



Taskforce on
Nature-related
Financial
Disclosures

Crested Serpent Eagle
The Hoping Mine in Hualien



TCC Official Website



TCC ESG Section



TCC Facebook



Wechat Public Account



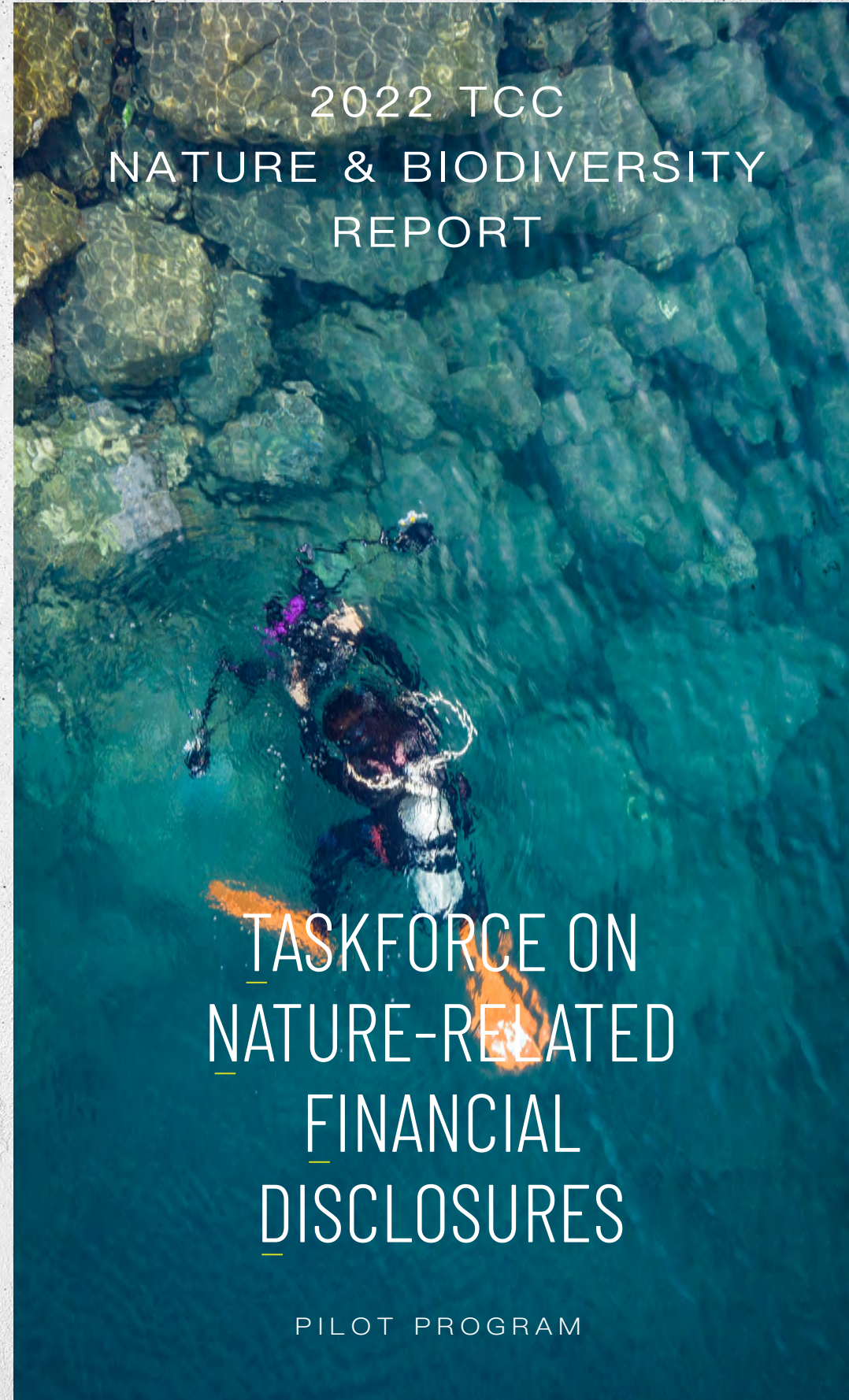
TCC Instagram

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2022 TCC NATURE & BIODIVERSITY REPORT



TASKFORCE ON NATURE-RELATED FINANCIAL DISCLOSURES

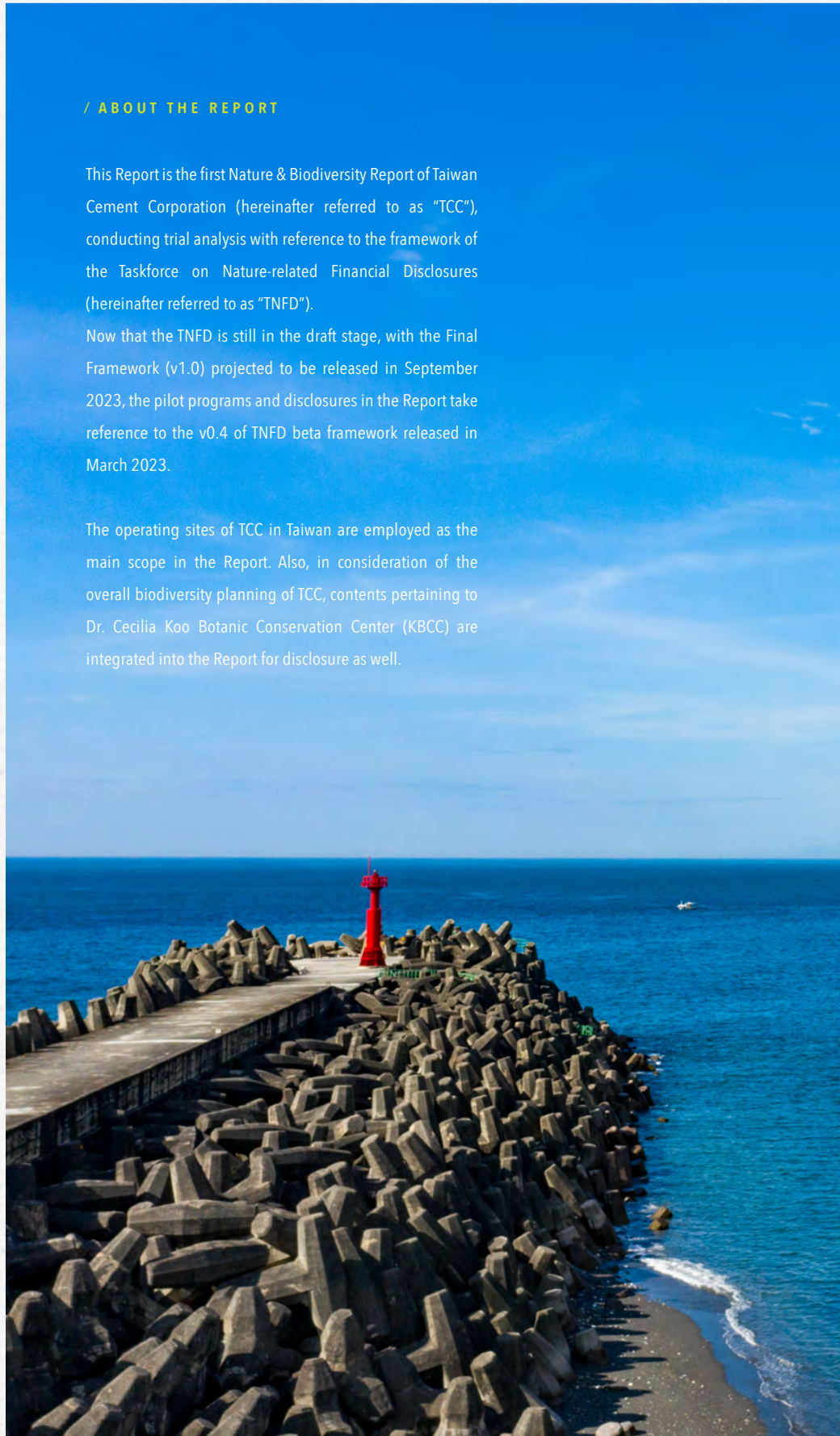
PILOT PROGRAM

/ ABOUT THE REPORT

This Report is the first Nature & Biodiversity Report of Taiwan Cement Corporation (hereinafter referred to as "TCC"), conducting trial analysis with reference to the framework of the Taskforce on Nature-related Financial Disclosures (hereinafter referred to as "TNFD").

Now that the TNFD is still in the draft stage, with the Final Framework (v1.0) projected to be released in September 2023, the pilot programs and disclosures in the Report take reference to the v0.4 of TNFD beta framework released in March 2023.

The operating sites of TCC in Taiwan are employed as the main scope in the Report. Also, in consideration of the overall biodiversity planning of TCC, contents pertaining to Dr. Cecilia Koo Botanic Conservation Center (KBCC) are integrated into the Report for disclosure as well.

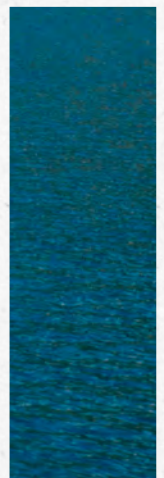


/ TABLE OF CONTENTS

Chairman's Address	04
IN SERVICE FOR LIFE: Management Philosophy with Nature at the Core of TCC	05
TCC Nature Actions	10
Biodiversity Plans at TCC	12
Accumulated Achievements of TCC in Nature Conservation Projects	12



1 Nature Topic Strategies	13
1.1 Biodiversity Policy	15
1.2 Nature Governance Framework and Targets	15
1.3 Professional Partnerships and Initiatives	16
2 TNFD Pilot Program	17
2.1 Nature-related Risk and Opportunity Assessment Process	18
2.2 Results of the Dependencies and Impacts on Nature Evaluation	19
2.3 Results of Nature-related Risks and Opportunities and Coping Strategies	21
2.4 TNFD Pilot Process and Review	25
3 TCC Natural Conservation Development	27
3.1 Status and Planning for the Focused Business Areas of TCC	29
3.2 Stakeholder Engagement on Topics of Nature	39
3.3 Guardian of Life on Earth for Good – KBCC	41
4 Future & Prospect	45
Appendix	47



Life Diversity

Amidst the symphony of life diversity,
The majestic landscape of nature lays out a splendid embroidery.
Biodiversity is a treasure of profound significance,
Nurturing the earth and giving birth to each life's uniqueness.

On the earth, prides of lions run free,
With graceful leopards traversing betwixt the lush prairie.
The magnificently plump elephants are the faithful guardians of mother nature,
Marching in pride to embody the values of the wilderness onward.

Blue blips shine deep in the ocean,
Whales sing songs that tug at our heartstrings, resonating to the far side of the ocean.
Over the seabed full of colorful coral reefs,
Creatures in postures of variety dance gracefully to the oceanic symphony.

Among the canopy in emerald green, creatures dwell,
In the forest bit by bit mysteries unveil.
Monkeys leap, game, and play at liberty,
As birds spread their wings, soaring high in the heavenly melody.

Flowers release intoxicating fragrancy,
Painting the face of the earth splendidly.
Bees hum and caress petals with their wings,
Disseminating pollens and the future for fruits.

Amidst the perpetual cycle of life and the cuddle of great love of nature,
Each life is a masterpiece as much as an artwork.
With unlimited talents and diverse infinity,
It holds hope and the consciousness of greater self to pass on the world.

Protecting and respecting everything we cherish,
For we have the power to choose in our hands
To safeguard those we hold dear.

Let us create a future of praise and contemplation of nature,
A world that is greener, brighter, and without fear.

Zuo Ren
August 2023

Nelson An-ping Chang
Nelson An-ping Chang
Chairman
TCC



MANAGEMENT PHILOSOPHY WITH NATURE

IN — SERVICE — FOR — LIFE

AT THE CORE OF TCC



For long, we humans have been enjoying the seemingly endless gift granted by nature selfishly, without realizing that the sources on Earth are limited and that we are on loan from the future environment. Needless to say, there are only a few that remember to thank all things in return as we should, in service for all lives.

We have to see that the ecosystem of Earth cannot support the development of human life if there are only humans and the flora and fauna tamed thereby remain on Earth.

~Nelson An-ping Chang, Chairman of TCC

"Biodiversity loss" has been included by the World Economic Forum (WEF) for four consecutive years as the top five threats to be faced in the decade to come. According to the statistics, 50% of the world's total GDP derives from natural capital. Should we fail to mitigate and preserve natural capital actively, the economies worldwide will sustain a loss of over \$42 trillion, as the human race will face the survival crisis. As part of nature, TCC actively mitigates the impacts on the natural environment, takes the potential nature-related risks of the Company seriously, and treats them as critical topics at present.

Cement is Derived from Nature, Applied to the Society, and Accountable for the Earth's Environment

Cement stemmed from the basic needs of humanity for security. With the raw material derived from the limestone in mines, it has been one of the industries that rely on natural resources. TCC, as the first cement company in Taiwan, has been dealt with issues of environmental protection since the 1990s. In compliance with the eastern shift industrial plan of the government, TCC constantly reflects on the relationship between the cement industry and nature. With "nature first" and "Benefit to Society", TCC seeks the balance of human development and nature.

Chairman Nelson An-ping Chang specifically incorporated "In Service for Life" into the basic thinking of the corporate operation. He is convinced that In Service for Life is not a strange topic, but a subject philosophers and scholars of humanities have been exploring for life over millennia. Nevertheless, this subject was never incorporated into the basic thinking of corporate operation. It seems to be confined onto the moral level, never been realized in the reality of human society. It is not morality or a slogan, nor does it an abstract notion, but a highly professionalism to be fused into the everyday work contents of an enterprise.

TCC launched the plant conservation project in 2007. Dr. Cecilia Koo and Mr. Leslie Koo, the former Chairman of TCC, provided the private land of "Taihe Farm" located in Gaoshu Township in Pingtung to establish "Dr. Cecilia Koo Botanic Conservation Center" (KBCC). Tasked with the mission of conservation and research on the endangered and rare species in the tropical and subtropical climates, it preserves different parts of plants in

liquid nitrogen as well. At present, there are over 34,000 taxa of plant species conserved, with over 62,000 specimens frozen with liquid nitrogen, as the research materials for the generation scientists to come.

Regarding the conservation efforts on land, TCC insists on that "During mine excavation, we must minimize the environmental impacts. After mining is completed, we must return the site to its natural state" The optimal restoration methods are adopted in line with the characteristics of the mines owned by TCC, aiming primarily to restore the local ecological environment. The indigenous plant propagation project was commenced for the mines in 2016. Also, TCC works with relevant departments in universities, and KBCC became the professional team for the mine restoration project as well.

Soil is a habitat for the survival of countless live. It is also the largest carbon pool on land. However, humans have very limited knowledge about it. Therefore, TCC launched the "Ho-Ping Ark Ecological Program" in 2022, committed to the 10-year soil monitoring plan and a long-term support to the research progress. The first semi-closed ecosystem experimental base in the world was created in search of the solutions for the future Earth ecosystem.

Regarding the marine conservation, upon discovery of corals at the Hopping Port over a decade ago, TCC engaged in various basic surveys and restoration efforts successively, preserving the port environment and marine ecology in an active manner. At present, over 280 corals have been restored to the Hopping Port, with up to 89% of restoration rate overall.

Participation in International Nature Initiatives and Efforts on the Basis of UN SDGs

The three UN Sustainable Development Goals (SDGs), i.e. Goal 13 Climate Action, Goal 15 Life on Land, and Goal 14 Life below Water, are employed as the strategies at TCC. Biodiversity survey, research, and conservation programs were launched for its plants, the forests and soil at the mines, and the ports. Meanwhile, echoing with nature-related topics and the current initiatives internationally, TCC proactively signed "Call to Action" and "Make It Mandatory" of Business for Nature and joined Taiwan Nature Positive Initiative (TNPI) of the Business Council for Sustainable Development of the Republic of China (BSCD-Taiwan) to voice out for the conservation of biodiversity hand in hand with corporate partners.

TCC participated in the Pilot Program of the Taskforce on Nature-related Financial Disclosures (TNFD) in 2022 to examine. Moving forward, TCC shall continue to draw reference from the Final Version (v1.0) of TNFD framework for analyses and disclosures, and introduce the Science Based Targets Network (SBTN), and work toward the direction of Nature Positive.



TCC NATURE ACTIONS



1992

The Rio Conventions of the United Nations

United Nations Framework Convention on Climate Change (UNFCCC)
Convention on Biological Diversity (CBD)
United Nations Convention to Combat Desertification (UNCCD)

- 1994 CBD COP1
 - 1995 UNFCCC COP1
 - 1997 CBD COP3
- Signing of Kyoto Protocol

2010 CBD COP10
20 Aichi Biodiversity Targets stipulated



Life in harmony, into the future
いのちの共生を、未来へ
COP 10 / MOP 5

2015



17 Sustainable Development Goals (SDGs) of the United Nations released
UNFCCC COP21 Paris Agreement: limiting the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit it to 1.5°C

2018 UN IPCC Special Report: Global Warming of 1.5°C

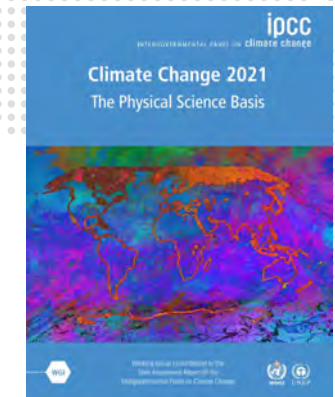


UNFCCC COP26
A strict compliance with the threshold value of 1.5°C of global warming, proposal of Net Zero target, phase-out of fossil fuels, Deforestation Pledge, committed to put an end to the issues of deforestation and land loss

CBD COP15
Taskforce on Nature-related Financial Disclosures (TNFD) launched jointly by the UN and G20

2021-2023

IPCC 6th Assessment Report, disclosing the fact that the global warming of 1.1°C reached and accounting the relationship between climate change with the changes of land, ocean, and the cryosphere



UNFCCC COP27
Protecting biodiversity is protecting the Paris Agreement, United Nations Environment Programme (UNEP) said

CBD COP15
Adoption of the Kunming-Montreal Global Biodiversity Framework (GBF), with the target "30 by 30" established, along with an enhanced promotion of Other effective area-based conservation measures (OECMs)



Taskforce on Nature-related Financial Disclosures

IN SEPTEMBER

The Final version (v1.0) of TNFD Framework to be released



1992-2000

2001-2020

2021

2022

2023

TCC ACTIONS



The Kaohsiung Shoushan Mine

1992 Mining rights terminated

1993 Restoration works initiated



SEA (HOPING PORT)

2019 The biodiversity policy of TCC stipulated

2007 Dr. Cecilia Koo Botanic Conservation Center established
The Suao Taibaishan Mine

2006 Quarterly environmental and ecological monitoring (long-term program)

2017 Ecosystem restoration program commenced, with the results tracked every half a year (long-term program)

The Hoping Mine

2006 Annual ecological survey long-term program

2016 Quarterly environmental monitoring and launch of the reforestation program (long-term program)

2020 First estimation of ecosystem service value and the survey on the plant restoration efforts

2015 Life below water survey launched

2019 Port Environmental Review System (PERS) certified

2020 Identification and distribution survey of the coral species and benthos in the port

Biodiversity Management Plan (BMP) executed

Membership of Business for Nature obtained

Survey of the Hoping Mine Ecosystem expanded to quarterly execution

Bio Cube Coral Creation Project commenced
The APSN Green Port Award System (GPAS) certified
The PERS certification renewed

The first manufacturer in Taiwan involved in the TNFD Pilot Program

Nature, CBD, and COP15, including Make It Mandatory and Call to Action, signed

Initiatives of Business for Taiwan Nature Positive Initiative

"Ho-Ping Ark Ecological Program," the only one long-term on the sole soil species in the world commenced

Hoping Port certified Environmental Education Facility



IN AUGUST

Nature & Biodiversity Report -



TNFD Pilot Program to be released

Planning to partake in the national OECM recognition
Introduction of the Final version (v1.0) of TNFD and the SBTN framework



BIODIVERSITY MANAGEMENT PLANS AT TCC



Established by TCC Group in 2007, KBCC is tasked with the mission to conserve the tropical and subtropical plants in the world, preserving biodiversity via ex-situ conservation. On the basis of academic research, it actively engages in international academic exchanges and tropical plant conservation projects as a world-class botanical conservation base.

Dr. Cecilia Koo Botanic Conservation Center

34,154 taxa of plants (endangered plants included) conserved cumulatively as of 31 March 2023

Over 6,200 plants in 60 taxa provided for academic & medicinal research cumulatively from 2008 to March 2023

Over 2,500 extracts constructed at the Natural Product Libraries

10,000 seedlings restored in the Lanyu program

ArbNet Level 1 accredited

Asteroid No. 526460 named "Ceciliakoocon"



The Hoping Mine in Hualien

The Hoping Mine in Hualien has been conducting the survey of the mine's land ecosystem to collect basic information since 2006. In 2016, TCC launched the long-term restoration project and established nurseries and hardiness facilities in the mountains for seedling growing works. Also, it works with Dahan Institute of Technology, National Hualien Agricultural Senior High School, and KBCC to propagate and conserve the indigenous species of the mine.

Suao Taibaishan Mine

The century-old mine—Suao Taibaishan Mine—presents harsh conditions for restoration thanks to its challenging climate and terrain since the Japanese ruled period. The environmental monitoring and the animal and plant ecological survey have been carried since 2006. In 2017, the "dedicated ecological restoration project" was launched in collaboration with the Sustainable Landscape Laboratory, National Ilan University, using the solar-powered microirrigation system, rainwater harvesting ponds, and windbreak nets to overcome the adversities for growing.

Ecological restoration projects for mines



100% Coverage of Biodiversity Management Plans (BMPs)

74% of area restored in Suao, and 47% in Hoping, in 2022

Indigenous plant species accounted for 90% in Suao, and 89% in Hoping, in 2022

First Prize of Environmental Friendly Project, the 18th CSR and ESG Awards of Global View Monthly in 2022 for "Homecoming for the Indigenous Residents in Taibai Mountains—TCC Ecosystem Restoration Program in Suao"

Top 10 Sustainable Micro-Movie, the 6th Taipei Golden Eagle Micro-Movie Festival in 2022 for "Indigenous Residents in Taibai Mountains"

ACCUMULATED ACHIEVEMENTS OF TCC IN NATURE CONSERVATION PROJECTS



Upon the discovery of coral colonies at the Hoping Port, TCC engaged in the life below water survey in collaboration with the team of National Taiwan Ocean University in 2015 and surveyed the species of corals and benthos together with Taipei University of Marine Technology in 2020, in which the broken branches from indigenous corals were found. Hence, TCC worked with Eco-Angel Environment Conservation Association to launch the Bio Cube Coral Creation Project to foster a richer habitat environment.

Hoping Port Ecological Restoration

Hoping Port certified to PERS in 2019 & 2021 consecutively

APSN Green Port Award System (GPAS) certified for the first time in 2021
284 corals restored with a 100% coral larvae survival rate and the area restored nearly tripled as of February 2023

Shortlist of Environmental Friendly Project, the 19th CSR and ESG Awards of Global View Monthly in 2023 for "The Great Barrier Reef of Hoping—TCC Bio Cube Coral Creation Project"

Silver Award of Sustainable Micro-Movie, the 7th Taipei Golden Eagle Micro-Movie Festival in 2023 for "Build A Home for Corals"

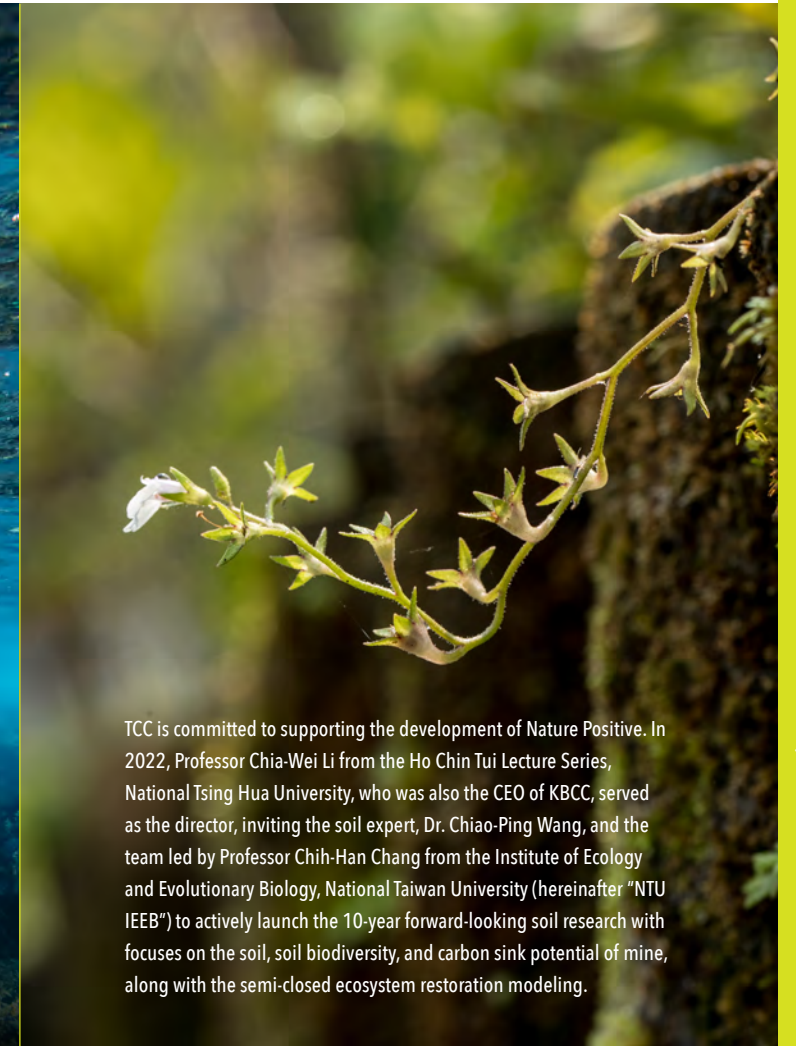
5,276 visitors benefited cumulatively

382 participants in the environmental education courses with satisfaction up to 90%

Environmental Education Facility certified



APEC PORT SERVICES NETWORK



TCC is committed to supporting the development of Nature Positive. In 2022, Professor Chia-Wei Li from the Ho Chin Tui Lecture Series, National Tsing Hua University, who was also the CEO of KBCC, served as the director, inviting the soil expert, Dr. Chiao-Ping Wang, and the team led by Professor Chih-Han Chang from the Institute of Ecology and Evolutionary Biology, National Taiwan University (hereinafter "NTU IEEB") to actively launch the 10-year forward-looking soil research with focuses on the soil, soil biodiversity, and carbon sink potential of mine, along with the semi-closed ecosystem restoration modeling.

Ho-Ping Ark Ecological Program

1167 plants of 173 taxa transplanted

Irrigation of the plants in the Ark Program using the reclaimed water from shaft tunnels, with 74 metric tons reclaimed in total as of March 2023

Gold Award of Corporations
the 1st Taiwan Biodiversity Awards in 2023

