



PMAC 2022

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THE WORLD WE WANT

ACTION TOWARDS A SUSTAINABLE,
FAIRER AND HEALTHIER SOCIETY



*THE COMPANION BOOK
FOR FIELD TRIPS*



PRINCE MAHIDOL
AWARD CONFERENCE

2022



PMAC 2022 | **THE WORLD WE WANT**
ACTION TOWARDS A SUSTAINABLE,
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PMAC 2022

The World We Want:
Actions Towards a Sustainable,
Fairer and Healthier Society

*THE COMPANION BOOK
FOR FIELD TRIPS*

PMAC 2022 | The World We Want: Actions Towards a Sustainable, Fairer and Healthier Society

The companion book for field trips in PMAC 2022

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Preface

Thailand Universal Health Coverage The World We Want: Actions Towards a Sustainable, Fairer and Healthier Society

National Health Security Office

Thailand was the first country outside China to detect the first case of COVID-19 in the country on 13 January 2020. However, after the first detected case was reported in Thailand, the relevant stakeholders managed to keep the pandemic under control. Collaboration and seamless integration of all involved sectors and strong leadership in all levels were important and effective for COVID-19 management because the novel outbreak causes high impact to people in the whole country. Quick detection, medication and personal protection are the three essential keys in controlling the outbreak. Our implementation stem from a combination of public health measures, social measures and Universal Health Coverage or UHC.

Thailand's policy on Universal Health Coverage (UHC) has made progress since its inception in 2002. Every Thai citizen is now entitled to essential health services at all life stages. UHC is the key in providing a timely response to health emergencies. Dealing with the COVID-19 pandemic, like many other countries, Thailand has introduced strategic measures for controlling the contagious situation as quickly as possible for the benefit of the people. Everyone in Thailand will be able to access the COVID-19 related health services both for Thais and foreigners. The services include free active screening and surveillance, testing, tracing, quarantine, treatment in hospital, hospitel, home isolation and community isolation. The UHC made a more significant success stems from a combination of public health and social measures, including effective communication strategies, enhanced social safety nets, and awareness-raising campaigns based on these three principles of equity, efficiency, and participation.

The Prince Mahidol Award Conference 2022 (PMAC 2022) will organize field trips under the topic of "The World We Want: Actions Towards a Sustainable, Fairer and Healthier Society" in Phuket province, which known as "the Pearl of the Andaman". Before the crisis, Phuket used to be a dream destination of both Thai and oversea

tourists for its spectacular scenery, world recognized magnificent beaches, eco adventure and typical culture. It is considered an important tourism city of Thailand. Tourism accounts for 90% of the income within the province, with over 14 million tourists from overseas each year and an estimated annual income of over 470,000 million THB (16,000 million USD) mainly derived from tourism.

Phuket was selected as one of the PMAC field trip sites last year as it is the greatest economic zone that was suddenly affected by COVID-19 in March 2020. The outbreak has affected not only people's related health issues but also the economic tragedy when the income relies on tourism.

The field trip this year will show how the experience of the COVID-19 pandemic is impacting the geopolitics of health, implications of key shifts in the makeup of the local population, the opportunity gains and threats of exponential technological change, and evolving threats to global health and wellbeing posed by climate change.

The synopses of 2 site visits proposed for virtual PMAC 2022 are as follows:

1) Integrative, Seamless and Participatory Management towards Sustainable Health and Wellness in a Tourism Area

Dealing with the COVID-19 pandemic in Phuket was extremely challenging as there were a large number of tourists from all over the world during the peak time of infection. Nevertheless, with integrative, seamless and participation of public organizations, the private sector, and communities, along with the experiences in dealing with the past emerging infectious diseases such as SARS and MERS, Phuket was able to control the outbreak of COVID-19 within a couple of months. The strategies that lead to this success include a super lockdown measure, lockdown at a district level and village level in some areas, collaboration of all sectors for screening, local quarantine supported by the hotel industry, and establishment of a field hospital which had the highest number of beds in the country for COVID-19 patients. However, there were many damages. The hotel and tourism industry, the main business of Phuket, had to close down and laid off their staff. This has had impact on the household income chain.



It is a big challenge to revitalize and recover Phuket's economy. With the synergy of all sectors, Phuket has been able to efficiently manage for controlling the outbreak as well as high coverage of COVID-19 vaccination. Tourism was reopened since 1 July 2021 under the "Phuket Sand-box program" that allows vaccinated foreign tourists with a special tourist visa (STV) to enter Phuket and do not need to quarantine, but they must stay with freely travelling in Phuket and make all tourists believe that Phuket is a safe haven.



The field trip will cover the issue of this program management which needs integrative, seamless and participatory management and what is a “new normal” were agile and adaptable towards sustainable medical and wellness tourism.

2) Regeneration of the Environment: Impact of COVID-19 and Human Behaviors in a Tourist Area

Phuket is a world tourist destination because of its renowned nature. However, “every coin has two sides”. The more tourists come, the more natural resources are consumed. Environmental conservation has been a challenge for Phuket. Many efforts and approaches have been made to balance the environment and tourists for



a long period. When COVID-19 rapidly spread across the globe and was declared a pandemic by the World Health Organization on January 30, 2020, it has generated unprecedented impacts on the whole world, including Thailand. The outbreak has led to a global catastrophic situation resulting in a high number of deaths and infections. It has also caused significant socioeconomic losses, especially in Phuket due to national and international travel restrictions. COVID-19 prevention and control measures increase the amount of infectious waste and sewage. This requires proper waste management.

The impacts of the crisis have also shown a positive side. When the country was lockdown, the restriction was applied to the entire country, the number of passengers visiting Phuket declined dramatically. Tourism business and sightseeing had to shut down and caused many effects on people, but it has imparted many positive changes on the environment because the nature has time to rest and recover. The water quality of the sea has improved. Endangered marine animals such as dolphins, omura's whale, and whale shark have been sighted and reported in the Andaman Sea.



This field trip will highlight two places: the Phuket Marine Biological Center and Ban Laem Tukkae, a community of an indigenous marine community called “Chao Lay or Urak Lawoi”. Examples of strategies for conserving and restoring the environment and nature to balance the marine and coastal ecological system, health of people, and economic and tourism of Phuket will be presented. The future plan and actions will also be discussed.



1

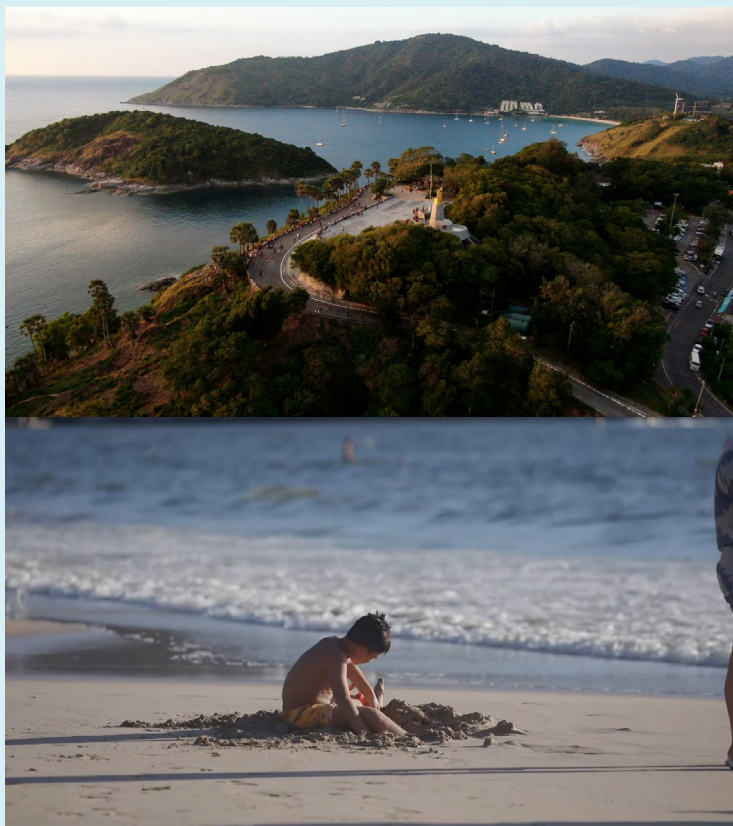
Integrative, Seamless and Participatory Management towards Sustainable Health and Wellness in a Tourism Area

Integrative, Seamless and Participatory Management towards Sustainable Health and Wellness in a Tourism Area

Kamolrat Turner

Sukjai Charoensuk

Panarut Wisawatapnimit





Phuket, the dream destination of domestic and foreign tourists

Introduction

Phuket, the largest island in the south of Thailand on the west coast of the Andaman Sea, surrounded by the Indian Ocean, has an area of 544 square kilometers with a length of 48 and a width of 21 kilometers. Travel to Phuket can be by air, land, or sea. Phuket is one of the dream destinations of domestic and foreign tourists because of its spectacular scenery, world-famous magnificent beaches, eco-adventure, and typical culture. Its economy is mainly based on tourism with an annual income of over 470,000 million THB (16,000 million USD).¹



Phuket before the outbreak of COVID-19



*A street with only one bicycle in the middle of Phuket city
after the pandemic*

The outbreak of COVID -19 had a massive impact on Phuket’s normalcy and especially on its economy. The paradise city with over 14 million international tourists annually was suddenly hit by the COVID -19 pandemic in March 2020. All businesses had to be closed. With workers across Thailand and tourists from all over the world, it was very difficult and complicated to manage the outbreak situation. The synergy of all sectors and Phuket’s experience in dealing with emerging



Quiet Phuket after the pandemic

infectious diseases such as SARS and MERS helped manage the COVID -19 pandemic from the first wave of infection in March 2020 to the present time, early 2022.



The synergy of all sectors to tackle COVID-19

Integrative, seamless, and participatory management has been implemented to achieve sustainable health and well-being as well as the economy. This article briefly reviews the management of the outbreak of COVID -19 in Phuket in 2020, followed by a discussion of the current strategies and management in a way that balances the health and economy applied from 2021 to early 2022.

Management of the outbreak in 2020

Since the main income of Phuket people comes from tourism, the involved sectors work together to ensure the survival of Phuket's residents. Through close collaboration among stakeholders and strategies such as super lockdown (lockdown at a village level), active case finding and close surveillance, local quarantine, field hospital, and fundraising, Phuket managed to control the infectious outbreak within a few months, from mid-March to the end of May 2020. There were no further cases of infection from the end of May to the end of December 2020, when the new wave of outbreaks began in Samutsakorn province.

Phuket has brought together all parties involved, including business, industry, and public authorities, to make Phuket a safe haven for tourists again. All key



Tracing, one strategy of the 5Ts model

representatives have been involved in the Phuket Communicable Disease Committee and the Phuket Provincial Disease Control Center. Social measures have been taken and relevant laws enforced to ensure safety. A Phuket model with 5 Ts strategies, including “Target, Test, Trace, Treat, and Trust,” was implemented with strong prevention measures.²



The flow for welcoming overseas tourists at Phuket airport

Strict controls were implemented at the airport and seaport to prevent the introduction of new cases of infection from outside the country. The new normal way of life was regularly propagated. The population was continuously informed and educated.



Phuket airport



Phuket seaport

The involved sectors made a concerted effort to restore Phuket with a new sense of normalcy and new ways of managing tourism. The previous way of life and tourism in Phuket no longer fit the current situation, which is threatened by COVID -19. The revitalization of Phuket must be done in a way that balances health and economy. The synergy of all sectors has been adopted for recovery and Phuket should be a safe, healthy, and happy destination. “Wellness must start with Phuket residents. Hosts must be healthy and happy first so they can welcome tourists and offer them wellness and happiness,” Mr. Narong Woonciew, the Phuket Governor said in a December 2020 interview.



*Mr. Narong Woonciew,
Phuket Governor*

The ‘Phuket Sandbox’ was introduced in 2021 to support tourism in Phuket. It is a program that opened on 1 July 2021, to allow foreign travelers to visit Phuket province in Thailand without having to undergo



Test and go in Phuket Sandbox

quarantine. However, they will have to show a negative RT-PCR test result before they can undertake travel and leisure activities in Phuket.

“We need to think about how to make our population survive. In the last two years, we have suddenly gone from rich to poor. We used to earn more than 400,000 million baht per year or 400,000 baht per year per capita, but now we have no income at all. We have to do two things at the same time, control the disease and ensure people’s economic survival. The idea of the ‘Phuket Sandbox’, introduced by the private sector, is one of the key solutions... The Phuket provincial government is responsible for putting into practice the policies that fit the context and the needs of the people and the community,” the Phuket governor said in the December 2021 interview.



Traveling within the island with Phuket Sandbox Program

Mr. Phummikitti Ruktaengam, President of Phuket Tourist Association who played an important role in the setup of Phuket Sandbox says that “looking back at a New Year 2021...it was lonely and hopeless in the eyes of the people, but we didn’t give up...we started reading medical journals so that we had evidences to support us when we talked to the government...We found that vaccination was the only way to help us rebuild our business...”. This led to a synergy of all sectors involved to get all Phuket’s residents vaccinated.

*Mr. Phummikitti Ruktaengam,
President of Phuket Tourist
Association*



Vaccine Management

To prepare for the return of tourists to Phuket, residents of the province must be vaccinated. The government has required that 70% of Phuket residents receive the COVID -19 vaccine before the opening of the Phuket sandbox campaign on 1 July 2021. It is a challenge for the Phuket Provincial Health Office to procure the vaccine for 460,000 residents or 920,000 doses within three months. Due to the strong participation of stakeholders from the public organizations, private sector, and communities, the provision of the vaccine outside hospitals or health centers was initiated for the first time in the country. There were 6 vaccine centers evenly distributed across the island, including Phuket Airport, Sapan-Hin Sports Center, Jung Celon Shopping Center, Angsana Laguna Phuket Hotel, Phuket Orchid Resort and Spa Hotel, and Central Phuket.

“The private sector has played an important role in immunization... Phuket was the first province to be vaccinated and our model was a model for other provinces to provide the vaccine outside hospitals,” said Mr. Kusak Kukiattikoon, Provincial Chief Medical Officer of Phuket.



*Mr. Kusak Kukiattikoon,
Provincial Chief Medical
Officer of Phuket*



*Vaccination centers
outside the hospitals*



The challenge for vaccine management was not only to manage the vaccine but also to motivate and guide people. Communication and outreach are important to lead people. The Phuket Tong Chana (Phuket Must Win) website was set up to allow people to sign up for the vaccination. Phuket residents can register through the website to make an appointment and choose the location for vaccination. Previously, the vaccine COVID-19 was only available to Thais in Phuket, but it is now also available to foreigners in the province.



The Phuket Tong Chana (Phuket Must Win) website

*Dr. Withita Jang-iam,
Deputy Director of Primary
Health Care,
Vachira Phuket Hospital*



At the beginning, the vaccine was limited, so it is a challenge to make it more effective. Dr. Withita Jang-iam, Deputy Director of Primary Health Care, Vachira Phuket Hospital, initiated an intradermal vaccination technique to administer the COVID -19 vaccine to 242 volunteers. Intradermal vaccination was found to elicit as robust an antibody response as the intramuscular method of administration but saved 80% of the vaccine for four additional individuals. However, the standard method of administration for the COVID -19 vaccine is still intramuscular administration. “The study is still ongoing...we would like to test the level of immunization in the long term, for about 3 months after the administration of the vaccine,” said Dr. Withita Jang-iam.

Tourism Business Management

The tourism industry has been greatly affected by the COVID -19 pandemic and they must prepare to do business in a New Normal Way. They have cooperated with the Ministry of Public Health and the Tourism Authority of Thailand (TAT) to raise the standard of the tourism industry by integrating health standards and have launched the SHA project in 2020. SHA (Amazing Thailand Safety and Health Administration) is a symbol of ensuring a safety standard for tourism operators to protect their customers. The TAT has collaborated with the World Travel and Tourism Council (WTTC) to promote the SHA symbol along with the WTTC's Safe Travels Stamp.



SHA symbol

SHA has been raised to SHA plus for the Phuket Sandbox campaign. Business owners applying for SHA plus must meet the standard of SHA and also more than 70% of employees must have received 2 doses of the COVID-19

vaccine. “SHA plus managers must take care of their employees’ vaccination and also monitor their customers who are staying at the hotel on a given day,” said Ms. Ratanada Choobal, President of the Health & Wellness Phuket Spa Association.

To welcome tourists to Thailand with the Phuket Sandbox Campaign, SHABA (SHA Plus Booking Authentication) platform has been developed for tourists. Tourists can book a hotel room through SHABA and receive a document from the embassy to apply for Certificate of Entry (COE). The requirements for applying for SHABA are: 1) booking of at least 14 nights and full payment; 2) RT-PCR test within 72 hours; 3) full vaccination against COVID -19 with a vaccine approved by the Thai FDA/Ministry of Health/ WHO no later than 14 days prior to departure; 4) purchase of health insurance with a minimum coverage of 100,000 USD covering treatment for COVID -19 in Thailand throughout the duration of stay; and 5) proof of payment for COVID -19 testing in the Sandbox area.

*Ms. Ratanada Choobal,
President of the Health & Wellness
Phuket Spa Association*





Information on Entry Requirements to the Sandbox Areas in Thailand

PRE DEPARTURE

REQUIREMENTS

- 1) Fully vaccinated against COVID-19 with a vaccine approved by the Thai FDA/ Thai Ministry of Health/WHO no less than 14 days before departure. Children under the age of 18 and are traveling with parents/guardians are eligible without proof of vaccination.
- 2) Must have health insurance with minimum coverage of 100,000 USD and covers COVID-19 treatment in Thailand throughout the entire duration of stay.
- 3) Must have a paid SHA+ hotel reservation confirmation (SHABA Certificate) throughout the mandatory 7-day period.
- 4) Must obtain payment proof for COVID-19 testings in the Sandbox area.

STEP 1

APPLY FOR COE
(Required for every individual even when travelling in groups/family)

Apply for COE >>
<https://coethailand.mfa.go.th>

Documents required for COE issuance

- 1) Passport
- 2) Vaccination Certificate
- 3) COVID-19 Health Insurance with minimum Coverage of 100,000 USD.
- 4) Air ticket
- 5) SHA+ hotel reservation confirmation.
- 6) Proof of payment of COVID-19 testings while in the Sandbox.
- 7) Thai Visa (if required)

STEP 2

GET COVID-19 TEST

Must get a COVID Test (RT-PCR only) not more than 72 hrs. before departure with a "negative" result.



ARRIVAL IN SANDBOX AREA

- Pass through disease control and immigration checkpoints, and undergo RT-PCR test at the airport / designated hotel.
- Wait for your test result at the designated accommodation / hotel. If the result is negative, enter the Sandbox Area.



DEPARTURE FROM SANDBOX AREA

Once you have stayed in the Sandbox area for the mandatory 7-day period and have received your second RT-PCR test result, you will be able to obtain the Release Form, and be free to travel to other parts of Thailand.



- As of 1 October 2021, you must undergo two RT-PCR tests while you are inside the Sandbox area, the first test upon arrival, and the second on your day 6 or 7 before obtaining your release form.

Call Center
Department of Consular Affairs,
the Ministry of Foreign Affairs

02-572-8442



SHABA platform

Home Isolation and Community Isolation

The Phuket Sandbox launched on 1 July 2021, and COVID -19 infected cases from the sandbox were found to be less than 10%, in contrast to cases in the country. Thailand has entered the fourth wave of the COVID -19 pandemic, with cases of the delta variant increasing since July 2021. It peaked in mid-August at more than 20,000 cases per day, with 240-250 confirmed cases per day in Phuket. Hospital beds are likely to be insufficient, so home isolation (HI) and community isolation (CI) become optional. Vachira Phuket is a 600 -bed hospital, but Phuket has almost 8,000 community beds as each sub-district has set up its isolation ward for people.

“At that time, Vachira Phuket Hospital had only 300 beds for COVID-19 patients, but there were more than 4,000 patients...we need to set up Community Isolation and Home Isolation...and we also set up Aun-Jai Clinic” said Mr. Weerasak Lawtongkum, M.D., Director of Vachira Phuket Hospital



*Mr. Weerasak Lawtongkum,
M.D., Director of Vachira
Phuket Hospital*



Community Isolation

Aun-Jai Clinic, a center for the comprehensive care of COVID -19 patients, was established in September 2021. The aim of the center is to treat infected COVID -19 cases in the community so that they receive appropriate treatment and care as soon as possible. The city hall has been converted into the clinic and the Phuket Provincial Administration is providing funding to employ 20 staff to work at the clinic with the health care teams from the Phuket Provincial Health Office and Vachira Phuket Hospital. Key services include 1) a one-stop service call with 20 telephone lines to provide information and coordinate partners; 2) X-ray and laboratory tests for diagnosis and treatment; and 3) daily follow-up and counseling for HI and CI cases.



Aun-Jai clinic

*Services at
Aun-Jai clinic*



Integrative Care Management

It is a challenge for health management in the pandemic situation to balance the resources in response to COVID-19 while maintaining essential care for other medical issues, especially chronic illnesses. Phuket has deal with this challenge by integrating care using area-based approach with a solid participation from all partners. Ko-Kaeo community is a good example.



Ko-Kaeo Health Promoting Hospital



Home visit by VHVs

Ko-Kaeo is a sub-district of Muang District, Phuket, with a population of 12,000 according to house registration. However, there are another 10,000 latent residents, including 350 indigenous people. Ko-Kaeo Health Promoting Hospital is a health center that provides primary and comprehensive care to the people in this sub-district in collaboration with Vachira Phuket Hospital. The health center provides primary care in collaboration with Village Health Volunteers (VHVs). There are 90 VHVs and each of them takes care of people in 50-60 households. Physicians, physiotherapists, and dentists from Vachira Phuket Hospital provide their services two to four days a week at Ko-Kaeo Health Promoting Hospital.

In the midst of the COVID -19 pandemic, the synergy among the public, private and civil sectors has led the community to overcome the problem. The peak of infection cases in the community was 70-80 cases per day. Initially, people in the community were panicking and afraid of death. The challenge was to control the spread of the disease and save the lives of the infected people. Health personnel from Ko-Kaeo Health Promoting Hospital and Vachira Phuket Hospital, as well as VHVs, had to work together by providing knowledge, vaccine and psychological support to the people. Community isolation was initially set up at Dara Hotel to isolate those infected, who would be taken to Vachira Phuket Hospital if their symptoms worsened. Unfortunately, the indigenous people in the community did not want to stay in the hotel and asked to be accommodated in the community near their families. The new community isolation was urgently established at Sa-pam temple. The success of the management of the community isolation is due to the cooperation of all sectors in the community, such as the training of staff by Vachira Phuket Hospital, the provision of food and supplies by Ko-Kaeo Sub-District Administrative Organization, and the communication with people by VHVs.



Community Isolation at Dara Hotel



Community Isolation at Sa-pam temple

Ko-Kaeo Health Promoting Hospital continues to provide basic care for non- COVID cases, both chronic diseases and emergency care. The concept of care is comprehensive care with the motto “Close to Home Close to Heart”. Thailand has reformed health services to strengthen primary care by introducing a Primary Care Cluster (PCC) since 2016. The Ko-Kaeo community PCC is composed of family doctors, dentists, physiotherapists, pharmacists, psychologists from Vachira Phuket Hospital, Thai traditional medicine doctors, nurses, and public health workers from Ko-Kaeo Health Promoting Hospital and VHVs from their own community. The service concept of the PCC is not only an “extended OPD” but also a holistic care clinic. It covers everyone, every service, everywhere, and at all times with technology. The services include health promotion, disease prevention, basic treatment, rehabilitation, and client protection for all citizens of the community in the hospital and at home. People in the Ko-Kaeo community are satisfied with the care provided by the health care team. “The medications provided at Ko-Kaeo Health Promoting Hospital are the same as those provided at Vachira Phuket Hospital...The patients have a connection with their family doctors, so they feel comfortable going to the hospital,” said Mr. Sombat Singkala, a director of Ko-Kaeo Health Promoting Hospital.



Mr. Sombat Singkala, Director of Ko-Kaeo Health Promoting Hospital, and colleagues visiting a village member

Ko-Kaeo community has succeeded in improving the quality of life of its residents through an area-based approach through the District Health Board (DHB). The board is composed of representatives from the public, private and civil sectors and is chaired by the district chief officer. Ko-Kaeo community was recognized as an excellent DHB at the national level in 2018. Road traffic injuries and non-communicable diseases were significant problems of the community and these problems have been reduced through the management of the DHB. The family doctor in PCC, Dr. Withita Jang-iam, is one of Ko-Kaeo DHB members. Therefore, the PCC and the DHB work together and focus on the health and well-being of the people in Ko-Kaeo.

The Ko-Kaeo Sub-District Administrative Organization, a civil sector representative in the DHB, has played an important role in improving the quality of life of people in the community through a Community Health Fund (CHF). The CHF has been established by the National Health Security Office (NHSO), the Ministry of Public Health, the Department of Local Government Administration, and the Ministry of Interior under the decentralization approach as set out in the National Health Security Act B.E. 2545 (2002) and the Determining Plans and Process of Decentralization to Local Government Organization Act B.E. 2542 (1999), focusing on people participation at the sub-district level. The CHF primarily aims to support health-related activities and the Ko-Kaeo CHF Committee has approved projects for the care of bedridden people in the community through the employment of caregivers and COVID -19 prevention through proactive screening of at-risk people using ATK. “In the past, the government budgeting was rigid...like having a dozen shirts but did not fit everyone...the budget from the CHF is more flexible and based on the community problems,” said Dr. Withita Jang-iam.

No one left behind: from global policy to implementation in Phuket

Leave no one behind (LNOB) is a global policy and promise of the 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs). It represents the absolute commitment of all UN member states to eradicate poverty, end discrimination, and exclusion, and reduce the inequalities and vulnerabilities that leave people behind and undermine the potential of individuals and humanity as a whole. One of the main causes of people being left behind is discrimination, which marginalizes and excludes individuals, families, and whole communities. Different groups of people in Phuket are at risk of being left behind.

There are three main groups of people in Phuket, including Thai residents, foreign workers, and international tourists. Thai residents in Phuket are made up of traditional Phuket residents, residents from other provinces who travel to or do business in Phuket, and indigenous residents who have lived near the sea for more than 300 years. Basically, there are three social health security schemes for Thai people, including the Social Security Scheme (SSS), the Civil Servant Medical Benefit Scheme (CSMBS), and the Universal Health Coverage Scheme (UHCS).

Thai residents in Phuket access health care through one of these schemes according to their rights identified by their identity card. In the past, the indigenous residents of Phuket were not covered by the UHCS until they were offered Thai citizenship. The indigenous population of about 13,000 people lives in five provinces along the Andaman Sea, including Phuket, Phang-nga, Satun, Ranong and Krabi. They earn their living in the traditional way by fishing and diving and have no identity cards. In 2010, the Cabinet adopted a policy to restore the way of life of this indigenous group. This policy was implemented through nine plans covering housing, employment, health, identity card, education, ethnic prejudice, local language, network and culture, among others. Cooperation between the Ministry of Interior and the Ministry of Public Health (MOPH) has resulted in indigenous people having Thai identity cards. Nowadays, these indigenous people have access to health care through the UCS and are no longer left behind.



*Indigenous people in
Phuket*



Vaccination for foreign workers

There are more than 130,000 foreign workers in Phuket, most of whom are from Myanmar. Generally, these foreign workers can access health care through the Social Security Scheme if they are legally registered to work and have a health insurance card. Thailand introduced the health insurance card for migrant workers in 1998 through the MOPH. In 1998, workers paid 500 baht per year for the health insurance card, and in 2004 the price was increased to 1,900 baht per year. Although foreign workers in Thailand have access to health care, it is limited to the treatment of illness. Health promotion and disease prevention are not covered for foreign workers (Thongmak, B. & Mitthong, W., 2021).³ However, the Phuket Communicable Disease Committee and the Phuket Provincial Disease Control Centre have recognised the importance of these workers in order to launch Phuket Sandbox, the COVID -19 vaccination was introduced on 1 June 2021.





Welcome to Phuket

The international tourist group is one of the target groups of the Phuket Sandbox campaign. In order to enter the country, they are required to purchase health insurance with a minimum cover of 100,000 USD, covering treatment for COVID -19 for the entire duration of their stay in Thailand. They can choose their medical care according to their health insurance plan. There are several private hospitals as well as public hospitals that provide treatment for them. Thanks to the well-planned Phuket Sandbox campaign, no international tourist is left behind in Phuket.





*The Center of Underwater
and Hyperbaric Medicine,
Vachira Phuket Hospital*

Next Step

Phuket Sandbox is a program to restore Phuket's economy with a new sense of normalcy and new ways of managing tourism. The lesson of the COVID -19 pandemic has Phuket people thinking about sustainability. A single cornerstone of the tourism industry is not enough to be a good plan, so the Phuket Health Sandbox is introduced. Health and wellness are new cornerstones that build a more solid foundation for Phuket's economy.

In term of Health Industry, Vachira Phuket Hospital plays a critical role with many special services, including Bariatric and Metabolic Center, Cardiothoracic Surgery, Endoscopic Thyroid Surgery, Wound Care Center, Excellent Trauma Center, Endoscopic Tympanoplasty, and Center of Underwater and Hyperbaric Medicine.



*Mr. Kongsak Khoopongsakorn,
President of Thai Hotels
Association Southern Chapter*

“We need to balance between economy and health...both COVID and Non COVID...we also need to consider a various group of people in Phuket...people from different countries...different provinces...we have a capital and the success is waiting for us if we are synergized”, said Mr. Kongsak Khoopongsakorn, President of Thai Hotels Association Southern Chapter.

Phuket Health Sandbox is a 20-year plan with a vision of a “city of citizens in relation to world health” and three smart missions, including smart citizens, smart city and smart governance. The four main strategies include 1) improving accessibility and reducing health inequalities, 2) promoting health tourism, 3) developing the standard and quality of public services, and 4) strengthening the health system.



Mr.Bancha Kakhong, M.D., Adviser to the President of the Provincial Administrative Organization and Adviser to Phuket governor, one of initiators of Phuket Health Sandbox”

The synergy of public organizations, the private sector, and communities, together with Phuket’s experience in dealing with emerging diseases such as COVID -19, makes it more confident to fulfill the missions of the Phuket Health Sandbox.



Lesson learned from Phuket

Phuket used to rely on a single cornerstone of the tourism industry. The outbreak of COVID -19 has led to a paradigm shift towards a multi-pillar model. The balance between health, wellness, economy, and others has become critical. Leadership by those in charge is important to put policy into practice. Strong collaboration between the public and private sectors and the people is key to success for Phuket's recovery. It is important that people adhere to public policies and actions.

The sandbox is a proven model that can be used to address critical issues before scaling up the implementation to wider society. The Phuket Sandbox is an example of a pilot model that can be implemented in other tourist areas. Vaccinating the population quickly and across the province helps ensure safety. However, we must always be prepared for contingencies. The onset of the Omicron outbreak is a test of the strength of Thailand and Phuket and the potential of the new framework being applied in Phuket and the nation. Even if COVID -19 or other health issues attack us, "No one left behind" is still a fundamental concept in creating the world we want.

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6. Ms. Withita Jang-iam, M.D., Deputy Director of Primary Health Care, Vachira Phuket Hospital;
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9. Mr. Kongsak khoopongsakorn, President of Thai Hotels Association Southern Chapter
10. Ms. Ratanada Choobal, President of the Health & Wellness Phuket Spa Association
11. Ms. Nisarath Songprasirt, National Health Security Office Region 11 Suratthani

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2

Regeneration of the Environment: Impact of COVID-19 and Human Behaviors in a Tourist Area

Panarut Wisawatapnimit
Kamolrat Turner
Sukjai Charoensuk

Regeneration of the Environment: Impact of COVID-19 and Human Behaviors in a Tourist Area

Panarut Wisawatapnimit

Kamolrat Turner

Sukjai Charoensuk

Introduction

In April 2019, an orphaned baby dugong of about 4-to-5-months-old was stranded on the beach of Poda Island in Krabi province. Her body showed no injuries and she was able to swim normally. Villagers and national park officers carried her back to the sea, but the next day she was found near the first beached area. They tried to release her a couple of times, but still found her. They made sure that this baby dugong was lost from her mother. Finally, the officers moved her to a hunting-free area on Libong Island in Trang Province for nurturing her. The head of the Dugong Conservation Group on Libong Island named her “Marium” which means elegant woman of the sea. The officers and volunteers took turns to feed her with seagrass and milk four times a day and took her



Officers nurtured Marium, a baby dugong

to swim in the deep sea. Her photos with marine biologists quickly went viral on social media and made her popular. The officers' conservative activities to take care of her and her cute behaviors were seen on lived social media and followed by many people from all over the world.

Unfortunately, in August 2020, Marium became ill and refused food. She was treated at the Phuket Marine Biological Center. Finally, she died because plastic debris had clogged her stomach. Many pieces of marine debris stuck in her stomach caused gas in her gastrointestinal tract and pus in her lungs. This led to respiratory infection, sepsis, and shock as causes of her death.¹ Normally, a dugong feeds on seagrass and its gastrointestinal system cannot digest plastic or waste. Because of her death, Marium has become a symbol of the marine and coastal conservative project of Thailand. The dugong is





Marium died caused of marine debris

one of the endangered marine animals being preserved in Thailand, as there are only about 250 dugongs remaining.

The illness and death of this baby dugong and many endangered marine animals, such as sea turtles, dolphins, and whales due to marine debris show the negative impact of human behavior on the environment and marine animals. Although the Thai government is putting great efforts into protecting nature, there are still many incidents of marine animals dying or becoming stranded due to garbage or human activities in the water.





Phuket, a World tourist destination

Natural resources are also affected by the number of people who consume them. Phuket is an example of the impact of tourism on the environment. Phuket is known for its beautiful beaches and sea. Before COVID-19, it was a global destination visited by about 14.4 million tourists from all over the world every year. However, the more tourists come, the more the environment is affected. The balance between tourism and the environment is one of the biggest challenges for Phuket authorities, tourism entrepreneurs, and the local population.

Since the first case of COVID-19 was found and the World Health Organization (WHO) announced the COVID-19 pandemic in 2020, every country has been affected, including Thailand. The strict measures and regulations to control COVID-19 transmission have been applied in every province. Phuket was particularly affected by COVID-19 cases during 2020 – 2021. No tourists came resulting in economic collapse. Although the impact of COVID-19 on restriction has caused negative effects on people's health and the economy, it has also shown positive effects on the regeneration of the environment in Phuket and in other tourist areas.

This article focuses on the impacts of COVID-19 prevention and control measures, and human activities on the environment, as well as its regeneration. The Phuket Marine Biological Center (PMBC) and the Ban Laem Tukkae community are cited as examples of how Thailand is dealing with environmental issues and planning future actions.

One World, One Environment, One Health

The impact of the environment, such as marine debris, climate change, and emerging diseases, such as COVID-19, have proven that there are no borders and the health of people in every country is affected. The environment, people, animals, and plants are interdependent in an ecological system. When one dimension is affected, others and the whole system are affected. To tackle this, we need a global and national agenda using the one health approach.





Marine debris

Marine debris is recognized as a global environmental problem because the oceans are seamless. A 2021 study by the Thailand Development Research Institute (TDRI) found that Thailand has the 10th largest amount of marine litter in the world (2020). Most of the trash in the ocean comes from human consumption behavior and improper disposal of garbage. About 1.03 million tons of plastic waste per year are not properly managed, and about 0.41 million tons end up in the sea per year.² To address this issue, ASEAN member countries signed the “Bangkok Declaration” to work together to solve this issue and protect marine ecosystems throughout the region.

Climate change is another major global problem. It causes global warming leading to the change of environment and seasons. Thailand has ratified participation in the Paris Agreement that has a common goal to control the global average temperature to below two degrees Celsius, to control the temperature rise to no more than 1.5 degrees Celsius, and to reduce greenhouse gas emissions by 20-25 percent by 2030.³ The Thai Marine Department’s project of “Mangrove planting to benefit carbon credits” is an example of collaboration between the public, private, and civil sectors to solve the global warming crisis.

The COVID-19 pandemic is an example of the global agenda affecting human health and behavior, the economy, and the environment. COVID-19 preventive and control measures reduce domestic and international travel and increase infected waste, but regenerate the environment. To mitigate and control transnational transmission of the virus requires global collaboration and national integrative and seamless approaches of all sectors involved.

Impact of COVID-19 on the environment in tourist areas

Although COVID-19 has a negative impact on human health and the economy, it has a positive impact on the environment due to the restrictive measures. Dr. Kongkiat Kittiwatanawong, Director of PMBC, states that “Tourism increases the burden on the environment. During the period of COVID-19 control for about two years, the environment has regenerated. We can see the natural environment changing. The corals recover. Five years ago, leatherback sea turtles never came to the beach to lay their eggs. Last year, we saw eighteen nests of them. That shows the success of nature’s recovery.” Seeing rare animals such as sea turtles, dolphins, Omura’s whales, whale sharks, and dugongs in the Andaman Sea are parameters for the regeneration of the environment.



A sea turtle at one of the beaches in Phuket



Dugongs in Andaman Sea

Although the beautiful nature returns during the outbreak of COVID-19 in Phuket, the amount of some waste increases due to the involved measures and protocols used in order to prevent and control COVID-19 infection. The amount of infectious waste is increasing, such as surgical masks and other personal protective equipment, syringes, and medical devices for COVID-19 vaccine injections. Plastic bags, foam from food containers, and trash are also increasing due to the restriction measures. However, the total amount of waste has been reduced due to the decrease in the number of tourists. Ms. Ratanada Choobal, President of the Health and Wellness Phuket Spa Association, stated “COVID-19 management increases more waste to save the lives of health care personnel or involved operators. The more protective equipment that is used, the more infected waste increases. However, during the Phuket lockdown, less waste and sewage was generated because there were no tourists and fewer outside activities.” Therefore, infected waste must be managed effectively to ensure human and environmental safety.



Health care personnel wear PPE



Trash bins for infected clothes

Mr. Phummikitti Ruktaengam, President of Phuket Tourist Association, stated “During the outbreak of COVID-19 garbage is not recycled. Before COVID-19, Phuket announced a ‘no plastic campaign’. Many hotels comply and recycle the waste. They also use glass water bottles instead of plastic bottles. When COVID-19 hit Phuket, they reverted to using plastic. Local authorities need to help solve the problem of sewage and garbage.”

Mr.Saroj Ankanapilas, Mayor of Phuket Municipality, mentioned “COVID-19 has increased the amount of infected waste. All waste from hospitals, local and community quarantines to control COVID-19 are classified as infectious waste including foam food containers and plastic. Phuket Municipality staff collect all infected waste, and dispose of them using very high temperature at Phuket Municipal Solid Waste Incineration Plant without sorting them for recycling.” Therefore, the regeneration of the environment needs time and rest to recover as well as effective management of all sectors.

The roles of public sector in maintaining the marine and coastal ecological system: Phuket Marine Biological Center

The Phuket Marine Biological Center (PMBC), the Department of Marine and Coastal Resources, Ministry of Natural Resources and Environment, Thailand was established under the bilateral agreement between the governments of Thailand and Denmark after the 5th Thai-Denish Expedition in the Andaman Sea off the coast of Thailand on 11 October 1968. It was the first marine research center of Thailand and currently, there are six centers throughout the country. PMBC is located on the southeastern tip of Phuket Island, at Panwa Cape, Phuket province, Thailand. It covers 1,000 kilometers of the coastal area of six southern provinces of Thailand on the upper Andaman Sea.





Phuket Marine Biological Center

The PMBC's main missions are to research and monitor marine and coastal biodiversity, ecological systems and oceanographic changes, to breed and conserve rare or endangered marine species, to develop technologies and activities to support the restoration of Thailand's seas and coastal areas and to collect marine animals and plants in the upper Andaman Sea for learning and study.

PMBC plays an important role in monitoring water quality every two months. Water samples are randomly collected from the sea, shoreline, and water sources from hotels and communities in Phuket to be analyzed for pH,



Water quality analysis at PMBC

salinity, bioindicators, nitrate chemicals, and temperature. Mr. Isaman Madsit, Fishery officer, illustrated “when there were many tourists and customers in Patong, a popular tourist place in Phuket, they consume water and natural resources. This causes sewage. During the COVID-19 control period, the water quality has noticeably improved.” If the water quality is below standard, PMBC will report to the national and local authorities to solve the problems.

PMBC also monitors the impacts of climate change on the marine and coastal ecological systems. The rising climate temperature affects beach erosion and sea turtles. Sea turtles are unable to lay their eggs on damaged beaches and high-temperature water affects the gender forming of sea turtles, to become female, resulting in reproductive imbalance. The number of sea turtles will decrease. In addition, seawater becomes more acidic at high temperature. This affects the growth of coral reefs which are the habitat for small marine fishes and animals.



Sireetan Marine Endangered Animals Rescue Center

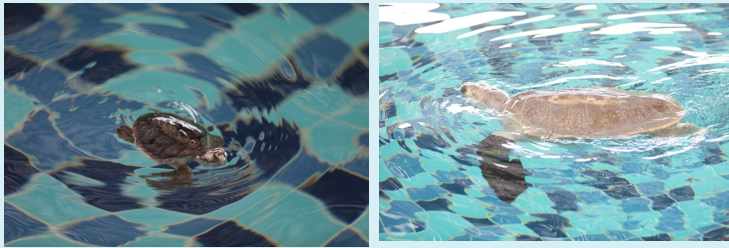
The Sireetan Marine Endangered Animals Rescue Center, PMBC, is responsible for the conservation and care of endangered marine animals. Mr. Pathompong Jongjit, Veterinarian, explains, “The main causes of stranded marine animals are marine debris, net debris, water activities and boat crashes, and their disease conditions. Sometimes two or three sea turtles were found to be accidentally held and caught by a piece of net on the coral reefs. During the high tourist season, we may see dolphins, sea turtles, and whales near the beach because they were injured by boats or water. COVID-19 outbreak has reduced these incidents due to the decrease in tourism.”

Ms. Parcharaporn Kaewnong, Marine Veterinarian also supports that “many endangered marine animals died because they ate marine debris or the debris coated their bodies. Sea turtles are most commonly found. If they do not have gastrointestinal problems, they are able to excrete the debris. Unfortunately, some of them died. If dolphins and whales eat the marine debris, most of them will die because they cannot excrete it.” Currently, at the Sireetan Marine Endangered Animals Rescue Center, PMBC, Olive Ridley sea turtles and a green turtle are being treated for marine debris.



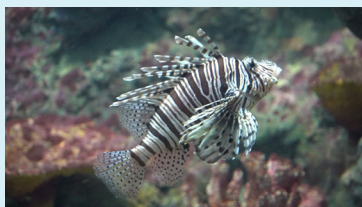
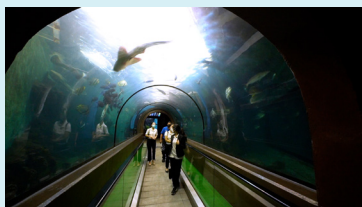
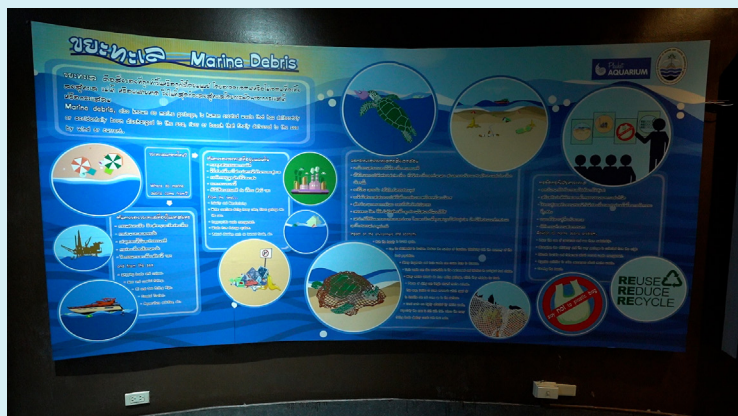


Treatment for an injured sea turtle



*Rehabilitation for sea turtles at Sireetan Marine Endangered
Animals Rescue Center*

Sharing knowledge about the environment is also an important role of the PMBC. Phuket Aquarium, the first marine aquarium in Thailand, was established in 1986. The objectives are to cultivate awareness and increase the knowledge of people about the conservation of marine resources. The Reference Collection was also established to exhibit marine and coastal samples collected from the Andaman Sea as part of an academic collaboration project between PMBC and Copenhagen University, Denmark. Training sessions related to marine and coastal ecological systems, environmental conservation, the poison of marine animals such as jellyfish and their management, have also been organized for students, hotel staff, health personnel, and the general public. The interactive aquarium is an important resource for increasing knowledge of people as well as referencing for academic and research purposes.



Phuket Aquarium



Reference Collection and Type Materials Collection

The roles of local authorities in balancing the economy, health, and environment in the tourism area

Mr.Bancha Kakhong, Adviser to the President of the Provincial Administrative Organization and Adviser to the Phuket governor



Mr.Bancha Kakhong, Adviser to the President of the Provincial Administrative Organization and Adviser to the Phuket governor states, “The sea is an important resource for Phuket because it is the first reason why tourists come to Phuket Island. If nature is destroyed, tourists will not come. Phuket must preserve and protect its beautiful environment. Prosperity will return when health, economy, and natural environment return. Garbage is a parameter of a crowded population and causes air pollution. Phuket municipality is concerned about pollution affecting the health of people. Therefore, we are planning to operate Phuket Health Sandbox.”

*Dr. Kongkiat Kittiwatanawong,
Director of Phuket Marine
Biological Center*



The amount of garbage on land is a challenge for a big city like Phuket. Dr. Kongkiat Kittiwatanawong, Director of PMBC, states “an indicator to measure the impact of people on the marine environment is sewage and garbage. This is more than a threshold. To resolve these issues, we need to reduce the amount of waste, and manage the waste on land so that it does not enter the sea. Some waste takes 100 years to decompose.”

The Phuket Municipal Solid Waste Incineration Plant, the first incinerator in Thailand and a prototype of the plants in other provinces of Thailand, was established in 1996 in order to effectively dispose of garbage and solve the overflowing garbage problem in Phuket. It can also generate electricity, though not in large quantities. Recycling garbage is also promoted. Mr. Saroj Ankanapilas, Mayor of Phuket Municipality, states “We have started



*Mr. Saroj Ankanapilas,
Mayor of Phuket
Municipality*

a recycling campaign for about 3 – 4 months. We asked people to separate and categorize garbage, such as paper, plastic bottles, and light bulbs as they are treated differently. We plan to collaborate with community leaders and citizens to implement a pilot project in three to four communities. We also have a plan to add another incineration plant in the future to increase electricity generation from waste.”

Sewage is an issue in the tourism area, especially in Phuket. The Phuket Municipal Wastewater Treatment Plant was established in 1997 to treat wastewater from households, hotels, and other users in Phuket. To monitor and manage wastewater, entrepreneurs have to analyze the impact of their operations on the environment and report an Environmental Impact Assessment (EIA) to the Phuket Municipality. Hotels and factories have to check



Phuket Municipal Solid Waste Incineration Plant



Waste sort





*Mr. Kusak Kukiattikoon,
Provincial Chief Medical
Officer*

the quality of the effluent every month. During COVID-19 outbreak, the sewage issue is of greater concern to local authorities to ensure effective virus transmission control. Mr. Kusak Kukiattikoon, Provincial Chief Medical Officer, states that “We have more than 1,000 rooms for local quarantine and more than 3,000 rooms for hotel isolation. Before their operations, the provincial public health officers will inspect the infected waste and wastewater treatment systems. If the treating system is not proper, we will make recommendations for them to solve the problem before obtaining approval.”

It has proven that Phuket Municipality authorities are concerned and manage the environmental issues of Phuket Island. The system and legislation to manage and control waste, sewage and other environmental problems are established and regulated.



*Mr. Kongsak Khoopongsakorn,
President of Thai Hotels
Association Southern Chapter*

Mr. Kongsak Khoopongsakorn, President of Thai Hotels Association Southern Chapter, stated that “To build environmental sustainability, the public authorities must enforce the law implementation. When the law is sacred, the entrepreneur must follow it.” A foreign tourist acknowledged the Phuket environmental restoration by saying that “I have been to Phuket about seven times. The last four times I stayed in a yacht. Now it is a lot better because there are fewer people here, the water is cleaner and less plastic. It is good. It is improving all the time. The infrastructure is all improved. Wastewater from housing is also now treated which it wasn’t before.”

Community and tourism entrepreneur participation: A key to preserving the environment

Dr. Kongkiat Kittiwatanawong, mentions “collaboration with the local community is needed because local people are an important labor force in regenerating the environment.” PMBC has developed many activities in the responsible area, such as the Seagrass Restoration Project. Seagrass resources are important to the marine and coastal ecosystem. It is a source of spawning, habitat for young marine animals, and food for sea turtles and dugongs. It also protects the seabed from natural disasters. This project can restore more than 160,000 square meters of seagrass in Phang Nga province.”

Hotels in Phuket follow the government’s environment protection standards. However, some groups realize the importance of natural resources to sustain their business. The Mai Khao Beach Conservation network is an example developed by hoteliers to preserve the environment for leatherback sea turtle egg-laying and keep the beach clean.



Ms. Ratanada Choobal, President of Health and Wellness Phuket Spa Association

Tourism entrepreneurs are also responsible for the environmental conservation. Ms. Ratanada Choobal, President of Health and Wellness Phuket Spa Association stated that “Hotels and tourism entrepreneurs in Phuket have sorted waste for more than 10 years in order to reduce waste. Some hotels are green hotels. Spas have also separated their waste, made bio-fertilizer, and reduced the use of plastic. We try to create as little waste as possible for our community.”

Mindset Cultivation to Preserve the Environment: Ban Laem Tukkae Community

Ban Laem Tukkae is a community of a marine indigenous community called “Chao Lay or Urak Lawoi” in Phuket. Most people in this community live near the beach and still maintain their traditional fishing method. They developed a fish trap called “Boo Boo” in their local dialect, by weaving a net made of bamboo and using vines or rattan to catch the bow to form a dome. The net is about four inches wide so small fish can get out. They dive into the deep sea to set their traps for 7 – 15 days, and then come back to catch the fish in the trap. In this way, the big fish is caught and the small fish can continue to grow in the sea.

Garbage in the community has been a big problem because it is neglected. Mr. Pipat Sittipong, Assistant



*Mr. Pipat Sittipong,
Assistant to the
community leader*



Way of life of Chao Lay at Ban Laem Tukkae community

to the community leader, developed the project of “garbage collecting on the beach” in 2020 to raise the awareness of the youth in the community to protect the marine environment. He states “Three years ago, there was a big pile of garbage in the community. This is bad for the image of our community. This is my homeland. I do not want others to think we neglect our problem. The garbage comes from our community. It is our duty to collect it, not the duty of Phuket Municipality.” The project has been in place for two years. Beach activity organizes two days a month on the days of lowest sea level. About 20 – 30 children and teenagers volunteer to participate in this garbage collection project each time. Knowledge about garbage and the environment, teamwork, and fun activities are strategies to keep the children and youth engage in the project. This activity helps raise their awareness of the environment. Construction of garbage traps around the canals in the mangrove forest area adjacent to the Ban Laem Tukkae area is another project to divert the waste from canals to the sea.



Garbage collecting on the beach project

Lesson learned

The environment and humans are interdependent. Humans are important factors in the destruction or preservation of the environment. The environment has become a global issue that must be addressed through international and national cooperation among all involved sectors. Human awareness and community participation are sustainable strategies to restore and maintain the marine and coastal ecological system.

To preserve the environment, collaboration and a shift of mindset are the keys. Dr. Kongkiat Kittiwatanawong, states “People’s awareness of environmental conservation is very important. Sometimes people misunderstand that we are the center of everything. In fact, all living beings on this earth and the environment are interdependent. We need to take care of our ecological system. A sea turtle needs seagrass. It needs a continuous campaign to raise and cultivate people’s awareness until it becomes their habit and way of life. Society needs to know what to do or not to do. Therefore, we need to collaborate with schools, educational institutes, and people to transfer our knowledge to them.”



*Mr. Phummikitti Ruktaengam,
President of Phuket Tourist
Association*

The balance between economy and environment is important in the tourism area Mr. Phummikitti Ruktaengam, President of Phuket Tourist Association, states “We need to balance nature and economy. We want to be able to scuba dive to see endangered marine animals, such as whale sharks and sea turtles, that we have not seen for many years. However, when we are on land, we want to be able to see the happiness of the Phuket people. Do we not have to accept 14.4 million tourists as in the past? Could we accept only 8 million tourists, but local people in Phuket are happy? We could better manage the garbage, sewage, and other problems caused by the crowds on Phuket Island. How can we balance the economy and the environment? We do not reject money, but we will have the opportunity to develop our economy.”



*Mr. Narong Woonciew,
Governor of Phuket*

COVID-19 situation causes the economy and tourism disruption, but the environment regenerates. It is an important lesson for all sectors of Phuket that they cannot rely only on tourism as a foundation pillar. They need to conserve the environment and improve the health of people because the environment and health are important assets that support their tourism and economy as well as people's quality of life. Mr. Narong Woonciew, Governor of Phuket, states about the future plan and action of Phuket that "We have to create more cornerstones. We plan to develop Phuket to be a modern environmentally friendly city. The more nature is consumed, the more it deteriorates. If there are many tourists, nature will be destroyed. How can we preserve the natural resources as long as possible or restore them as quickly as possible? We can manage garbage at the endpoint because we have a waste-to-energy incineration plant.

Controlling garbage from the beginning point is still an issue. We have a future plan for people participating in garbage reduction, especially for non-degrading material. We are going to develop the “Coconut island model.” In this project, students will bring trash from their houses to schools and exchange it for eggs or some small money. We can convert or recycle this trash to create more value. In this way, we can cultivate the mindset of children to preserve the environment. We also have a plan to restore 0.40 acres of mangroves by collaborating with the Department of Fisheries. This will increase marine habitat and food sources; such as the number of aquatic animals. The traditional fishing method will be promoted to conserve







nature. It will also increase the income of people as well as promote tourism and economy of the Phuket.” Therefore, the “Phuket Health Sandbox” will be operated as a model for the health pillar to strengthen the health of local and foreign people. Other pillars, including the environment, will also be the future actions of Phuket.

In conclusion, human beings cannot live in this world without a good environment. Effective, sustainable strategies and systematic research are needed to balance the whole ecological system, health, and economy. We must take action now to preserve our nature and environment for our and future generations and create the world we want.

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4. Mr. Kusak Kukiattikoon, M.D., Provincial Chief Medical Officer of Phuket;
5. Mr. Weerasak Lawtongkum, M.D., Director of Vachira Phuket Hospital;
6. Mrs. Patama Tanchotikul, D.D.S., Deputy Director of Health Care System Development and Health Service Support, Vachira Phuket Hospital;
7. Ms. Withita Jang-iam, M.D., Deputy Director of Primary Health Care, Vachira Phuket Hospital;
8. Dr. Kongkiat Kittiwatanawong, Director of Phuket Marine Biological Center;
9. Dr. Charatsee Aungtonya, Marine Biologist, PMBC;
10. Ms. Parcharaporn Kaewnong, Marine Veterinarian, PMBC;

11. Mr. Isaman Madsit, Fishery officer, PMBC;
12. Mr. Pathompong Jongjit, Veterinarian, PMBC;
13. Mr. Phummikitti Ruktaengam, President of Phuket Tourist Association;
14. Mr.Kongsak Khoopongsakorn, President of Thai Hotels Association Southern Chapter;
15. Ms. Ratanada Choobal, President of Health and Wellness Phuket Spa Association;
16. Mr.Pipat Sittipong, Assistant of the community leader, Ban Laem Tukkae;
17. Ms. Nisarath Songprasit, National Health Security Office Region 11 Suratthani

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Appendices

Promote Participation to Ensure Access Healthcare Service under Universal Health Coverage (UHC)

National Health Security Office (NHSO)

Promote participation to ensure access healthcare service under UHC

The participation of local communities and health volunteers engagement in the healthcare system is a powerful social innovation that strengthens emergency response---a distinctive advantage of Thailand, where reciprocity is valued by society.

In Thailand, the engagement of local communities and health volunteers is the primary mechanism that helps us suppress the number of infectious cases. They put consistent efforts in tracing and monitoring suspected cases in their residing area, in collaboration with local administration organizations and hospital operators.

Many local communities lead health promotion and disease prevention programs, by educating their neighbors about the symptoms of COVID-19 and how to protect the communities from the virus.

NHSO was financially support social innovation in community level, one of which is the collaboration between small-scale pharmacies and public hospitals to deliver drugs and medical supplies to patients.

NHSO has support hospital operators to deliver supplies to pharmacies in patients' neighborhoods. Pharmacists will then prescribe drugs to patients accordingly to their health conditions and records retrieved from hospital operators.

The engagement of public hospitals and pharmacies in the healthcare system is a powerful social innovation that strengthens emergency response---a distinctive advantage of Thailand, where reciprocity is valued by society.

Patients can reduce the time and travel expenses to hospitals while reducing the risk from the coronavirus. Patients with non-urgent chronic diseases will likely benefit from the delivery the most. Hospital operators, in the meantime, can reduce the workloads and prioritize emergency cases.

Though COVID-19 forced us in temporary turmoil, it also shows us the opportunities and the possibility to use social innovation for the upgrade of the healthcare system.



Public-private partnership for fighting the pandemic

The new emerging phase of COVID-19 in Thailand exposes the gap in its capital's health system as much as reflects the indispensable role of the private sector to fill such gap.

The National Health Security Office (NHSO) has collaborated with the private sector to run the Universal Coverage Scheme (UCS), one of three tax-funded health-care schemes under Thai UHC. The other two are Social Security Scheme and Civil Servant Medical Benefits Scheme. The schemes ensure healthcare access for more than 99% of Thai people, including free COVID-19 testing and treatment.

Many private hospitals have participated in the UHC by providing health services and emergency care to the schemes' beneficiaries, especially in Bangkok, where many private hospitals are located.

Many private hospitals agree with the NHSO to provide medical care to COVID-19 patients regardless of their financial status and registered healthcare schemes.

To support the hospitals, the NHSO has recently amended its reimbursement regulation to improve hospitals' liquidity and their ability to cope better with the pandemic. Previously, the NHSO allowed healthcare providers to once a month submit claims for the costs of services provided to patients under the UCS. It has now changed to every 15 days.

Meanwhile, some hotel owners agree to turn their properties into temporary quarantine facilities, so-called "hospital," to answer the high demand for hospital beds and isolation rooms in the recent outbreak. The NHSO covers the operational cost for them.

The NHSO will continue strengthening the partnership with the private sector. We're aware that all players are essential in the health system.



Public-private partnership in home/community base care

COVID-19 patients with asymptomatic or mild symptoms have experimented with self-care at home or community facilities through home isolation and community isolation programs implemented by the NHSO, Ministry of Public Health and partners. Many patients and health professionals have discovered that the approach is possible and practical if good management and a support system are put in place.

Home isolation and community isolation measures have been put in place for COVID-19 patients with asymptomatic or mild symptoms as this reduces the number of patients needing to be hospitalized. Moreover, it increases the efficiency and thoroughness of treatment for patients who do need to be hospitalized.

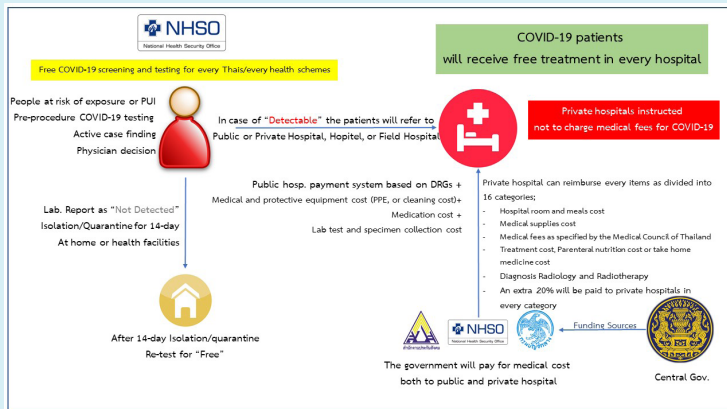
Home isolation provides a hybrid of virtual and on-ground care to patients. Hospital or private clinic staff monitors them via online consultation while providing medicine, medical devices, and meals via home delivery service.

Each patient will be matched with a local clinic or hospital partnered with the NHSO. Then the health provider will deliver medical devices, medicines, and meals to patients, and monitor them via phone or video call. The NHSO will cover all incurred costs. The collaboration across organizations and the setting up of patients' monitoring systems make home isolation possible and effective.

Community isolation involves members of communities or local administrative organizations who manage community isolation facilities for COVID-19 patients unable to isolate themselves at home.

The program is driven by the resources sharing among different players in the Thai health system --- from the central and local governments, public and private hospitals, clinics, pharmacies to local communities --- to provide care to the patients while curbing the spread of coronavirus.

For non-COVID patients with stable conditions can request telemedicine service from hospitals to avoid exposure to the virus. After consulting with physicians online, hospital staff will send medicines to the patients by post or place medicine at local partnered pharmacies where patients can pick up their packages.



NHSO found that many patients had adopted telemedicine and medicine home delivery service quickly. They have realized that this approach is more convenient than commuting to hospitals. They became aware that they have abilities to take care of themselves and no need to depend on hospital-based services solely.

No-Fault Compensation for COVID-19 Vaccination's Adverse Events

National Health Security Office (NHSO)

Along with the international community, Thailand is implementing a mass vaccination program to create herd immunity and end the COVID-19 pandemic. The program's success depends mainly on the speed of vaccine distribution and the assurance of people's safety after the vaccination. All vaccines are authorized for emergency use only. There is a chance that some vaccine recipients may experience adverse events.

To protect them from adverse effects after the vaccination, on 3 May 2021, the National Health Security Board introduced a no-fault compensation program for individuals who find undesired outcomes after the vaccination. All Thais 68 million whose health is insured under the Universal Coverage Scheme (UCS), Social Security Scheme and Civil Servant Medical Benefits Scheme will be compensated for adverse events.

This program covers everyone who receives the COVID-19 vaccine administered under the government's national vaccination program. It will not just bring the people's confidence to the Thai government's vaccination campaign. It will also protect their healthcare rights from the uncertainty of the pandemic.

The no-fault compensation program for COVID-19 vaccination is the first and only national-level program of its kind ever implemented in Thailand. This same approach is also implemented globally. For example, in February, the World Health Organization (WHO) announced a program to compensate eligible individuals in 92 low- and middle-income countries for finding adverse effects after receiving COVAX-distributed vaccines. Thailand is among 25 member states of WHO that implements a no-fault compensation program for medical errors, even before the arrival of the COVID-19 pandemic.

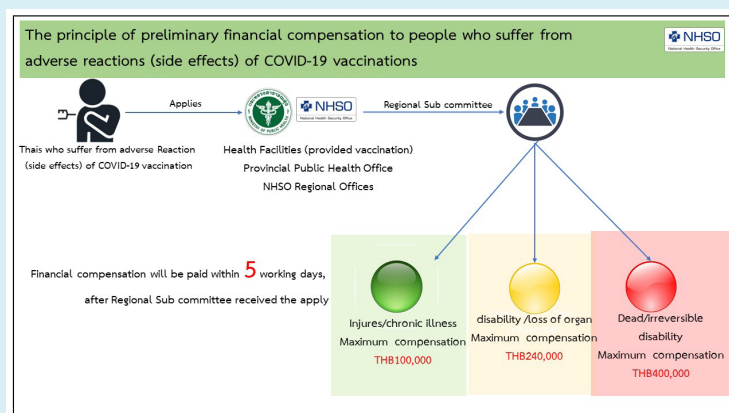
As much as giving a challenge, the COVID-19 vaccination program also shows the Thai government the opportunity to expand the no-fault compensation program to a national level. As the NHSO has long years of experience running such a program, it is assigned to lead this new national move.

We have issued the guideline and criteria for paying preliminary financial compensation to COVID-19 vaccine recipients suffering side effects. They can submit the complaints to every public hospital, Provincial Public Health Office, and the NHSO's Regional Office within two years from the day the side effects are detected.

The NHSO has also tasked its existing regional sub-committee to handle these complaints by examining and deciding on the compensation requests. The compensation will be paid within five days after the subcommittee giving approvals.

A maximum of 400,000 baht will be paid in compensation for a death, a permanent and severe disability, or a chronic disease requiring treatment for the rest of the patient's life that occurs after the COVID-19 vaccination. At most 240,000 baht will be paid in compensation for loss of organs or a disability and at most 100,000 baht for less serious chronic injuries or illnesses.

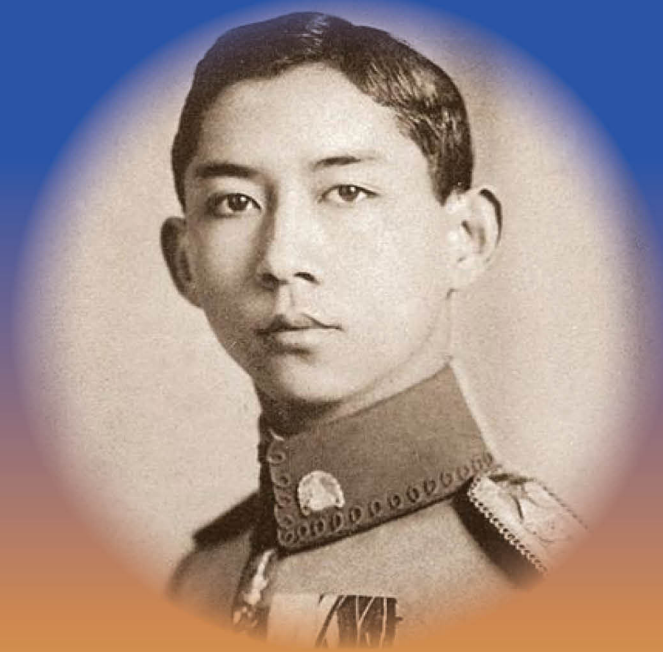
The NHSO will keep monitoring the adverse events of the COVID-19 vaccination closely. If any new studies concerning the negative effects arise, we may consider implementing a new program or a provision



With the cooperation of:

Ministry of Public Health, Thailand
Provincial Administrative Organization
Phuket Municipality
Phuket Provincial Office
Phuket Provincial Health Office
Vachira Phuket Hospital
Ko Kaeo Health Promotion Hospital
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Boromarajonani College of Nursing, Changwat Nonthaburi
Faculty of Nursing, Praboromarajchanok Institute, Thailand



“True Success is not in the learning, but in
its application to the benefit of mankind.”

HRH PRINCE MAHIDOL OF SONGKLA



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