



# ក្រសួងសាធារណការ និងដឹកជញ្ជូន

MINISTRY OF PUBLIC WORKS AND TRANSPORT

## Development of Small and Medium Ports for Transportation of Agricultural Products Cambodia

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**General Department of Waterway, Maritime Transport and Port**



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III. Our Proposal for Further Cooperation



# I. Status of Development

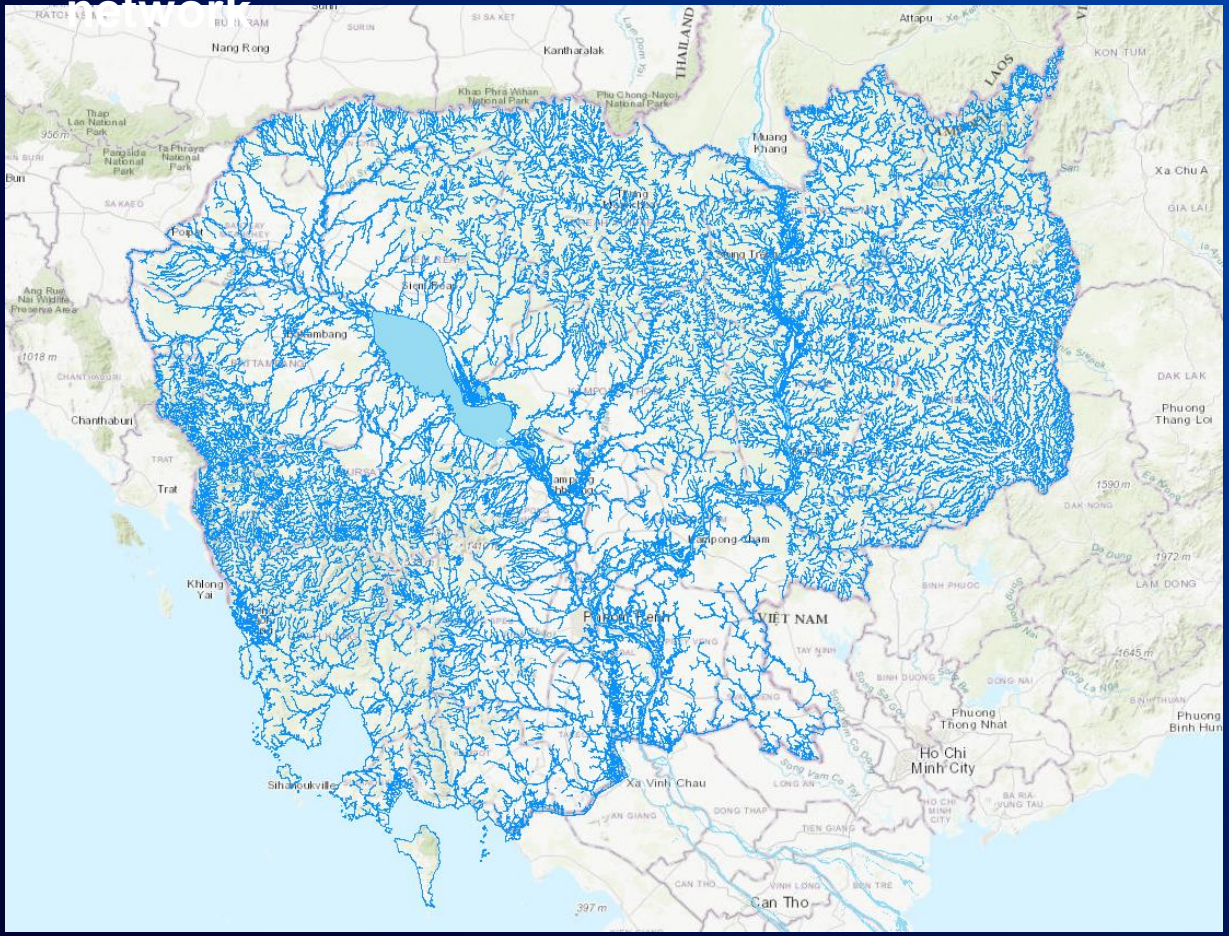
Inland Waterway, Maritime Transport and Port Sector



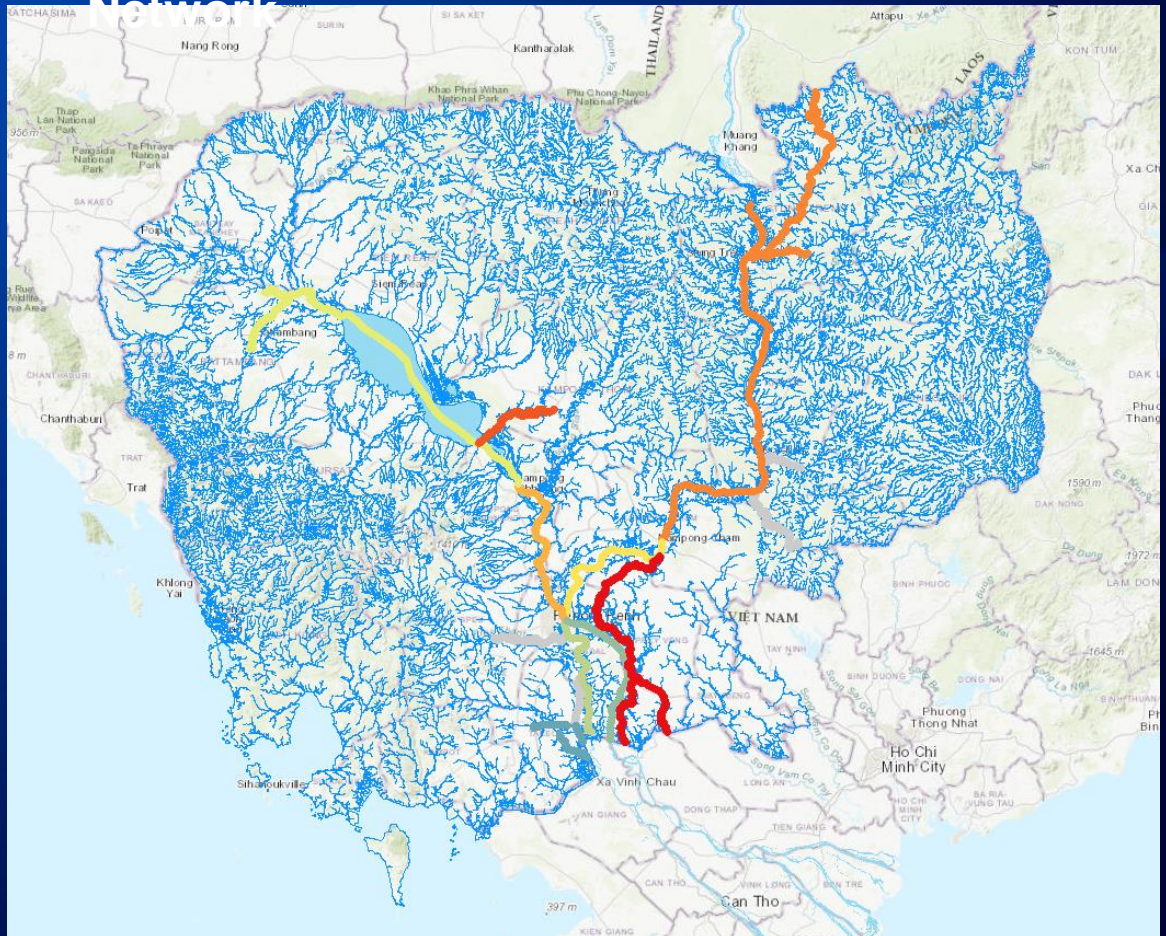
# Our Development Status

❖ Cambodia has abundance and variability of Natural Waterway Connectivity Complex

## Potential of main river and its tributaries network



## Current-Under Utilized of Waterway Network



# Our Status



## Navigable waterway



1,750 ( 30% of Mekong, 15% Tonle sap and 5% of Bassac river and 50% of other tributaries.

## Year-round navigable



780 km (45%) of the whole waterway and only 8-12% of the transport potential

## Navigable-only dry season



580 km (33%) less than 10% Potential of transport route

## Vessel Size and Transport Capacity



20 DWT to 5000 DWT depending on the season and the water depth

## Inter-Inland Port



PPAP

## Private-inland port



65 under the Ministry 24 under the provincial department

## Deep Sea Port- International



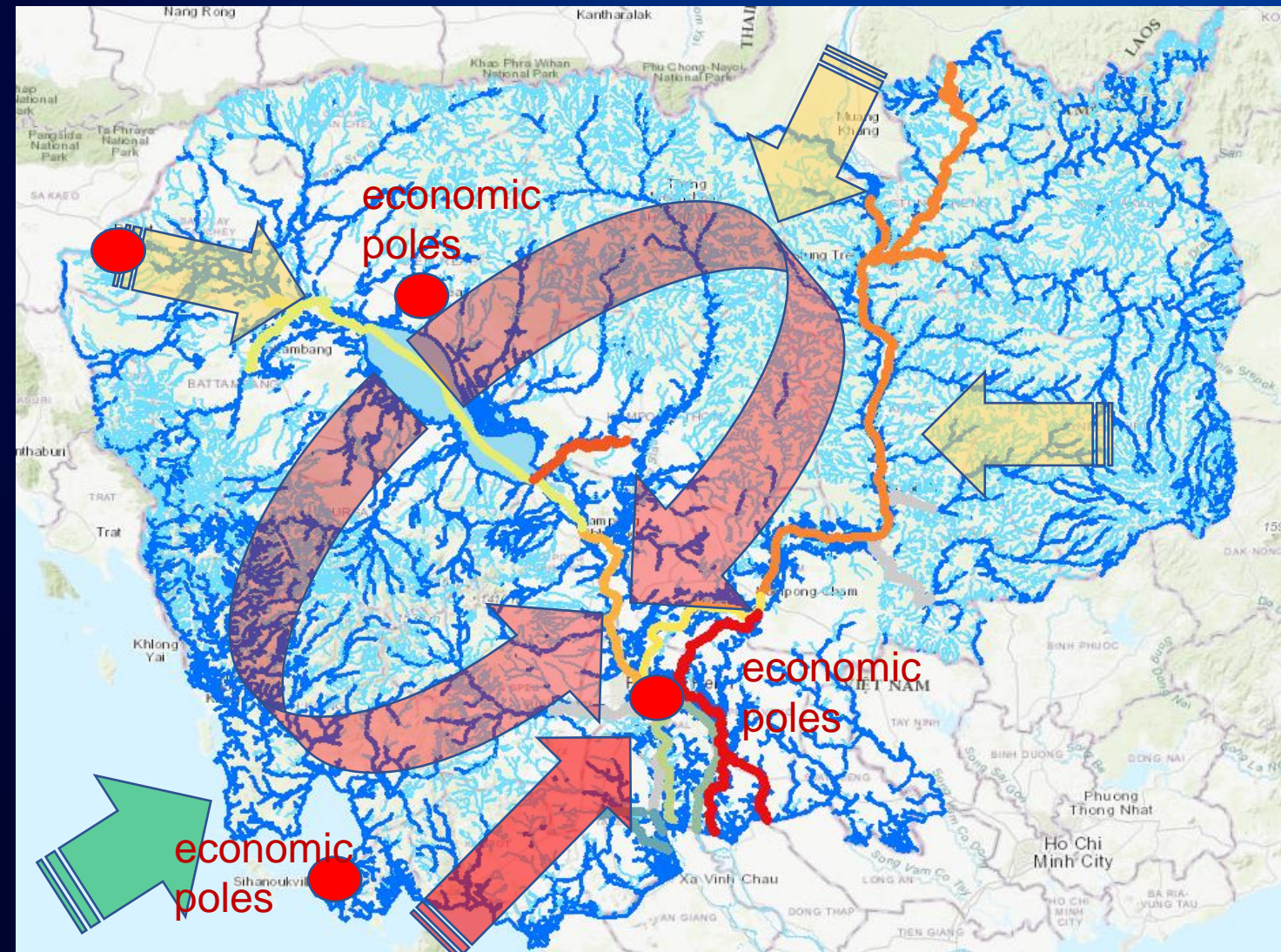
Two ports of Sihanoukville Autonomous Port and Kampot Multi-Purpose Port (under construction)

## Private Seaport



19 under the Ministry 10 provincial departments

# Overall vision of development



- ❖ Strengthen and expand the waterway connectivity from the main river, tributary of the tributary to the sea
- ❖ Connects capitals, cities, towns, rural areas and agricultural production areas and industrial areas to the sea
- ❖ Connect all of Cambodia's economic poles to waterways and seas
- ❖ Expand the capacity, potential and quality of transportation to the inland and port shipping industry
- ❖ Develop infrastructure to support water transport and ports
- ❖ Use modern technology to ensure effective management and control of operations

# Overall vision of development



## Our Goal:

- ❖ Promote the connection of water transport from the main river with the tributary of the Stung, Prek and Rivers to connect urban, rural, and community communities along the Prek River to agricultural production and tourism areas to the sea.
- ❖ Reduce time, distance, unnecessary expenditures and reduce barriers and obstacles of water transport through the implementation of the Funan Techo Canal Project.
- ❖ Integrate water transport with other multimodal transport
- ❖ Shifting of the model of heavy transport by road to waterway transport to reduce road damage and traffic congestion, reduce road accidents, reduce transportation costs and especially reduce Greenhouse gas emissions.

# Overall vision of development

## Priority projects / activities

Implement Funan-Techo Canal



Rehabilitation of main rivers, tributaries, canals, rivers and estuaries to expand connectivity



Waterway and Maritime Transport Infrastructure Improvement and Development Project



Development of strategic ports, satellite ports and warehouses



Development of Smart Port and smart ships



Waterway and port network development project connecting with other means to all development areas



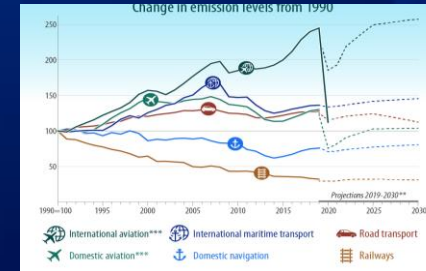
Development of Navigation Management and Operation Center



Development of ships yard in each provinces



Project to study and analyze greenhouse gas emissions into the atmosphere by water



Development of Provincial Ship and Port Service Center





# Law on Waterway Transport



This Law was adopted on 23 March 2024 and it consists of 18 Chapters and 275 Articles as follows:

- Chapter 1 objectives, scope, and definition
- Chapter 2 the management authority
- Chapter 3 the principles of the law:
- Chapter 4 vessel management, including the management of coastal, domestic, and Cambodian-flagged vessels.
- Chapter 5 the training of seafarers on coastal or inland waterway vessels and seafarers on seagoing ships.
- Chapter 6 navigation, including navigation regulations, safety, security, and the environment in navigation and maritime accidents.
- Chapter 7 stowaways
- Chapter 8 the detention of seagoing vessels.
- Chapter 9 transportation and compensation including cargo transportation, passenger transportation, and other objects.
- Chapter 10 port management, including port classification and port management, harbor master, ship entry permit, port development, construction and operation, port security and environmental regulations, channel dues and Port Electronic Data Exchange System
- Chapter 11 waterway infrastructure
- Chapter 12 pilotage
- Chapter 13 the shipyard (Licenses)
- Chapter 14 inspections, including inspections of coastal vessels, domestic vessels, shipyards, port facilities, structures, floating platforms, and other activities, and port state control, inspection of vessels along the waterway in the territory of the Kingdom of Cambodia and uniforms.
- Chapter 15 co-measurement
- Chapter 16 penalties
- Chapter 17 inter-provisions
- Chapter 18 the final provisions

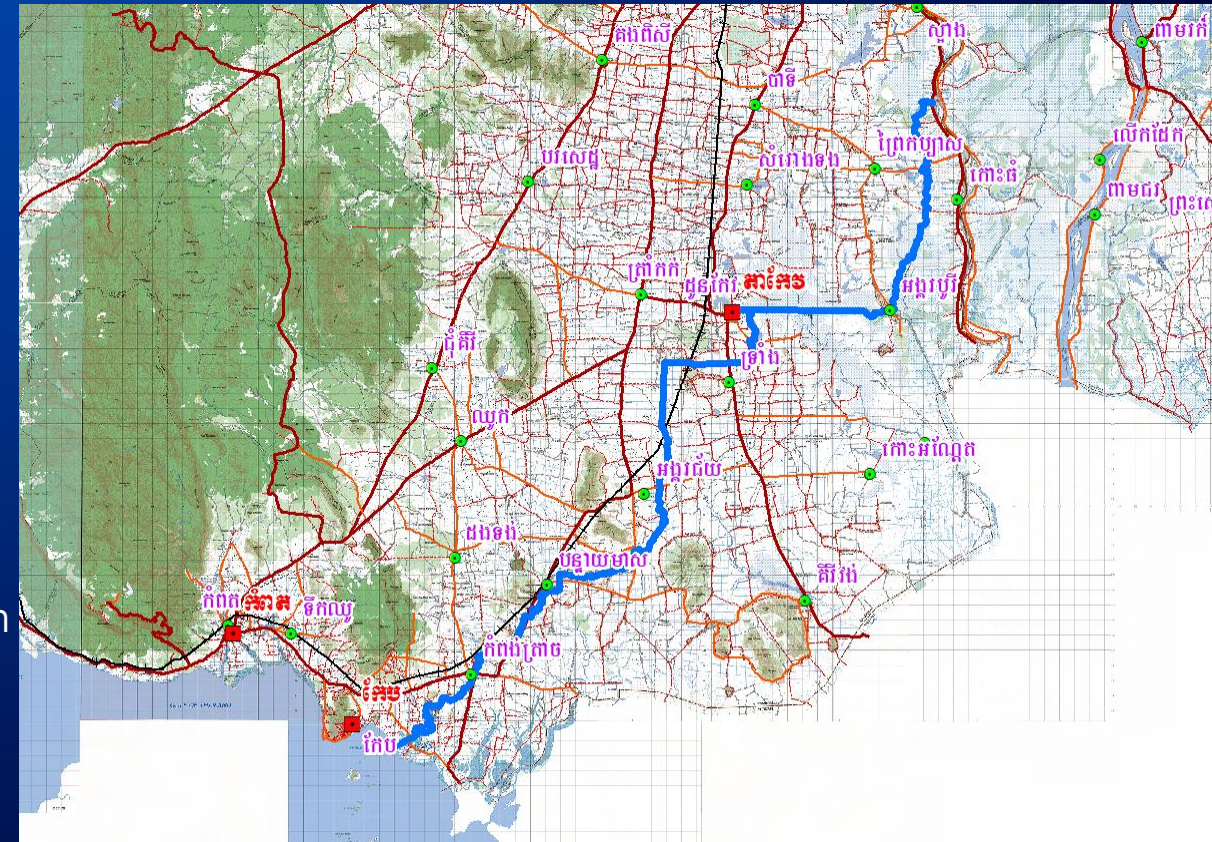
# Funan Techo Canal Project



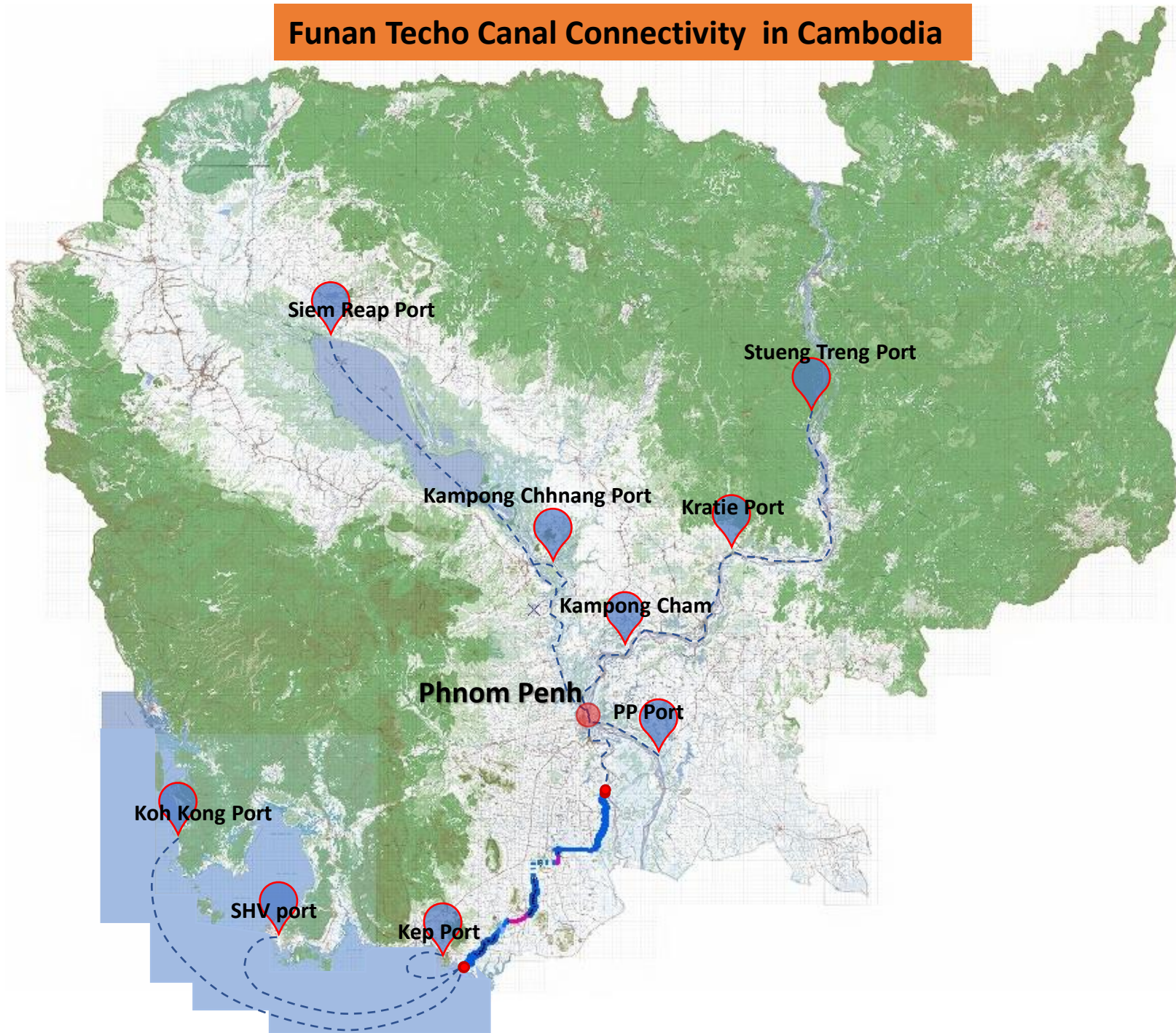
## Overall condition

The total length 180 km.

- ❑ 135 Km of existing streams, rivers and streams, mostly flooded in the rainy season and shallow in the dry season.
- ❑ 38 km are modified and of existing stream canals and irrigation systems.
- ❑ 7 km is a new route.
- ❖ This canal connects 13 major cities and districts of 4 provinces: Kandal, Takeo, Kampot and Kep.
- ❖ The total population living on the new waterway is estimated at 1.6 million.
- ❖ In Kandal and Kep provinces, more than 50% of the population has agricultural land with irrigation system, while in Takeo and Kampot provinces, less than 30% of the population has agricultural land with irrigation system.
- ❖ About 50 km from Phnom Penh and 40 km from Takhmao city.



# Funan Techo Canal Connectivity in Cambodia



# Suitable Types of Waterway Transporters



Sea-river vessel



Seagoing vessel



Barge convoy



LASH (Lighter Aboard Ship )

# Infrastructure Development Projects-FTC



Strategic port: 2 Locations  
 TPC: 300 M USD/each port  
 CTP: 350-500 thousand TEU/Year  
 Status: FS  
 Timeline: Target 2025-2028



Feeder port: 5 Locations  
 TPC: 80-100 M USD/each port  
 CTP: 150-300 thousand TEU/Year  
 Status: FS  
 Timeline: Target 2025-2028



Tourist Terminal/Rest Area: 15 Locations  
 TPC: 3-6 M USD/terminal  
 Passenger: 50-150 thousand Per/Year  
 Status: FS  
 Timeline: Target 2025-2028



SEZ/ Industrial zone: 6 Locations  
 TPC: 300-505 M USD/Project  
 Area Capacity: 50-450 ha  
 Status: FS  
 Timeline: Target 2025-2028



Road construction: 208 Km with 20 meters width  
 TPC: 350 M USD  
 Status: FS  
 Timeline: Target 2025-2028



Urban and City development : 3 Potential location  
 TPC: 500-800 M USD/each project  
 Status: FS  
 Timeline: Target 2027-2030



Shipyard Station: 3 Potential location  
 TPC: 540-860 M USD/each project  
 Status: FS  
 Timeline: Target 2026-2028



EV Tourist Ship: 30 ships  
 Capacity: 300-500 persons  
 TPC: 160-378 M USD  
 Status: FS  
 Timeline: Target 2026-2028



Shipping Company and Ship operators  
 Timeline: Target 2026-2027



Irrigation and agriculture : 50,000 ha  
 Capacity: 4-8 Million Ton/year  
 TPC: 470- 750 M USD  
 Status: FS  
 Timeline: Target 2026-2028



## II. Development of Small and Medium Ports for Transportation of Agricultural Products Cambodia

# Background

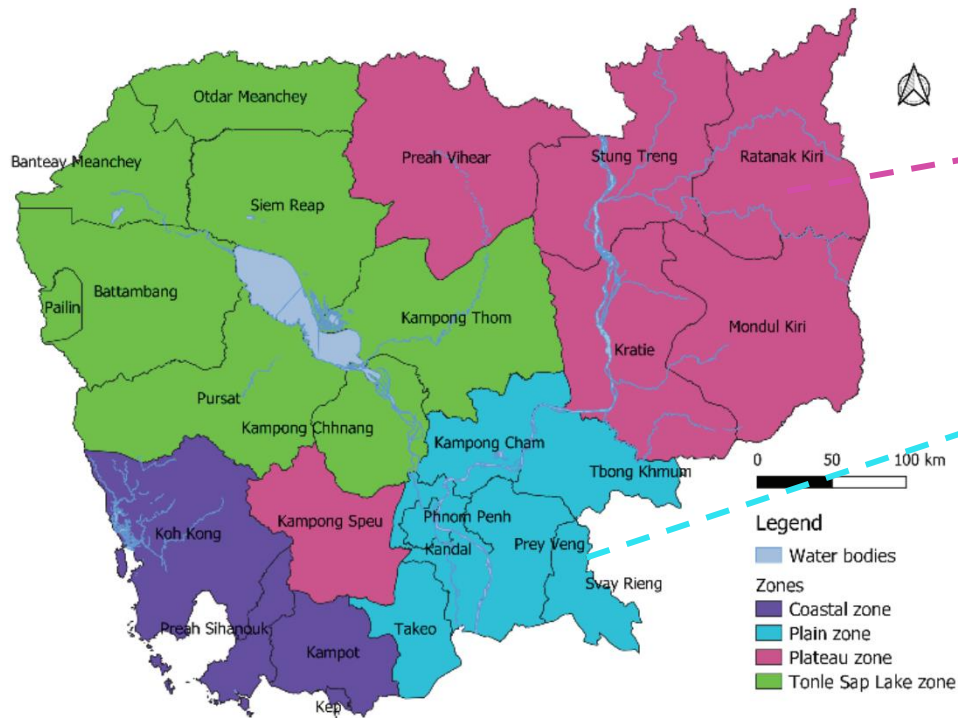


- Inland waterway network in Cambodia consists of the Mekong, Tonle Sap, and Tonle Bassac Rivers with the total length of 1,750km. It plays a significant role in facilitating movement and trade and contributes to the development of social economics of the country.
- Cambodia's agricultural sector plays a significant role in the country's economy, accounting for approximately 26% of the GDP and employing over 60% of the population. However, challenges persist in the transportation and distribution of agricultural products, particularly for small and medium-sized farmers. These challenges include inadequate infrastructure, high transportation costs, and limited access to markets.

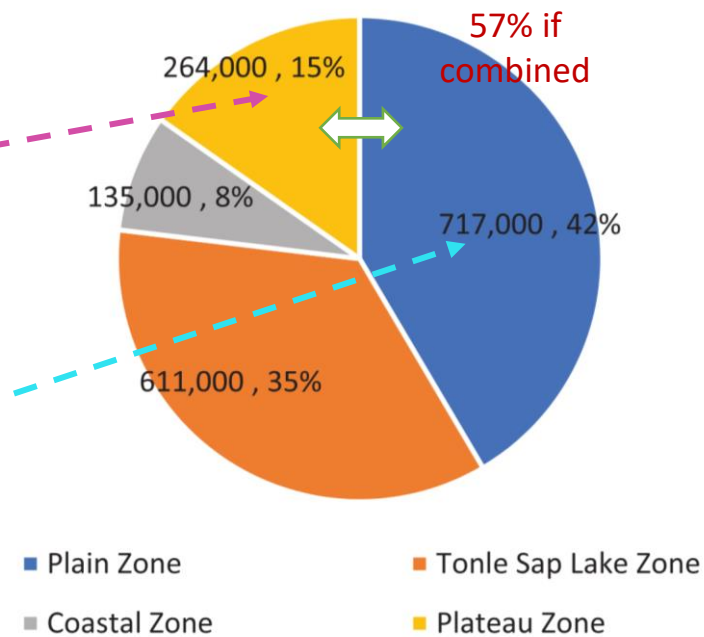
# Background



Socio-geographic zones in Cambodia



Number and percentage of household agricultural holdings by socio-geographic zone

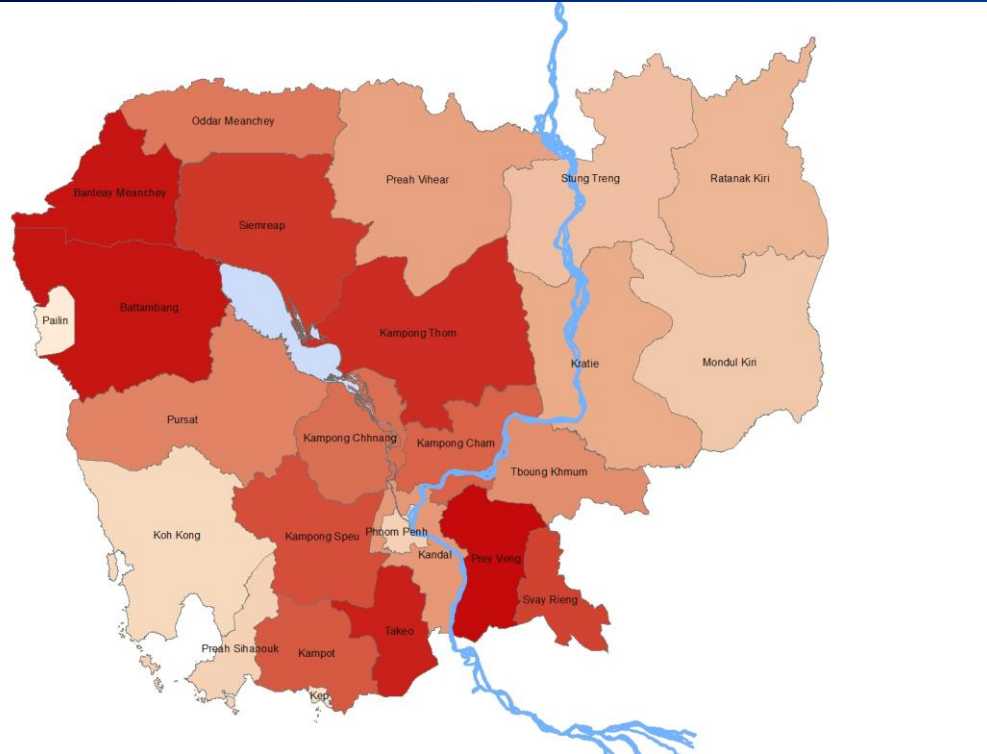


Source: Cambodia Inter-Censal Agriculture Survey 2019.

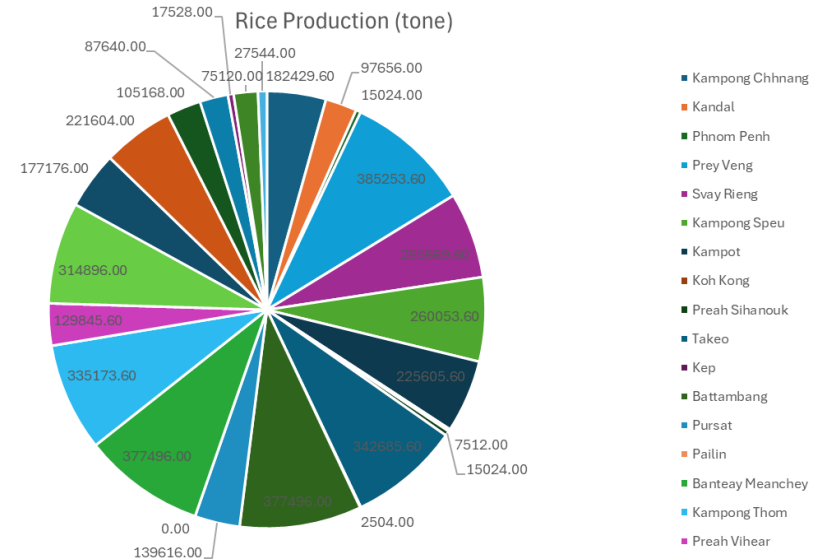
Cambodia Agricultural Production



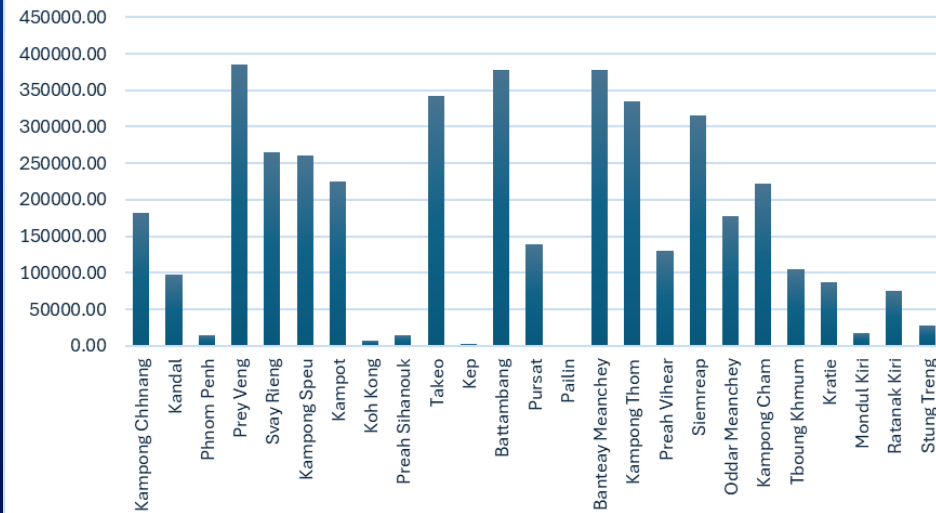
# Background



Rice Production per province



Rice Production (tone)



# Background



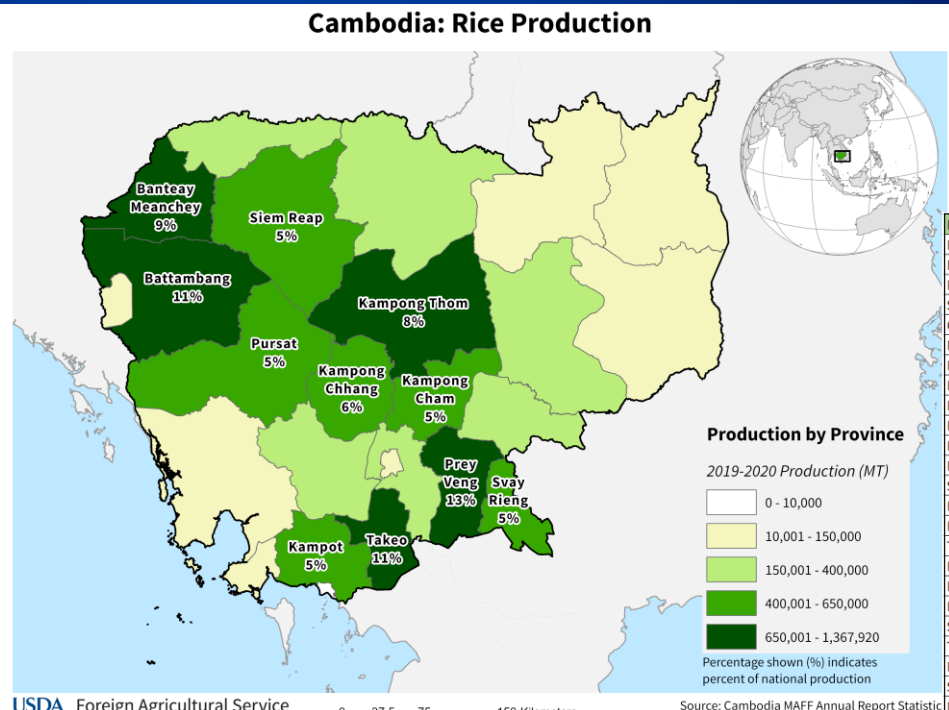
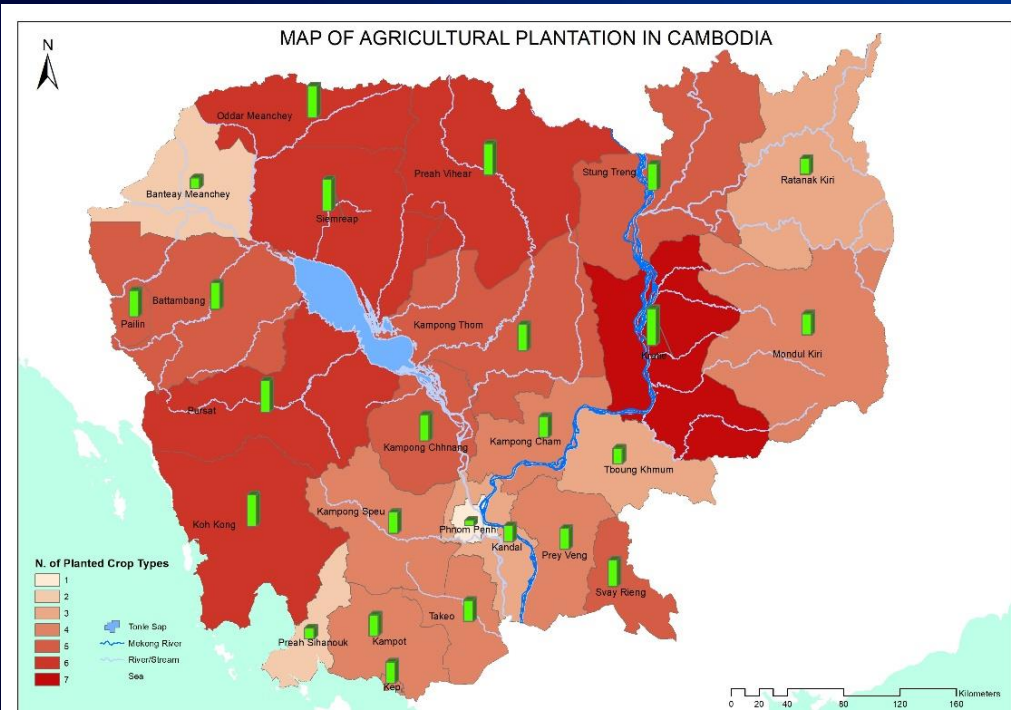
Province	Rice Production (tone)	Non-Aromatic Rice (tone)	Aromatic Rice (tone)	Sticky Rice (tone)	Maize (tone)	Cassava (tone)	Mung Bean (tone)	Soybean (tone)	Sugarcane (tone)
Kampong Chhnang	182,429.60	147,736.00	31,944.00	2,749.60	7,243.50	0.00	0.00	0.00	8.18
Kandal	97,656.00	97,656.00	0.00	0.00	16,901.50	0.00	0.00	0.00	11.62
Phnom Penh	15,024.00	15,024.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Prey Veng	385,253.60	350,560.00	31,944.00	2,749.60	7,243.50	0.00	0.00	0.00	4.93
Svay Rieng	265,669.60	262,920.00	0.00	2,749.60	0.00	13,134.00	2,839.00	0.00	2.36
Kampong Speu	260,053.60	225,360.00	31,944.00	2,749.60	0.00	0.00	0.00	0.00	0.00
Kampot	225,605.60	222,856.00	0.00	2,749.60	4,829.00	0.00	0.00	0.00	2.36
Koh Kong	7,512.00	7,512.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Preah Sihanouk	15,024.00	15,024.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Takeo	342,685.60	307,992.00	31,944.00	2,749.60	0.00	0.00	0.00	0.00	2.36
Kep	2,504.00	2,504.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Battambang	377,496.00	345,552.00	31,944.00	0.00	294,569.00	755,205.00	163,242.50	2.29	0.00
Pursat	139,616.00	107,672.00	31,944.00	0.00	28,974.00	157,608.00	34,068.00	0.00	8.18
Pailin	0.00	0.00	0.00	0.00	38,632.00	157,608.00	34,068.00	0.00	0.00
Banteay Meanchey	377,496.00	345,552.00	31,944.00	0.00	33,803.00	564,762.00	122,077.00	0.00	0.00
Kampong Thom	335,173.60	300,480.00	31,944.00	2,749.60	0.00	453,123.00	97,945.50	0.00	14.97
Preah Vihear	129,845.60	95,152.00	31,944.00	2,749.60	7,243.50	242,979.00	52,521.50	3.38	3.55
Siemreap	314,896.00	282,952.00	31,944.00	0.00	0.00	485,958.00	105,043.00	2.13	15.96
Oddar Meanchey	177,176.00	145,232.00	31,944.00	0.00	0.00	564,762.00	122,077.00	0.00	4.33
Kampong Cham	221,604.00	221,604.00	0.00	0.00	12,072.50	128,713.20	27,822.20	0.00	12.21
Tboung Khmum	105,168.00	105,168.00	0.00	0.00	16,901.50	354,618.00	76,653.00	0.00	0.00
Kratie	87,640.00	87,640.00	0.00	0.00	2,897.40	197,010.00	42,585.00	0.00	4.93
Mondul Kiri	17,528.00	17,528.00	0.00	0.00	0.00	65,670.00	14,195.00	0.00	0.00
Ratanak Kiri	75,120.00	75,120.00	0.00	0.00	7,243.50	197,010.00	42,585.00	16.90	0.00
Stung Treng	27,544.00	27,544.00	0.00	0.00	0.00	52,536.00	11,356.00	0.00	0.99

List of agricultural productions in Cambodia per province, Cambodia statistics 2019



# Background

- With its significant role, the waterway transport network needs to be developed further, especially, creating more transporting channels connecting the Mekong and Tonle Sap to the northern, western, and southern parts of the nation.



Province Name	Crops Types	N. of Crops
Battambang	Rice, cassava, coconut, banana, mango	5
Banteay Meanchey	Rice, cassava	2
Pailin	Rice, cassava, cashew nut, coconut, mango	5
Siem Reap	Rice, cassava, cashew nut, coconut, banana, mango	6
Otdar Meanchey	Rice, cassava, cashew nut, coconut, banana, mango	6
Preah Vihea	Rice, cassava, cashew nut, coconut, banana, mango	6
Kampong Thom	Rice, cassava, cashew nut, rubber, banana	5
Kampong Chhnang	Rice, cassava, coconut, banana, mango	5
Pursat	Rice, cassava, cashew nut, coconut, banana, mango	6
Phnom Penh	Rice	1
Koh Kong	Rice, cashew nut, coconut, rubber, banana, mango	6
Kampong Speu	Rice, coconut, banana, mango	4
Sihanouk Ville	Rice, coconut	3
Kampot	Rice, coconut, banana, mango	4
Kep	Rice, coconut, banana, mango	4
Takeo	Rice, coconut, banana, mango	4
Kandal	Rice, banana, mango	3
Prey Veng	Rice, coconut, banana, mango	4
Kampong Cham	Rice, cashew nut, banana, mango	4
Svai Rieng	Rice, cashew nut, coconut, banana, mango	5
Tbong Khum	Rice, cashew nut, rubber	3
Kratie	Rice, cassava, cashew nut, coconut, rubber, banana, mango	7
Stung Treng	Cassava, cashew nut, coconut, banana, mango	5
Monduliri	Rice, cassava, cashew nut, banana	4
Ratanakiri	Cassava, cashew nut, rubber	3



# Objectives of the Project

- The primary objectives of the Waterway Port Development Project are:
  - a. To create alternative modes of transportation for small and medium enterprises (SMEs), mainly the SMEs in the agricultural sector.
  - b. To reduce transportation costs and improve the competitiveness of Cambodian agricultural products in both domestic and international markets.
  - c. To increase access to markets for small and medium-sized farmers, thereby promoting inclusive economic growth.
  - d. To contribute to the overall development and modernization of Cambodia's agricultural sector.



# Expected Outcomes & Outputs

1. Increased agricultural productivity and income for small and medium-sized farmers through enhancing agricultural marketing network in rural Cambodia.
2. Improved waterway transport sector for agricultural trade.
3. Improved capacity for small and medium-sized farmers with the most advanced technology for utilization of the new infrastructure and market accessibility.
4. Enhanced market linkages through partnership with domestic and international buyers.
5. Reduced goods transportation traffic from the road, hence, prolong the age of our national road networks and infrastructure.
6. Participated small and medium enterprises and investors in the development and improvement of the Kingdom's waterway transport and port sector.

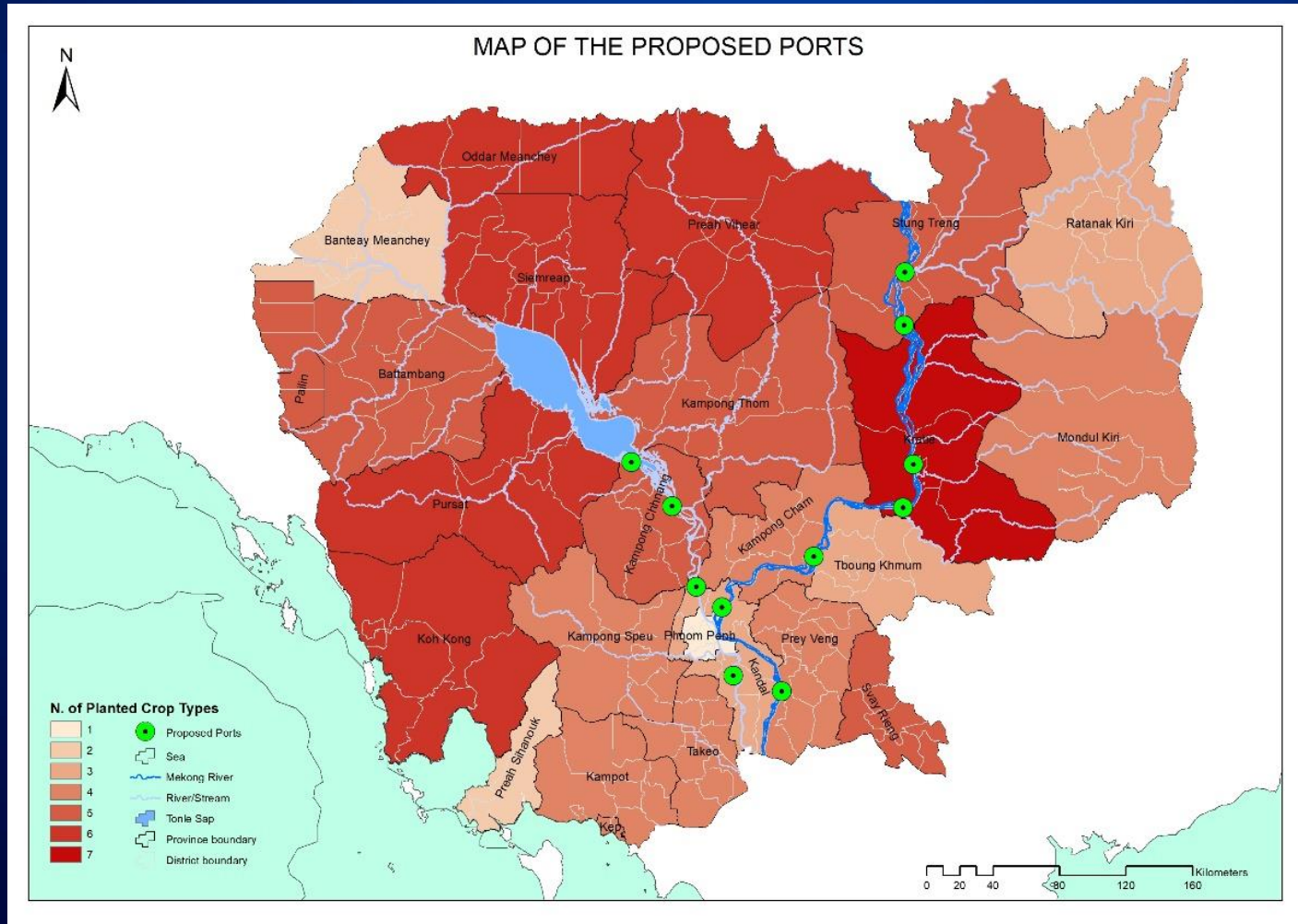


# Expected Outcomes & Outputs

To achieve the expected outcomes above, the project aims to develop the following infrastructure and services (outputs):

- 13 waterway ports for small and medium sized agricultural markets: The locations of the ports are proposed along the Mekong mainstream, Tonte Sap, and Tonle Bassack to facilitate the agricultural trades and be the local hub of agricultural products of Cambodia.
- Enhanced navigation channels through improvement of waterway network and waterway navigation facilities to support the transportation activities for small and medium-sized agricultural products.
- 2 shipyards to provide maintenance and reparation services to the ships for goods transportation and tourism. One shipyard is proposed to be built near the proposed Phnom Penh port while the other one is proposed to be built near the proposed port in Kratie bordering with Tboung Khmum Province.
- 13 ships with a capacity of 1000 DWT to transport agricultural products from the local market to other ports.
- A friendly-use mobile phone application for easily booking for goods transportation and monitoring of the movement of the ships for the local farmers.

# Expected Outcomes & Outputs



# Annual Operation Cost



Number	Task	Unit Cost (US\$)	No. Month	Quantity	Total Cost (US\$)
<b>I</b>	<b>Port operation</b>				<b>219,600</b>
1	Admin cum cashier	400	12	13	62,400
2	Guard	200	12	13	31,200
3	Labor	300	12	22	79,200
4	Electricity and water bill	300	12	13	46,800
<b>II</b>	<b>Ship operation</b>				<b>296,400</b>
5	Captain	500	12	13	78,000
6	Captain assistant	300	12	13	46,800
7	Gasoline	1,050	12	13	163,800
8	Ship maintenance service	50	12	13	7,800
<b>III</b>	<b>Farmer trainings</b>				<b>138,000</b>
9	Services and mobile app	1,000	2	13	26,000
10	Agricultural plantation	2,000	2	13	52,000
11	Workshop/expo	30,000	2	1	60,000
<b>IV</b>	<b>Shipyards operation</b>				<b>170,000</b>
12	Technical training	5,000	5	2	50,000
13	Technician	1,000	12	10	120,000
<b>V</b>	<b>WatranApp operation</b>				<b>72,000</b>
14	O&M of the App	6,000	12	1	72,000
	<b>GRAND TOTAL</b>				<b>896,000</b>



# Investment Capital



Port Construction	Unit Cost (\$/m2)	Quantity	Size	Total (US\$)
<b>1. Port building</b>				<b>2,210,000</b>
<i>Construction cost</i>	500	13	120	780,000
<i>Infrastructures for the port</i>	10,000	13	1	130,000
<i>Navigation facilities for the port</i>	50,000	13	1	650,000
<i>Transportation ship</i>	50,000	13	1	650,000
<b>2. Enhancement of the waterway transportation network</b>				<b>3,640,000</b>
<i>Comprehensive study of the existing waterway system</i>	30,000	13	1	390,000
<i>Enlargement of the cross-sections and rehabilitation water channels</i>	250,000	13	1	3,250,000
<b>3. Development of navigation safety system for the ships</b>				<b>2,660,000</b>
<i>Topographic and bathymetric survey along the main rivers</i>	100,000	3	1	300,000
<i>Safety navigation track development</i>	120,000	3	1	360,000
<i>Safety navigation aids for main locations</i>	200,000	10	1	2,000,000
<b>4. Shipyard</b>				<b>1,100,000</b>
<i>Shipyard construction</i>	200,000	2	1	400,000
<i>Shipyard facilities</i>	300,000	2	1	600,000
<i>Construction of infrastructures</i>	50,000	2	1	100,000
<b>5. Water Transportation Network App (WatranApp)</b>				<b>350,000</b>
<i>Central database system</i>	200,000	1	1	200,000
<i>Website and dashboard with notification function</i>	100,000	1	1	100,000
<i>Mobile application with payment system</i>	50,000	1	1	50,000
<b>GRAND TOTAL</b>				<b>9,960,000</b>

# Expected Annual Profit



Income source	Unit Cost (US\$)	No. Way	No. Day	No. Ship	Total (US\$)
Transportation by ship	200	2	365	13	1,898,000
Ship reparation and maintenance	500	1	365	1	182,500
<b>TOTAL ANNUAL INCOME</b>					<b>2,080,500</b>
Annual operational cost					896,000
Annual Profit					1,184,500
Income tax (10%)					118,450
<b>NET PROFIT</b>					<b>1,066,050</b>



# III. Our Proposal for Further Cooperation

## Inland Waterway, Maritime Transport and Port Sector

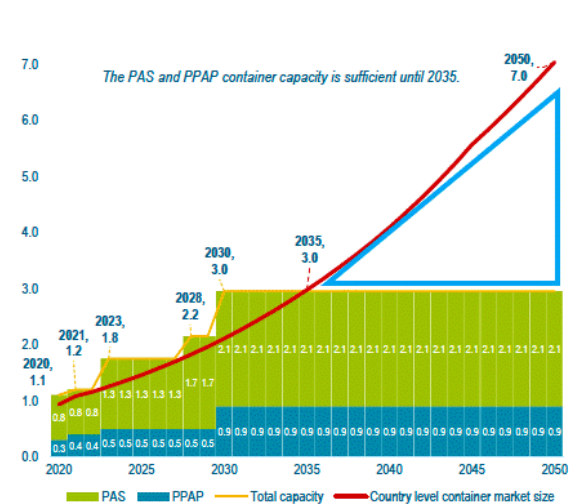
# Demand Forecast of Cambodia's Container Throughput



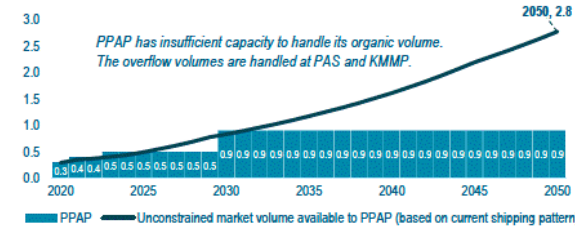
## Projected container handling demand Vs supply in Cambodia

The unconstrained market size of Cambodia's container throughput, projected against its total GDP, manufacturing, and agricultural growth trends, is set to exceed its total available capacity by 2035.

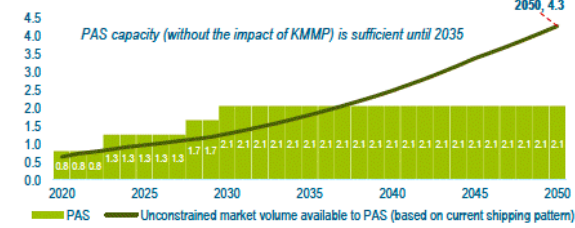
Projected container market volume Vs terminal capacity, 2020-2050 (MTEU)<sup>1</sup>



Potential container volume Vs capacity at PPAP, 2020-2050 (MTEU)<sup>2</sup>



Potential container volume Vs capacity at PAS, 2020-2050 (MTEU)<sup>2</sup>



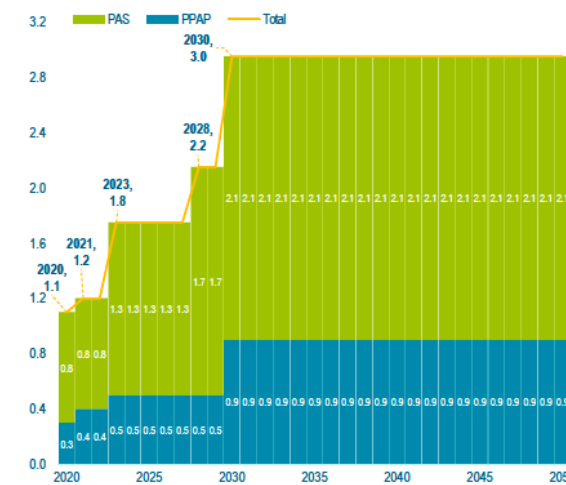
Abbreviations: PPAP – Phnom Penh Autonomous Port, PAS – Port Autonome de Sihanoukville, KMPP – Kampot Multi-Purpose Port  
<sup>1</sup> – Volume trendline includes 2020 & 2021 actuals and unconstrained 2022-2050 forecast values projected against Cambodia's GDP, manufacturing, and agricultural growth trends, excluding the development of KMPP's project-specific captive volume considerations, while total capacity trendline is based on existing and planned capacity developments at PPAP and PAS, excluding potential terminal developments at KMPP.  
<sup>2</sup> – Volume distribution between PPAP and PAS based existing pattern of Cambodia's container shipping market at 10m maximum vessel draft, without accounting for overspill volume due to capacity limits at PPAP and the development of terminal handling capacity at KMPP.  
 Sources: PPAP PAS, KMPP, RHDHV-QSC

## Projected container terminal capacity development in Cambodia

Cambodia's container port capacity (excluding KMPP) is set to reach 3.0 MTEU by 2030, with PPAP's planned expansion and PAS' phased development of a new container terminal largely expected to occur over 2023-2030.

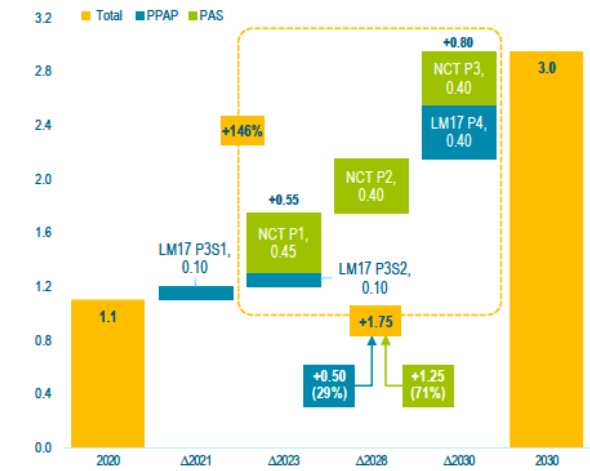
Cambodia's total container terminal capacity, 2020-2050 (MTEU)<sup>1</sup>

◆ Current capacity of 1.2MTEU is expected to increase another 146% to 3MTEU by 2030



Planned container terminal capacity additions, 2020-2050 (MTEU)<sup>1</sup>

◆ Over 75% of the capacity addition arises from the phased development of a new container terminal at PAS, with planned terminal expansion at PPAP accounting for the balance 29%



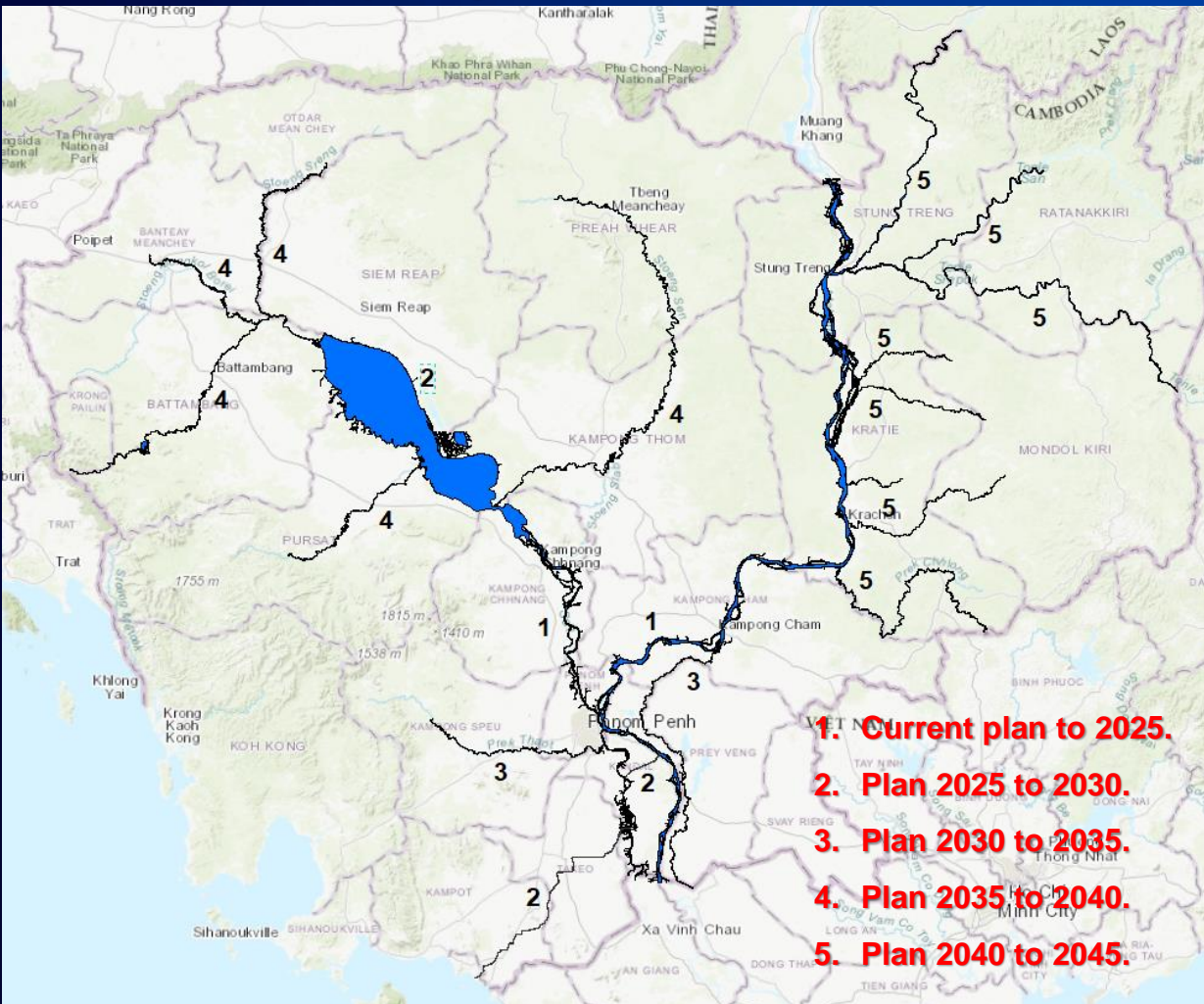
Abbreviations:  
 PPAP – Phnom Penh Autonomous Port, PAS – Port Autonome de Sihanoukville, KMPP – Kampot Multi-Purpose Port  
 LM 17 P3S1 – Phase 3 Stage 1; P3S2 – Phase 3 Stage 2; P4 – Phase 4  
 NCT P1 – New Container Terminal Phase I; P2 – Phase II; P3 – Phase III  
<sup>1</sup> – Based on existing and planned capacity developments at PPAP and PAS, excluding potential terminal developments at KMPP.  
 Sources: PPAP and PAS

The container market volume of Cambodia will reach 3 million TEUs in 2030

# Strategic Development Plan- Inland Waterway Infrastructure Improvement



## Master plan to expand inland waterway Transport Capacity



### ❖ Status

The main river route is about 1,812 km long. However, Current navigable is about 330 km and equivalent to only 18% of the main river waterways

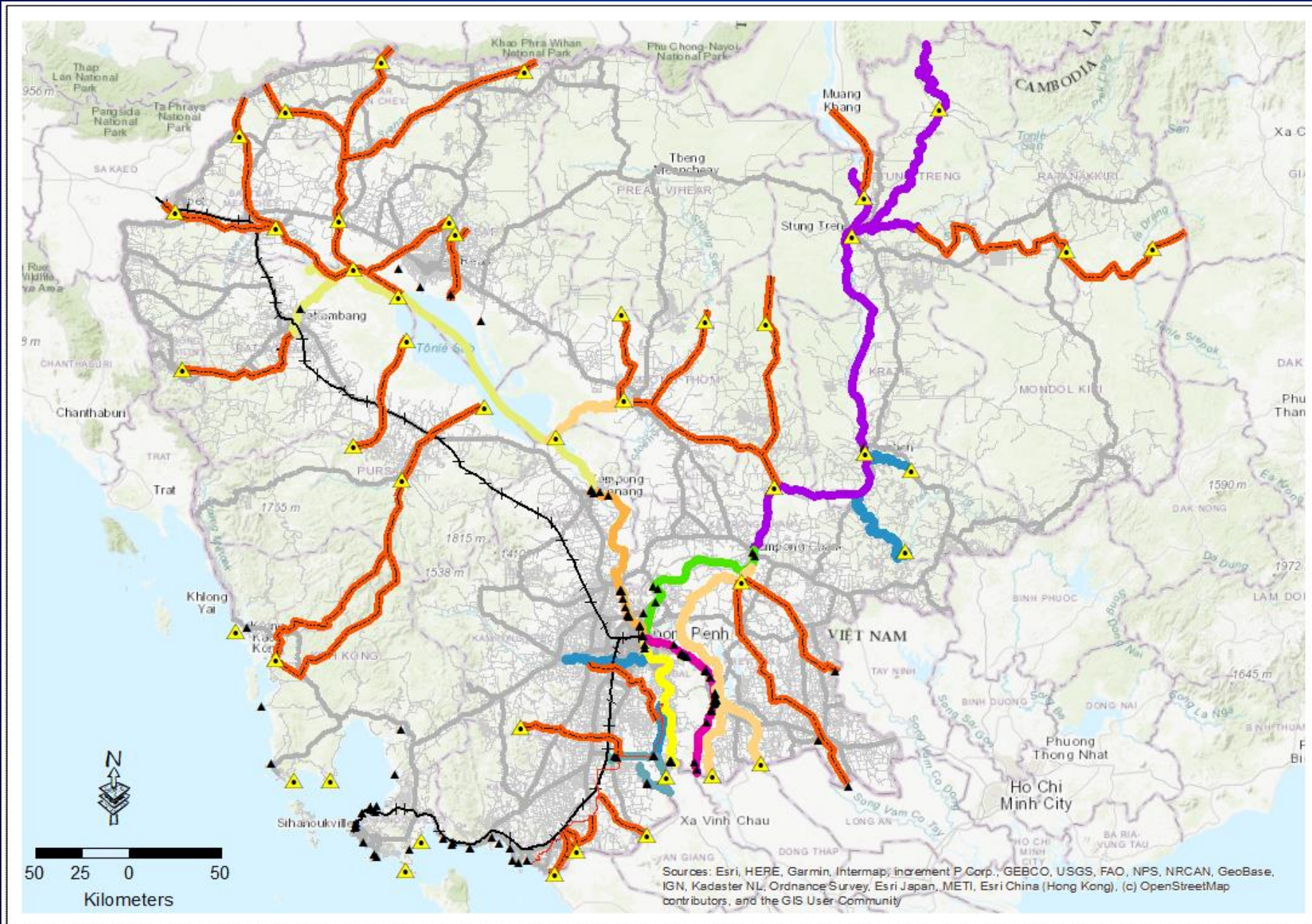
### ❖ Challenges

- No equipment, means and machinery for dredging, restoring and installation of navigation aids
- Lack of funding in dredging, rehabilitation of waterway infrastructure and installation of navigation aids

### ❖ Suggestion

Request for support from development Partners to purchase machinery, equipment, means and budget for the implementation of water and sea transport links

# Development of Waterway Connectivity and Ports





# WE ARE LOOKING FOR INVESTORS TO:

1. Design-build-finance and operate
2. Submit a request through solicited approach
3. Submit a full Financial Proposal for agreement consideration.



Thank you