



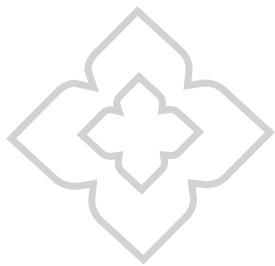
Voluntary Local Review 2022

The Implementation of the UN Sustainable Development Goals

in Nakhon Si Thammarat
City Municipality

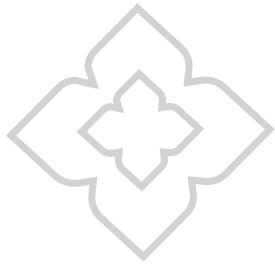






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ACRONYMS

AR	Augmented Reality
BOOT	Build-Own-Operate-Transfer
CCTV	Closed Circuit Television
CLP	Nakhon Si Thammarat City Learning Park
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
FY	Fiscal Year
EGAT	Electricity Generating Authority of Thailand
EIMP	Environment Impact Mitigation Plan
HLPF	High-Level Political Forum
IGES	Institute for Global Environmental Strategies
IoMT	Internet of Medical Things
kV	Kilovolt
LAOs	Local Administrative Organisations
m³	Cubic Metre
MoI	Ministry of Interior
MoNRE	Ministry of Natural Resources and Environment
MoPH	Ministry of Public Health
MSW	Municipal Solid Waste
NESDC	National Economic and Social Development Council
NST City	Nakhon Si Thammarat City Municipality
NICS	Nakhon International City School
OTOP	One Tambon (Sub-District) One Product
OTEPC	Office of the Teacher Civil Service and Educational Personnel Commission
PPPs	Public-Private Partnerships
SDG	Sustainable Development Goal
SPP	Small Power Producers
SWOT	Strengths, Weaknesses, Opportunities, and Threats
UN	United Nations
UN DESA	United Nations Department of Economic and Social Affairs
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
VLR	Voluntary Local Review
VNR	Voluntary National Review
VR	Virtual Reality

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MESSAGE FROM THE MAYOR

Nakhon Si Thammarat is an ancient city founded more than 1,500 years ago. The city prospers as the educational and cultural capital of Southern Thailand. Our long history reflects in various aspects such as religious ceremonies, architecture, sculptures, murals and pagodas. With significant archaeological sites around the city, Nakhon Si Thammarat has taken delicate steps towards urban development to harmonize a balanced- combination of prestigious history and remarkable urbanization.

"Listening to the people, enhancing public participation" is our core value. The implementation of all city projects is based on a people-centric strategy. The City Government has set the quality of life of its citizens as the top priority for the urbanization of the city. The City Government intends to drive improvements in governance, basic infrastructure, safety, education, healthcare, and the environment whilst encouraging crucial public participation. Subsequently, we are a winner of the Thailand Smart City Solutions Awards 2022 for our people-based Smart City E-Service project, which brought together 34,000 volunteers to solve various problems in the city, such as infrastructure maintenance, healthcare services, education, and even the day-to-day issues through a two-way digital communication platform.

The City Government not only intends to raise the quality of life of its citizens, but also aims to strengthen development in all areas in both short and long term solutions. It is an honour of Nakhon Si Thammarat to be the first city in Thailand to share our experiences through the Voluntary Local Review (VLR). The Sustainable Development Goals (SDGs), which emerged from the 2030 Agenda, are spoken about globally, promoted and localized through Voluntary Local Reviews (VLRs). The City Government is doing its utmost to consistently localize the SDGs. We also hope that our VLR can inspire other cities to address the SDGs and move forward in terms of sustainable development together.

Dr. Kanop Ketchart
Mayor, Nakhon Si Thammarat City Municipality

HIGHLIGHTS

This Voluntary Local Review (VLR) is the first review of progress towards the SDGs in Nakhon Si Thammarat City Municipality (NST City). The report was prepared by NST City in accordance with the Asia Pacific Regional Guidelines for Voluntary Local Reviews developed by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) and the Global Guiding Elements for Voluntary Local Reviews (VLRs) of SDG Implementation of the United Nations Department of Economic and Social Affairs (UN DESA). The VLR development process incorporated the views of relevant stakeholders such as the local communities, the private sector, educational institutions, NGOs, and youth. Vertical integration with regional and national agencies was also established through dialogues and the identification of key gaps in SDG implementation from national to local levels. The development process towards the SDGs has not only allowed the NST City to measure progress and planned work, but also provides the NST City with an opportunity to showcase itself and make new connections at the national and international levels.

NST City aims to improve the quality of life of its citizens and take a leading role in becoming a sustainable city and community. In 2022, NST City launched its Smart City initiative in five strategic areas: smart governance, smart economy, smart living, smart people, and smart environment. This VLR reflects the critical developments included in this new comprehensive initiative to prepare NST City for the future and achieve our ultimate goals with the current focus on SDGs 4, 6, 8, 9, and 11.







Smart City in a nutshell

1

Smart Governance



Smart City E-Service

NST City offers its citizens 17 complaint requests through the e-service platform, including public water supply, streets and sidewalks, watercourses, public drains, public sanitation, tree trimming and pruning, tree removal, nuisance, municipal solid waste, education, public welfare, pet vaccination and sterilisation, disinfection spray service, municipal hospital, municipal pawnshop, municipal financial services, and waste collection requests.



One Stop Service Platform

5 public services, including resident registration office, tax payment, public sanitation, building permit, and business registration.

2

Smart Economy



Virtual Craft Market

Creating an e-commerce platform for local entrepreneurs and small businesses to learn about marketing opportunities.



Mr. City Tour Guide

Creating a digital travel platform using Augmented Reality (AR) vs Virtual Reality (VR) technologies.



3

Smart Living



Real-Time Traffic Surveillance and Canal Monitoring via a Mobile Platform

(141 CCTVs installed, including 75 for traffic, 37 for school areas, 20 for safety zones, and 9 for canals.



License Plate Recognition

Cameras installed to ensure the safety of citizens and all passersby.



AI Traffic Control

Minimising traffic congestion at major intersections in the city through AI technology.



Hospital on Wheels

The 20,000 bed project, providing healthcare for patients and protecting bedridden patients from complications and supporting rapid recovery through ERP and EMR technologies.



Municipal Hospital

New municipal hospital using MedTech and IoMT technologies.

5

Smart Environment



Municipal Solid Waste Management

Construction of 20 MW Waste-to-Energy Plant.



Zero Waste Bins

Reducing waste bins and scheduled collection service while promoting recycling through recycling rewards.



Closing the Loop - Digital tools

Collecting data on waste hotspots using mobile application and GoPro camera.

4

Smart People



Metaverse for All

AR and VR technologies are used as learning aspirations for citizens, students, entrepreneurs and the general public.



Smart E-Library

Technological advancement to create a new community learning centre through online application.



Smart Museum

Technological advancement to attract more visitors through the use of AR and VR technologies.



Digital Street Vendors

Free training for local entrepreneurs and small businesses on online and offline businesses.



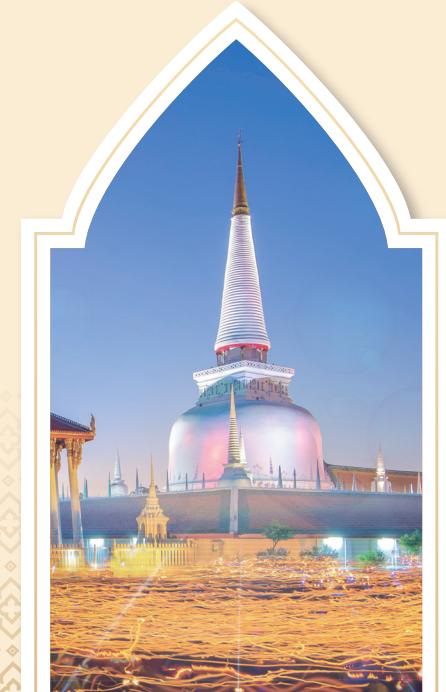
Smart City X

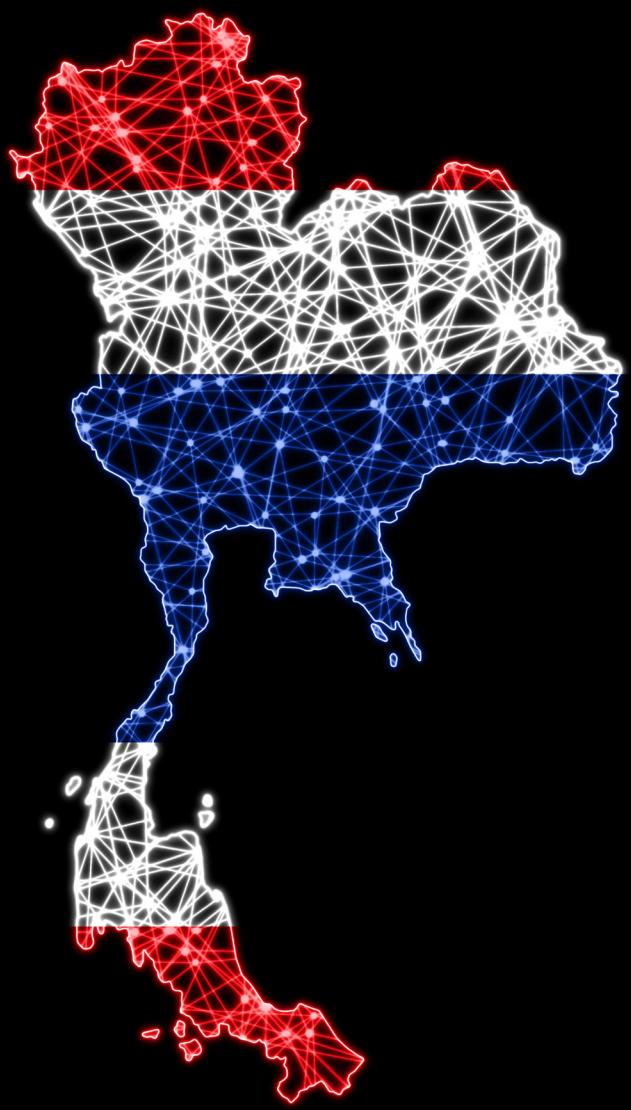
Free training for young volunteers on technologies used in the city.



Smart Schools

Improving the education system by using AR and VR technologies with the goal of covering 10 municipal schools with approximately 11,000 students.







1

Introduction

1.1 Nakhon Si Thammarat City Municipality's Sustainable Development

NST City is the first city in Thailand to produce a VLR, reviewing its progress towards achieving the 2030 Agenda. In 2017, Thailand presented its first Voluntary National Review (VNR) at the High-Level Political Forum on Sustainable Development (HLPF), followed by the country's second submission in 2021. While Thailand is committed to achieving the 2030 Agenda and the SDGs, the country relies heavily on efforts and progress made at the local and regional levels. This VLR report focuses specifically on the SDGs in NST City, reflecting the city's development plan and actions implemented by the city to achieve the well-being of its people.

NST City is a multicultural city where people with different religions live in harmony. It is an ancient city with rich culture and long history. NST City has many tourist attractions to offer, including a variety of foods, and convenient access. The main roads and public transportation are easy to reach. NST City is surrounded by beautiful natural resources such as mountains and beaches. The City Government is committed to making the city inclusive and attracting more tourists while ensuring sustainable consumption of natural resources and environmental management.

The NST's City Development Plan includes 6 strategies:

- Development of Good Governance
- Development of Good and Accessible Utilities and Infrastructures
- Development of Environment and Natural Resources
- Development of Vibrant Societies, Education, Religion, and Culture
- Development of Public Health and Sports
- Development of an Inclusive Economy

This City Development Plan is in line with national and regional policies and plans, including the 20-year National Strategy (2018-2037), the Twelfth National Economic and Social Development Plan, the Southern Development Plan, and the Provincial Development Plan. Under the 6 strategies, more than 200 projects are implemented in NST City each year.

Vision

“

Striving to build a city that is livable, modern, transparent, and safe, while being at the forefront of education and health care systems, and that the NST City Government can serve.

”

1.2 NST City Context

Population

NST City is the capital of Nakhon Si Thammarat Province, one of the major cities in Southern Thailand. It is a regional hub for commerce, tourism, education and culture. The tourism industry in particular has played an important role in driving economic development. NST City has a registered population of approximately 98,178 with 47,085 households as of 2022. The population has remained fairly stable with little migration or growth (0 - 1% per year). The city exhibits a clear linear urban morphology, concentrated along two main roads: Ratchadamnoen Rd and Highway 401, which connects Nakhon Si Thammarat with the adjacent Surat Thani Province. The city also has significant religious and historical importance. It was founded over 1,500 years ago.

Topography

NST City is located in the Mueang Nakhon Si Thammarat District and covers an area of 22.56 sq.km. It borders Pak Phun Sub-district to the north, Tha Ruea Sub-district to the south, Pak Phun Sub-

district, Pak Nakhon Sub-District, and Tha Rai Sub-District to the east, Phosadet, Mamuang Songton Sub-district, and Nakhan Sub-district to the west.

The city is bounded by a large network of urban canals including the Tha Wang, Tha Sak, Bang Luang, Na Mueang, Pa Lao, Suan Luang and Khu Pai canals, several of which run through the city's commercial and residential zones. These canals empty into the Gulf of Thailand via a number of branching rivers, primarily the Plai Bang Khwai, Pak Nakhon and Tha Sak.

NST City is the urban area with the highest density compared with other cities in Nakhon Si Thammarat Province. NST City is growing rapidly, driven by the construction of buildings, roads, housing projects etc. which has contributed to increased flooding in the city which has become more frequent in the past years. Key environmental challenges for the city include water quality degradation (driven by wastewater, municipal waste and agricultural pollution) and urban flooding. Flood events driven by extreme rainfall or tropical storms are common and have been recorded each year from 2016 - 2022.

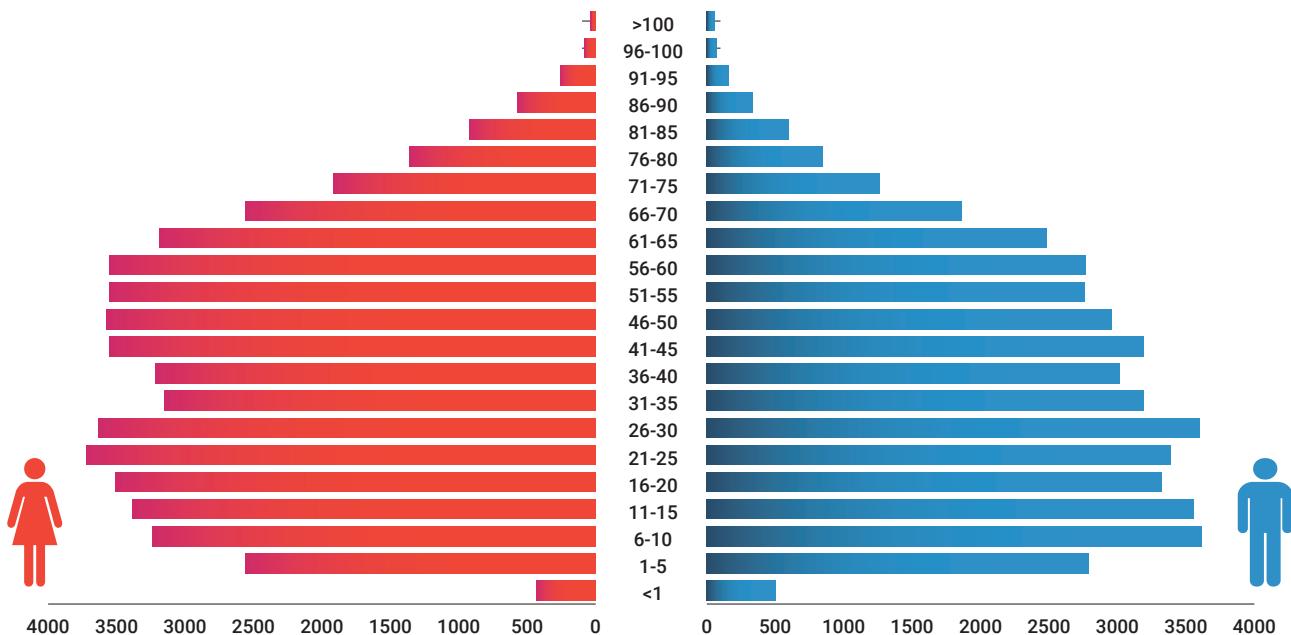


Figure 1.1 NST City Population in 2022



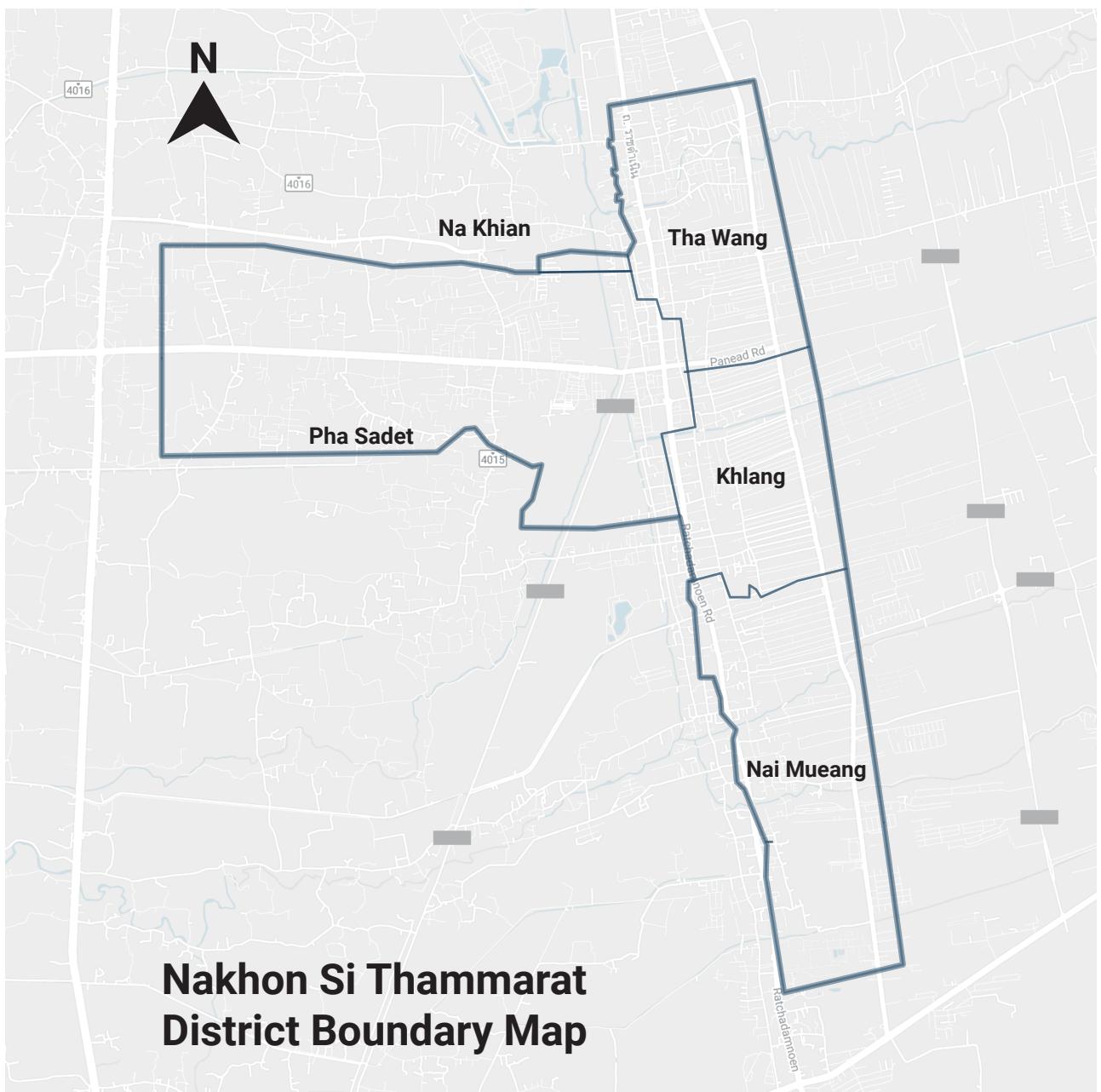


Figure 1.2 Map of NST City

Economic Development

Nakhon Si Thammarat Province has a total economic production estimated at USD 5.2 billion in 2020, growing at around 1.4% per year. The regional economy is driven by a thriving tourism industry. The number of visitors reached nearly 4 million visitors, generating revenue of over USD 450 million in 2019. This number declined rapidly after the COVID-19 pandemic. In 2022, the province was estimated to receive only 2 million visitors, both domestic and international, generating over USD 161 million in revenue. Tourism is expected to recover to 2019 levels by 2023. Most people are employed in the

agriculture sector in plantation, fishery or livestock production, and agriculture accounts for 48.7% of land cover. In NST City, there is a more developed service and industry sector.

Governance

NST City is part of the Mueang Nakhon Si Thammarat, the province's capital district. It is covers 5 sub-districts and 67 communities and is governed by the Provincial Office for Local Administration.

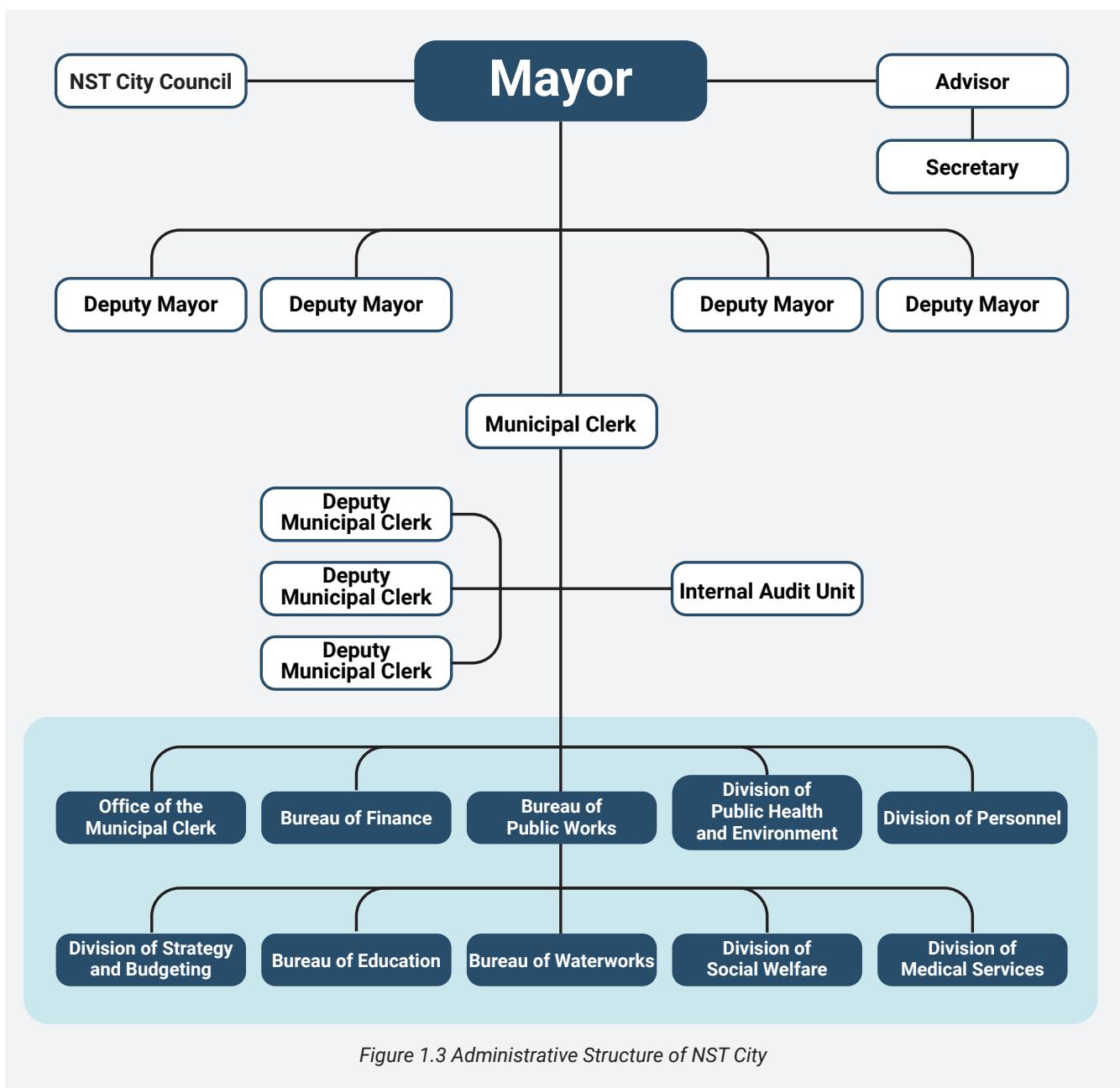


Figure 1.3 Administrative Structure of NST City





2

Preparation of Voluntary Local Review

This report was prepared following the Asia-Pacific Regional Guidelines on Voluntary Local Reviews developed by ESCAP and the Global Guiding Elements for Voluntary Local Reviews (VLRs) of SDG implementation developed by UN DESA. NST City, with technical assistance from ESCAP, conducted VLR to assess the city's progress in implementing the SDGs. The objectives of the VLR project are to strengthen the capacity of local governments to review their progress on the SDG Targets, create discussions among relevant stakeholders on the city's goals related to the SDGs, and strengthen the dialogue between the national and local levels for VLR-VNR integration.

Initially, an inception meeting was held in NST City on February 18, 2021 with participation of directors of 6 main divisions (Bureau of Public Work, Bureau of Finance, Division of Strategy and Budgeting, Division of Social Welfare, Division of Public Health and Environment, and Office of the Municipal Clerk), and 2 regional organisations (Regional Environmental Office, Ministry of Natural Resources and Environment (MoNRE), and Regional Public Health Office, Ministry of Public Health (MoPH)). The meeting was successfully conducted with the active participation of the Vice Permanent Secretary representing the Mayor. In his closing remarks, he assured NST City's commitment to the VLR project and expressed his belief that the VLR will benefit the city and the well-being of its citizens. The executive representatives from divisions and bureaus also agreed to work towards the 2030 goals.



After the successful inception meeting, a training workshop was conducted on 2 – 3 March 2021 to build the capacity of the city's working group. The workshop included 3 sessions (6 sessions in total) consisting of a presentation followed by breakout group discussions. The objectives of the training workshop included:

- Introduced the VLR project and Asia Pacific Regional Guidelines;
- Discussed how SDGs could be integrated into the City Development Plan; and
- Identified relevant stakeholders and their engagement, as well as the methodology of data collection.





VLR Project /Training Workshop / NST City

Participants from 10 city divisions engaged in working teams.

- Office of the Municipal Clerk
- Bureau of Finance
- Bureau of Public Works
- Division of Public Health and Environment
- Division of Personnel
- Division of Strategy and Budgeting
- Bureau of Education
- Bureau of Waterworks
- Division of Social Welfare
- Division of Medical Services

The training workshop was successfully conducted with active engagement from the participants. It enhanced the project framework and the understanding of the outcomes and the importance of stakeholder engagement. The SWOT analysis was also conducted. Four SDGs were identified as priorities for the municipality, along with the outcomes directly relevant to stakeholder identification and data collection methodology. The training workshop led to a better understanding of the VLR project and data collection.

Data collection was conducted through an onsite follow-up workshop, an online meeting, a desktop review and a public stakeholder consultation with all relevant stakeholders. The follow-up workshop was held on 12 November 2021 to discuss progress made by the local government and challenges even amidst the outbreak of COVID-19, share VLR case studies from other cities, and discuss data collection and verification. Online data collection was conducted starting on May 2021 onward.

During the training workshop, a stakeholder engagement plan was developed, and the SDG priority mapping matrix was updated. On 25-26 December 2021, a stakeholder consultation workshop was organised with key stakeholders, including youth, the private sector, academia, and communities. They provided suggestions to the NST City on each of the SDGs. The process map for the preparation of the VLR is shown in Figure 2.1.

VLR Project / VNR-VLR Integration Meeting / NST City



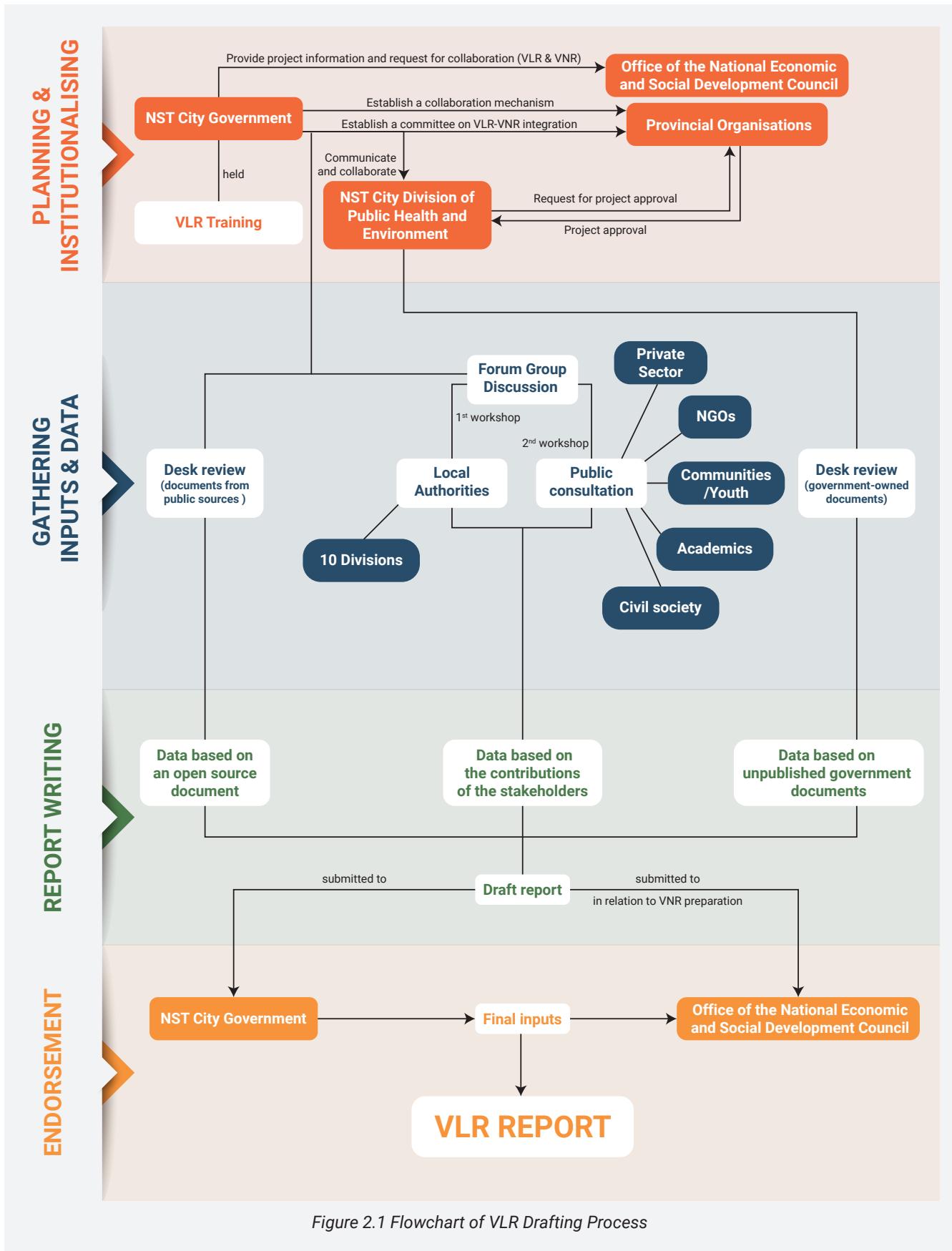


Figure 2.1 Flowchart of VLR Drafting Process





2.1 SWOT analysis

From the SWOT analysis, NST City identified strengths, such as the provision of a sufficient budget by the central government, active engagement and devotion of executive officers and staff, many attractive tourist attractions, several schools and educational institutions. Its weaknesses include many outdated laws and regulations, intense traffic in the core city, conflict between citizens due to life dissatisfaction of unemployment, environmental problems, and inadequate water supply. The opportunities identified include the promotion of the secondary city initiated by the central government and financial and technical support from various agencies. The threats are clearly apparent in how disasters due to climate change have affected the city. Following the SWOT analysis, NST City prioritised its focus on SDG 4, SDG 6, SDG 8, SDG 9, and SDG 11 as detailed in the table below.

The SWOT analysis of NST City was carried out as part of a training workshop with intensive participation from various divisions listed below.

- Office of the Municipal Clerk
- Bureau of Finance
- Bureau of Public Works
- Division of Public Health and Environment
- Division of Personnel
- Division of Strategy and Budgeting
- Bureau of Education
- Bureau of Waterworks
- Division of Social Welfare
- Division of Medical Services

S STRENGTHS	4 QUALITY EDUCATION 	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 
W WEAKNESS	6 CLEAN WATER AND SANITATION 	11 SUSTAINABLE CITIES AND COMMUNITIES 
O OPPORTUNITIES	8 DECENT WORK AND ECONOMIC GROWTH 	
	<ul style="list-style-type: none">• Strong education system.	<ul style="list-style-type: none">• Full decision-making and budgetary power to improve infrastructure.
	<ul style="list-style-type: none">• Water Supply.	<ul style="list-style-type: none">• Municipal solid waste management.• Surface water quality.
	<ul style="list-style-type: none">• Create new jobs in the tourism industry.	

STRENGTHS

S

- The executive officers of the local government organisation actively support various projects, especially in the field of education.
- NST City has a sufficient budget available for its development projects.
- The executive officers and staff are local people who deeply understand the context of NST City and are committed to their communities.
- NST City is surrounded by rich and diverse natural resources.
- There are numerous schools and educational institutions in NST City and the surrounding areas that are sufficient for students. NST is a historical city with unique cultural attractions, such as temples and museums.
- NST City has several transportation hubs such as a train station, an intercity bus station, and an airport, making it easy for visitors to reach the city.
- Strong horizontal collaboration among the various divisions of NST City enables smooth and effective communication and effective work outcomes.
- The NST City Government has full decision-making power over the city's development projects.

OPPORTUNITIES

O

- The Thai government has promoted secondary cities through stimulus policies to boost economic growth in secondary cities. Nakhon Si Thammarat is defined as a secondary city and benefits from this policy as a new tourist attraction in Southern Thailand.
- There is also financial support from other sources, such as the budget from the Environmental Fund.
- Technical support from central government agencies in various aspects should be provided.

WEAKNESS

W

- Some of the laws and regulations governing operations are outdated.
- The core city of NST City is an old town with many important historical areas. Infrastructure development, such as road expansion, has been regulated by land-use law, making it difficult to regulate traffic due to the increasing number of cars.
- There are many unemployed people, leading to complaints and conflicts in the communities due to unsatisfaction with their well-being.
- Due to the change in lifestyle, people participate less in the activities organised by the local government.
- Increasing environmental problems, such as municipal solid waste, water pollution, air pollution from transportation, and risk of flooding.
- Tap water is sometimes of insufficient quality and grade.

THREATS

T

- NST has witnessed natural disasters due to climate change such as floods and droughts.
- Drug abuse in adolescents and the young generation has been reported.
- Quarrels among teenagers are common.





2.2 Stakeholder Engagement

Stakeholder Consultation Workshops were conducted on 25 – 26 December 2021. The workshop aimed at introducing the project, involving stakeholders in the context of SDG implementation and VLR progress of the NST City, sharing VLR case studies of other cities, identifying the city's qualifications using the SWOT analysis approach and discussing the future of the city.

The workshops consisted of an introduction, the city's progress, and group discussions.

The SWOT analysis approach was conducted with stakeholders from the first workshop, which helped to identify further improvements and actions by the local government in terms of public safety, pollution problems, better coordination and cooperation among governmental agencies, better environmental and natural disaster management, infrastructure problems, promotion of public relations, and social problems (e.g., homeless, low-income generator, etc.).

For the second workshop, a different approach was taken, namely facilitating open discussions that included youth from secondary school to university, whose participation was very active and encouraging. Many interesting ideas about the current situations in the city, further improvements and how they envision the city of the future in the context of the SDGs were discussed and shared during the feedback session. The outcomes of the two workshops were subsequently shared and presented with the Mayor and high-level staff.



VLR Project | Stakeholder Consultation Workshop | NST City

Mapping of SDGs with Proposed Activities by Stakeholders

1 NO
POVERTY



- Responsible agencies should have direct access to poor groups and provide them with direct assistance. (Target 1.1, 1.3, 1.5)
- Online and offline career path development and promotion should be provided for local communities. (Target 1.1, 1.2, 1.4)
- Job training and housing programme should be provided for homeless. (Target 1.1, 1.2, 1.4)
- Career centres should be established to assist with job inquiry and consultation. (Target 1.1, 1.2, 1.4)

2 ZERO
HUNGER



- A food and housing assistance programme should be established for the homeless. (Target 2.1, 2.2)
- NST City should promote career path development that helps generate income for poor people in need. (Target 2.3)
- Food pantries/centres should be established for the homeless or those who sleep on the streets or those living hand to mouth. (Target 2.1, 2.2)

3 GOOD HEALTH
AND WELL-BEING



- A variety of public health services/facilities should be provided. (Target 3.4, 3.7, 3.8)
- Government services should be easily accessible and convenient. (Target 3.4, 3.7, 3.8)
- Public gyms should be developed to encourage people to exercise. (Target 3.4, 3.8)
- Coordination between the municipal hospital and Maharaj Hospital (provincial hospital) should be strengthened to resolve problems in a timely manner. (Target 3.8)
- A medicine delivery service should be provided for the disabled and elderly. (Target 3.8)
- Equal access to health care should be applied for all, regardless of social status and/or circumstances. (Target 3.8)
- Health and wellness should be promoted through the media so that people take more care of their health. (Target 3.8)
- Facilities of the municipal hospital including buildings, parking lots, and hospital staff services should be improved. (Target 3.8)

4 QUALITY
EDUCATION



- Equal access to education should be applied for all, regardless of social status and/or circumstances. (Target 4.1, 4.2, 4.3, 4.4, 4.5)
- Scholarships (financial support, uniforms, equipment, etc.) should be made available as early as kindergarten. (Target 4.1, 4.2, 4.3, 4.4, 4.5, 4.6)
- The right to education should be guaranteed for persons with disabilities and poor people. (Target 4.1, 4.3, 4.5, 4.a)
- Alternative education and new learning methods for people with unequal qualifications should be promoted. (Target 4.4)
- Entrance and admission fees for universities may be waived to enable people to access education. (Target 4.b)
- Equal education should be provided in both rural and urban areas. Currently, teaching methods and school facilities differ. (Target 4.3, 4.6, 4.a)
- Education is equally accessible in remote areas. (Target 4.1, 4.3, 4.4, 4.5, 4.6)
- Some education expenses should be deducted or waived to allow low-income people to access education. (Target 4.b)





5 GENDER EQUALITY



- The rights of women and children to leadership, suffrage, choice of occupation and clothing should be ensured. (Target 5.5)
- No gender should be discriminated against in the workplace so that all genders can pursue all desired occupations. (Target 5.1, 5.a)
- Equality through understanding and acceptance processes should be promoted. (Target 5.3, 5.4, 5.5, 5.6)
- Equal employment opportunities in recruitment should be ensured regardless of gender. (Target 5.1, 5.a, 5.b, 5.c)
- All genders have equal rights and opportunities in all aspects – no exclusion. (Target 5.1, 5.3, 5.4, 5.5, 5.a, 5.b 5.c)
- Be open-minded and insightful about gender rights. (Target 5.2, 5.3, 5.4, 5.a, 5.b, 5.c)

6 CLEAN WATER AND SANITATION



- The quality of tap water must be verified before it is distributed to communities. Customer service issues should be monitored and resolved in a timely manner when problems arise. (Target 6.1)
- Ensure that tap water is free of colour, odour, and dirt so that it can be used safely. (Target 6.1)
- Access to clean water and sanitation should be guaranteed as a fundamental human right. (Target 6.1, 6.2)
- The tap water system and disinfection in wastewater treatment should be properly managed to prevent contamination. (Target 6.3, 6.6)
- Water quality and sanitation should be improved – municipal tap water does not work or does not flow sometimes, making it difficult to perform daily routine tasks (e.g., washing dishes, laundry, etc.). (Target 6.1, 6.2)
- Reddish colour must be removed from tap water. (Target 6.1)
- Ensure that tap water is safe and reliable for people to drink. (Target 6.1)

7 AFFORDABLE AND CLEAN ENERGY



- Clean energy should be introduced to create an enabling environment and reduce costs for the public. (Target 7.2)
- Solar systems should be supported and developed to increase more clean energy options. (Target 7.2)
- A comprehensive energy system, such as sufficient lighting for night-time should be provided, especially on dark corners and desert roads/path. (Target 7.b)
- Promotion of energy efficiency in households should be encouraged to make electricity bills cheaper. (Target 7.2, 7.3, 7.b)

8 DECENT WORK AND ECONOMIC GROWTH



- Effective employment should be promoted to improve the quality of life and generate income for people. (Target 8.1)
- Fair wages and equal pay for equal work should be ensured. (Target 8.5)
- Diversity of jobs should be created to avoid competition. (Target 8.3, 8.6)
- Minimum wages should be increased to improve the quality of life. (Target 8.1, 8.2, 8.3, 8.5)
- Industrial businesses and domestic investment should be promoted rather than relying on foreign investment. (Target 8.2, 8.5)

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



- Electrical wires should be placed underground to maintain a beautiful landscape. (Target 9.1)
- Ensure that the environment is not harmed by the use of equipment and technological advances. (Target 9.2)
-

10 REDUCED INEQUALITIES



- The right to access development and growth should be ensured regardless of location. (Target 10.2)
- Ensure that uneven distribution/concentration of wealth between rich and poor is reduced. (Target 10.1)

11 SUSTAINABLE CITIES AND COMMUNITIES



- Strict security controls in critical/risk areas should be provided. (Target 11.7)
- The number of homeless in Thawang Sub-district should be reduced and shelters should be provided to ensure safety. (Target 11.1, 11.3, 11.7)
- Safety is ensured in all areas and at all times. (Target 11.7)
- Waste and noise pollution must be well managed. (Target 11.6)

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



- “Bringing Your Own Reusable/Shopping Bags” to stores should be promoted by offering customers some discounts. (Target 12.1, 12.5, 12.8)
- Local products should be supported (e.g., selling at reasonable prices and promoting capacity development for local people to produce local products, such as handbags made from lygodium, handbags made from old/recyclable clothing). (Target 12.8)

13 CLIMATE ACTION



- Open burning in local communities and temples should be reduced. (Target 13.3)
- Public transportation should be expanded to reduce emissions from vehicles/engine. (Target 13.2, 13.3, 13.b)
- Carbon credit projects should be promoted. (Target 13.2, 13.a)
- Pollution must be reduced through stringent measures, especially on vehicle exhaust systems. (Target 13.2, 13.3, 13.b)
- Good and safe public services should be provided to help reduce private vehicles and carbon emissions. (Target 13.2, 13.3, 13.b)

14 LIFE BELOW WATER



- Clean and clear canals should be maintained (e.g., regular canal dredging should be performed). (Target 14.1, 14.2)
- Sewage must be eliminated in canals and rivers. (Target 14.1, 14.2)
- Cleanliness campaigns/activities and prohibition of littering of canals and rivers should be promoted. (Target 14.1, 14.2)
- Continuous improvement of canals should be maintained to reduce debris and sewage. (Target 14.1, 14.2)
- Carbon emissions to the atmosphere should be reduced. (Target 14.3)
- The use of plastic must be reduced. (Target 14.1, 14.2)
- The littering into canals, rivers, and the sea must be stopped/prohibited by raising awareness especially among children. (Target 14.1, 14.2)
- Waste trapping floating dam should be set up to collect trash. (Target 14.1, 14.2)
- Tourism should be promoted via social media (e.g., Facebook, Instagram, etc.). (Target 14.1, 14.2)
- Awareness of the importance of marine resources and environmental conservation should be promoted. (Target 14.1, 14.2, 14.5)





15 LIFE ON LAND



- Campaigns to raise awareness of potential harm from agricultural pesticide and chemical use and water collection in deserted and abandoned areas. (Target 15.1, 15.5)
- Trees in the city should be maintained and cut down when necessary.
- The Waste at Thung Ta Lad landfill should be removed and converted it into green areas. (Target 15.1)
- Public park areas should be expanded. (Target 15.1)
- The number of trash bins in urban areas should be reduced while educating local people about waste disposal and waste separation. (Target 15.1)
- The use of trees should be used in a sustainable way and the planting of new trees to reduce carbon footprint. (Target 15.1)

16 PEACE, JUSTICE AND STRONG INSTITUTIONS



- Dark corners and deserted and abandoned areas must be controlled to ensure the safety of people. (Target 16.1)
- CCTVs should be installed throughout the city. (Target 16.1)

17 PARTNERSHIPS FOR THE GOALS



- Knowledge of administration and management with international organisations should be explored for further development and improvement of the city. (Target 17.9)

STRENGTHS

S

- One of the largest sources of rubber plantations in Thailand
- Beautiful temples
- Many canals
- Strong and accessible leaders who take prompt actions
- Prominent source of southern food
- Good source of retail stores
- Rich in natural resources
- Ancient city with long history
- Rich in culture and traditions
- Surveillance (CCTV) systems throughout the city
- Listen to public opinion and take action
- Municipal schools are located near all communities
- Good and accessible public healthcare
- Good size for a city - not too big and not too small
- Convenient transportation
- High quality education
- Religious diversity
- Easy access via main street
- One of the beautiful city pillar shrines in the country
- Community involvement and participation
- City can be further developed, e.g., roads
- Stable and diversified economy.

WEAKNESS

W

- Highly populated urban residential areas leading to social and environmental problems
- Many knowledgeable people, but no action
- Lack of cooperation between professional groups
- Limited traffic discipline
- Limited understanding of being a good host and welcoming tourists
- Lack of cooperation - relies on donations
- Frequent flooding
- Waste problems
- Pollution problems
- Traffic congestion
- Low income with high expenses
- Limited water resources and management
- Unclear urban planning - no cooperation between relevant authorities
- Limited cooperation among local communities
- Community economy
- Limited promotion of cultural communities
- High drug and crime problems
- Lack of PR and promotion of tourist attractions
- Recognise the importance of all jobs as they are the source of income for the province
- Lack of caretakers at tourist attractions





OPPORTUNITIES

- One of the cities with the cleanest air - Few factories in the area
- An ancient and sacred city that is very valuable and attracts visitors
- Variety of food from both fresh water and sea.
- Convenient access to transportation - cars, trains, planes
- Large markets for fresh fruits and vegetables delivered to neighbouring cities and provinces.
- Tourism and hotels
- Knowledge of famous local products can be turned into selling points, e.g., bags made of lygodium, silver niello goods, gold, southern shadow puppet show performances, art gallery, etc
- Ecotourism goals
- Investment by a large group of companies
- Wat Phra Mahathat Woramahawihan is to become the next UNESCO World Heritage Site
- Nora, a traditional folk dance drama from southern Thailand, has been declared an intangible cultural heritage site by UNESCO
- There is a course on "Nakhon Si Thammarat Study"
- Second-tier city for tourism, which helps to attract people who are interested in culture
- The city receives the "City Municipality Rank", which helps to allocate budget for local development
- Shopping centres that facilitate buying and selling
- Fully equipped hospital and services
- Promotion of tourism
- Many holy wells

O

THREATS

- Public safety issues
- Central government policies are inconsistent with local context and culture
- Natural disasters
- Lack of promotion of PR
- Political divide between local communities and local government
- Lack of continuity in following up projects with relevant authorities
- Economic problems
- Limited transportation - no buses
- Overhead power lines detract from scenic beauty.
- Small streets
- Limited parking facilities

2.3 Background of Participants

The stakeholder consultation workshops were successfully conducted with the active participation of local stakeholders. The two workshops were well attended by over 40 participants representing municipal schools, academics, local communities, temples, the private sector, and youth.



VLR Project | Stakeholder Consultation Workshop (Youth) | NST City

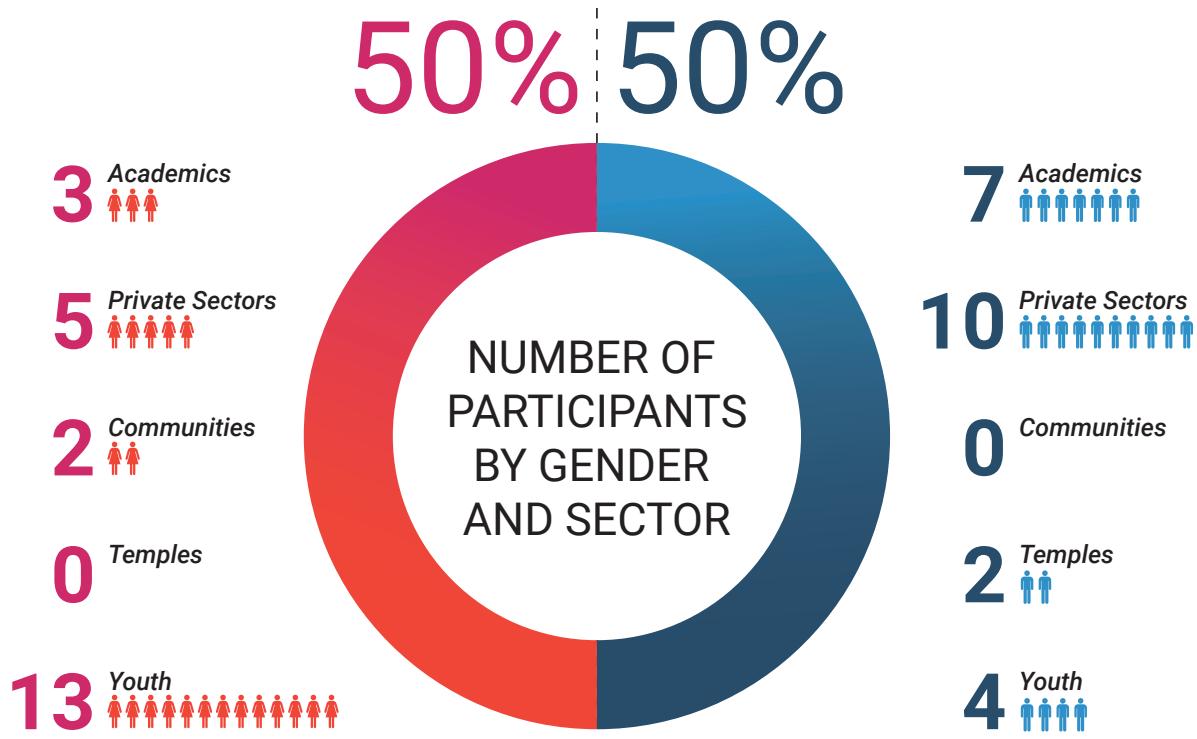
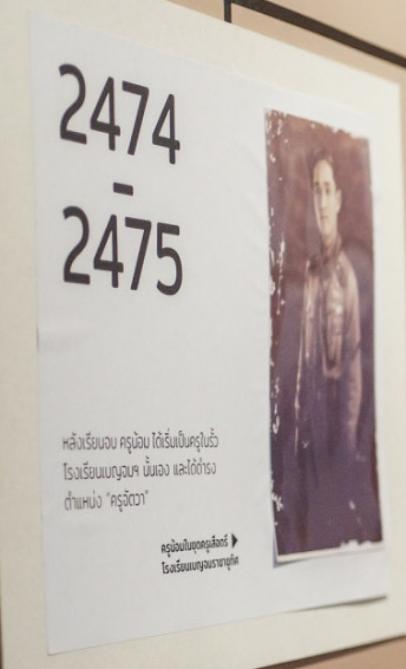


Figure 2.2 Number of Participants by Gender and Sector at the Stakeholder Consultation Workshop





3

Policy and Enabling Environment

3.1 Engagement with the National Government on SDGs Implementation

NST City conducted VLR to assess the city's progress on the SDGs. The objectives of VLR reporting are to strengthen the capacity of local governments to review their progress on SDGs, initiate discussions among relevant stakeholders on the city's goals towards SDGs and strengthen dialogue between the national and local levels for VLR-VNR integration.

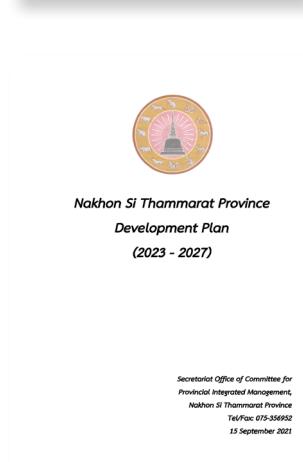
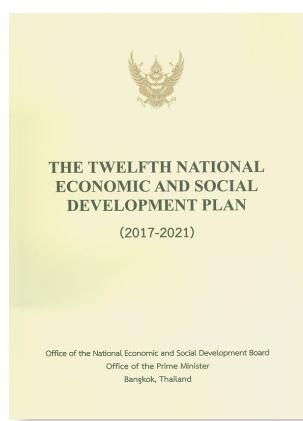
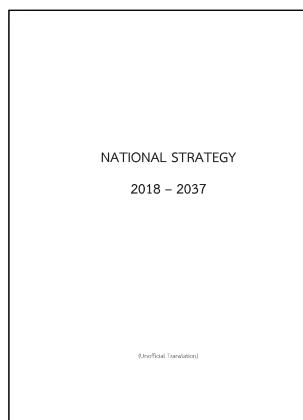
The dialogue between local, regional and central governments was organised in January 2022 to discuss gaps and challenges in localising SDGs. It aimed at strengthening policy alignment from central government to implementation at the local level.



This mainstreaming of the SDGs at the national level is being systematically translated to regional strategies and local implementation. NST City Development Plan is in line with national and regional policies and plans, including the 20-year National Strategy (2018-2037), the Twelfth National Economic and Social Development Plan, the Southern Development Plan, and the Provincial Development Plan. Thailand's Voluntary National Review report was first published in 2017, followed by the second submission in 2021.

"This VNR underlines the importance of a whole-of-society approach and the interconnectedness of the SDGs, showcasing





key examples of the role of the private sector, civil society, academia, youth networks, and ordinary citizens in advancing the SDGs at the national level. The VNR itself has provided an opportunity for stakeholders to engage and discuss SDG implementation".

National Plans and Policies

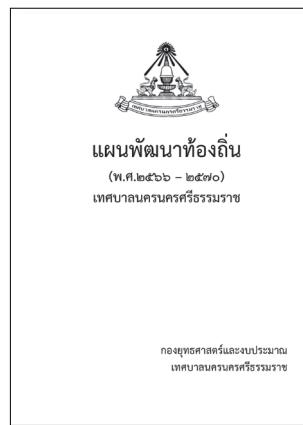
The National Strategy (2018-2037) is the country's first long-term national strategy developed in accordance with the Constitution. It aims to ensure that the country achieves its vision of becoming a developed country with security, prosperity and sustainability in accordance with the "Sufficiency Economy Philosophy" with the ultimate goal being the happiness and well-being of all Thais.

The Twelfth National Economic and Social Development Plan (2017-2021) was formulated at a time when the world was undergoing rapid change and becoming even more integrated, while Thailand itself was undergoing reforms. Since the Ninth Plan, the principles of the "Sufficiency Economy Philosophy" have been and continue to be an essential element of the development strategy, as they underpin the promotion of moderation, reasonableness, and resilience. These principles have contributed significantly to balanced and sustainable development in Thailand.

Regional Plans and Policies

Nakhon Si Thammarat Province developed its Provincial Development Plan (2023 - 2027) by brainstorming opinions from all sectors to meet their needs, solve major provincial problems, and advance provincial development, which are aligned with national strategies, national plans, government policies, and regional development plans, according to the potential and opportunities of the local context. This includes the analysis and comparison of information related to the economy, society, natural resources and environment, including but not limited to identifying local problems, taking into account the needs of local people, coordinating plans at different levels in the region, including the identifying target groups and areas, and prioritising provincial concerns.

The Southern Development Plan was developed to set the direction for the region's economic development. The strategic goal is to make the southern region a world-class tourist destination and the country's hub for rubber and palm oil products, as well as to link its economy with trade and investment with other regions of the world. The plan also includes the creation of agricultural products and agribusiness throughout the value chain, the development of infrastructure to support tourism, and industrial zones that will help diversify economic activities and create income opportunities for the local people. Economic growth will be increased while inequality (Gini coefficient) in income distribution in the southern region will be reduced.



Local Plans and Policies

Determining Plans and the Process of Decentralisation of Local Government Organisation Act, B.E. 2565, states in Section 16 that municipalities are responsible for developing their own local development plans. In addition, the Regulation of the Ministry of Interior on the Preparation of Local Development, B.E. 2548, 3rd Revision, also sets the direction and guidelines for local development planning, which should be consistent with the national economic and social development plan, government policies, the provincial development plan, the strategic framework for local development in the province, the district development plan, and the policies of local administrators. The committee involved in the development of the NST City Development Plan has gathered the concerns and needs of local people from public consultation meetings and information from relevant agencies to conduct a Local Development Plan for Nakhon Si Thammarat City Municipality (2023-2027), which will serve as a guiding framework for the city development.

3.2 Creating Ownership of the SDGs and the VLRs

To raise public awareness and ownership of the SDGs, public satisfaction with the city's performance in achieving each goal was surveyed by 46 individuals from diverse backgrounds. There were 23 men and 23 women who participated in the survey. For them to understand the questions and the purpose of the survey, all participants were presented with the core idea of each SDG goal and the City's current activities to implement the SDGs. They rated their satisfaction with each SDG and shared their ideas and suggestions for the city. The results are shown in the figure below. SDG1, SDG7, and SDG13 received less than 3.0 points out of 5.0. The rest ranged from 3.0 to 3.7, with overall satisfaction scoring 3.4 out of 5.0.

The suggestions from respondents can be summarised as follows;

- Provide more training for communities to develop new skills or strengthen their skills to be able to earn income, especially people who have lost income
- Develop more high-quality private hospitals
- Move away from exam-based education to more diversity in skill development for learners
- Ensure equal and equitable distribution of budget to all schools
- Improve language skills for learners
- Improve the reliability, quality, and quantity of water supplies
- Provide more raw water for water supply during dry season
- Install a solar cell on the rooftop of all municipal schools
- Increase more clean energy initiatives in the city
- Revise land use to strengthen the city's resilience to climate change, social and environmental impacts
- Incorporate infrastructure development into culture and history to make the city unique and preserve culture and tradition
- Create an enabling and accessible city for all
- Adopt sustainable lifestyles (e.g., the use of cloth bags)



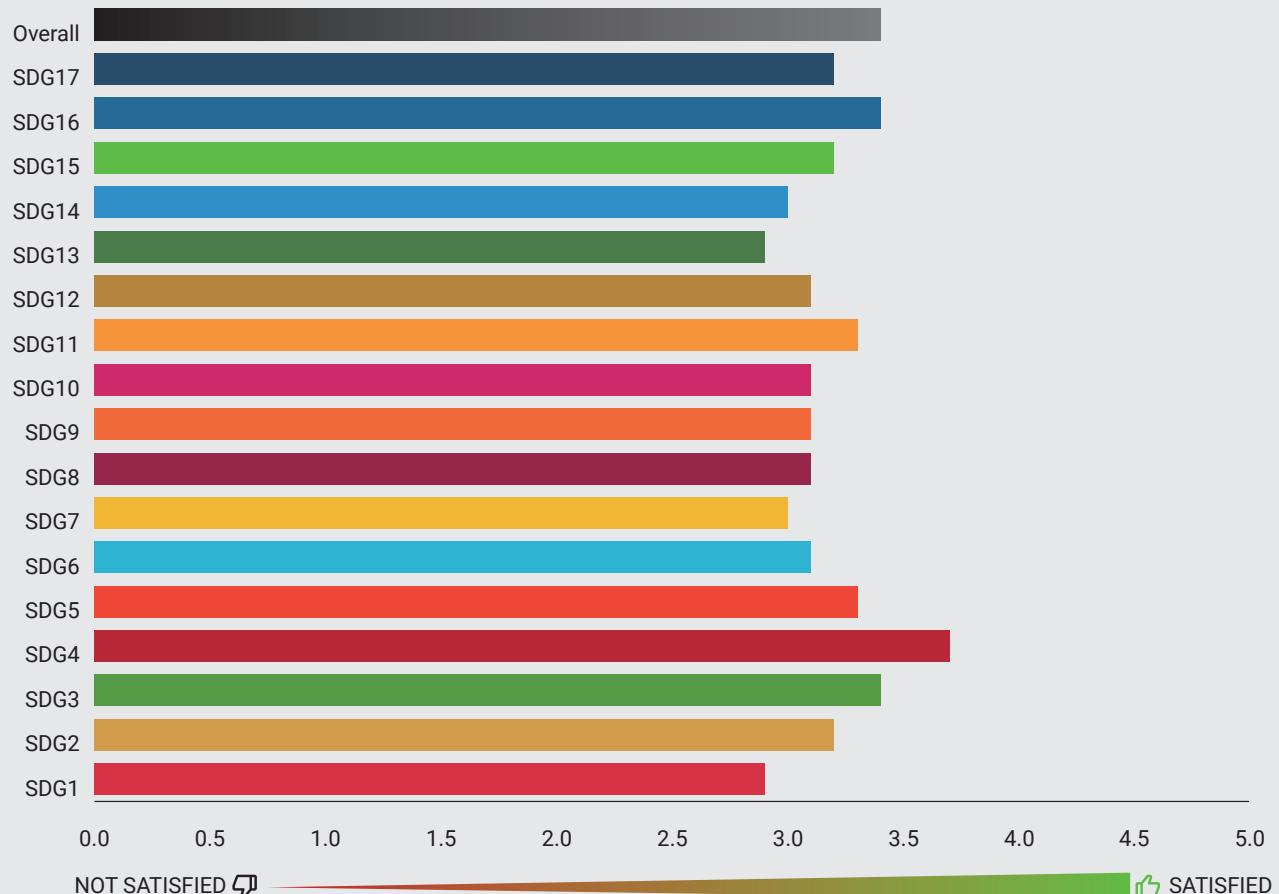


Figure 3.1 Public Satisfaction Survey with NST City's Activities towards SDGs

- Provide people with knowledge about climate change through various media and communication methods
- Increase adaptive capacity to climate change
- Promote canal protection campaigns, including increasing public participation and collaboration between city authorities and communities to protect canals
- Strengthen law enforcement
- Increase green spaces in the city
- Increase public participation and collaboration to provide information on risk areas in the city

3.3 Incorporation of the SDGs in Local Frameworks

The project activities implemented by the NST City are in line with 13 of the 17 SDGs. In the working group, many discussions focused on the challenges and impacts of the COVID-19 pandemic, which has undoubtedly hindered a number of planned activities and budget allocations in the city. In particular, SDG 3, SDG 5, SDG 10, SDG 11, SDG 13 and SDG 17, which cover a wide range of activities, were challenged by the pandemic, such as training programmes on disaster prevention and mitigation for volunteers in communities and promotion of foams and plastic bags reduction in markets and businesses. Ligor City Floating Market (SDG 5, SDG 8, and SDG 10), City Contemporary Art Gallery management project and Events and Festivals (SDG 11) were forced to suspend operations due to social distance measures during the pandemic.

3 GOOD HEALTH AND WELL-BEING



SDG Target(s)

- 3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births
- 3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases
- 3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being
- 3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all

Project Activities

- Safe restaurants for all (Target 3.3)
- Safe foods for all (Target 3.3)
- Promotion and improvement of the fresh market (Target 3.3)
- Vaccination programme for children and young people outside educational institutions (Target 3.2, 3.3, 3.8)
- Provision of equipment for disabled and underprivileged people (Target 3.8)
- ! Promotion of health and sport competition in communities (Target 3.4)
- Centre for health promotion and potential development for the elderly (Target 3.4)
- Pension for AIDS patients (Target 3.3, 3.4)

Challenges

- ! COVID-19 Pandemic hindered the implementation of the activity.





4 QUALITY EDUCATION



SDG Target(s)

- 4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes
- 4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education
- 4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university
- 4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
- 4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations
- 4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy
- 4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development

Project Activities

- Development of digital/electronic learning of Local Administrative Organisations towards Thailand 4.0 (Target 4.4)
- City Learning Park (CLP) management project (Target 4.4, 4.5, 4.6)
- City Contemporary Art Gallery management project (Target 4.7)
- City Museum management project (Target 4.7)
- Rongrean Waisai - education for the elderly (Target 4.4)
- Educational curriculum improvement project (Target 4.2, 4.3, 4.3, 4.6, 4.7)
- Non-formal education management (Target 4.6, 4.7)

Project Activities	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Enhancing learning and development for children in Child Development Centre (Target 4.2) <input checked="" type="checkbox"/> Provision of student uniforms project (Target 4.1) <input checked="" type="checkbox"/> Individual learning and teaching needs project (Secondary level) (Target 4.6) <input checked="" type="checkbox"/> Education materials development project (Target 4.1) <input checked="" type="checkbox"/> Teaching equipment project (Target 4.3) <input checked="" type="checkbox"/> Provision of school lunch programme (Target 4.1, 4.2) <input checked="" type="checkbox"/> Subsidy programme for basic needs of poor students (Target 4.1, 4.2) <input checked="" type="checkbox"/> Provision of educational books (Target 4.1, 4.3) <input checked="" type="checkbox"/> School milk programme (Target 4.1, 4.2)
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Challenges	N/A
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SDG Target(s)

- 5.1 End all forms of discrimination against all women and girls everywhere
- 5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life
- 5.a Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws
- 5.b Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women

Project Activities	<ul style="list-style-type: none"> ⚠ Ligor City Floating Market (Target 5.a) <input checked="" type="checkbox"/> Training programme for scientific process competence (Target 5.b)
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SDG Target(s)

6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

Project Activities

- School pilot project on waste separation (Target 6.3)

Challenges

N/A



SDG Target(s)

7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

Project Activities

- Waste-to-Energy Incineration project (Target 7.2)

Challenges

N/A

8 DECENT WORK AND ECONOMIC GROWTH



SDG Target(s)

- 8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalisation and growth of micro-, small- and medium-sized enterprises, including through access to financial services
- 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead
- 8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value
- 8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training

Project Activities



Ligor City Floating Market (Target 8.3)



Training programme for career promotion and development for local people in NST City (Target 8.3, 8.4, 8.5, 8.6)

Challenges



Following the COVID-19 pandemic, budget was not allocated for the implementation of the project activities.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



SDG Target(s)

- 9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
- 9.c Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020

Project Activities



City Museum renovation (Target 9.1)



Dormitory of Nakhon International City School renovation (Target 9.1)



Expansion of internet connectivity (Target 9.c)

Challenges

N/A





10 REDUCED INEQUALITIES



SDG Target(s)

10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status

Project Activities

Ligor City Floating Market (Target 10.2)

Enhancing student quality development project (Target 10.2)

Provision of English classes for kindergarten (Target 10.2)

Training programme for scientific process competence (Target 10.2)

Educational curriculum improvement project (Target 10.2)

Non-formal education management (Target 10.2)

Strengthening the capacity of staff and teachers in municipal schools (Target 10.2)

Expansion of internet connectivity (Target 10.2)

Challenges

Following the COVID-19 pandemic, budget was not allocated for the implementation of the project activities. Training programme and seminar for staff and teachers could not be conducted.

11 SUSTAINABLE CITIES AND COMMUNITIES



SDG Target(s)

11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels

Project Activities

- ⚠️ City Contemporary Art Gallery management project (Target 11.4)
- ⚠️ Events and Festivals (namely the Tenth Lunar Month, Loy Krathong, New Year, Makha Bucha – Hae Pha Khuen That, Chinese New Year (China Town) (Target 11.4)
- ⚠️ Training programme on disaster prevention and mitigation for volunteers in communities (Target 11.b)
- ✓ Establishment of safety service points on the roads during festive events (Target 11.2)
- ✓ Ceremony to commemorate the Birthday Anniversary of Her Royal Highness Princess Srinagarindra, the Princess Mother (Target 11.4)
- ✓ Volunteer project on “We Do Good Deeds by Heart” (Target 11.3)
- ✓ Pension for the elderly programme (Target 11.3)
- ✓ Pension for the disabled people (Target 11.3)
- ✓ Aid for disaster victims and poor people (Target 11.b)
- ✓ Household hazardous waste segregation (to be administered by Nakhon Si Thammarat Provincial Administration Organisation) (Target 11.3, 11.6)

Challenges

- ⚠️ COVID -19 Pandemic hindered the implementation of project activities as follows: The planned activities under City Contemporary Art Gallery management project were delayed due to the decrease in the number of visitors; however, the gallery tried to solve this problem by virtual advertising of the exhibitions; the organisation of festivals could not be carried out to comply with the provincial guidelines that no gatherings of more than 50 people training programme on disaster prevention and mitigation for volunteers in communities could not be carried out to ensure the safety of all.





12 RESPONSIBLE CONSUMPTION AND PRODUCTION



SDG Target(s)

- 12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries
- 12.2 By 2030, achieve the sustainable management and efficient use of natural resources
- 12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses
- 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
- 12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

Project Activities

- Waste-to-Energy Incineration project (Target 12.2)
- Promotion of sustainable consumption and production (Target 12.1, 12.3, 12.5, 12.8)
- Zero Waste Bins on the main roads (Target 12.5, 12.8)
- ! Promotion of foams and plastic bags reduction in markets and businesses (Target 12.2 12.5, 12.8)

Challenges

- ! Lack of cooperation from vendors/stores in banning foam, paper packaging is more expensive than foam packaging, unwillingness of people to bring their own bags, promotional campaigns were not widely advertised due to the COVID -19 pandemic, lack of incentives for vendors and buyers.

13

CLIMATE ACTION



SDG Target(s)

13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

Project Activities



Training programme on disaster prevention and mitigation for volunteers in communities (Target 13.1)

Challenges



COVID -19 Pandemic hindered the implementation of the project activity.

14

LIFE BELOW WATER



SDG Target(s)

14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans

Project Activities



Development of city Baseline Report, City Action Plan and Digital Mapping Tools under Closing the Loop: Scaling up Innovation to Tackle Marine Plastic Pollution in ASEAN Cities (Target 14.1, 14.2)

Challenges

N/A





17 PARTNERSHIPS FOR THE GOALS



SDG Target(s)

17.9 Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the SDGs, including through North-South, South-South and triangular cooperation

Project Activities

- Training seminars for staff to enhance management skills. (Target 17.9)
- Development of City Baseline Report, City Action Plan and Digital Mapping Tools under Closing the Loop: Scaling up Innovation to Tackle Marine Plastic Pollution in ASEAN Cities (Target 17.9)
- Nakhon Si Thammarat City Municipality Voluntary Local Review (VLR) (Target 17.9)

Challenges

- COVID-19 Pandemic hindered the implementation of the activity.

3.4 Leaving No One Behind

Leaving no one behind is the driving principle of the 2030 Agenda for Sustainable Development. NST City has adopted the SDGs with a strong commitment to building an inclusive society. The implementation of the SDGs is integrated into the NST City Development Plan. Gathering the public needs and expectations has always been part of the planning process. The participation of different sectors, such as all local communities, private sector, academia, and the public is crucial to the direction and policy frameworks of the city. Public consultations are conducted on an equal basis, regardless of age, sex, disability, race, religion, and economic status. One example of an attempt to reduce inequality is to improve access to education and health care services.

NST City is known as a city of education. There are many schools offering a variety of education systems, from primary to higher education. International languages are taught in all schools. However, there are still several children who fall out of the education system due to financial problems

of their families. The city recently launched the **Mayor's Classroom** project, which provides children with basic necessities such as meals, transportation and stationery to get them back into the education system.

The second priority of the city is the health care system, as we face an aging society. **Hospital on Wheels** is an initiative that provides people with various basic treatments and diagnoses, such as blood tests, directly in their homes. People are very satisfied with this project.

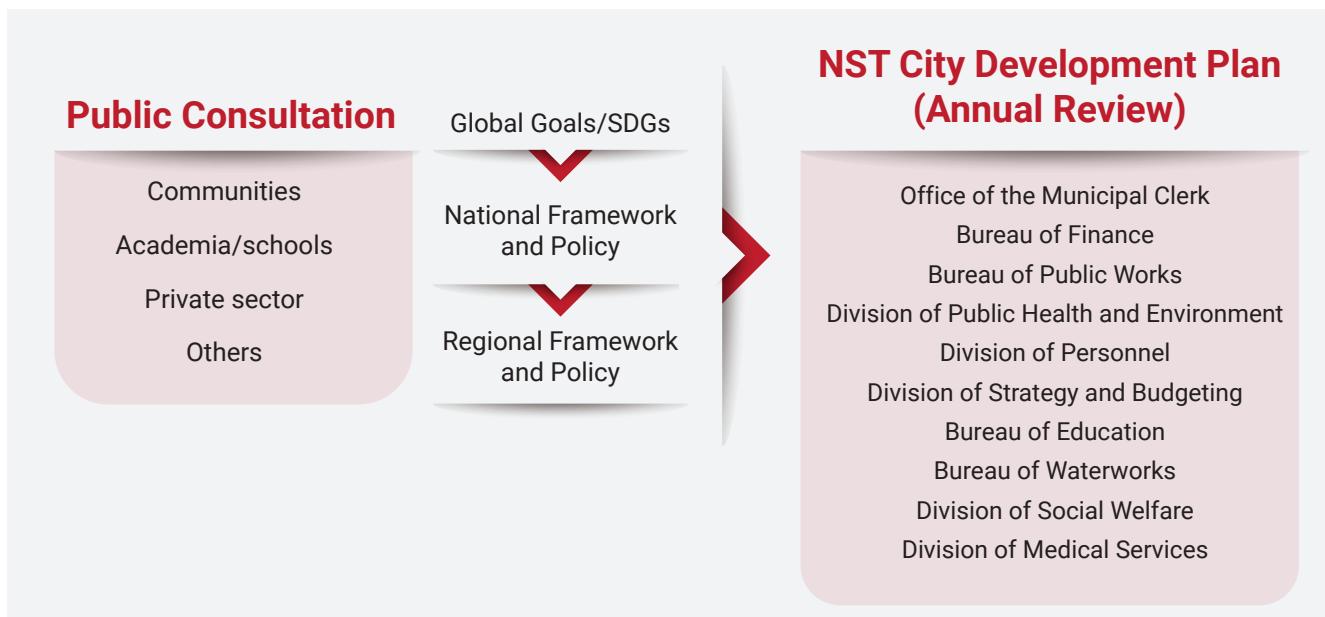
In response to COVID-19 pandemic, the city's primary focus is to protect its citizens equally in all social and life situations. The city has worked closely with community leaders to respond to people's needs in a timely manner. The goal is to stop the spread of the pandemic and provide assistance and support to people. Support included not only medical care, but also financial assistance and foods. In the area of education, online learning resources were also provided for students living in a family with financial difficulties, and teachers were trained to properly deliver online lessons.





3.5 Institutional Mechanisms

SDGs implementation is aligned with the NST City Development Plan. The plan was formulated by gathering needs from the public, mapping with policies and framework at the national and regional levels which adopt its goals from the global goals. Then the city plan was developed and implemented by divisions under the city administration. Although NST City primarily focuses on SDG4, SDG6, SDG8, SDG9, and SDG11, the NST City Development Plan implementation has included all goals and the implementation is shared by all divisions.



3.6 Administrative Structure Issues

Like everywhere else in the world, the COVID-19 pandemic was the biggest challenge to achieving the SDGs in NST City. Many projects could not be implemented due to the restrictive measures that had to be put in place due to the pandemic, and the prioritisation of the budget allocation towards health care, including procurement of vaccines, equipment for field hospitals and quarantine spaces. Economic activities were also suddenly put on hold due to travel restrictions and social distancing measures.

Apart from the pandemic situation, there are also issues with the administrative structure. The administrative structure of the Thai Government is made up of three levels: the central government at the national level, regional administrative body, and local government. The regional level in this case is Nakhon Si Thammarat Province. Governing local government is directly mandated by the Ministry of Interior at the national level. Policies are forwarded to Nakhon Si Thammarat Province, headed by the governor, and then translated into the local context through the NST City Development Plan prepared by the municipal government. However, at the national level, SDGs planning is under the National Economic and Social Development Council (NESDC), a dependent agency of the central government. Implementation of the SDGs is undertaken by various ministries. Since many levels of government agencies are involved, implementing the SDGs at the local level can be challenging. There are gaps in SDG vertical mainstreaming. Therefore, a working group on SDG implementation should be established to bridge the gap between the local, regional and national levels.



SDG1:

Ministry of Interior



SDG2:

Ministry of Agriculture and Cooperatives



SDG3:

Ministry of Public Health



SDG4:

Ministry of Education



SDG5:

Ministry of Social Development and Human Security



SDG6:

Office of National Water Resources



SDG7:

Ministry of Energy



SDG8:

Office of the National Economic and Social Development Council



SDG9:

Ministry of Industry



SDG10:

Office of the National Economic and Social Development Council



SDG11:

Ministry of Interior



SDG12:

Office of Natural Resources and Environment Planning and Policy (Ministry of Natural Resources and Environment)



SDG13:

Office of Natural Resources and Environment Planning and Policy (Ministry of Natural Resources and Environment)



SDG14:

Department of Marine and Coastal Resources (Ministry of Natural Resources and Environment)



SDG15:

Department of National Parks, Wildlife, and Plants Conservation (Ministry of Natural Resources and Environment)



SDG16:

Ministry of Justice



SDG17:

Ministry of Foreign Affairs

Figure 3.2 National focal points from the government sector for all 17 SDGs



4

Progress on Goals and Targets

From the SWOT analysis, NST City has **strengths**, such as the provision of sufficient budgetary resources by the central government, the active engagement and dedication of executive officers and staff, many attractive tourist attractions, many schools and educational institutions. Its **weaknesses** include many outdated laws and regulations regarding land use, intense traffic in the core city, conflicts between citizens due to an unsatisfactory life due to unemployment, environmental problems and inadequate water supply. The **opportunities** are promotion of the secondary city by the central government, and financial and technical support by various agencies. The **threats** are disasters due to climate change. According to the SWOT analysis, the SDGs focus on Goal 4, 6, 8, 9, and 11. The priority of the SDGs reflects the city's strength in education (SDG 4) and full decision-making power and budgeting to improve infrastructure (SDG 9). Weaknesses exist in water supply (SDG 6), municipal solid waste management and surface water quality (SDG 11) and opportunities in economic development help to create new jobs in the tourism industry (SDG 8).

This chapter aims at elaborating on the historical background and progress of the selected goals.





4 QUALITY EDUCATION



4.1 Priority Goals

SDG4

Improving the Quality of Formal and Non-Formal Education

Education system in Thailand consists of early childhood education, primary education, lower and upper secondary education, vocational education, and higher education. In Thailand, full-time education is compulsory for all children, covering the first nine years of primary school (grades 1 – 6) and lower secondary school (grades 7 – 9) for children between 6 and 14 years old.

Based on 2019 data, the NST City has 10 affiliated municipal schools, including Nakhon International City School (NICS), which offers primary education and can accommodate up to approximately 10,000 students. Additionally, there are 10 schools with other affiliations that offer primary and secondary education.

Approximately 29% of the city population is still of school age (under 20 years old).

NST City has focused on promoting education in several dimensions, not only infrastructure but also providing scholarships for secondary and high school students. NST City has many high-quality schools, all of which meet national standards (Figure 4.1). In national examinations, NST City students perform well with above-average results.

The development of primary and secondary education is effective, standardised and satisfied by parents and students, including increasing learning opportunities for effective non-formal and informal education. There

Proportion of Schools Achieving National Standards by Year

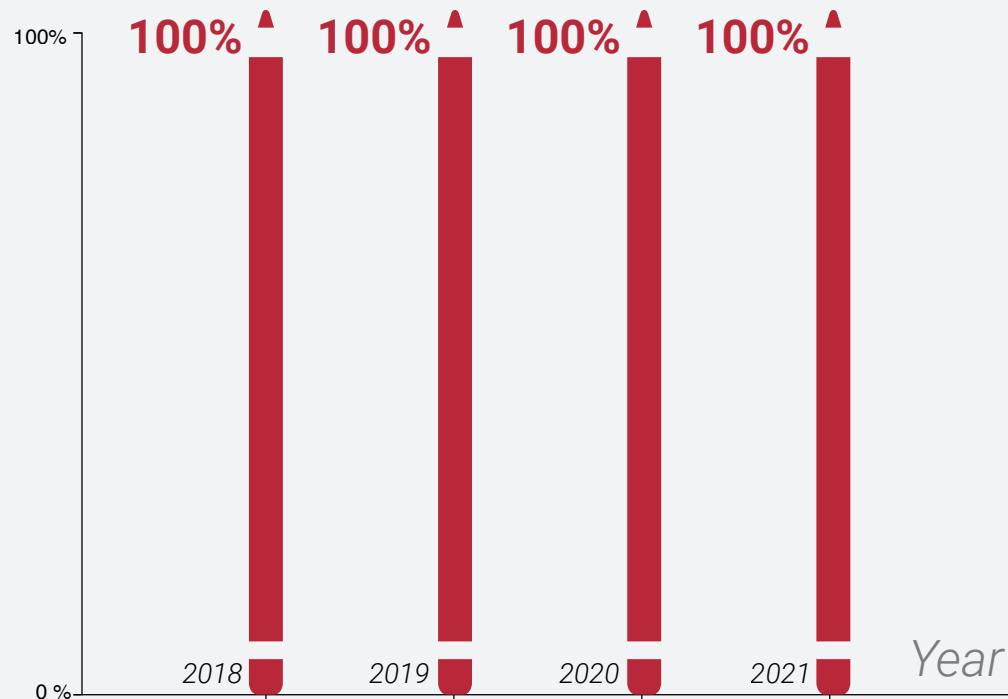


Figure 4.1 Proportion of Schools Achieving National Standards (2018 – 2021)

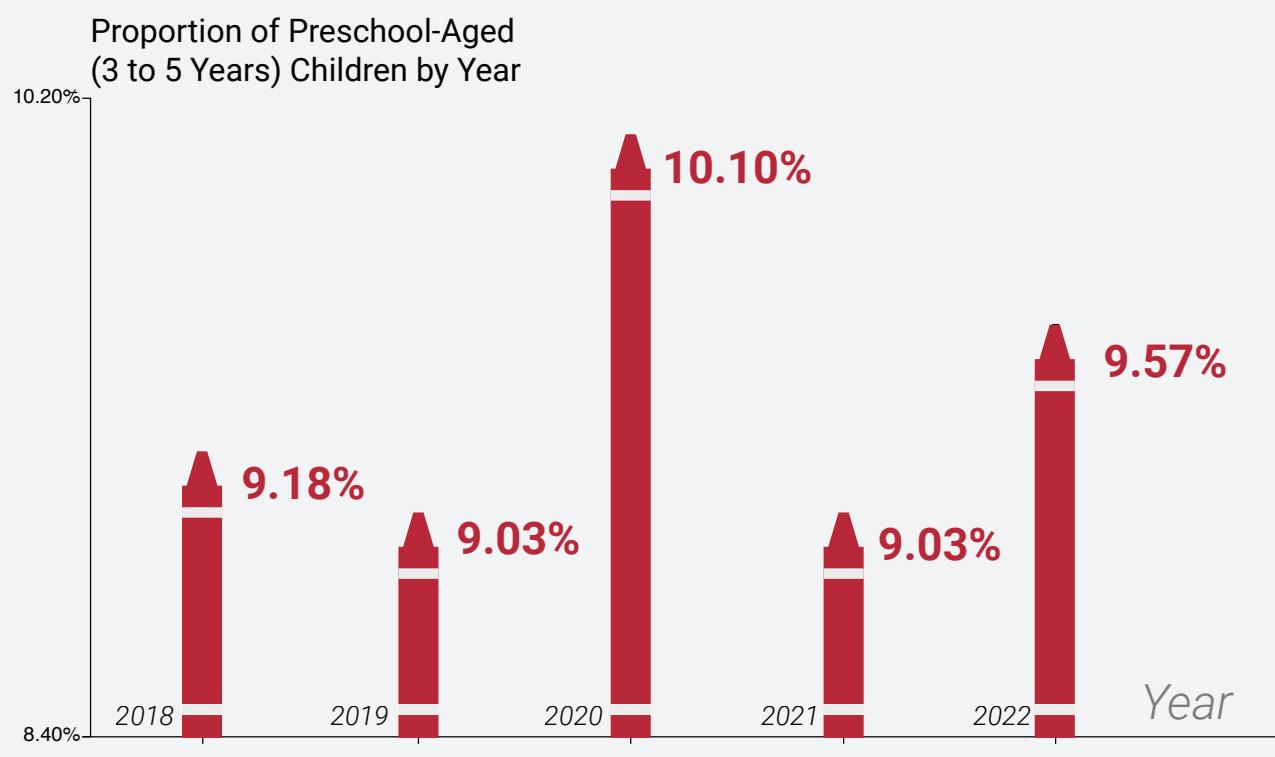


Figure 4.2 Proportion of Preschool-Aged (3 to 5 Years) Children from (2018 – 2022)

are a wide range of activities to participate in, such as the academic skills competition where students could win certificates/medals in 8 learning areas. This competition provides an opportunity for students/individuals to demonstrate their talents and act as a representative at provincial, regional and national levels. The results showed that about 85% of the students who represented NST City in the competitions were successful and were selected to compete at the national level as representatives of the southern region. 80% of the students received awards. More than 60% of teachers were trained to improve their teaching skills and knowledge of results-based education and digital platforms for education. Each school has an appropriate teacher-to-student ratio of approximately 1:14 to 1:16, which is in line with the Office of the Teacher Civil Service and Educational Personnel Commission (OTEPC) standard that recommends a ratio of less than 1:20 for elementary education and 1:25 for secondary education.

NST City has early childhood schools that provide access to quality child development, care, and preschool education. The schools provide health,

learning and psychosocial well-being equally, regardless of gender, religion, social and financial status. The proportion of children enrolling in government-funded preschool ranges from 9-10%. The number dropped during the COVID pandemic in 2021 and increased again in 2022 (Figure 4.2). Children can develop their learning skills and mental health through school-based activities and resources provided by well-trained teachers.

According to the Nakhon Si Thammarat Provincial Department of Education, all residents of school age receive primary education, and 94.09% attend middle school. After middle school, 72.96% remain in the education system and attend secondary and vocational schools, and 72.96% continue their studies in higher education and vocational schools (Figure 4.3). It is expected that the proportion of the population in NST City tends to be higher than other cities in the province because schools, higher education and vocational training institutions are concentrated in NST City and the economic status of the population in NST City is better than the average in the province.





Proportion of Students Enrollment in Formal Education System

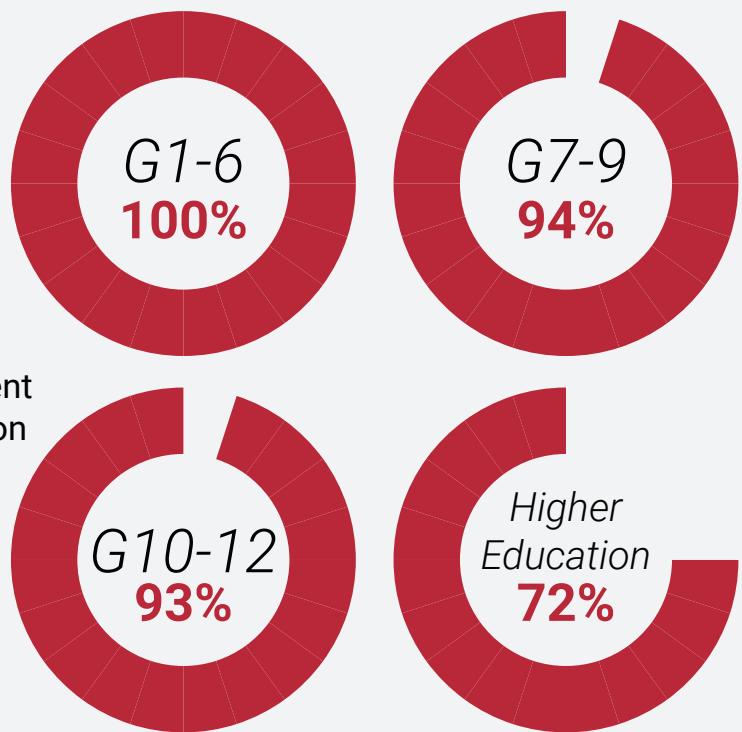


Figure 4.3 Proportion of Students Enrolment in Formal Education System in Nakhon Si Thammarat Province.

NST City also provides a non-formal education system for people who are not of school age. They receive weekend education equivalent to the formal education system: primary education (G1-6), lower secondary education (G7-9) and upper secondary education (G10-12). They receive a certificate after passing the examination of each level and can enrol in higher levels of education in both the formal and non-formal education systems. The non-formal education system has been formulated by the country's policy since 1978. The office in Nakhon Si Thammarat Province started in 1982. It has been educating people until today. After the country launched the decentralisation of local administrative organisations (LAOs) through the Decentralisation Act in 1999, the non-formal education was transferred to the LAOs. Since then, the NST City has been providing non-formal education to people to develop their skills and give them the opportunity to get decent jobs and higher education. The statistics shown in Figure 4.3 include the data from 2019 to 2022.

Health Promotion and Capacity Building Development for the Elderly

Active promotion and expansion of educational opportunities have been part of the NST City's commitment and priority to ensure the quality of lifelong education and promoting a learning society, while increasing the capacity of communities for employment and income prospects through both formal and non-formal education.

According to population data, the elderly aged 60 or more make up 16.3% of the total population of NST City, making the city an aging society. As part of the city's ongoing commitment, various activities have been carried out to improve the lifelong learning and quality of life of the elderly. It is important to support them with activities that enable them to continue their lives without being completely dependent on others, encourage them to maintain their physical and mental health, and promote skill building. NST City has achieved this through the "Health Promotion and Capacity Building for the Elderly" project, which has been carried out from Monday to Friday throughout the year. However, due

to the pandemic COVID-19, the city activities mainly focused on improving education infrastructure, building capacity among public servants, developing digital learning of local administration organisation towards Thailand 4.0, improving and management of the CLP, improving and managing City Contemporary Art Gallery and City Museum, and developing a centre for health promotion for the elderly and improving the facilities for **Rongrean Waisai**, a school for the elderly.

It is clear that NST City gives priority to education to all age groups. Formal schools and institutions are of high quality and exceed national levels, resulting in highly qualified students. People who do not participate in the formal school system are given the opportunity to earn a degree that will help them achieve their life goals. The elderly is provided with activities and knowledge that make them physically and mentally healthy and give them an understanding of lifelong learning. NST City also offers a capacity building programme for the unemployed to strengthen their skills and give them the opportunity to earn an income.





Occupational Activities



Dharma Therapy Activities



Recreational Activities



Physical Rehabilitation Activities





SDG6

Operation and Maintenance of the Water Supply System

Prior to 2021, water scarcity was a prominent characteristic of NST City as it relied heavily on raw water from the Tha Di and Tha Yai canals, NST city's only two sources of raw water, which were barely able to distribute water during the months of April through September, due in part to climate change-induced rainfall variability and the frequency and intensity of droughts. In addition, NST City faced a number of issues, including multiple water shortages due to worn-out, broken and leaking pipeline system, poor quality of water supply, and no running water during the dry season. As a result, citizen-led complaints about the management of the water supply system and water demand increased, leading to an overall upward trend until 2020. Annual statistics show that broken pipes were the most common, followed

by occasional non-flowing water during the dry season and poor water quality in some areas (Figure 4.4).

In 2021, the City government recognised the need for a revolution to arrest the continued trend of dwindling raw water supplies and its consequences, and made water supply management one of the city's top priorities to achieve further improvements and provide citizens with clean and safe tap water. The City government released the "Access to Water for All" Plan, which aims to reduce drought-related water shortages by 100%. The plan explored how best to solve water scarcity and the water supply system through effective cooperation efforts among city officials led by the mayor, including but not limited to surveying and identifying potential new

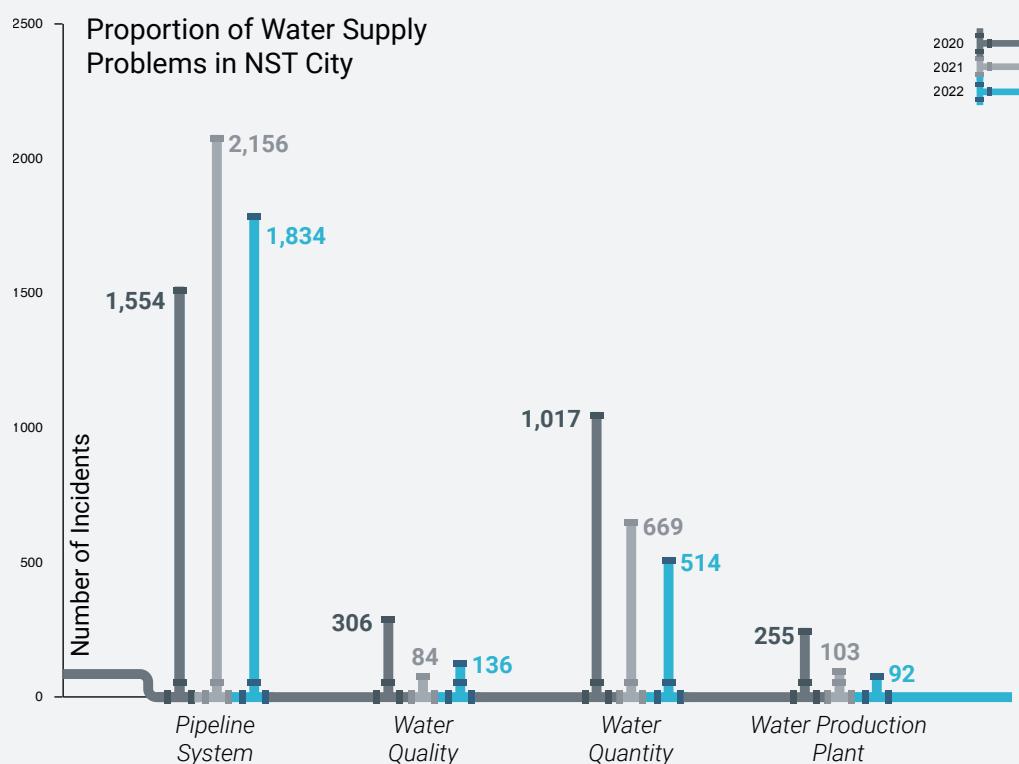


Figure 4.4 Proportion of Water Supply Problems in NST City (2020 – 2022)





water resources (i.e., Wang Kong pond and Na Sai pond) integrating the water supply system (e.g., Utilisation of Thung Ta Lad reservoir), improving efficiency of water resources (e.g., Thadi and Tha Yai pumping stations), planning water needs and behaviour change.

NST City provides a valued service to its citizens through responsible water resources management. A budget is allocated annually to repair the pipeline system and increase production capacity and quality (Figure 4.5). The City Government has budgeted for the repair, maintenance, and reconstruction of 25 piped water systems, as well as for the increase of production capacity of the water filtration plants from 63,000 cubic metres per day to 81,600 cubic metres per day as of 2022, and the construction of another water treatment plant with a capacity of 400 cubic metres per day is underway to meet the growing demand of water consumption following the urban development and expansion of NST City. As a result, NST City is able to supply water to 39,506 local users and reduce water losses by 30% after pipeline repair (Figure 4.6). The construction and maintenance of pipeline systems always involves high costs. The budget for improving the quality and quantity of the water supply was lower than that for repairing the pipeline system. A budget of several hundred to several thousand US dollars can fix 1% of the total water quality and quantity problems in the city, while an adequate repair of the pipeline system requires about half a million USD.



Annual Budget for Repair and Maintenance Cost of Water Supply System

Pipeline System



Water Quality



Water Quantity



Figure 4.5 Annual Budget for Repair and Maintenance Cost of Water Supply System (2020 – 2022)



Proportion of Leakages in Water Distribution Networks

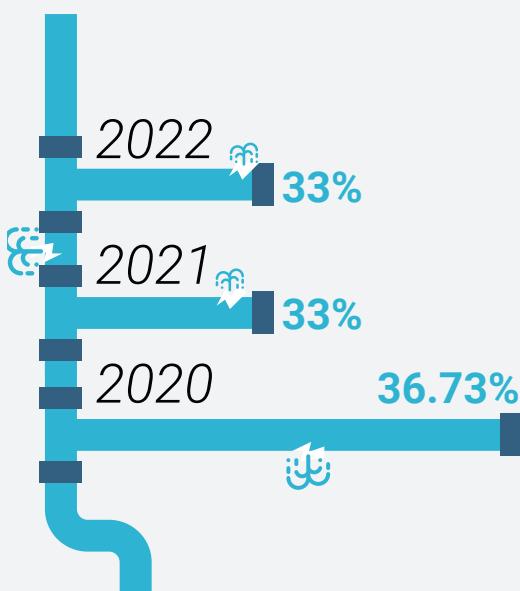


Figure 4.6 Proportion of Leakage in Water Distribution Networks (2020 - 2022)

As part of the proactive approaches and solutions, the City Government planned to allocate USD 14.4 million (Approximately THB 500 million) to install a new water pipeline and pumping system to channel water from Thai Di and Tha Yai canals into NST City in 2024. In addition, the Thung Ta Lad reservoir, a man-made reservoir with an area of 300 rai (48 hectares), was designed to mitigate the potential impact of flooding during the rainy season and can store water to be used during the dry season. The Thung Ta Lad reservoir can help solve problems related to water scarcity and will become an alternative source of water for NST City in the future with a capacity of up to 2 million cubic metres.

While the goal of achieving zero water shortages was ambitious, it is clear that the City government has achieved this worthy goal as there are no more incidents of water shortages due to drought in 2022. Figure 4.7 shows how NST City suffered from a high number of incidents in 2018 to zero incidents in 2022.





Proportion of Monthly Incidents without
Piped Running Water (2018 and 2022)

14



0

2018

2022

Figure 4.7 Number of Incidents without Piped Running Water due to Draught (2018 and 2022)



SDG8

Training Programme for Career Promotion and Development for Local People in NST City

NST City has been conducting a Training Programme for Career Promotion and Development for Local People in NST City annually. This programme was designed to build capacity, develop knowledge and promote decent career opportunities, as well as provide alternative sources of income for people in the city. This is in line with the "**Sufficient Economy Philosophy**" and leads to a reduction in poverty and a change in economic development as a consequence. Target groups include women, housewives and interested people, at least 20 people per training programme. It also includes One Tambon One Product (OTOP), a local entrepreneurship programme that aims to

help local people produce local products and expand to larger markets, as well as create new career opportunities. Some of the outstanding accomplishments in 2020 include the following:

1. 22 people were trained to develop value-added products from coconut shells which helped strengthen both existing and new knowledge and generate income for local communities.
2. 25 people were trained in developing and improving their skills in ladies tailoring training course.
3. 35 people were trained on natural and synthetic dyes training course.



Training on Making Local Products from Coconut Shells





Tourism is another major source of income for NST City, as the airport is located near the city and there are many cultural attractions, accommodations, and a variety of traditional foods in the city. According to the Ministry of Tourism and Sports, more than 3 million people came to the Nakhon Si Thammarat province annually prior to the COVID-19 pandemic. Total visitor spending in 2018 – 2019 was USD 400-500 million per year. Even at the beginning of the COVID-19 pandemic in 2020, when travel restrictions were imposed, the number of visitors was still high, exceeding 2 million people (Figure 4.8). These were mainly domestic visitors. International visitors accounted for only 1%. As part of the central government's efforts to boost economy, secondary

cities have been promoted by offering discounts to visitors. This provides an opportunity for the tourism industry in Nakhon Si Thammarat province to earn more money and also shows that the province is a popular destination among Thai visitors. However, the NST City faced an increasing number of COVID-19 new cases at the last quarter of 2020, and the city was sealed off for a long period of time. This led to a rapid decline in visitor numbers to about 800,000, which is about four times less than normal. After the COVID-19 pandemic, people tend to spend more on travel activities (Figure 4.9). It is expected that Nakhon Si Thammarat province will receive more tourists and revenue from tourism in the future.

Number of Visitors to Nakhon Si Thammarat Province



Figure 4.8 Number of Visitors to Nakhon Si Thammarat Province (2018 – 2022)

Current activities to promote decent work and economic growth in NST City include the Ligor City Floating Market, which provides a source of income for local people. The city has established a training program for unemployed residents. This could be a preparation for the opportunities that will arise after the pandemic ends.

Visitor travel spending in Nakhon Si Thammarat Province

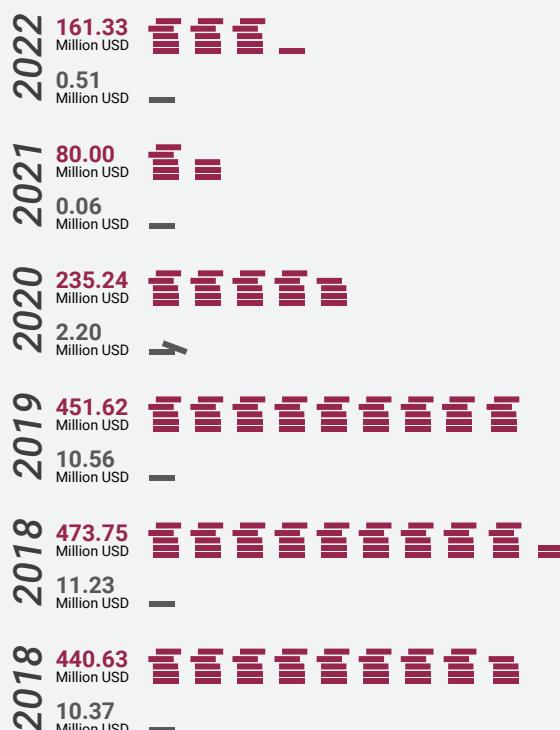


Figure 4.9 Visitor travel spending in Nakhon Si Thammarat Province (2018 – 2022)





SDG9

Road and Transportation Service Coverage

NST City is a densely populated urban area and is well advanced in infrastructure development. The road network is 100% developed, and every house is less than 2 km from the main roads. Public transportation is located on two main roads but is easily accessible as the road network is comprehensive. The main roads and small alleys are concrete and asphalt and in good condition.



free Wi-Fi in 12 model communities and initiated 102 loaner tablets for students. This project, **Nakhoncity-Wifi-Education**, was recently launched. If this project is successful, the city will increase internet coverage and provide more tablets with up to 1,000 devices to alleviate the impact of the pandemic on students and their guardians, especially those struggling with economic problems.



The central government budget for NST City is estimated at around USD 29 million/year. This is quite high compared to other smaller municipalities and gives NST City more flexibility in financially managing its infrastructure development. The current infrastructure development activities are the renovation of the City Museum and the school dormitory.

Due to the pandemic crisis, online learning is the most important learning approach in every school. The city assessed the ability of students and their households to participate in online learning. It was found that not all households can provide internet and learning resources to their children. To address this problem, the city provided

Lighting public spaces and streets is one of NST City's top priorities to make the city safe for all genders and ages. All main streets are equipped with lights every 40 metres and even small alleys are equipped with a lighting system. By 2022 alone, NST City installed more lights in more than **10,000 spots** in small alleys. As a result, people in NST City feel safe even at night.



SDG11

Waste-to-Energy

NST City has been accumulating solid waste of over 1.13 million tonnes that needs to be properly managed. In response to the city's growing waste problem, the Ministry of Interior (MOI) approved a THB 2,900-million public-private partnerships (PPPs) for a waste-to-energy project proposed by NST City in July 2018. Following the approval, a 20-Megawatt stoker-type incineration plant is in development aiming to process up to 1,000 tonnes of municipal solid waste per day and generate electricity. This includes new municipal solid waste of 350 tonnes per day, while the remaining amount will be taken from the old municipal solid waste which was dumped at the landfill in the past decades. It was estimated that the installed capacity will help to contribute towards the city target in managing and disposing of all of the accumulated waste including plastic waste within 11 years.

The waste-to-energy incineration plant will be provided by NST City and located at the current landfill site in Na Khian.

It covers the area of approx. 50 rai (8 hectares) where 30 rai (4.8 hectares) will be allocated for waste disposal plant, and 20 rai (3.2 hectares) will be allocated for wastewater treatment.

Under the Build–Own–Operate–Transfer (BOOT) agreement signed with NST City on 16 March 2021, Green Power Energy Company Limited will exclusively invest, finance, design, build, operate, maintain, and manage the incineration plant for 20 years. The Company is considered as Small Power Producers (SPP) and will supply 16 MW of power generation through a 115 kilovolt (kV) transmission line to the state-owned enterprise, Electricity Generating Authority of Thailand (EGAT). The feed-in tariff of 3.66 THB per kWh will be applied for a period of 20 years. In addition, the Company also charges a waste disposal fee of THB 350/tonne. It is expected that the Company will generate income of approx. THB 500 – 600 million/year with a return on investment of more than 7 – 8%. The construction is planned to commence in 2022 and to be completed by 2024.





Under the agreement, NST City still plays a vital role in solid waste management and is responsible for providing waste collection services, coordinating with other LAOs, keeping records of waste generation, collecting management fees, carrying out land acquisition for the incineration plant, monitoring company's performance in accordance with the agreement, environmental inspection at the implementation site, managing the Energy Development Fund and Environmental Development Fund, assessing potential impacts of and mitigation for humans who live nearby, and developing environment impact mitigation plan (EIMP) etc.



CLOSING THE LOOP ON PLASTIC POLLUTION IN NAKHON SI THAMMARAT, THAILAND

Baseline Report



Municipal Solid Waste Management

NST City joined with ESCAP and the Institute for Global Environmental Strategies (IGES) to develop plastic waste management action plan under the Closing the Loop project, in response to their municipal solid waste issues. In developing the action plan, the Division of Public Health and Environment of NST City worked together with relevant stakeholders to collect opinions and suggestions through online and onsite focus group discussions. The plan was formulated with active participation of all relevant stakeholders to ensure the success of the implementation. The City Action Plan focuses on managing waste at source by 3R principle (reduce, reuse, recycle), waste segregation

at source, enhancing recycling business capability and municipal solid waste collection. The overall objectives are to raise awareness for behaviour change, create demand and supply chain for recycling, develop an efficient waste collection system and reduce the consumption of plastic bags and single-use plastics. It includes more than 70 activities divided into short-term (1 year), medium-term (2-5 years) and long-term (6 – 10 years) plans. The action plan is available in Thai and English language on ESCAP website (<https://www.unescap.org/projects/closing-the-loop/cities/nakhon-si-thammarat>).



Current waste management activities are aimed at reducing waste generation at source, reducing waste leakage and increasing recycling rates. There are several projects, such as a model waste-free community. This community initiated a campaign to separate waste at source and dispose of it separately. Food waste is separated from other waste and composted with garden waste, recyclable waste is separated and sold to the informal sector, and non-recyclable waste is sent from the city to the landfill. This will be a model for other communities to follow. Another initiative of the city is the **Zero-Waste Street**. This is designed to prevent waste from leaking by setting collection times so that citizens can place their household waste on the side of the street. Not only does this practice prevent litter from being scattered on the street, but it also makes the street clean and pleasant. It is also a good way to allow people to monitor their own waste generation. These activities have contributed to a steady decrease in the amount of waste going to the landfill (Figure 4.10)

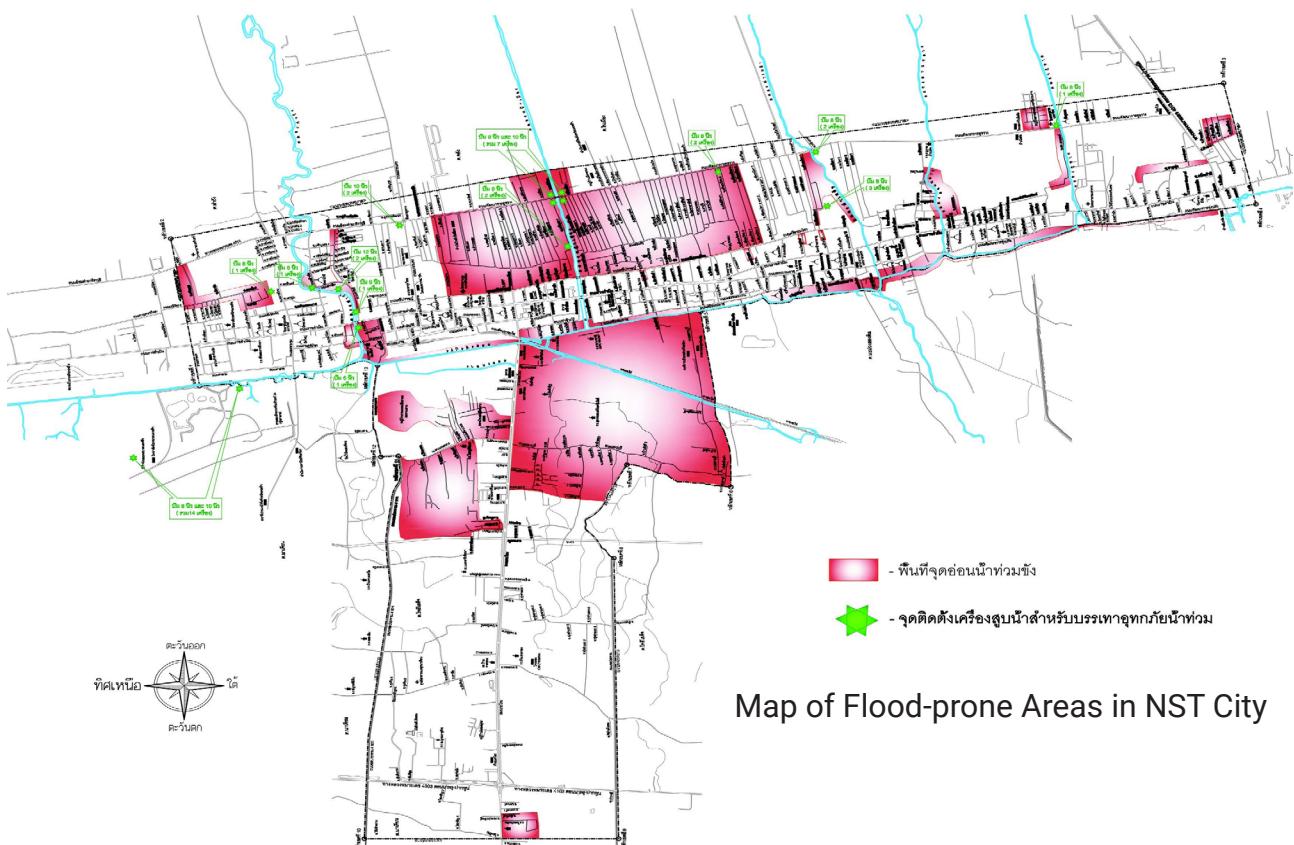
Amount of Waste Dumped Daily at an Unregulated Landfill in NST City Waste generation



Figure 4.10 Amount of Waste Dumped Daily at the Landfill in NST City (2018 – 2022)

Nakhon Si Thammarat Flood Mitigation Project under the Royal Initiatives





Map of Flood-prone Areas in NST City

Resolving Flooding Impacts

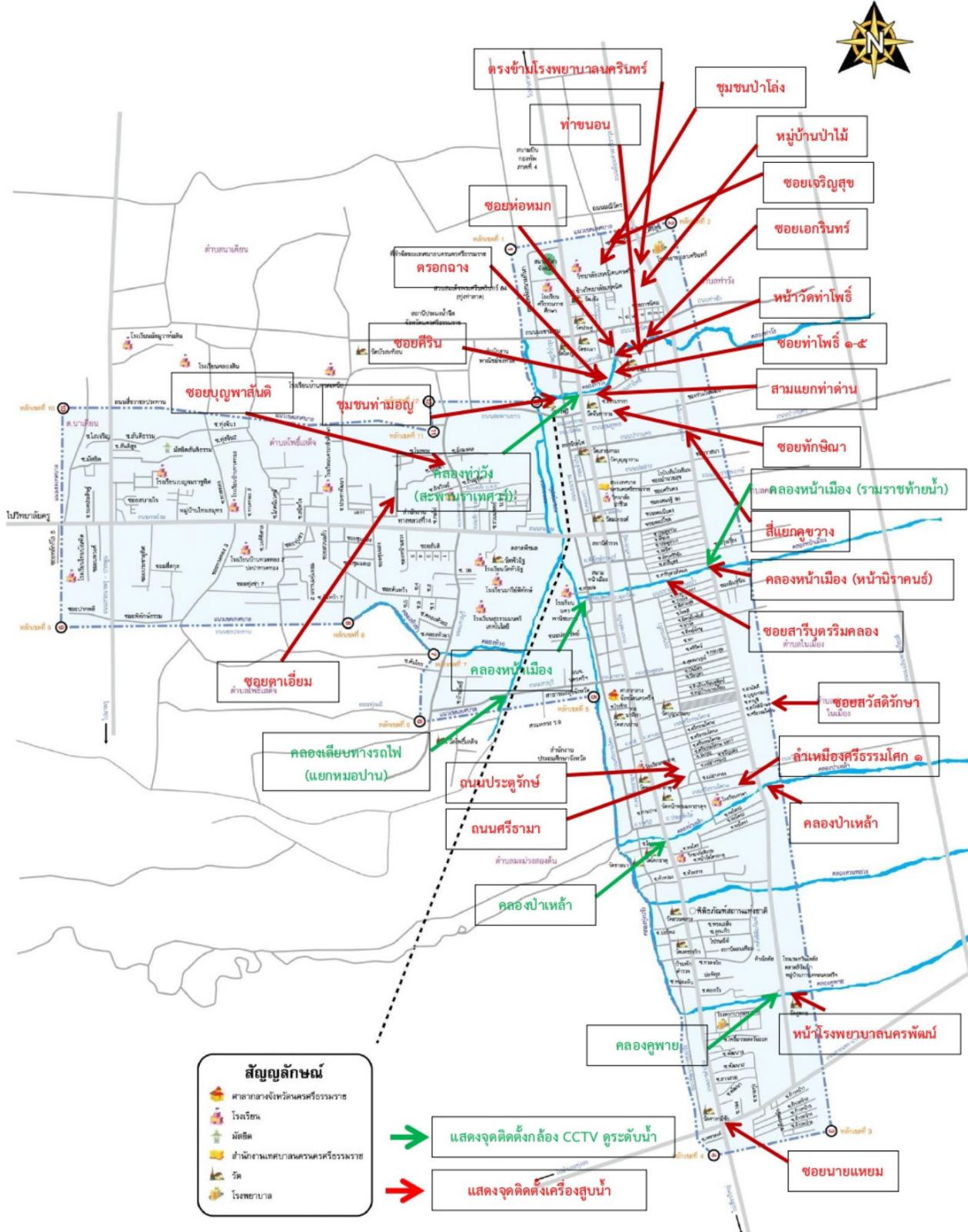
NST City is a low-lying settlement located 15 km inland, north-west of Pak Nakhon Bay. The city's water resources are largely composed of an expansive network of canals and streams that stretch from the city into the surrounding rural areas. This includes the Tha Wang, Tha Sak, Bang Luang, Na Muang, Pa Lao, Suan Luang and Khu Pai Canals, several of which run through the city's commercial and residential zones. These then empty into the Gulf of Thailand via a number of branching rivers, primarily the Plai Bang Khwai, Pak Nakhon and Tha Sak.

The extensive canal networks in Southern Thailand were first developed following an extreme flood season in 1988. Heavy losses of life, property and agricultural land that year instigated a series of infrastructure reforms aiming to manage flood risk and water resources across the region. Over the past 45 years, the Royal Irrigation Department has made significant infrastructure investments, completing over 50 projects in Nakhon Si Thammarat Province since 1977. In 2017, the Thai Cabinet approved a major flood mitigation project with a total budget of USD 277 million (THB 9,580 million) in 2017 and an expected implementation period from 2018 - 2024. This project will create a series of new diversion channels and floodgates to control drainage and

alleviate flooding in Mueang Nakhon Si Thammarat. The project also covers 12 sub-districts of NST City and nearby areas and will cater 32,253 households when completed.

In NST City, the City Government initiated a comprehensive flood prevention scheme in 2021 - 2022, including a flood early warning system through 9 Real-Time CCTV Canal Monitoring Stations via a Mobile Platform, installations of 49 pumps and 12 propeller pumps at 28 and 4 critical locations in the city, respectively. This allowed water to be diverted from potentially flood-prone areas into canals before discharging into the Gulf of Thailand, resulting in significant mitigation and protection of 67 communities living in NST City. Flood mitigation has allowed NST City to avoid purchasing emergency flood kits, saving over USD 375,600 (THB 13 million) in the city budget.

NST City Map



Pumping Locations in NST City





Proportion of Urban Population Living in Slums

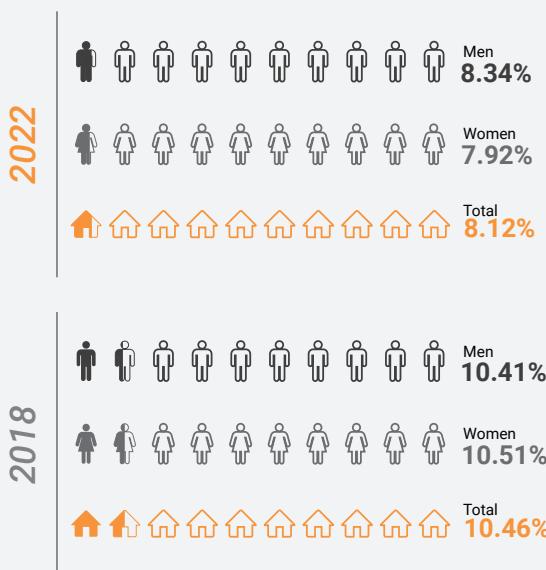


Figure 4.11 Proportion of Urban Population Living in Slums (2018 and 2022)

Annual Budget Expenditure Per Capita for the Preservation and Promotion of Local Culture and Tradition



Figure 4.12 Annual Budget Expenditure Per Capita for the Preservation and Promotion of Local Culture and Tradition (2019 – 2022)

Proportion of Urban Population Living in Slums, Informal Settlements, or Inadequate Housing

NST City, the capital of Nakhon Si Thammarat Province, generally offers more job opportunities than other cities in the province. Rural population migrates to NST City for income. This leads to informal settlements in some parts of the city due to the difficult economic situation of households and social problems. However, NST City provides them with comprehensive health care, infrastructure, formal and non-formal education,

and vocational training, leading to better career opportunities. Despite population growth in NST City, the percentage of people living in slums has decreased from about 10% in 2018 to about 8% in 2022 (Figure 4.11). These figures clearly show the success of urban development strategies and the strong mantra of leaving no one behind.

Preservation of unique culture and tradition

NST City has a long history and a unique culture and tradition. Wat Prathat Temple (วัดพระธาตุ) is an important temple with a long history and the landmark of Nakhon Si Thammarat. The city is home to people with different cultures and tradition. A mosque can be seen to be next to a temple and a church. Each year, NST City allocates a budget to preserve this unique culture and tradition and maintain the vibrant atmosphere of the city (Figure 4.12). Due to the COVID-19 pandemic, activities concerning gathering people were not allowed, the budget was used for other projects with higher priority in the city.

The Creative Nakhon event was held in the old city from December 1 to 12, 2021. The event aimed at promoting tourism activities and keeping the city moving with art and exhibitions. As part of the event, art galleries were exhibited in 19 buildings in the old city. The main concept was RE-SET. It was about thinking about new possible ideas in the old foundation. The content of the exhibition included art, historical buildings, food and much more. It helped visitors to return to forgotten areas that used to be full of economic activities and to think about the modern society that made the old city forgotten. This was a good example of collaboration between the private sector, active citizens and the public sector to find together a new way to promote the city and reshape the way citizens perceive their city. More information about the event can be found on social media. (<https://www.facebook.com/Creativenakhon/>).sector to find together a new way to promote the city and shape the way citizens perceive their city in a new way. More information about the event can be found on social media. (<https://www.facebook.com/Creativenakhon/>).





4.2 Overall Progress

Development of Good Governance



Smart Governance

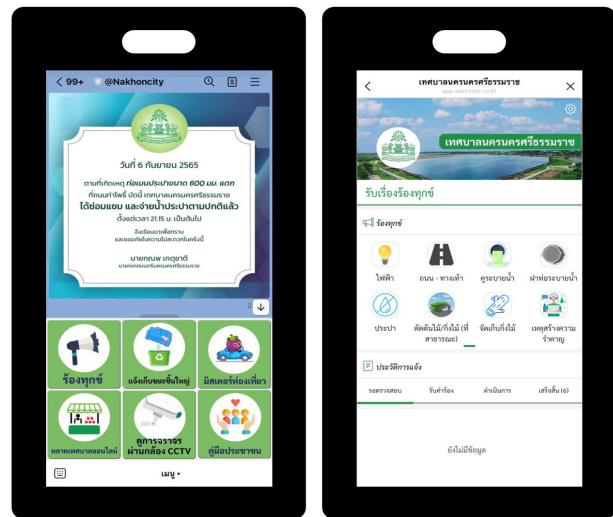
NST City is thriving to becoming a **Smart Governance**. A digital platform, the **Smart City E-Service**, has been introduced as part of the city services using a mobile application called LINE app (@**Nakhoncity**) which was launched in 2021. The Smart City E-Service includes more than 17 complaint requests, including public water supply, streets and sidewalks, watercourses, public drains, public sanitation, tree trimming and pruning, tree removal, nuisance, municipal solid waste, education, public welfare, pet vaccination and sterilisation, disinfectant spray service, municipal hospital, municipal pawnshop, municipal financial service, and waste collection request. In addition, the system expands its limit to include the "Miscellaneous" category, which covers all services that do not fall under the abovementioned categories. The Smart City E-Service is thus able to provide as many public services as possible that NST City is authorised to provide. In addition, each requested service is traceable, and all requests are answered by relevant authorities. NST City is committed to providing all services within 48 hours to meet the satisfaction of all. To date, 40,973 members have joined the application, representing 42% of the population, and the number of members continues to increase. The Smart City E-Service is a very successful initiative that won the first prize in the National Smart City Competition in 2022. This application has a user-friendly interface that displays a map of the tasks requested from the city and serves as a one-stop online service that can provide people with an immediate response. In the near future, this application will be expanded so that citizens can also use it to pay taxes online and apply for other online permits. 88% of people who use the application are very satisfied with the service. The users have given 5-star rating. With all its features, it shows that Smart City E-Service not only promotes a people-centric strategy, but also supports sustainable development.

NST City intends to reduce costs, time and procedures to provide better service to its citizens. With the creation of **One Stop Service Platform**, NST City aims to make public service more transparent and accountable, while making service more affordable for citizens. This new online platform covers 5 public services, including civil registration, tax payment, public sanitation, building permit and business registration.

Aiming at improving the quality of the city services, NST City recently



@Nakhoncity



conducted a survey on the overall satisfaction of the population with the government system. The results of the survey show that people are satisfied with the government system and have given 4 points out of 5 (Figure 4.13). This ensures the transparency and accountability of the City Government. In addition, NST City is also committed to improving the welfare of its citizens by being on track to improve its services and respond to citizens' needs in a timely manner. Wireless internet service is already available in all public areas to ensure that people do not miss any information. NST City is also building the capacity of its staff to respond to the digital age and provide the best service to its citizens.

Smart Living

Safety in the city is one of the keys to ensuring the quality of life of citizens. NST City is determined not only to keep the infrastructure in the city in good condition, but also to make progress in promoting safety throughout the city. Under **Real-Time Traffic Surveillance and Canal Monitoring via a Mobile Platform** project, over 141 CCTVs (Closed Circuit Television) have been installed, including 75 for traffic, 37 for school areas, 20 for safety zones, and 9 for canals as part of the city surveillance and flood early warning system. All real-time recordings of these CCTVs are accessible to citizens 24/7 through LINE app (@Nakhoncity). These projects are expected to provide greater security and protect the city area from severe flooding, leading to a higher quality of life for citizens in the long run. In line with the purpose of the Real-Time Traffic Surveillance and Canal Monitoring via a Mobile Platform project, the **License Plate Recognition (LPR)** project was

developed to install LPR cameras at specific intersections that are the main entrances to the city. These cameras are placed to ensure the safety of citizens and all passersby by accurately recognising and recording the license plates of vehicles. In case of accidents, emergencies or unexpected situations, the data collected by this LPR system will be used by the relevant authorities and the police. In addition, NST City initiated AI Traffic Control project to solve the problem of chronic traffic congestion at the city's key intersections such as Tha Wang and Yamaha by using AI to calculate traffic density and the length of traffic light phases for adaptive traffic light control, which is intended to minimise the problem of congestion.

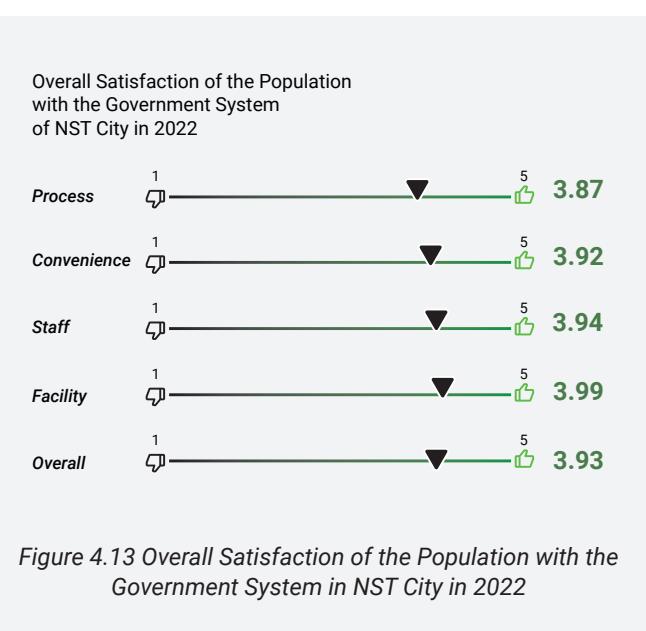


Figure 4.13 Overall Satisfaction of the Population with the Government System in NST City in 2022

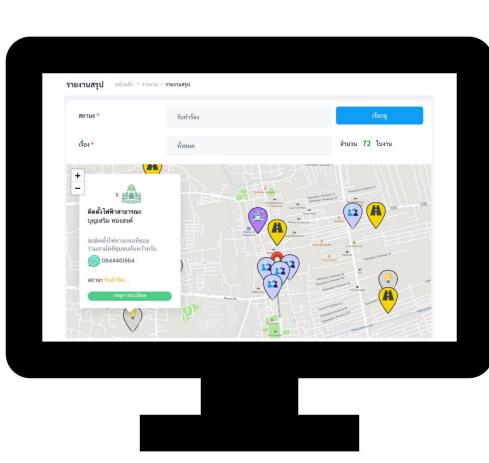




Development of Good and Accessible Utilities and Infrastructures



NST City continues to improve infrastructure to build an inclusive and sustainable city. Blue-green infrastructure measures have been initiated, such as the rehabilitation of canals and water diversion systems to prevent more severe flooding due to climate variability during the monsoon season. CCTV is continuously improved and coverage expanded for security purposes. It is also used to monitor the water level in the canal for flood warnings. The water level is displayed in the LINE app (@Nakhoncity) for real-time monitoring and anyone who has the application can access it. This initiative is called **Smart Living** and received an honorable mention in the National Smart City Competition in 2022. This infrastructure development has successfully protected the city from flooding, as it rained more in 2022 than last year, but the city was safe from flooding. This gives great satisfaction to the people of NST City. Although the lighting system, traffic lights and road are covered, maintenance is always a priority for NST City to ensure the best standard of living.



A large portion of the city's budget goes towards improving the water supply, because safe and adequate water is a prerequisite for a good quality of life. NST City has improved the pipeline system, water treatment plants, and new water sources to address its weaknesses related to SDG6. The efforts were successful: by 2022, the city no longer experienced water shortages, and pipeline leakages had greatly decreased. The level of satisfaction with infrastructure development is shown in Figure 4.14.

Level of Satisfaction towards Infrastructure Development of NST City in 2022



Figure 4.14 Level of Satisfaction towards Infrastructure Development in NST City in 2022

Development of Environment and Natural Resources



To ensure the health and well-being of its people, NST City has implemented many projects to maintain the city's landscape and cleanliness. The cityscape has been continuously improved and new green spaces, sports facilities, and exercise spaces have been created for all local communities. Public parks are well maintained and in good condition, including the lighting and clean restrooms. These public parks are used for cultural events and attract tourists. To increase citizen ownership, NST City encourages its citizens to participate in tree planting and maintenance of green space activities.

The wastewater treatment plant (stabilisation pond) was built in 2010 with a capacity of 33,700 m³/day, which is sufficient for the entire city. This wastewater treatment plant receives grey water (household wastewater excluding excreta wastewater) from households. The treatment capacity is efficient to remove pollutants and meet the national effluent standard. Blackwater from households is treated





on-site in a cesspool or commercial septic tank. Hotels, commercial buildings, and hospitals have their own septic systems that are well regulated and meet wastewater standards. The sewer system in NST City is a combined system where stormwater and wastewater are mixed and sent to a stabilisation pond for treatment before being discharged into natural waterways.

Waste management has always been a problem for NST City, with litter found near curbside bins. This is due in part to the carelessness of scavengers searching for recycled waste in the municipal bins. In order to tackle this issue, NST City launched a campaign called **Zero-Waste Street**, or street without trash bins. In this effort, NST City removed municipal bins from the main streets to prevent trash from being scattered by scavengers. Local people are very involved in the campaign by bringing their waste to the municipal waste collection truck, as the collection schedules are announced well in advance. The scavengers play an important role in waste separation and recycling, and the NST City plans to include them in the system and provide them with proper vocational training, health care and insurance. In the past, the waste collection system did not encourage source separation because there was only one type of truck that combined all types of waste during daily collection. The collection system has improved significantly in the last year, as there is a collection schedule for different types of waste with a suitable truck. Bulky waste is collected once a week and upon request through the Line app (@Nakhoncity) on Friday with dump trucks. Food waste is collected daily by motorised carts, which is very effective as it can reach citizens' homes through narrow alleys. Other waste is collected daily by municipal compactor trucks. Waste separation at source is an ongoing campaign, along with strengthening the capacity of the informal sector in the recycling business. The overall satisfaction of residents in NST City with the management of the environment and natural resources is shown in Figure 4.15.



Level of Satisfaction toward Environment and Natural Resources Management of NST City in 2022



Figure 4.16 Level of Satisfaction toward Environment and Natural Resources Management in NST City in 2022





Development of Vibrant Societies, Education, Religion, and Culture



NST City has partnered with King Monkut's Institute Ladkrabang, a leading educational institution for technology in Thailand, to launch the **Smart City** initiative in NST City. With the vision of building **Smart People** as part of the initiative, NST City aims to improve its education system by introducing **Smart Schools** and solve existing problems such as overcrowded schools, inadequate learning materials, etc. NST City plans to construct a new building in one of the 10 municipal schools to serve as a digital hub where new technologies for education are available and accessible to both the students and the public. In addition, NST City provides training to teachers to use the Metaverse technology with the goal of covering 10 municipal schools with approximately 11,000 students. In 2022, the Metaverse project was introduced at Semamueng School, a primary school, as a powerful learning content creation tool, even allowing students to create content based on their interests. It provides students with digital experiences to create a virtual reality, so there are no limits to students' imagination. Students can gain more insight into learning while having fun in the classroom. This truly takes the educational standards of NST City to the next level. Now, visitors to public spaces in NST City can see virtual animals created by students in their virtual world through their smartphones. Metaverse technology has been expanded to educate the citizens of NST City. The **Metaverse for All** initiative allows students, teachers, businesses and citizens to learn about technology. This technology was also extended to the **Smart E-Library**, a new community learning centre in the City Learning Park (CLP) that provides local people with an extensive source of useful resources through the **CLP Library** application. After registering, users can access, read and borrow all the resources contained in the application online. NST City has also recognised the value of its ancient history and its importance to the future development of the city. The **Smart Museum** was created to give visitors the opportunity to explore the City Museum from new perspectives using AR and VR technologies, instead of having to deal with the old-fashioned way of telling history when they visit the City Museum. This makes the City Museum more interesting and exciting, which leads to a higher number of visitors. Last but not least, NST City has also launched a project called **Digital Street Vendors**, which provides free training on online and offline business to local entrepreneurs and small businesses in the city, which is important after the COVID-19 pandemic has spread worldwide.

Metaverse for All

NST City recognises that public participation is the crucial key to success and sustainable development when it comes to the deployment of advanced technologies. The **Smart City X** project was created to train young volunteers on behalf of NST City. The role of these volunteers is to mentor citizens and help them understand how technology works in harmony with all the important functions of NST City.

Education is key to the success in developing quality citizens and bringing the NST City to its best performance. Both at the formal and informal levels, inclusive education is provided to all, serving people from birth to death. The success is clearly reflected in people's satisfaction (Figure 4.16). NST City does not stop serving people and strives for continuous improvement to achieve greater satisfaction.



Level of Satisfaction toward Education, Religion, Tradition and Culture of NST City in 2022

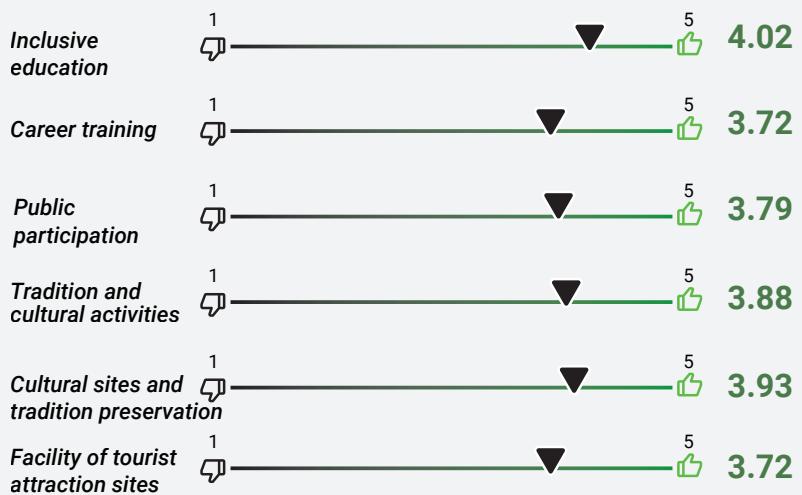


Figure 4.16 Level of Satisfaction towards Education, Religion, Tradition and Culture of NST City (2022)



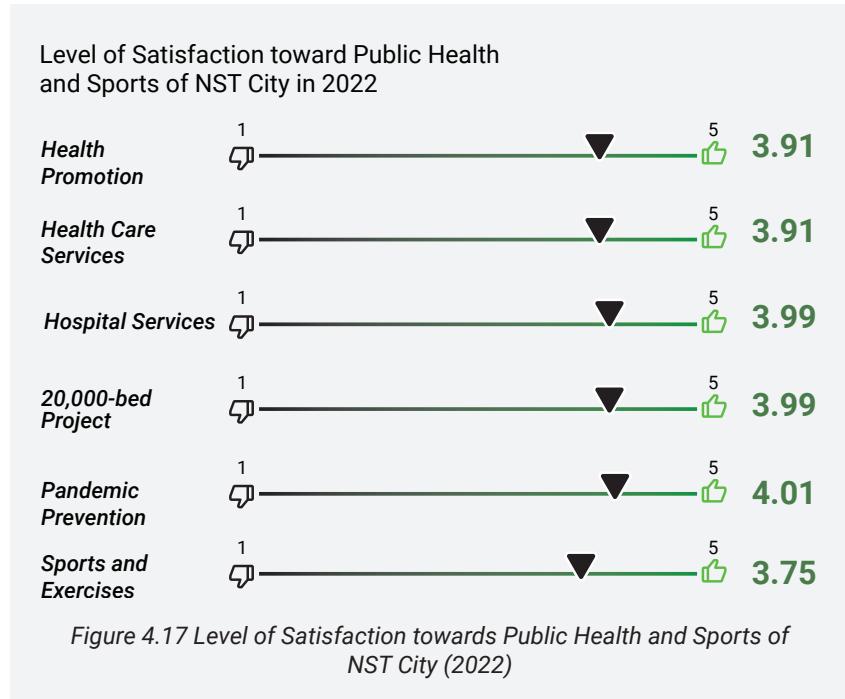


Development of Public Health and Sport



NST City carries out many projects relevant to public health, such as on-site health checkups for people with mobility problems such as women, pregnant women, the disabled, the elderly, and those infected with HIV. In view of the increasing number of bedridden patients in NST City, the Municipal Public Health Centre of NST City has proposed a project called **Hospital on Wheels**. The project aims to protect bedridden patients from complications such as bedsores, respiratory infections, and depression, and to support rapid recovery. The **20,000 bed project** is made available to bedridden patients with on-site health services to guide caregivers and prevent patient complications. Each community has volunteer health workers who monitor health problems and provide immediate assistance to the community. As part of the prevention approach, NST City supports the budget and space for sports activities to maintain health and well-being. To prevent pandemics, NST City provides vaccinations for animals, pathogen eradication, and food service monitoring for food safety. The hospitals in NST City are of good quality and equipped with advanced technologies. **Enterprise Resource Planning (ERP) and Electronic Medical Record (EMR)** have been introduced in the hospital to manage patient information efficiently and achieve better medical treatment for all patients. In the future, a new hospital with a capacity of 60 beds will be built to serve 89,000 social security patients. **Medical Technology (MEDTech)** will be used to better examine and heal bedridden patients. Also, Internet of **Medical Things (IoMT) tools** will be used to track and cure patients with IoMT and manage the database to further improve the medical system.

The elderly are well taken care of by NST City. Various activities such as exercise, meditation, and handicrafts are offered at NST City Office with transportation service from Monday to Friday. This has resulted in good physical and mental health of the elderly. Residents of NST City are very satisfied with public health and sports services, as shown in Figure 4.17.



Development of Inclusive Economy



NST City emphasises the **Sufficiency Economy Philosophy** and has presented it to its citizens. This philosophy is about increasing income and reducing expenses to strengthen the economies of households and communities. People are offered a range of vocational training and marketplaces are created to sell their products to promote income generation. Markets are improved with appropriate facilities to attract tourists. Cultural tourism is the main driver for the tourism industry in NST City.

Currently, NST City has established the e-commerce platform as part of the **Virtual Craft Market** to allow local entrepreneurs and small businesses to participate and expand their marketing opportunities. The idea is to promote cultural products on the online marketplace, which allows sellers and buyers to do business around the clock. In this regard, NST City has also developed **Mr. City Tour Guide**, a new online travel platform that can display travel information, such as “must-see” places, with a brief biography, as well as maps leading to each location. In addition, travelers can search conveniently on Mr. City Tour Guide. Both Virtual Craft Market and Mr. City Tour Guide were developed using Metaverse technologies such as AR and VR. Currently, there are already 425 stores registered on the Virtual Craft Market. This will surely be successful as it goes beyond any online platform and should bring much more income to people. Mr. City Tour Guide is expected to boost local tourism, thus strengthening the economic self-reliance of citizens and contributing to sustainable development.





Annual Corporate Tax and Sales Tax of NST City (2017 - 2022)

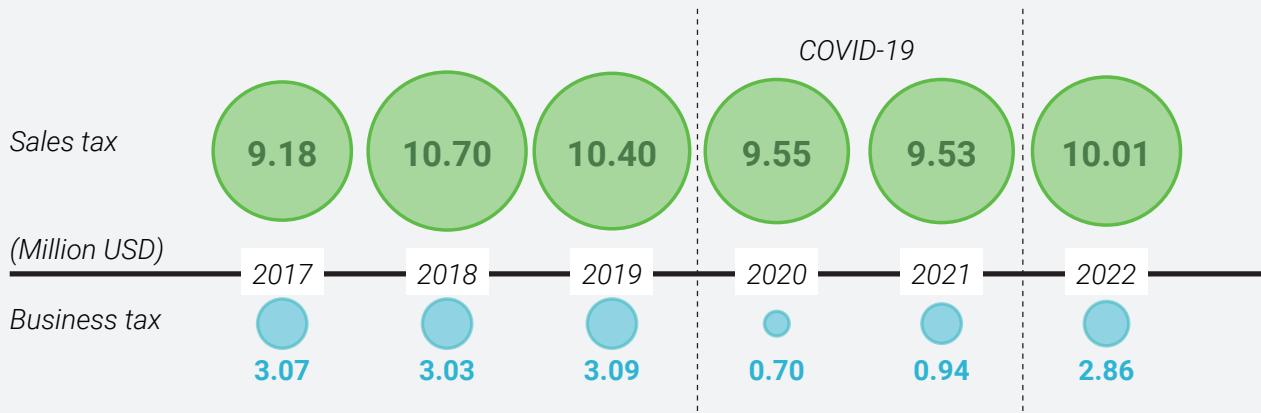


Figure 4.19 Annual Corporate Tax and Sales Tax of NST City (2017 - 2022)

During the COVID-19 pandemic, people's spending declined slightly, as reflected in sales tax revenues of NST City, while business revenues declined dramatically as the government supported businesses by reducing the tax rate by 90%. However, after the pandemic, all business activities and expenditures recovered very quickly and almost reached the normal situation (Figure 4.18). This clearly shows the economic stability of NST City and the effectiveness of the local government's measures to promote economic development during the pandemic.





5

Means of Implementation

Mainstreaming the SDGs into the NST City Development Plan requires various aspects such as budget, technology, data collection, stakeholder engagement to support planning and implementation.

5.1 Financing

Local governments are required to prepare a development plan every 5 years, including the budget allocation. Revisions may be made annually. NST City has developed the NST City Development Plan for fiscal year 2023-2027, with a total budget of USD 1.8 million (THB 59.7 million) allocated for 2023. The priority is infrastructure development to address the city's vulnerability to flooding through the construction and maintenance of drainage systems, roads, and pumping stations. The second priority is to manage and build the city's data platform to provide easier and faster services to citizens as part of smart city e-service upgrade. The city's revenue mainly comes from business tax and sales tax. Annual revenues are remitted by the national government in proportion to registered citizens and approved projects proposals. Currently, NST City has no problems with total revenues. They can be managed to meet the needs of the population. However, during the COVID-19 pandemic, NST City levied only 10% of the normal tax rate as a business tax from its citizens. This resulted in NST City not being able to implement some of its projects, which affected progress towards the 2030 Agenda goals. The NST City is aware of the risk it may face in the future.

5.2 Technology and Innovation

The digital platform has been known to the citizens of NST City for several years and has recently become increasingly important. The Smart City E-Service Platform provides citizens with a convenient and effective platform to communicate with and receive services from the city. So far, 42% of the NST City population has become a member of the online platform and the number has grown rapidly in the past year.

One of the outstanding initiatives is the use of digital technology for **Smart City E-Service Platform** through the LINE app (@Nakhoncity), which won the first prize in the National Smart City Competition in 2022. This application is a one-stop online service and user-friendly platform that encourages citizens to submit requests to the City Government, which helps the city respond effectively to the needs of its citizens.

Another innovative technology being introduced into schools is the **Metaverse**. It could enhance student learning and provide them with new digital experiences. Students can even create their own Metaverse content. The digital platform is also being rolled out in other areas as a **Metaverse for All**, such as an online museum to exhibit NST City's unique culture and tradition, to improve health care, and for anyone interested in digital technology.

5.3 Data Collection

NST City has done much for its citizens. However, data collection to measure the degree of achievement of specific goals is not systematically designed. Therefore, there is still a lack of data for analysis and continuous improvement. Measuring progress in implementing the SDGs is challenging, especially because the success of infrastructure development does not reflect people's quality of life, such as crime statistics, accident rates, etc. There is only people's satisfaction measured in terms of overall infrastructure development. The city's action plans need to systematically define project outcomes, performance indicators, and data collection methods.

5.4 Stakeholder Engagement

Involving the public in shaping policy is critical and has been implemented in every city in Thailand. NST City involves people without distinction of age, gender, religion, and social status. People's needs are well considered in the NST City Development Plan. In the plastic waste action plan, NST City has collaborated with ESCAP and IGES with intensive involvement of various stakeholders such as other local authorities nearby, the private sector, scientists, NGOs, youth and community leaders. The plan was very feasible and tangible. This is a good example of how NST City involves stakeholders in policy and plan formulation.





6

Conclusion and next steps

NST City has incorporated the SDGs into its City Development Plan. The five priority goals have been well addressed and successfully achieved. COVID Pandemic did not hit NST City so hard because the health system is strong. The city handled the crisis very well. An adequate budget was allocated for preparedness, protection, treatment, and recovery efforts. The Smart City E-Service has taken NST City into a new dimension of managing the city. The future of NST is bright and compelling.

These best practices can be applied to other cities. Some recommendations to be considered by the City Government to strengthen performance in achieving the SDGs are as follows

- Strengthen multi-stakeholder engagement in the implementation of the SDGs in NST City.
- Improving vertical integration with regional and national levels and horizontal integration among local authorities in NST City in implementing and analysing SDG outcomes.
- Strengthen the data collection system to measure the achievement of the SDGs in the NST City Development Plan.
- Continue the smart city initiative and build capacity among government officials, education staff, and the public to be able to access the digital platform without knowledge and skill barriers.
- Support educational institutions in developing innovations that are applicable in NST City and can be replicated in other cities.
- Expand SGD priorities to other goals such as;
 - SDG1 (No Poverty) - Intensive response to some marginalised groups facing the challenge of moving out of poverty.
 - SDG3 (Good Health and Well-Being) - Response to an aging society.
 - SDG13 (Climate Action) - Response to vulnerability to flooding.
 - SDG14 (Life Below Water) - Response to the leakage of wastewater and waste that pollute the natural water environment.





Appendix

SDG Targets

 SDG 1 – End poverty in all its forms everywhere	1.1 Eradicate extreme poverty 1.2 Reduce relative poverty 1.3 Implement social protection systems and policies, achieve substantial coverage of the poor and the vulnerable 1.4 Ensure equal rights to economic and other resources 1.5 Increase resilience of poor people (to environmental, economic and social shocks/disasters) 1.a Mobilize resources for developing countries to implement programs/policies to end poverty 1.b Establish policy frameworks at regional, national, and international levels to eradicate poverty
 SDG 2 – End hunger, achieve food security and improved nutrition and promote sustainable agriculture	2.1 End hunger, ensure access to food 2.2 End all forms of malnutrition 2.3 Double agricultural productivity and incomes of small-scale food producers 2.4 Ensure sustainability of food production and use of resilient agricultural practices 2.5 Preserve genetic diversity of seeds, crops, domestic/domestic animals (as well as wild relatives) 2.a Invest to improve agricultural production capacity in developing countries 2.b Correct and prevent trade restrictions and distortions in global agricultural markets 2.c Take measures to ensure the functioning of food commodity markets and facilitate access to market information

SDG Targets



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

- 3.1** Reduce maternal mortality
- 3.2** Reduce newborn and child mortality
- 3.3** Combat communicable diseases
- 3.4** Reduce premature mortality due to non-communicable diseases, promote mental health and well-being
- 3.5** Strengthen prevention and treatment of substance abuse
- 3.6** Halve deaths and injuries from road traffic crashes globally
- 3.7** Ensure access to sexual/reproductive health care / inclusion of reproductive health in national strategies
- 3.8** Achieve universal health coverage/access to health services and essential medicines/vaccines for all
- 3.9** Reduce deaths and illnesses from chemicals and pollution of environmental assets
- 3.a** Strengthen the WHO Framework Convention on Tobacco Control
- 3.b** Support research and development and access to vaccines and medicines
- 3.c** Increase health financing/education and training of health workers in developing countries
- 3.d** Strengthen early warning, risk reduction and management of health risks



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

- 4.1** Ensure free and quality schooling for all students
- 4.2** Ensure access to quality early childhood education and care
- 4.3** Ensure access to affordable and quality technical, vocational and tertiary education.
- 4.4** Ensure sufficient skills for employment, decent work and entrepreneurship
- 4.5** Ensure equal opportunities and equal access to all levels of education and training
- 4.6** Minimize the number of illiterate people
- 4.7** Improve knowledge and skills to promote sustainable development
- 4.a** Develop safe, inclusive and effective educational institutions
- 4.b** Increase the number of available higher education scholarships for developing countries
- 4.c** Increase supply of qualified teachers in developing countries





SDG Targets



SDG 5 – Achieve gender equality and empower all women and girls

- 5.1** End discrimination against women/girls
- 5.2** Eliminate violence against women/girls
- 5.3** Eliminate child marriage, early marriage and forced marriage, and genital mutilation of women/girls
- 5.4** Recognize and value unpaid care and domestic work
- 5.5** Ensure participation and equal opportunities for women in leadership roles at all levels
- 5.6** Ensure access to sexual and reproductive health and reproductive rights
- 5.a** Implement reforms to create equity in access to economic and other resources
- 5.b** Improve use of enabling technologies to promote women's empowerment
- 5.c** Strengthen sound policies/legislation for gender equality and women's empowerment



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

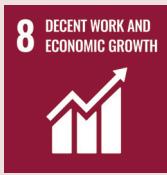
- 6.1** Achieve access to safe and affordable drinking water for all
- 6.2** Achieve access to adequate sanitation and hygiene for all
- 6.3** Improve water quality
- 6.4** Increase efficiency of water use, reduce water scarcity
- 6.5** Implement integrated water resources management
- 6.6** Protect and restore water-connected ecosystems
- 6.a** Expand international cooperation and assistance to developing countries on water and sanitation issues
- 6.b** Increase participation of local communities in sustainable water management and sanitation.



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

- 7.1** Ensure access to affordable, reliable and modern energy services
- 7.2** Increase the share of renewable energies
- 7.3** Increase energy efficiency
- 7.a** Increase international cooperation to facilitate access to clean energy research and technology
- 7.b** Improve infrastructure/technology in developing countries to provide sustainable energy services

SDG Targets



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

- 8.1** Sustain per capita economic growth
- 8.2** Achieve higher economic productivity through diversification, modernisation and innovation
- 8.3** Promote development-oriented policies to support decent work, entrepreneurship and innovation
- 8.4** Improve resource efficiency in consumption & production, strive to decouple economic growth from environmental degradation
- 8.5** Achieve full and productive employment and decent work and equal pay for work of equal value for all
- 8.6** Reduce proportion of young people out of employment and education/vocational training
- 8.7** Take action against forced and child labor, slavery and human trafficking
- 8.8** Protect labor rights and promote workplace safety
- 8.9** Develop and implement policies to promote sustainable tourism
- 8.10** Strengthen capacity of national financial institutions to promote access to financial/insurance services
- 8.a** Increase aid for trade to developing countries



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

- 9.1** Build resilient and sustainable infrastructure to promote economic development and human well-being
- 9.2** Promote sustainable industrialisation and increase industry's share of employment and GDP
- 9.3** Increase access to financial services for small industrial and other enterprises
- 9.4** Modernize infrastructures and retrofit industries in a sustainable manner
- 9.5** Improve research and build technological capacity of industrial sectors
- 9.a** Support developing countries to develop sustainable infrastructures
- 9.b** Support indigenous technology development, research and innovation in developing countries
- 9.c** Expand access to information and communication technology and provide access to Internet





SDG Targets



SDG 10 – Reduce income inequality within and among countries

- 10.1** Achieve income growth of the poorest population
- 10.2** Promote empowerment and inclusion of all people
- 10.3** Ensure equal opportunities and reduce inequalities
- 10.4** Take policy action to increase equality
- 10.5** Improve regulation and supervision of global financial markets and institutions
- 10.6** Strengthen the voice of developing countries in decision-making in international economic and financial institutions
- 10.7** Facilitate orderly and safe migration and mobility, implement managed migration policies
- 10.a** Apply principle of special and differential treatment for developing countries
- 10.b** Promote development assistance and financial flows in developing countries
- 10.c** Reduce transaction costs for migrants' home remittances



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

- 11.1** Ensure affordable, safe and adequate housing and basic services for all
- 11.2** Provide access to sustainable transportation systems for all, increase road safety
- 11.3** Implement integrated sustainable urban development
- 11.4** Improve protection and preservation of the world's cultural and natural heritage
- 11.5** Improve disaster prevention
- 11.6** Reduce environmental impact of cities
- 11.7** Ensure access to green spaces and public spaces for all
- 11.a** Through enhanced higher-level development planning, support linkages between cities and communities
- 11.b** Develop sustainable urban development policies in more cities and towns, and a holistic disaster risk management
- 11.c** Support developing countries in constructing sustainable and resilient buildings

SDG Targets



SDG 12 – Ensure sustainable consumption and production patterns

- 12.1** Initiate measures for sustainable consumption and production patterns
- 12.2** Achieve sustainable management and use of natural resources
- 12.3** Halve food waste and reduce food losses
- 12.4** Ensure environmentally sound disposal of waste and chemicals
- 12.5** Reduce waste generation
- 12.6** Encourage businesses to use sustainable process techniques and reporting
- 12.7** Promote sustainable public procurement
- 12.8** Ensure information and awareness of sustainable development among all people
- 12.a** Assist developing countries in transitioning to sustainable consumption and production patterns
- 12.b** Develop monitoring tools for the impacts of sustainable tourism and support
- 12.c** Reduce fossil fuel subsidies, taking into account the special needs of developing countries



SDG 13 – Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy

- 13.1** Strengthening resilience and adaptive capacity to climate change
- 13.2** Integrate climate protection measures into national policies
- 13.3** Improve education and human and institutional capacity in climate change mitigation and adaptation
- 13.a** Provide financial support for climate change mitigation activities in developing countries
- 13.b** Enhance climate change planning and management capacity for developing countries





SDG Targets



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

- 14.1** Reduce marine pollution
- 14.2** Sustainably manage and protect marine and coastal ecosystems
- 14.3** Minimize and address the impacts of ocean acidification
- 14.4** Implement sustainable fisheries mechanisms
- 14.5** Contribute to the conservation of coastal and marine areas
- 14.6** Prohibit forms of fisheries subsidies that lead to excessive and illegal fishing
- 14.7** Increase economic benefits through sustainable use of marine resources for developing countries
- 14.a** Deepen scientific knowledge to improve ocean health and increase biodiversity
- 14.b** Ensure access of small-scale fishers to marine resources and markets
- 14.c** Improve conservation and sustainable use of the oceans and their resources



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

- 15.1** Ensure conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems
- 15.2** Promote sustainable management of all forest types
- 15.3** Combat desertification and neutralize land degradation
- 15.4** Preserve mountain ecosystems
- 15.5** Reduce degradation of natural habitats, end biodiversity loss
- 15.6** Promote equitable sharing and adequate access to genetic resources
- 15.7** End poaching and trade in protected plant and animal species
- 15.8** Prevent introduction of invasive alien species
- 15.9** Incorporate ecosystem and biodiversity values into policies
- 15.a** Increase financial resources for biodiversity and ecosystem conservation
- 15.b** Increase financial resources for sustainable forest management and provide incentives for developing countries to do so
- 15.c** Combat poaching and trade in protected species

SDG Targets



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

- 16.1** Reduce violence and violence-related mortality
- 16.2** End violence against children
- 16.3** Promote rule of law and ensure equal access to justice
- 16.4** Combat organized crime, reduce illicit financial and arms flows
- 16.5** Reduce corruption
- 16.6** Build effective, accountable and transparent institutions
- 16.7** Ensure participatory decision-making at all levels
- 16.8** Increase participation of developing countries in global governance institutions
- 16.9** Ensure legal identity for all people
- 16.10** Ensure access to information and protect fundamental freedoms
- 16.a** Prevent violence and combat terrorism and crime
- 16.b** Implement non-discriminatory legislation and policies





SDG Targets

17 PARTNERSHIPS FOR THE GOALS



SDG 17 – Strengthen the means of implementation and revitalize the global partnership for sustainable development

Financing

- 17.1** Strengthen domestic tax collection resources in developing countries
- 17.2** Fulfill development aid commitments
- 17.3** Mobilize additional resources for development assistance
- 17.4** Assist developing countries in dealing with indebtedness
- 17.5** Implement investment promotion schemes for developing countries
- Technology**
- 17.6** Expand cooperation for knowledge transfer
- 17.7** Promote development, transfer and dissemination of sustainable technologies in developing countries
- 17.8** Systematize cooperation for science/technology/innovation; introduce global mechanism for introduce global mechanism for technology promotion

Capacity building

- 17.9** Increase international support for capacity building in developing countries

Trade

- 17.10** Promote open, equitable, and rules-based global trading system
- 17.11** Increase exports of developing countries
- 17.12** Achieve tariff/quota-free market access for developing countries

Systemic issues

- 17.13** Improve global macroeconomic stability
- 17.14** Improve policy coherence for sustainable development
- 17.15** Respect national sovereignty in implementing sustainability policies
- 17.16** Expand global (multi-actor) partnerships for sustainable development
- 17.17** Promote formation of public, public-private and civil society partnerships
- 17.18** Increase capacity building for data availability in developing countries
- 17.19** Develop measures of sustainable development progress, support statistical capacity building in developing countries

