment. Moreover, the Bukhansan Mountain Ecology Experience Center in the National Park has also delivered environmental education.

### ▪ Dobong EE Center

- The Dobong EE Center that was opened in 2003 is a facility using a gallery in Sole Ecological Park. The Center has offered EE in order to raise the awareness of future generations about the environment through nature experience activities and to improve the community

environment via volunteer training and so forth. Along with the head of the center and three full-time employees, 67 volunteers have been recruited through Dobong EE Center Nature Interpreters, School Garden Guides, and Ecology Play Teachers, with 18 instructors for Reaching-Out Environmental Class being also employed.



- The Center is operating a total of 35 EE programs including Nature Experience, Living Environment, Science Exploration, Group EE, and Reaching-Out Green School. Among them, Sole Ecological Park Reflecting Four Different Seasons designated as an exemplary program by the Ministry of Environment has implemented



diverse experience activities under the theme of Nature such as Making and Dyeing. ‘Useful Environmental Story to Know’ is a program for adults that provides information on eco-friendly lifestyles and offers ways to apply it in their daily lives. The Center was given the Environment Minister Award in the Low-Carbon Life Contest in 2019 and awarded the Gold Prize in Environment by the Seoul Metropolitan Government in 2017.

### □ Characteristics of EE reflecting locality of Dobong

- The event of finding ecological face (flagship species) of Dobong-gu is an EE program and an environment conservation project at the same time, where flagship species, which are environmental indicators representing the local ecology, are to be found. It is an EE project that has been implemented since 2018 when the habitat of *Seriginus montela* was found during the road construction in Jungnangcheon in 2016. Dobong-gu declared *Seriginus montela* on the land, salamander in the water, and large egret in the sky as flagship species of Dobong-gu, and produced an ecology map. Habitat conservation and ecology experience education focusing on *Seriginus montela*, an endangered species designated by the Ministry of Environment, one



of the three flagship species, are carried out in the district. This project is performed every year, and environmental education that reflects regional characteristics is implemented. Eco-Friendly Urban Farming Promotion Education is offered to young children, teenagers, and families at Ssangmundong.

- Eco-Friendly Shared Garden. It includes urban farming facilitation education such as mushroom cultivation, urban bee raising, honey production for children, and stories of medicinal herbs, as well as urban farming experience programs including rice planting, rice reaping and traditional threshing. Taking advantage of the geo-cultural characteristics of the urban area, the program informs residents of the value of urban farming, delivering food-related EE.



- The Preserving, Saving, and Smiling Festival that was launched in 2018 is a representative environmental event in northeastern Seoul dealing with various themes such as environment, ecology, energy, and urban farming. Grabbing keen attention from community members, the festival is attended by five to six thousand residents every year. In connection with this event, more than 50 booths are run by EE sphere to lead residents to participate in environmental conservation.

- The Eco-Exploration Scheme for Teenagers was launched in 1996 and is implemented for two to three days between August and October every year. It consists of six exploration programs regarding river, atmosphere, garbage, transportation, walking, and welfare, as well as environmental contamination monitoring and the survey of residents on their awareness of the environment. It has long been positioned as local culture and is attended by more than 200 teenagers every year recognizing that they should take care of their communities.



- In addition, various EE programs are provided, including community based EE for villages, EE that utilizes the policy concerning the lifelong learning city, and the establishment of the network for lifelong learning.

## □ Achievements or impacts of EE on Dobong local communities

○ Dobong-gu provided ‘Green New Deal’ training to employees in the district office so that they could develop basic grounding in community-based green new deal in preparation for the post-Corona era. In addition, the education project concerning climate change response provided in the district has been certified as an official ESD project by the Korean National Commission for UNESCO, and the district also has been certified as an RCE by UN University, which is the first time among autonomous districts in Seoul and the 6th time in Korea. Through this, Dobong-gu are implementing various projects related to the pursuit of sustainable life. From 2019, Dobong-gu has autonomously held Dobong Environmental Education Forum, and Dobong Environmental Education Center recently received an official certification as the first local-level EE center of Seoul.



○ Dobong-gu held “Dobong EE Forum” in 2019 to inform residents of EE, to attract their participation. Heated discussions regarding EE were conducted under the theme of “Better Dobong! Discussions on the Operation of the Basic EE Center.” Participants were able to more clearly understand the roles and direction of Dobong EE Center, seeking ways to offer customized EE to resolve local environmental issues.



○ Dobong-gu became the first basic district in Korea in 2014 to establish the Social Cooperative for Solar Power Generation Based on Residents’ Participation. This is attributed to the fact that EE has improved residents’ awareness of environmental preservation. This scheme is a model case of local environmental administration led by community members, where income from the operation of the facilities is returned to energy sharing and welfare. Building the first solar power plant in 2014, Dobong-gu completed the construction of



the 4th plant in 2018, all of which are now under operation. This initiative has played a key role in not only offering climate change education to residents but also aiding 40 households suffering from energy poverty every year.

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**KOREA 5.****Tongyeong City****□ Introduction of Tongyeong City**

- Tongyeong City with its byname, ‘Naples of Korea,’ is one of the most famous tourist cities in Korea, boasting the indigo blue sea, the beautiful port, and many islets. Historically, Tongyeong is where Tongjeyong, the navy headquarters in the Joseon Dynasty era was located (the very site of the great naval battle in Hansan during the Japanese Invasion of Korea in 1592), and the home of lacquerware inlaid with mother-of-pearl, a tradition that goes back 400 years. Current population of Tongyeong City is about 130,000.
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- The sea surrounding Tongyeong is one of the cleanest areas officially recognized by the US FDA. The city also features advanced fishing and shipping industries. Well-known tourist sites in Tongyeong are Hallyeohaesang Cable Car, Mireuksan Mountain, Dong Pi Rang Mural Village, and an undersea tunnel.

**□ Vision and status of EE in Tongyeong**

- Based on natural marine resources in Hallyeohaesang National Marine Park, Tongyeong is a truly comfortable habitat for a variety of marine life including endangered species such as convex crab, seagrass, seahorses, and fairy pittas. It houses a diversity of educational institutions specializing in the environment and the sea.
- 「The local EE Plan」 established in 2020 for the activation of eco-environmental education in Tongyeong City set ‘Tongyeong, the City of Citizens with Environmental Literacy Building a Sustainable Future’ as the vision statement, and Tongyeong-style EE and ESD (Education for Sustainable Development) are being expanded. EE of Tongyeong, with Tongyeong RCE as the central agent, is formed in the manner of linking EE with ESD. Another distinctive feature of EE of Tongyeong is the promotion of EE based on private-public-school

cooperation, considering unique qualities of the region at the same time.

- Tongyeong has set up infrastructure for an educational city for sustainable development, devising the first EE ordinance in Gyeongsangnam-do, crafting the EE plan, and designating and operating local centers for EE. Also, the city has promoted Tongyeong-style EE programs in school EE and social EE, developing and distributing teaching materials, strengthening EE teacher training, supporting middle and high schools to choose EE courses, and cultivating social environmental education instructors. The establishment of evaluation and monitoring systems for bringing about local changes differentiates its EE from the one in other cities. Tongyeong plans to offer better EE to its citizens through systematic EE assessment and monitoring.

## □ Governance and partnership for EE in Tongyeong

- When declaring itself as a city for EE and ESD in June 2020, Tongyeong specifically set up the direction and goals of its EE and organized a TF team responsible for making key policies and action plans. Six institutions and organizations decided to establish systems for a city for ESD, to develop and operate school and social environmental education programs, and to actively participate in private-public-school governance for creating an environmental city.
- The Tongyeong RCE Education Commission, composed of 19 educational institutions in the jurisdiction and four special members, is making systematic efforts among members for ESD. The commission has prevented the overlapping of programs through the joint planning and operation of civic education programs, upgrading the quality of civic education via ESD.
- The network of teachers for sustainable development is governance operated mainly by those teachers who were in charge of ESD model schools in 2006. Currently 75 teachers from 57 schools are participating in the network. They have expanded EE and ESD at school environments by holding seminars on EE and ESD and sharing teaching materials.
- The Council for Sustainable Development of Tongyeong City has actively engaged in civic education through the operation of Tongyeong

Academy of Sustainable Development, and received an award of best example of private-public governance in Gyeongsangsam-do. In 2018, the Council set up T-SDGs (Tongyeong-SDGs) reflecting local circumstances.

## □ EE policies of Tongyeong City

- Tongyeong devised 「The Basic Ordinance on the Environment」 in 1988, making itself an ecologically desirable city where humankind and nature coexist in harmony wherein sustainable development is promoted. In particular, the Ordinance contains provisions on EE in order to enable the city government, educational institutions, and related agencies to cooperate to facilitate EE and its promotion activities and thereby to support citizens and businesses to have a deeper understanding of environmental conservation and to promote environmental preservation activities in a voluntary manner(Article 17).
- With the designation as an RCE(Regional Center of Expertise on Education for Sustainable Development) of UN University in 2005, 「The Ordinance on Establishment and Operation of the Educational Foundation for Sustainable Development of Tongyeong」 was enacted, and the foundation was established. On the basis of the accumulated experience in EE and ESD since then, Tongyeong city is now preparing for the enactment of 「The ordinance on the activation of EE and ESD」 for the first time among primary local governments in Gyeongsangnam-do. The office in charge of EE of Tongyeong City is the Environment Division. In accordance with 「The Tongyeong RCE Ordinance on the Management and Operation of Natural Eco-Parks」, the opinions of RCE officials in the Asia-Pacific region were gathered in 2014 to rename the park ‘Tongyeong RCE Sejahtera Forest’. The park was opened in 2015 to act as a hub for EE and ESD at home and abroad.
- 「The Basic Plan for Promoting Eco-Environmental Education」 was crafted in 2020 to ensure a sustainable future for the city of Tongyeong. This plan is designed to establish the foundation for the promotion of school EE in order to nurture global citizens living with nature in the era of climate crisis and environmental disasters. It also aims to put EE into practice through collaboration among the office of education, EE groups, and schools and to cultivate eco-friendly citizens by setting up networks among local

governments, social EE institutions, and schools.

- The division takes charge of EE in communities with the Tongyeong RCE (Sejahtera Forest), a local EE center (preliminary), as the main agent. Tongyeong RCE employs a total of 15 staff members and its education team with expertise in EE plays a leading role in promoting EE and ESD in Tongyeong.

## □ EE centers and facilities in Tongyeong

- The Tongyeong RCE Sejahtera Forest is being promoted as a preliminary local EE center. Built in a site of superb natural landscape in 2015, Sejahtera Forest affords an assembly hall, library, cafeteria, and even accommodations, enabling various experiential learning outdoors. Annually 14 EE programs are operated, including EE programs where citizens participate, and ESD training program. Tongyeong Office of Education is in charge of EE in schools, and Hallyeohaesang National Marine Park Nature Center, located in Tongyeong, provides excellent EE programs designated by the Ministry of Environment. Other main players in EE include the Council for Sustainable Development of Tongyeong City, the Federation for Environmental Movement in Tongyeong and Geoje, and Tongyeong Multicultural Family Support Center.

### ▪ Tongyeong RCE Sejahtera Forest (Tongyeong Educational Foundation for Sustainable Development)

- The Tongyeong RCE Sejahtera Forest is an EE center where people, facilities, and programs are organically intertwined for effective education, R&D, and networking. This facility is designed to learn and promote coexistence between people and people, between mankind and nature, and between present and future generations. It was launched as Tongyeong RCE in 2011, opening an eco-friendly experience center called Sejahtera Forest in 2015. This center has played a pivotal role in facilitating EE and ESD in Tongyeong.



- The Forest consists of Sejahtera Center, Marine Eco Center, Green Life Education Hall, Visitor Center, Family Garden Experience Center,

and Treatment Wetland Park. The Forest is mainly implementing four projects. First, as part of the efforts to support ESD at school, it is supporting the operation of the School Council for ESD and model schools in ESD. Second, for ESD for citizens, it has organized the Education Council for Citizens and established citizen education networks, jointly planning and operating citizen education programs based on the concepts of ESD.



- It also operates ‘Sejahtera School’ equipped with programs for various age groups to make Tongyeong a sustainable city based on lifelong education. In 2019, 121 persons participated in various programs such as culture/arts, humanities, citizens’ participation, and vocational capabilities offered by the School. It has also supported researchers, experts, and artists working for global RCE cities and ESD-related institutions, promoting ESD networking and academic exchanges. The programs are designed to lead participants to improve their environmental activities while staying at the Forest and to increase the value of sharing and learning by sharing their talent and knowledge with visitors.



#### ▪ Ecological Exploration Center in Hallyeohaesang National Marine Park

- The Ecological Exploration Center was opened in October 2018 to contribute to enhancing people’s quality of life through national park ecology experience projects for enabling connections among nature, mankind, and future. By using excellent ecology, culture, and natural resources in Hallyeohaesang National Marine Park, it has operated programs such as eco-tourism and EE, enabling teenagers to experience environmental vocations via career experience programs. It is also operating differentiated EE programs designated by the Ministry of Environment. For instance, it is offering marine EE to citizens through programs such as ‘Let’s Curtail Marine Litter’, ‘Eco-Orienteering’, ‘Meet the Ocean World of Hallyeohaesang’, and ‘Let’s Take Care of Porpoises’.

## □ Characteristics of EE reflecting locality of Tongyeong

- Tongyeong is surrounded by the ocean and is characterized by well-advanced fishing, shipping, and tourism industries, thereby making it possible to offer a diversity of marine EE. In particular, it specializes in ecological experience education. This makes its EE clearly differentiated from the one in inland cities.

- The Tongyeong RCE Sejahtera Forest houses a marine eco-education center located on the seaside, making it possible to offer marine EE against the background of the offshore zone designated as a marine protected area. ‘Hi, Ocean’, an exemplary marine EE program, leads participants to learn the ocean plagued by litter and to seriously think about what they can do to ensure its sustainability through stories of sea turtles.



- Tongyeong Office of Education has jointly operated a marine EE program called ‘Seagrass School’ with the Federation for Environmental Movement in Tongyeong and Geoje in order to support participants to clearly understand and effectively preserve marine protected areas. The practical experience program leads students to have a clear understanding of and to conserve the marine environment. Such a program is expected to play a key role in enabling Tongyeong citizens to develop knowledge of the marine environment and to protect the ocean and ecosystems of Tongyeong in the future.



- The Ecological Exploration Center in Hallyeohaesang National Marine Park has planned and operated a program named ‘Let’s Curtail Marine Litter’. This was officially recognized by the Ministry of Environment as an EE program and has been carried out for those from fourth graders to middle school students in the Center and the neighboring seaside. This program enables students to clearly understand the significance of Hallyeohaesang National Marine Park and the value of marine ecosystems, supporting them



to participate in the scheme to reduce the negative impact of marine litter on ecosystems. Also, marine EE regarding the history and geography of Tongyeong has contributed to creating sustainable tourism culture.

- Being a UNU-certified RCE, various international exchange regarding ESD and related EE programs vigorously occur in Tongyeong City. ‘Bridge to the World’ is hosted by Sejahtera Forest with a view to prepare regional talents through such projects where youths of Tongyeong discover issues in the surroundings, seek measures to solve them in sustainable methods, and apply them in real life. Through this program domestic and overseas field trips to Germany, Malaysia, Japan, Busan, Seoul, and Ansan were carried out in 2018, and those to Australia, Malaysia, Indonesia, Jinju, Cheonan, and Seoul were carried out in 2019.
- Tongyeong ESD International Forum is annually held since 2017 with a view to discover excellent examples in the Asia-Pacific Region in the era where our environment and its sustainability are threatened, and to expand mutual exchange between RCE cities and between domestic ESD-related institutions. Every year domestic and overseas ESD institutions and experts participate in this forum, helping find the right direction of sustainable education in Tongyeong, an education city of sustainable development.

## □ Achievements or impacts of EE on Tongyeong local communities

- Focusing on the Tongyeong Sejahtera Forest, Tongyeong opened an educational marketplace in 2019 under the slogan of ‘Disposable Item-Free World’. At the ceremony, high-ranking officials including the Tongyeong Mayor promised to work harder to reduce waste in the region.
- With the declaration as a city for environmental and sustainability education on June 5, 2020, Tongyeong City and related institutions signed MOU to jointly achieve the vision of EE, thus creating a city where human and nature coexist based on the value of sustainable coexistence. Accordingly, Tongyeong included EE and ESD in its regular courses, the first in Korea, and has supported the operation of related



programs for 38 classes in every middle school in Tongyeong to which the free-semester system applies. In addition, the city implements environmental awareness survey of its citizens every other year since 2009, which is unprecedented for a local government. Based on the analysis of survey results, consciousness of citizens on environment and relevant issues is diagnosed, and the necessity of EE is shared.

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Case studies on Environmental Education in China, Japan, and Korea  
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