

台灣應如何調適氣候變遷



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簡報大綱

調適：以水患治理為例

台灣因應氣候變遷

台灣氣候變遷調適政策綱要架構

台灣擬定調適政策的困難

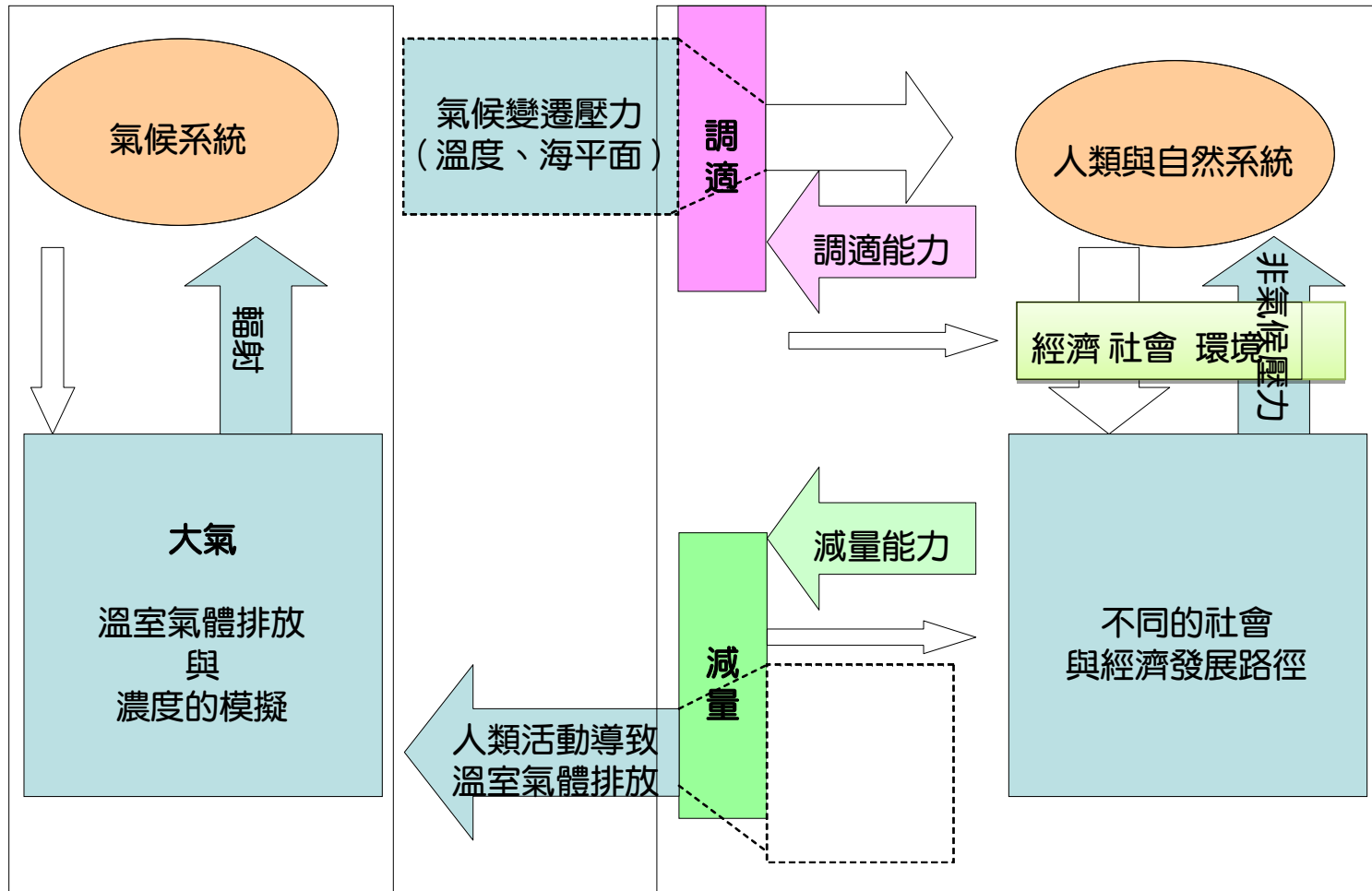
未來發展重點

調適與減量

(Munasinghe and Swart, 2005)

氣候面向

永續發展面向



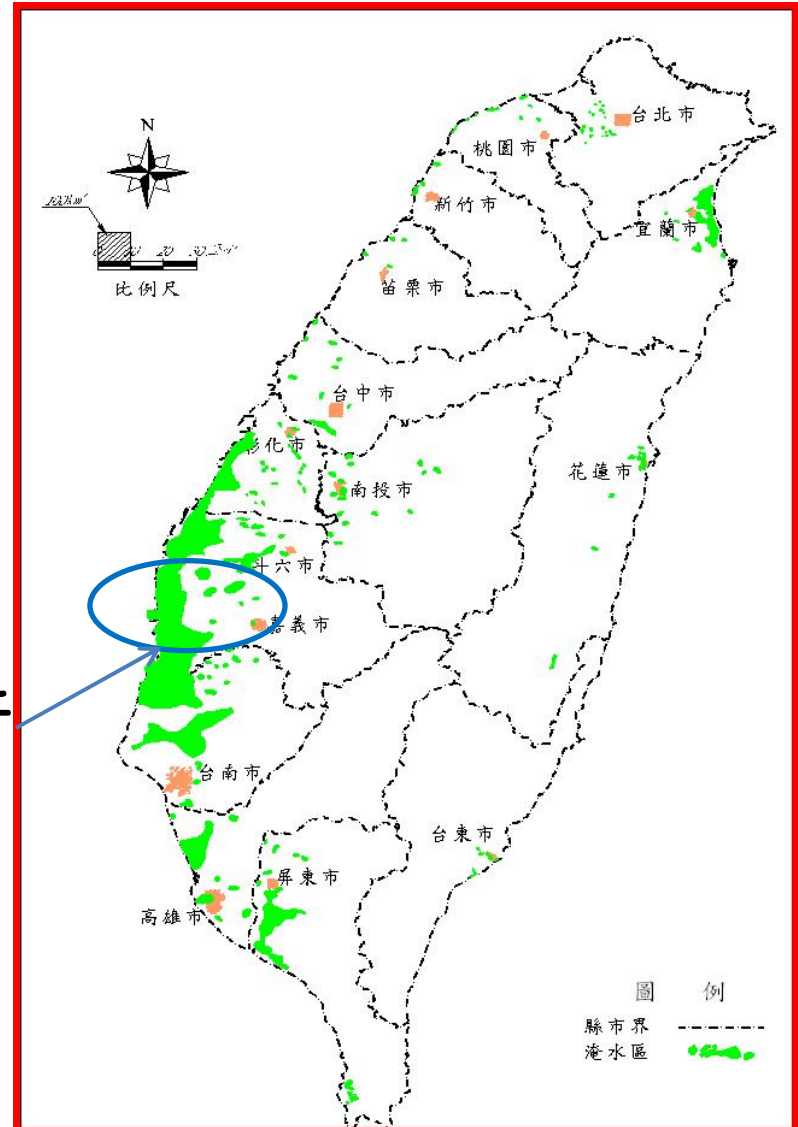
調適：以水患治理為例

易淹水地區水患治理計畫

- 台灣易淹水區總面積約1,150平方公里
- 2005年通過「易淹水地區水患治理計畫」
 - － 總預算1,160億
 - － 分8年執行
- 以新塹示範區之成本效益分析為例

2006年通過

「水患治理特別條例」



個案研究：新塭地區

(國家災害防救科技中心，2008)

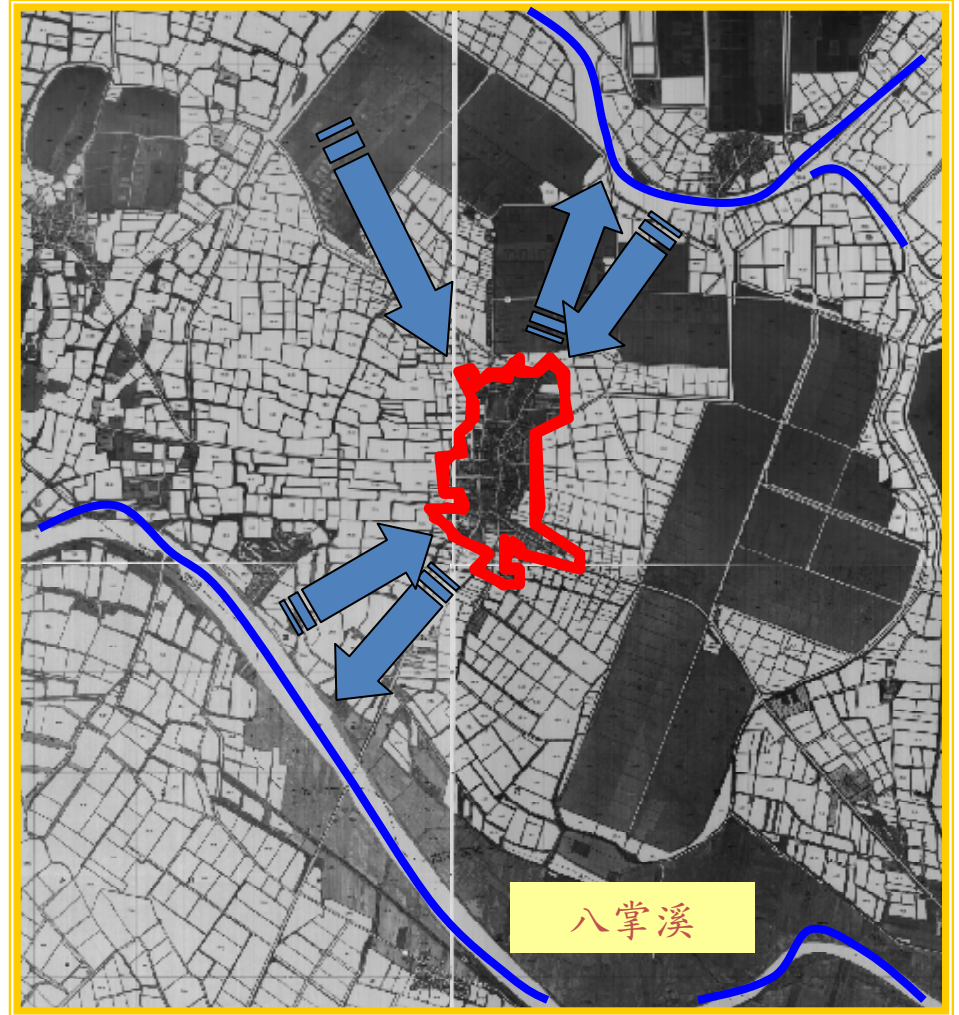
- 集水區特性

- 計畫區位於嘉義縣南部沿海，八掌溪與龍宮溪之間，鄰嘉義、台南縣界
- 集水面積約700公頃

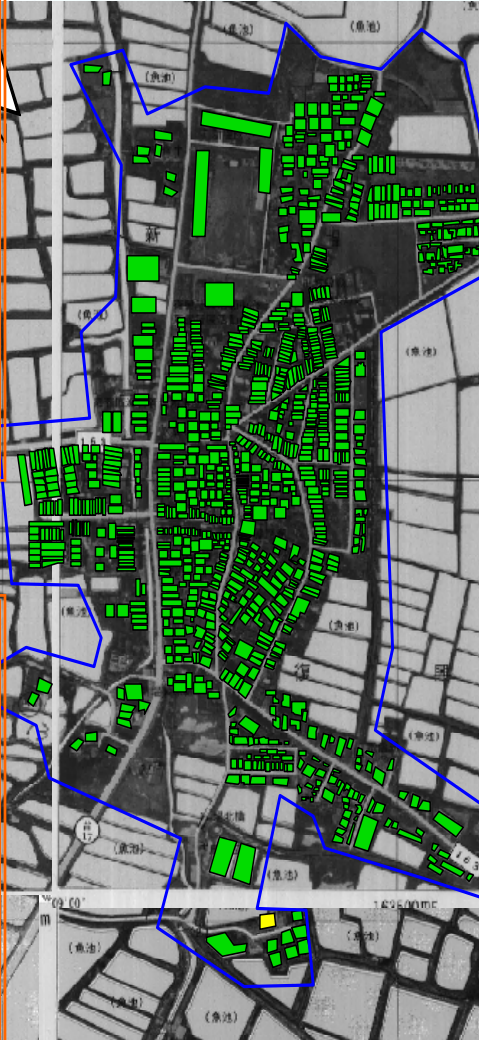
- 排水特性

- 本地區排水坡度約1/2,500，村內田面高程約0.5~1.0m
- 集水區內之排水，以區域排水及漁塭排水為主
- 豪雨期逢海水及溪水高漲，多數區段無法以重力排水

個案研究：新塭地區



個案研究：新塹地區



地基增高之住宅



地基未增高之住宅

個案研究：新塹地區

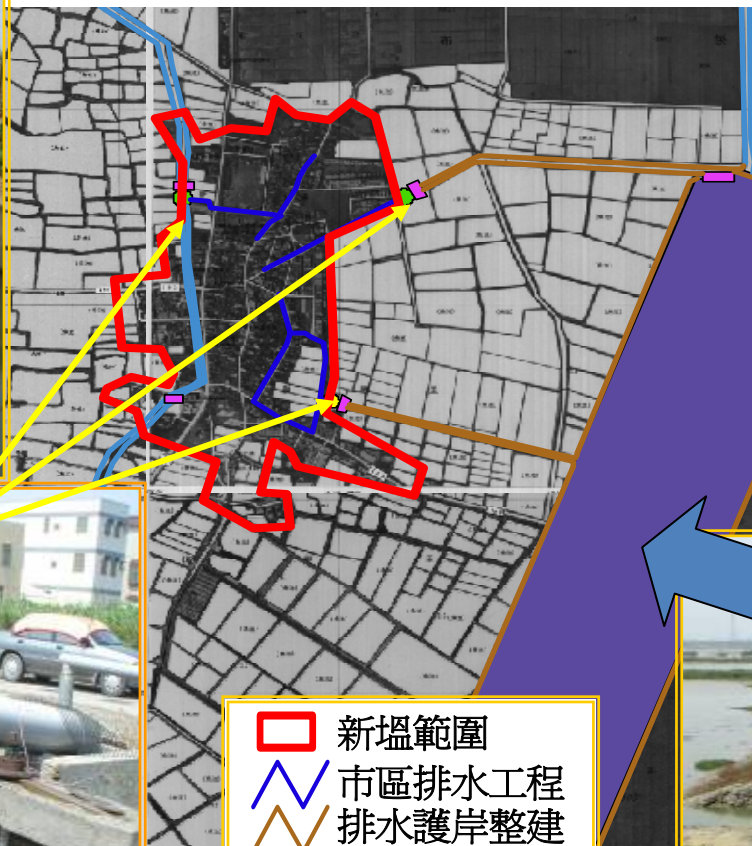
排水系統改善



補強村落圍堤



改善及新設抽水站



- 新塹範圍
- 市區排水工程
- 排水護岸整建
- 水門改建
- 排水加高補強
- 改善-舊抽水站
- 新建-蓄洪池

利用鹽田設置滯洪區



結論

Present value of benefits (B)	279,560,897 (NT dollars)
Present value of costs (C)	467,880,016 (NT dollars)
Benefit-cost ratio (B/C)	0.6

- 啟示
 - 效益有限，成本過高
 - 尚未將海平面上升納入防災工程規劃之考量
 - 未考量最大可能損失
 - 未考量到現在防災工程可能引導出未來氣候變遷下更易受災的區域發展
 - 因此，防災規劃需納入氣候變遷之考量，提出周延的替代方案，並應符合成本效益原則

台灣氣候變遷因應政策

氣候變遷因應政策

減量政策

調適政策

溫室氣體減量法

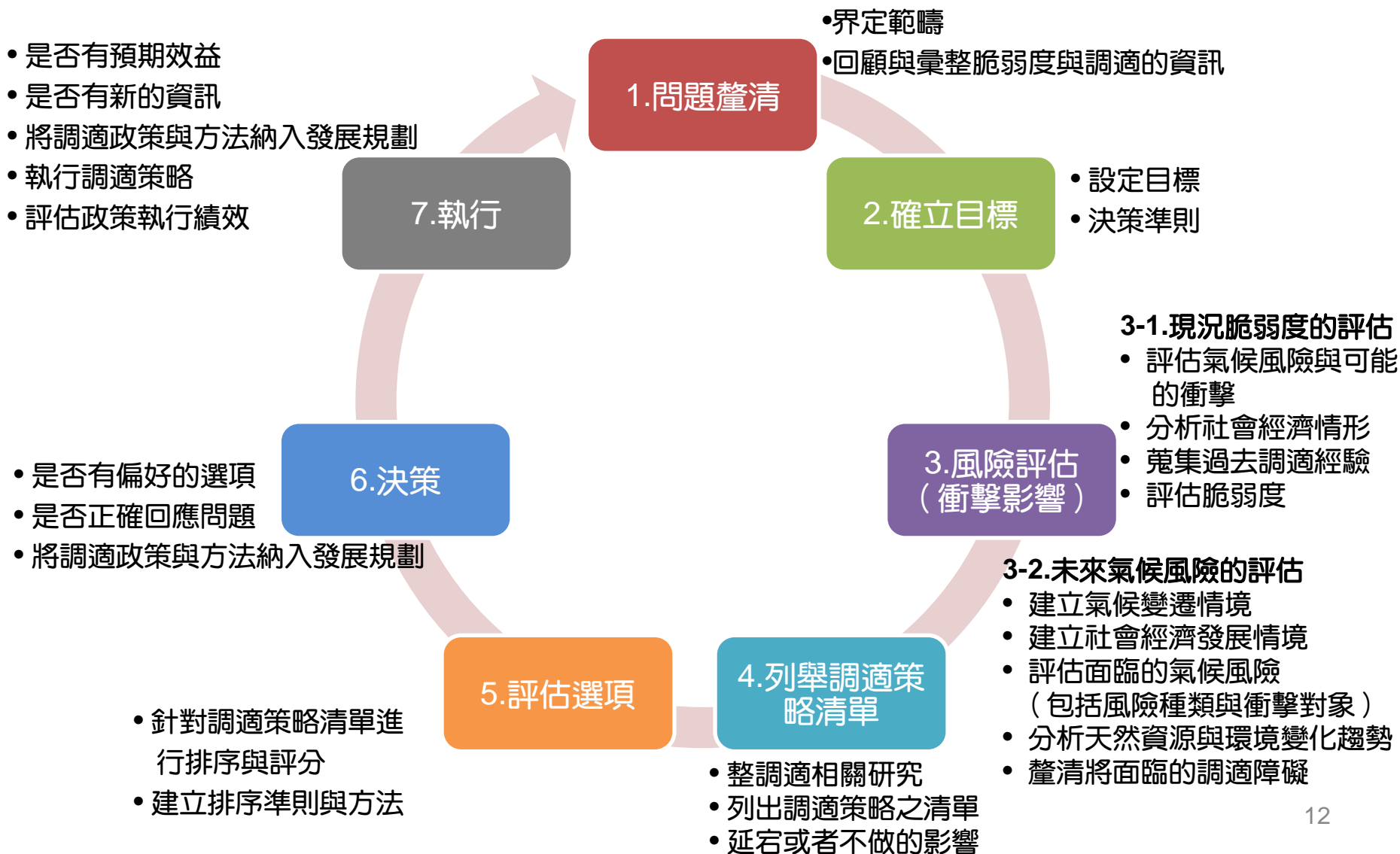
自願性減量

能源稅/碳稅

衝擊研究

防災

台灣氣候變遷調適架構



台灣擬定調適政策的困難

未來氣候變遷情境與衝擊尚不明確

尚未建立社會經濟發展情境

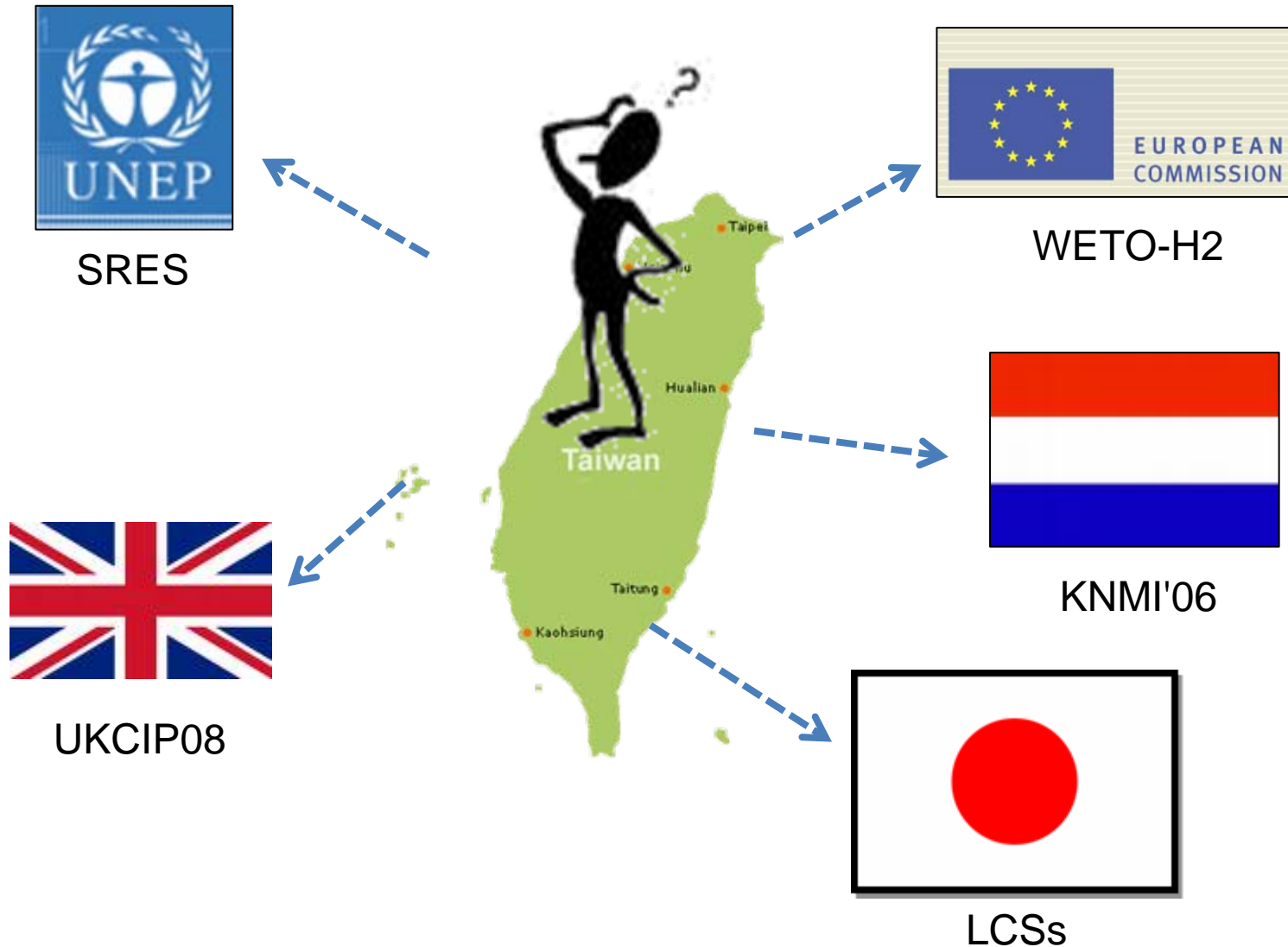
尚需結合氣候變遷情境與社會經濟情境之調適策略評估方法

未來發展重點

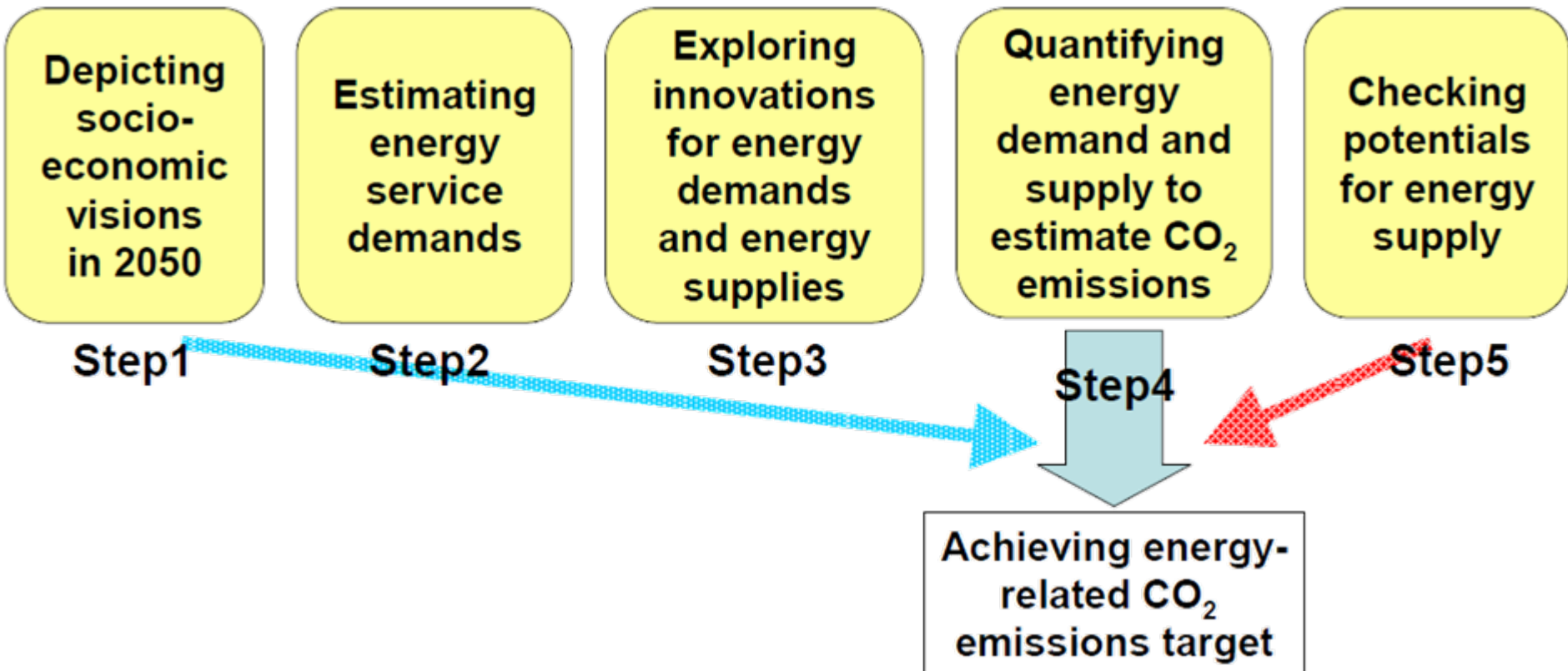




- 確定台灣氣候變遷情境與衝擊
- 建立台灣社會經濟發展情境
 - 主要目的
 - 確定台灣減量目標
 - 確定受衝擊的對象
 - 規劃台灣發展方向
- 建立調適策略評估方法

台灣的氣候變遷情境與社經情境??



日本低碳社會情境



Scenario A: Vivid	Scenario B: Slow
Technology-driven	Nature-oriented
Urban/Personal	Decentralized/Community
Technology breakthrough Centralized production /recycle	Self-sufficient Produce locally, consume locally
Comfortable and Convenient	Social and Cultural Values
2%/yr GDP per capita growth	1%/yr GDP per capita growth
	 <p data-bbox="994 1278 1110 1335">Akemi Imagawa</p>

經濟情境

Keywords	Scenario A	Scenario B
Economy:		
Annual growth rate	<ul style="list-style-type: none"> • Approximately 2% of GDP per capita growth rate 	<ul style="list-style-type: none"> • Approximately 1% of GDP per capita growth rate
Technology development rate	<ul style="list-style-type: none"> • High 	<ul style="list-style-type: none"> • Moderately high
Industry:		
Market	<ul style="list-style-type: none"> • Reducing regulation 	<ul style="list-style-type: none"> • Penetration of market rules with moderate regulation
Primary industry	<ul style="list-style-type: none"> • Decrease in share • Increase in import dependency 	<ul style="list-style-type: none"> • Relatively less decrease • Reduced import dependency
Secondary industry	<ul style="list-style-type: none"> • Tendency to heighten the added value • Globalization of production bases 	<ul style="list-style-type: none"> • Decrease in share • Limited production of diversified products with local brand
Service industry	<ul style="list-style-type: none"> • Increase in share • Increase in productivity 	<ul style="list-style-type: none"> • Increase in share • Increase in social activity

Key words	Scenario A	Scenario B
Migration: Decrease in population across all region	Population and capital would be concentrated more in urban areas because of the increase in urban preference of the people and pursuit of convenience/efficient lifestyles	Decentralization of population and capital would occur because of the increasing need for slower lifestyles of the people.
Metropolitan area:		
Urban	Intensive land use (vertical use of land area including underground space) in urban areas would allow people to live near their work places, and the ratio of people who live in convenient urban areas increases.	It becomes more common to move out from urban centers and people want to migrate where living environment matches with their own lifestyles. The capital city and other core cities remain moderate in size and population.
Suburb	Emigration of population would be observed in suburb area, however, most of the it would be redeveloped as amusement facilities or natural symbiosis areas through well-planned and effective urban designing	Outflow of population and capital would continue. Therefore, the regeneration plan is targeted to develop these areas as independent urban cities rather than suburbs of mega-city.
Local area:		
Urban	A number of local cities discontinue functioning as core city, however, some cities get re-developed as bases for land intensive businesses such as mass plantation or power generation.	Decrease in population would be restricted since sufficient health services or education can be enjoyed in those areas. There would be many attractive local cities with original cultures and unique features. Citizens and NGOs play important roles in decision making processes.
Agricultural, Mountainous area	Many agricultural areas or mountainous areas would suffer from depopulation. The regeneration efforts are targeted to effective use of land and resources. Agriculture, forestry and fisheries industries are operated by big private companies, Efficient use of resources such as manpower, materials, and capital become possible. Some areas are designated as national parks.	More people migrate from urban to rural areas due to increasing attractiveness of agriculture, forestry and fisheries industries. In addition to permanent farmers, increasing numbers of families enjoy secure food supply and healthy life-styles in rural areas while pursuing businesses in the pattern of Small Office Home Office (SOHO).

社會情境

簡報結束，歡迎討論!