

國土資訊系統資料增值應用現況 與未來發展



Status and Future Development of
Value-added Application on NGIS

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Secretary General

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Summary of the Presentation

1. Introduction

**2. Results of NGIS Construction
and Promotional Strategies**

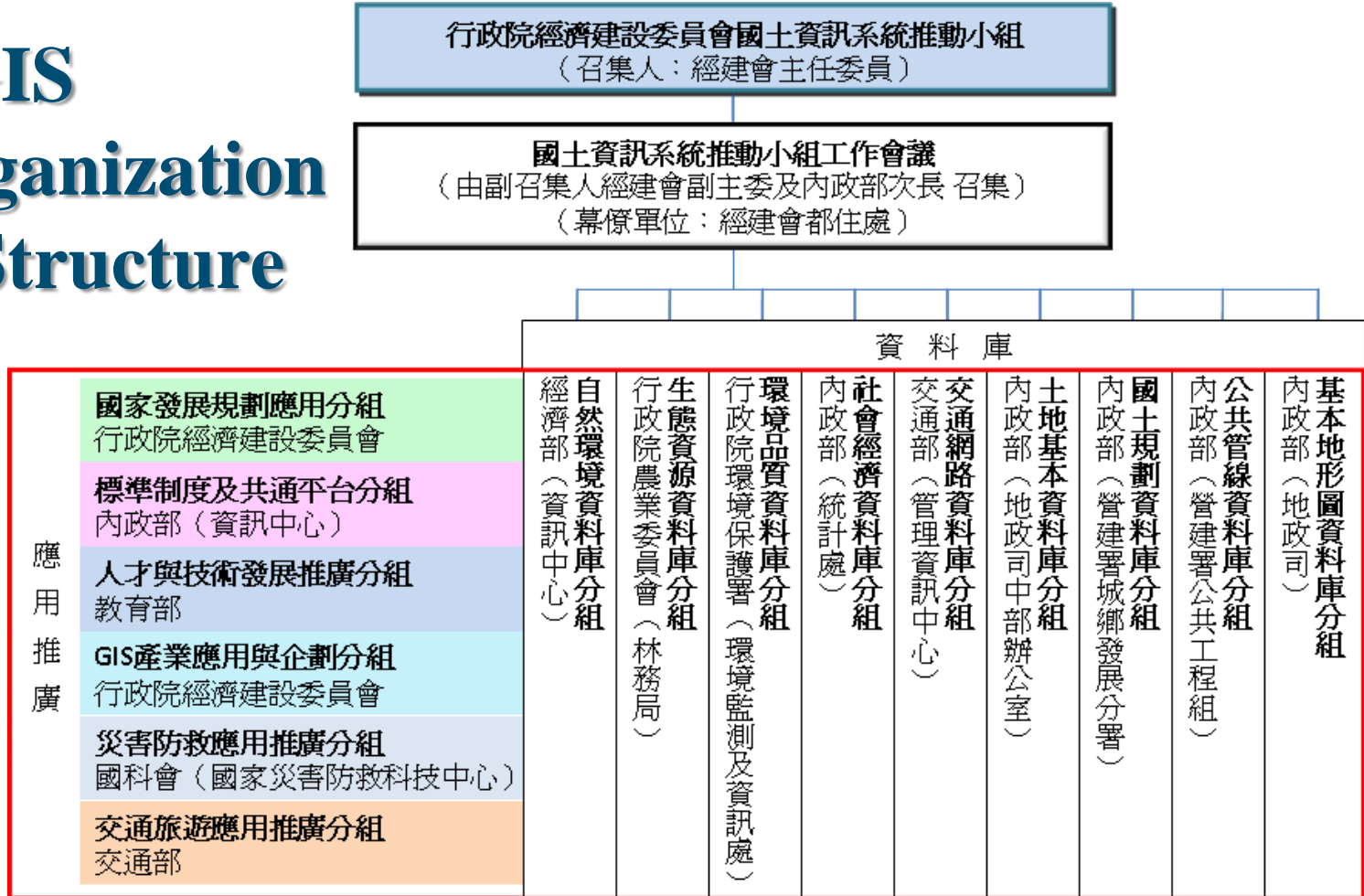
3. Status of NGIS Added Value

4. Challenges and Opportunities



1. Introduction

■ NGIS Organization Structure



1. Introduction

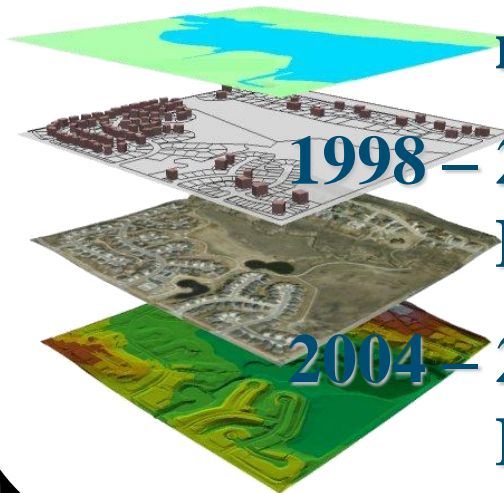
■ Development of the NGIS

➤ Information Construction Stage (Ministry of Interior):

1990: the Ministry of the Interior established a “NGIS Promotion Group” with nine major databases under it.

1998 – 2003: NGIS Spatial Data Infrastructure Plan – Phase 1

2004 – 2007: NGIS Spatial Data Infrastructure Plan – Phase 2



1. Introduction

■ Development of the NGIS

➤ Information Flow Application Stage (Council for Economic Planning and Development)

2006: NGIS Promotion Group became an Executive Yuan level unit

2006-2015: NGIS Ten-Year Plan

2009: Established promotion team for six major applications



國土資訊系統
National Geospatial
Information System

National Development

Industry Applications

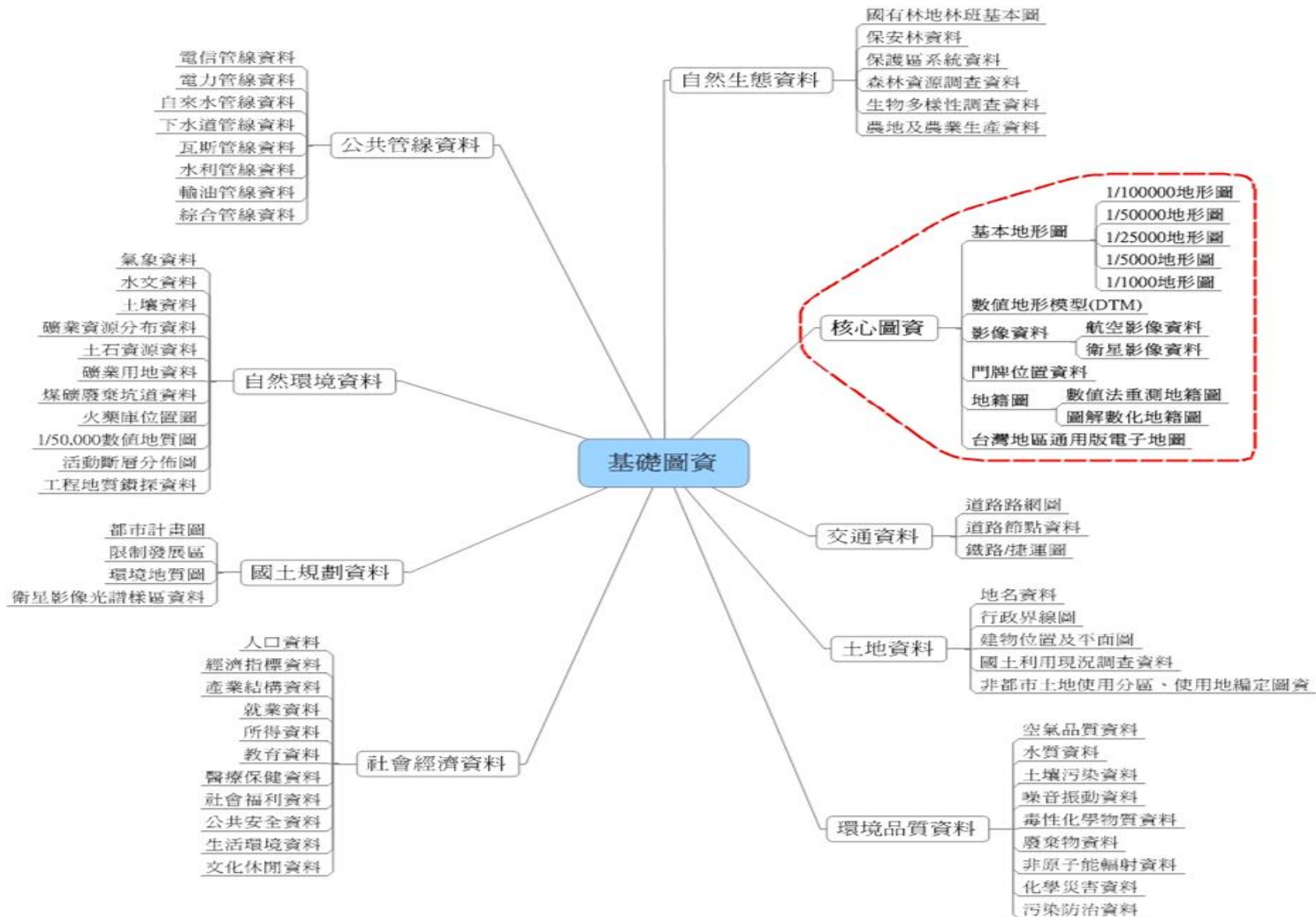
Transportation and Travel

Disaster Rescue and Prevention

Human Resource and Technology

Standard System

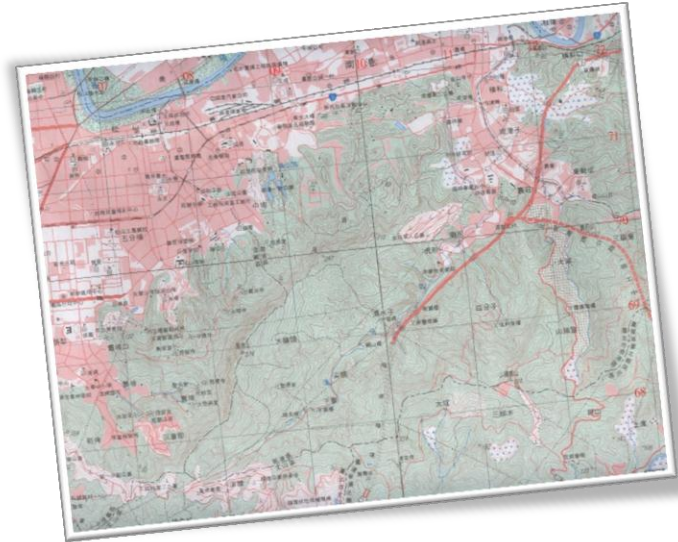
2. Results of NGIS Construction and Promotional Strategies



2. Results of NGIS Construction and Promotional Strategies

■ Base maps

- Currently completed base maps and topographical images 1/5000, 1/25000, and 1/50000 scales



■ Cadastral Data



- Cadastral maps (cadastral image files, topographical image files, lot boundary image files)
- Basic land data (measurement data, registration data, land price data)

2. Results of NGIS Construction and Promotional Strategies

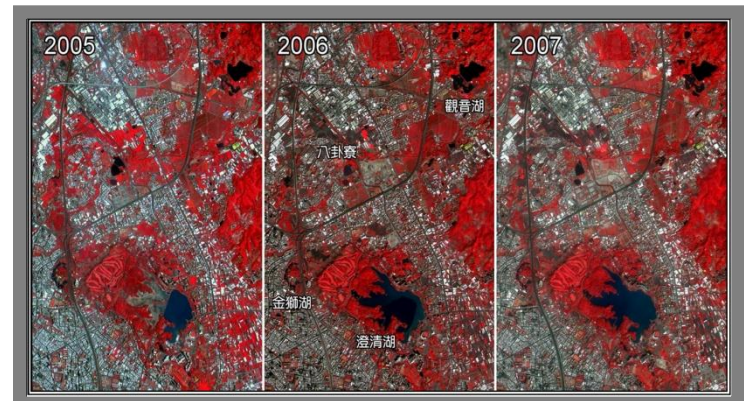
■ Aerial Photographic Image

Data

Aerial photography of the whole Taiwan area – once every two years



■ Satellite Imaging Data



2. Results of NGIS Construction and Promotional Strategies

Basic Image Resources

- National Land Utilization Survey
- Transportation Network
- Zoning
- Public Pipelines
- Socio-economic Database
- Ecological Database
- Natural Environment Database
- Environmental Quality Database
- Others



2. Results of NGIS Construction and Promotional Strategies

- **Promotion Strategy 1: Promote NGIS data standard system**

Promoting two types of data standards for “core” and “secondary core” data. First, complete “NGIS Data Standard Drafting Procedure,” outlining the steps of drafting data standards as well as the corresponding powers and responsibilities. Then draft “common regulations for data standards,” to outline content and specifications.

- **Currently 21 data standards are being announced**

Standards
Data Interpretation Standards
Administrative Area Boundary Data Standards
Control Point Data Standards
Elevation Data Standards
House Address Location Data Standards
Geographical Name Data Standards
Transportation Network Data Standards
Water Resource Location Data Standards (Rivers)
Cadastral Data Standards
Orthoimagery Data Standards
Land Utilization Data Standards
Basic Geological Data Standards
Public Pipeline Data Standards
Zoning Data Standards.....

2. Results of NGIS Construction and Promotional Strategies

■ Promotion Strategy 2: Make applications as primary focus

Resource management, disaster warning, travel and tourism, land planning, public infrastructure, area selection, etc.

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■ Using App to turn GIS into an industry

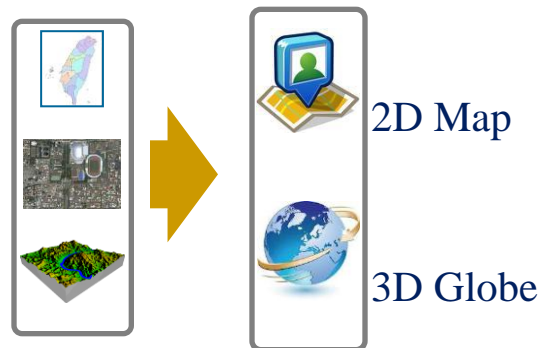


2. Results of NGIS Construction and Promotional Strategies

■ Promotion Strategy 3: Develop cloud computing geographical data services

Add GIS elements in cloud computing environment, making it one of the services offered (e.g. announce data sharing service or software services). This way, real-time GIS service can be offered on lifestyle thematic maps according to the user's actual location and conditions of use.

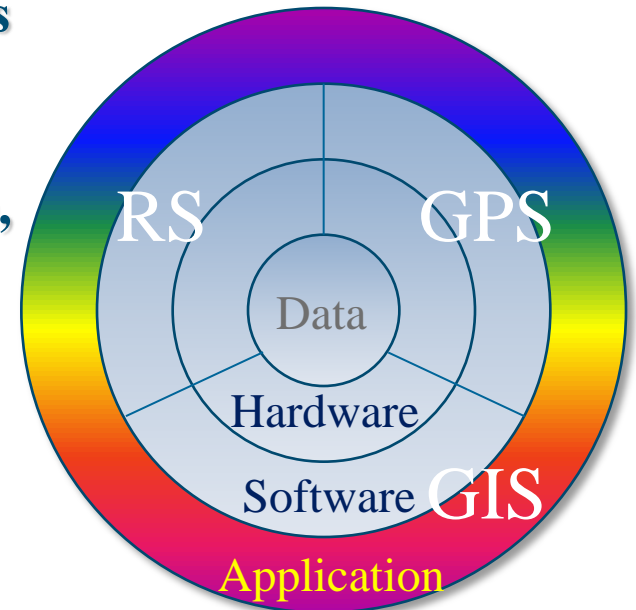
■ Constructing comprehensive image supply platform



3. Status of NGIS Open Data

■ GIS Industry Development Status

- Taiwan's location information industry includes three major professional fields: GIS, GPS, and RS. Through nearly two decades of promotion and supervision by the NGIS Promotion Group, the industry has gradually divided itself into four major aspects: data construction, hardware, software, and application services, forming an upstream/mid-stream/downstream industry chain and transitioning into an independent industry.



3. Status of NGIS Added Value

■ GIS Industry Development Status

- **Data construction:** includes surveying, digitalization, map drawing, and open data services. The advancements in measurement and remote detection technology, especially large volume of images provided by Formosa II and digital aerial photography, sped up data construction, improved the quality of the constructed data, and reduced production cost and budget.
- **Software:** Primarily software and special software modules; less comprehensive spatial data software. However, international marketing has started.
- **Hardware:** Primarily measurement and positioning equipment, mainly GPS systems. Taiwan is the top global producer of GPS systems, accounting for more than 40% market share.

3. Status of NGIS Added Value

■ GIS Industry Development Status

- **Application services:** Aside from applications crucial to national development such as disaster rescue and prevention, base data construction, and land remediation, the industry has expanded into commercial GIS for logistics, financial, security, construction and engineering, travel, transportation and shipping, feng shui, senior and child care, and medical industries, spurring the economic development of service industries as a whole. Furthermore, Taiwan has advanced wireless telecommunication and internet capabilities, allowing service industries in these two fields to start providing location based service (LBS), which in turn gives birth to commercial GIS services.

3. Status of NGIS Added Value

Industry Value Distribution of Taiwan GIS Industry

**Apps (include data construction, application services, software):
total annual industry value of NT\$2 billion**


	3-year average industry value ('NT\$100 million)	2-year average growth rate (%)	2007 (96)			2008 (97)			2009 (98)		
			Amount ('NT\$100 million)	Growth rate (%)	Percentage (%)	Amount ('NT\$100 million)	Growth rate (%)	Percentage (%)	Amount ('NT\$100 million)	Growth rate (%)	Percentage (%)
Software	2.34	9.55	2.2	-	0.13	2.43	10.45	0.13	2.39	8.64	0.17
Data construction	10.85	12.70	10	-	0.59	11.47	14.70	0.61	11.07	10.70	0.77
Application Services	8.63	11.82	8	-	0.47	9.08	13.50	0.49	8.81	10.13	0.61
Hardware	1650.13	-2.58	1,679	-	98.81	1,847	10.01	98.77	1,424.40	-15.16	98.46
Total	1671.95	-2.41	1699.2	-	100	1869.98	10.05	100	1446.67	-14.86	100

3. Status of NGIS Added Value

Government applications: financial planning for public infrastructure

- Increase tax revenues
- Increase volume and amount





公共建設計畫空間規劃支援系統
Planning Support System for Public Construction Projects

大眾運輸導向模式(TOD)

1.選擇計畫及環域預覽 2.輸入與結果輸出

公共建設計畫選擇

都市計畫土地使用分區現況	都市計畫土地使用分區規劃
樓地板面積	淡水都市計畫 內容
平方公尺	淡水新市鎮計畫 無資料
平均容積率	說明
180.00	說明

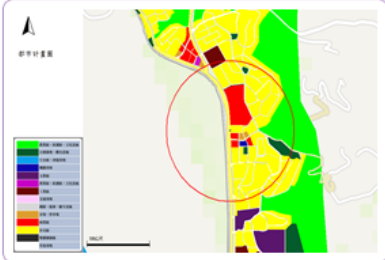
4 輸入容積成長率

預計容積成長率 % 確定

預計容積增額 平方公尺 說明

容積增額金額 萬元 說明

5 輸出空間地圖(都市計畫使用分區圖)



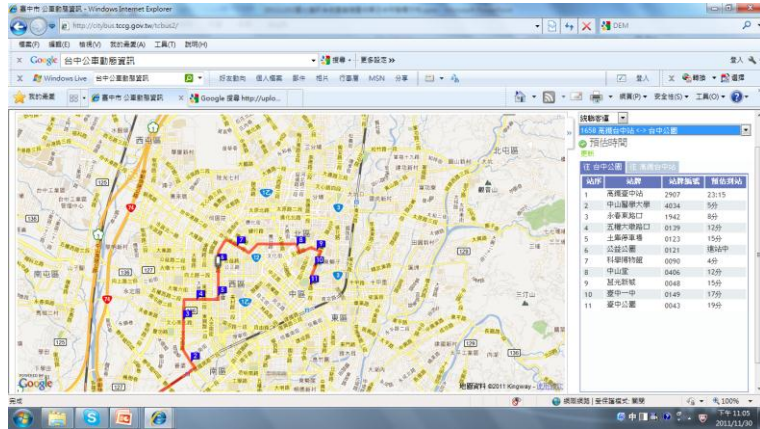
請點選地圖進行輸出

3. Status of NGIS Added Value

Disaster Rescue and Prevention: Application of spatial images during disasters or post-disaster reconstruction stage



3. Status of NGIS Added Value



Public bus movement data



Geological environment monitoring



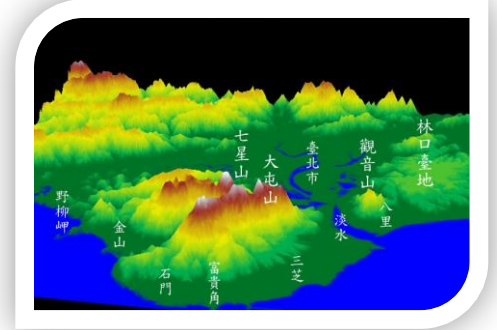
Real estate sale and lease data

4. Challenges and Opportunities

■ Obstacles to opening up NGIS Data

Issue of data confidentiality

- Aviation photographic data, remote sensing detection images, digitalized topography, and other data of similar natures fall under Article 55 of the “Land Surveying and Mapping Act” which states that “images or other relevant information which are attained by aerial survey photography and remote sensing work involve issues regarding national security or military secrets, the holders of these data must observe the National Security Information Protection Act and its relevant legal regulations.
- **Opportunity:** Resolution of confidential images can be lowered before providing them to the public.



4.Challenges and Opportunities

■ Obstacles to opening up NGIS Data

Issue of fees and charges



Some NGIS data are covered under Article 8 of the Charges and Fees Act stating that “When providing or offering any of the following to a certain party for his/her use, the Agency/School shall collect user charges: 2. signs, data (information), transcript, photocopy, duplicate, gazette, publication, statement, introductory literature and drawings; 3. the transcription, mailing or transmission of data (information), or the perusal of file

Opportunity: System of providing data (information) replaces the traditional (one-time fee). At the same time, a fund is established, using the revenue to maintain NGIS database.

4. Challenges and Opportunities

■ Future Directions of the NGIS



- **Service-oriented**
- **Market-oriented**
- **Application-oriented**



行政院 經濟建設委員會

COUNCIL FOR ECONOMIC PLANNING AND DEVELOPMENT

Thank You