

# A Case Study on multi-level governance between central and local Governments - an example of New Taipei City

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## Abstract

New Taipei City is the largest and most populous city in Taiwan. Being very active on climate change policies, the City also received assistance from the Environmental Protection Administration (EPA) to integrate climate risk assessments using the Taiwan Climate Change Adaptation Technology Knowledge Platform (TaiCCAT), a supportive system for decision-making developed by the Ministry of Science and Technology (MOST) since 2015. The City's adaptation strategy and plan were devised through Bureau interviews, inter-departmental discussions and numerous opinions collected from various stakeholders. In 2016, the City government further established 'The platform of mitigation and adaptation for climate change of New Taipei City', which host regular meetings chaired by the vice-mayor. In addition to incorporating a citizen participation mechanism to actively demonstrate more effective, transparent and trustworthy policies, the platform also acts as a bridge amongst the City's authorities to develop effective mitigation and adaptation strategies.

**Keywords:** *Government policy, Adaptation strategy, Multi-level governance, Taiwan*

## Introduction

Taiwan is an island country with a total population of 23 million people. Its terrain is diverse and mostly mountainous which, along with abundant water vapors, creates a complex and unique ecosystem, covering special flora and fauna of the cold to temperate, subtropical and even tropical zones within an area of about 36,000km<sup>2</sup>.

According to observational data, the occurrence of dry years has significantly increased from 1960 to 2017, and extremes in annual precipitation have also increased (Water Resources Agency, Ministry of Economic Affairs, 2017). According to the Taiwan Climate Change Science Report (2011), changes in rainfall are likely to increase with further warming from the greenhouse effect. Under RCP 8.5 scenario, the precipitation during rainy season will increase by 14% to 20% by the end of the 21<sup>st</sup> century.

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In terms of temperature in Taiwan, observation data indicates that annual temperature (land temperature) has risen by about 1.3°C over the past 100 years (1900-2012), and the warming rate has accelerated. In addition, it is estimated that the temperatures in Taiwan may increase by 3.0 to 3.6°C under the RCP 8.5 scenario by the end of the 21<sup>st</sup> century, especially in the northern regions (Taiwan Climate Change Science Report, 2017).

In 2009, in response to forthcoming impacts of climate change, central authorities in Taiwan have begun preparation to review relevant policies, carry out systematic restructure or reinforcements, and conduct risk assessments based on their respective responsibilities. In 2010, the National Development Committee (NDC) invited relevant ministries, experts, scholars, NGOs, and industrial representatives to set up a Task Force for “Formulating and Promoting the Climate Change Adaptation Policy Framework and Action Plan” for rigorous policy-planning, whilst MOST was assigned the task to summarise studies from Taiwanese academics, along with reference to definitions and scenarios from IPCC’s fourth assessment report (AR4), which led to the publication of the ‘Taiwan Climate Change Science Report 2011’. The report became the foundation for the taskforce to subsequently develop the ‘National Climate Change Adaptation Policy Framework’ and the ‘National Climate Change Adaptation Action Plan 2013-2017’, and finally the local adaptation assessment in 2013.

On 1<sup>st</sup> July 2015, Taiwan promulgated the "Greenhouse Gas Reduction and Management Act" (the Act), allocating responsibilities to all relevant authorities, whilst EPA serves as the competent authority for climate change policies in Taiwan (**Figure 1**). In accordance to the Act, the 'National Climate Change Action Guideline' was announced on the 23rd of February, 2017, setting explicit objectives for the country, outlining general principles where related strategies must refer to, and policies to be adopted when tackling climate change topics.

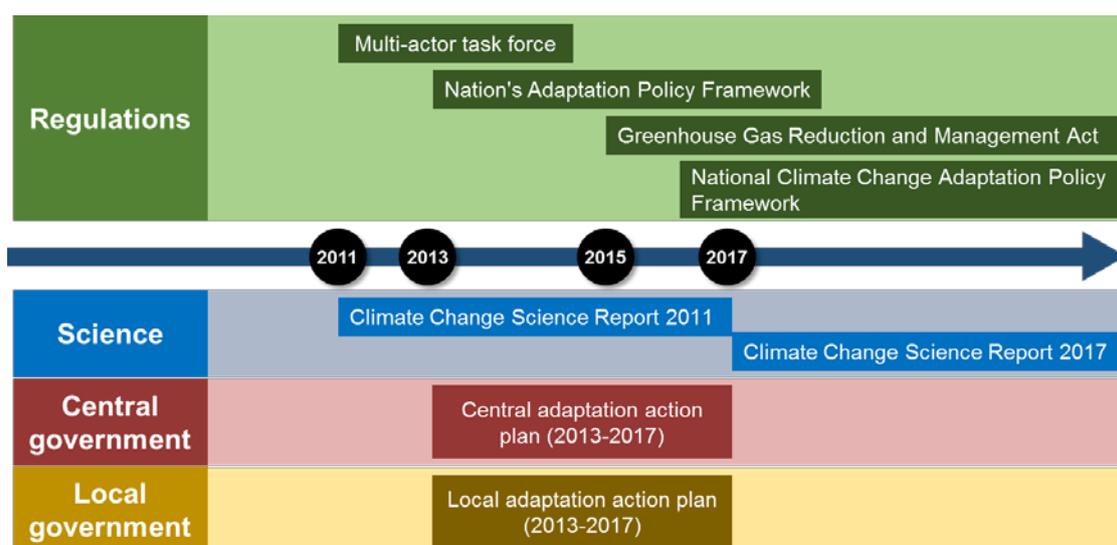


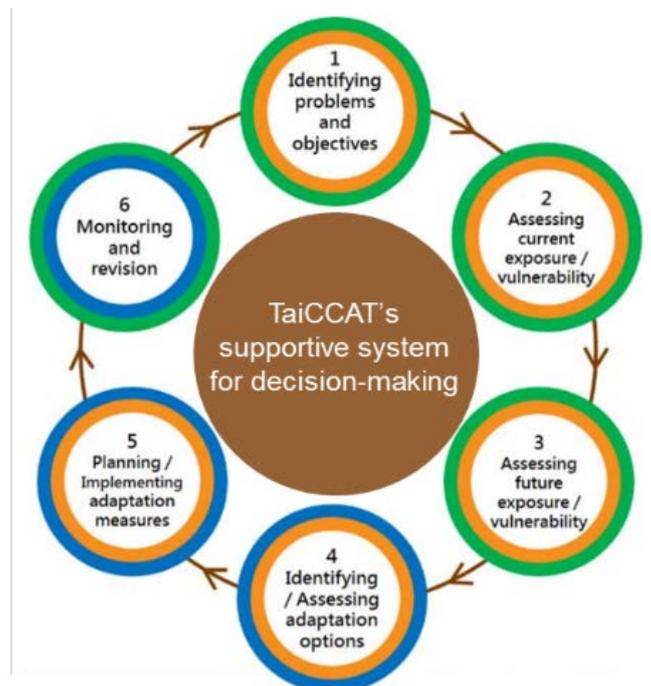
Figure 1. The timeline of Taiwan's adaptation policy (Source: Authors own)

## Methodology

While it is generally agreed that adaptation policies must be devised according to local conditions, local governments often encounter problems such as lack of funding, resources, and manpower to implement. Therefore the Central government in Taiwan has the overall responsibility of budgets, legislation, guideline and scientific database, while local government has to prioritize collaboration and implement action.

In New Taipei City, the adaptation assessment framework developed by TaiCCAT (Taiwan integrated research program on climate change adaptation technology)(**Figure 2**), which is dedicated to generate dynamic scientific approaches that can assist the public and private sectors to develop effective adaptation strategies. TaiCCAT was utilised as a standard operating procedure, where central or local authorities can assess adaptation options.

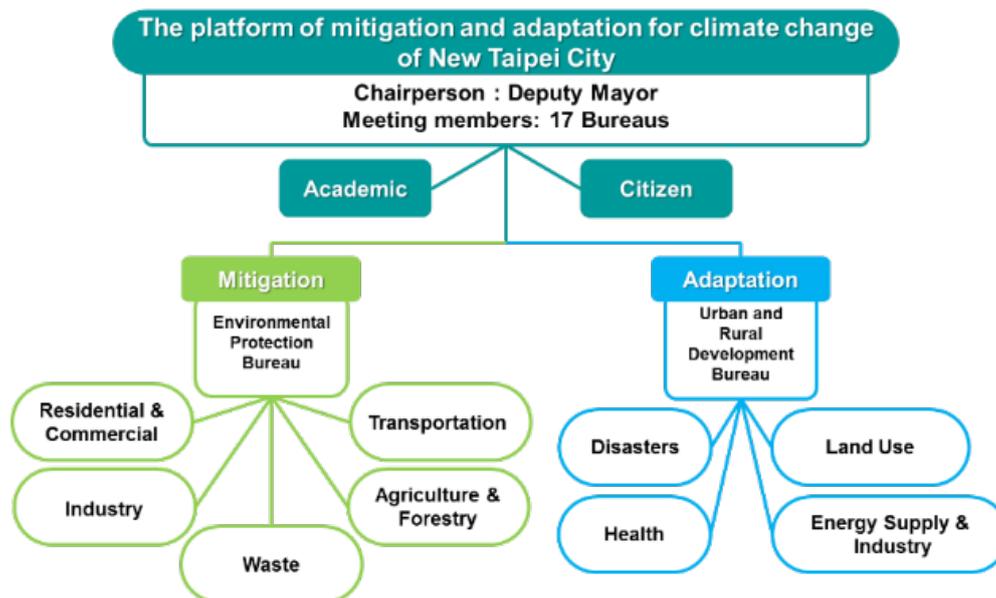
More than thirty bureau interviews and six inter-departmental meetings were held to accelerate communication and coordination amongst bureaus, which as a result achieved further understandings to the City's priorities and successfully developed the adaptation strategy and plan for New Taipei City.



*Figure 2. TaiCCAT's supportive system for decision-making  
(Source: Ministry of Science and Technology, 2014)*

## Results

In order to effectively enhance horizontal communication amongst local authorities, the City Government established the ‘The platform of mitigation and adaptation for climate change of New Taipei City’, which includes 17 bureaus, such as Environmental protection bureau, Urban and rural development bureau, Economic development bureau etc. The platform hosts meetings at least once every season, with academic and NGO invited depending on the agenda. Because the responsibilities of each bureaus is unique, the platform chairperson has to be the deputy mayor or personnel of similar status, in order to achieve effective coordination and collaboration amongst bureaus, and according to the ‘National Climate Change Adaptation Policy Framework’ as well as 6 cross-office meetings with different bureaus, academics and environmentalists. Out of the eight adaptation topics outlined by the taskforce, the platform identified four key topics and major bureaus including “disaster (fire bureau)”, “health (health bureau)”, “land use (urban and rural development bureau)”, and “energy supply and industry (economic development bureau)” (see **Figure 3**), where respective bureaus develop corresponding local strategies, and may invite relevant bureaus for assistance.



*Figure 3. The platform of mitigation and adaptation of New Taipei City (The Environmental Protection Bureau, 2016)*

Taiwan’s multi-level governance identifies the roles of central and local governments. The central government should establish scientific foundations and policy frameworks which can guide for local adaptation policy-making . The local authorities can strive for budgets and collaborate with central authorities to implement strategies. Taking the New Taipei city as an example, the platform has identified ‘health’ to be a key adaptation sector, the ‘Health bureau’ is mainly responsible, with related bureau invited (such as the environmental protection

bureau) to jointly devise strategies. After vigorous discussions, the Health bureau follow the infectious disease prevention guideline made by the Ministry of Health and Welfare to implement dengue fever monitoring and local community environment cleaning.

## Conclusion

Taiwan has completed the first national five-year adaptation phase, made progress on local adaptation efforts, but there are also obstacles that must be identified. Communication is critical to collaborations amongst authorities. Although successful executions have been carried out in New Taipei City, there are incidents where stakeholders were unable to reach a consensus, thus affecting the final outcome of adaptation actions. The next phase of adaptation will require authorities in Taiwan to consult the proper expertise, collaborate more effectively, converge available resources, focus on local issues, and must recognise that it is imperative to devise policies in a non-exhaustive approach towards critical topics. It should also be noted that EPA is currently developing a national adaptation information platform, currently focusing on synthesizing information from central authorities, in the hope to ultimately promote adaptation transparency and wisdom. Now, Taiwan is currently revising previous adaptation policies, and on the verge of starting a new phase, the promulgation of the Act weighs clear responsibilities on central authorities to assess, design and implement adaptation strategies, whilst promoting collaboration with local authorities and private sectors to practically enhance localised adaptation action.

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