APCEL Climate Change Adaptation Platform

The Overall Policy Framework to Deal with Climate Adaptation in Taiwan

by

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(Acknowledgement: This article was completed with funding provided by the Ministry of Science and Technology, Project Nos. 103-2410-H-007-016 -MY2; 105-3113-F-007 -003)

I. The Slow Progress of Climate Adaptation Policy in Taiwan

Taiwan has spent considerable effort in mitigating climate change. Since 1992, a lot of policy initiatives have dealt with mitigation, such as 1998 Energy White Paper by Energy Commission Taiwan. In spite of the potential link between adaptation and mitigation, the formal official government policy plan to deal with adaptation has developed slowly in Taiwan. After the publication of the UNDP Adaptation Policy Framework (APF) in 2005, many country or regional initiatives were introduced, such as the European Union 2007 green paper on climate adaptation,[2] the Australia Great Barrier Reef climate change action plan for 2007-2012, and the Dutch National Programme for Spatial Adaptation to Climate Change (ARK) (2007).[3] In Taiwan, the completion of the draft National Climate Adaptation Strategy came late in 2010,[4] while the final version was formally announced and approved by the Council for Economic Planning and Development (CEPD) in October 2012.[5]

II. The Main Elements of the Adaptation Strategy

With a focus on implementation of the adaptation strategies in Taiwan, several key elements in this adaptation policy document should be emphasized.

1. Comprehensive Institutional Design

Adaptation includes, inevitably, cross-ministerial issues. Therefore, this policy framework provides a comprehensive institutional design as shown in Figure 1.

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[2] European Commission Green Paper of June 29, 2007 on adapting to climate change in Europe - options for EU action [COM (2007) 354 final - Not published in the Official Journal]. *L28193 - EN - EUR-Lex* (2009) Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV%3Al28193 (Accessed: 4 March 2016).

[3] Available at: http://climate-adapt.eea.europa.eu/viewaceitem?aceitem_id=6417 (Accessed: 4 March 2016)

[4] http://unfccc.epa.gov.tw/epacafe/info/3-2%20%E6%B0%A3%E5%80%99%E8%AE%8A%E9%81%B7%E8%AA%BF%E9%81%A9%E6%94%BF%E7%AD%96%E7%B6%B1%E9%A0%98-1-6%E7%AB%A0%EF%BC%88%E8%8D%89%E6%A1%88%EF%BC%89.pdf

[5] Council for Economic Planning and Development, Adaptation Strategy to Climate Change in Taiwan (2012). http://www.tcap.ndc.gov.tw/images/pdf/%E5%9C%8B%E5%AE%B6%E6%B0%A3%E5%80%99%E8%AE%8A%E9%81%B7%E8%AA%BF%E9%81%A9%E6%94%BF%E7%AD%96%E7%B6%B1%E9%A0%98-%E8%8B%B1%E6%96%87%E7%89%88.pdf

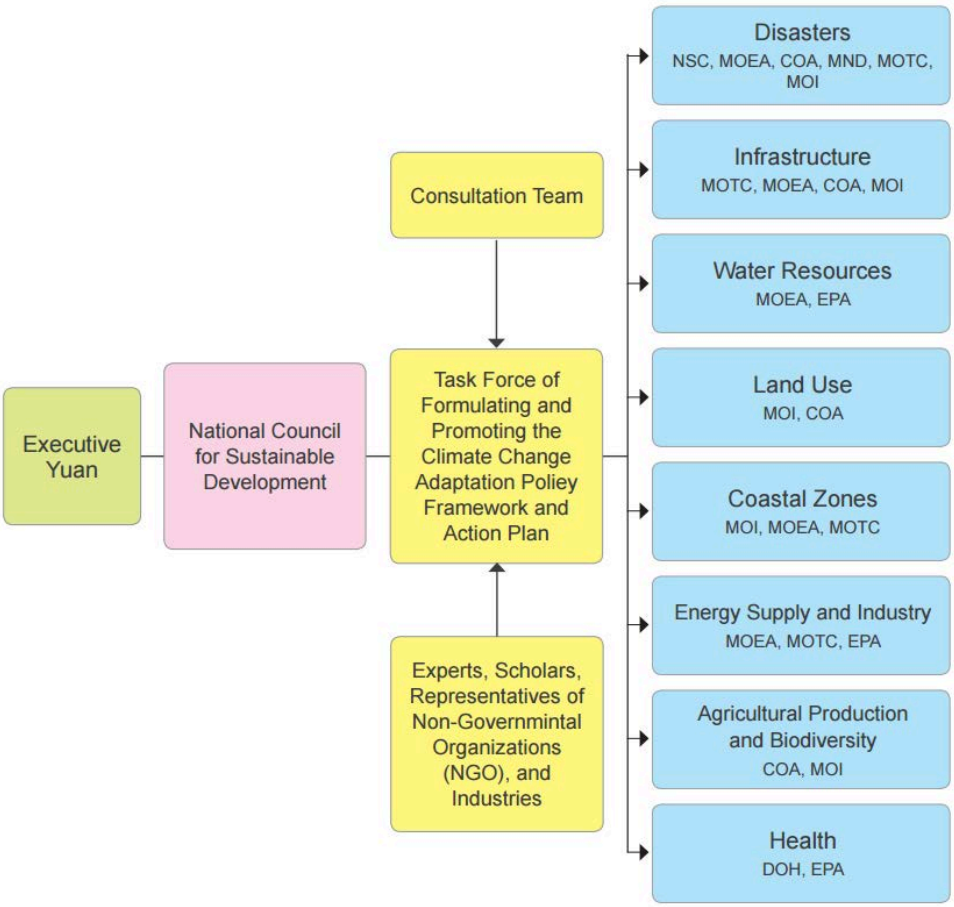

Figure 1. Comprehensive Institutional Design for Adaptation Issues in Taiwan
(Source: Council for Economic Planning and Development, Adaptation Strategy to Climate Change in Taiwan (2012), p. 11)

2. Key Affected Sectors and Main Impacts

The policy document identifies the sectors that are affected and the main impacts, as shown in Figure 2.

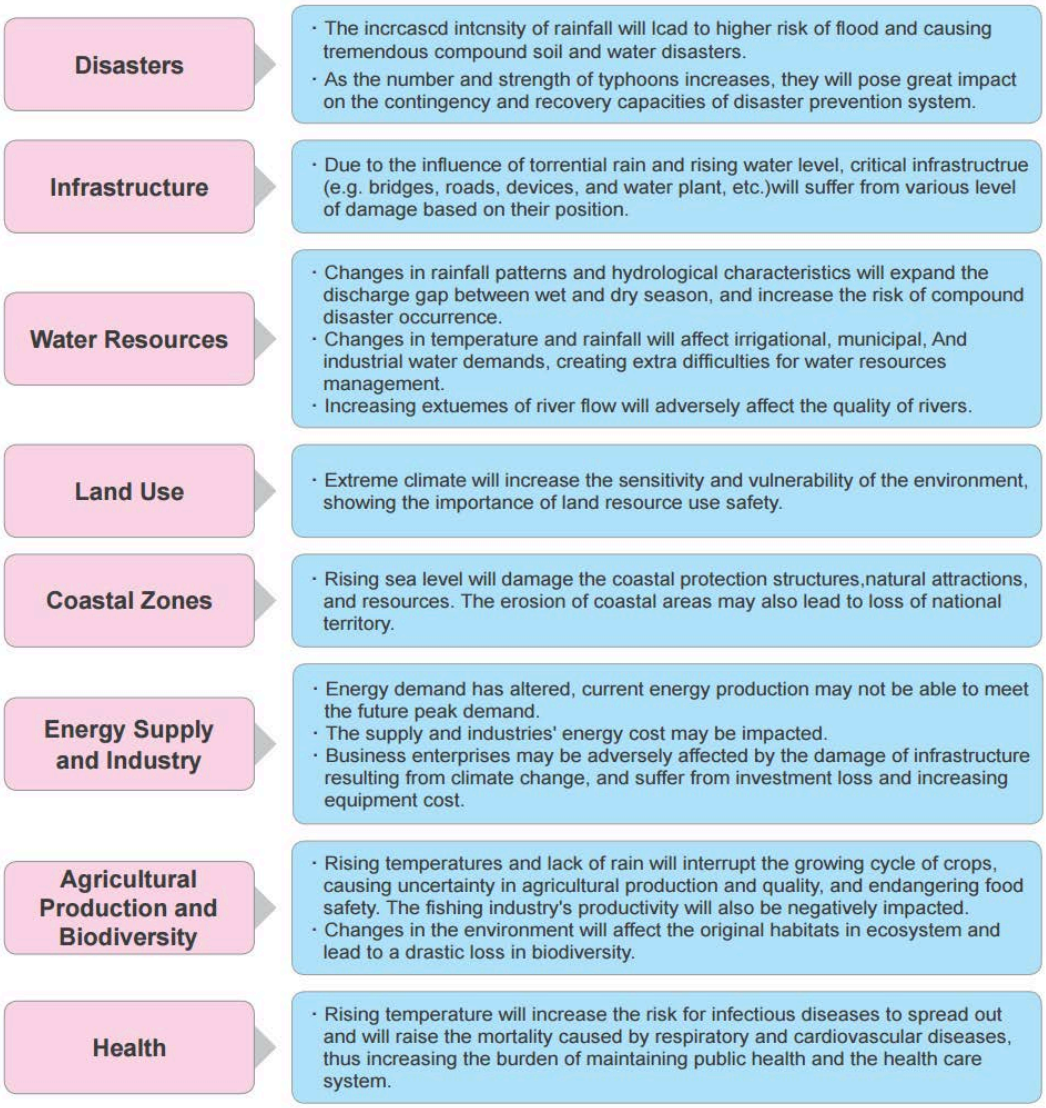

Figure 2. The Affected Sectors and the Main Impacts in the Adaptation Strategy
(Source: Council for Economic Planning and Development, Adaptation Strategy to Climate Change in Taiwan (2012), p. 19)

3. Challenges and Strategies

Different challenges will be faced by different sectors. For instance, in disaster sectors, floods and slope land disasters are both critical issues. The increasing frequency of typhoons will increase the risk of cascading disasters and the difficulties of recovery. Rising sea levels will result in drainage difficulties in low-lying regions.[6]
To tackle these challenges, the *overall* and *sector-specific* strategies must be further developed.

Table 1. The Overall Adaptation Strategy and the Strategy in the Disaster Sector

[6] Council for Economic Planning and Development, Adaptation Strategy to Climate Change in Taiwan (2012), p. 20.

Overall strategy	1 Implementing territorial planning and management. 2 Enhancing disaster prevention and avoidance capacities in the environmental, social, and economic systems. 3 Carrying out comprehensive river basin governance. 4 Prioritizing high-risk regions for climate change. 5 Enhancing prevention and protection capacities for adaptation in urban areas.
Sector-specific Strategy, e.g., Disaster Sector	1 Surveying and evaluating climate change disaster risks and identifying the high disaster risk areas. 2 Enhancing the integration of environmental monitoring and disaster warning systems and creating a platform for information exchange, enhancing the capacities in response to the impacts of climate change. 3 Reviewing and evaluating the vulnerabilities and prevention capacities of current critical public construction facilities and reinforcing disaster prevention and protection plans. 4 Including the impact of climate change in major construction and development plans. 5 Carrying out comprehensive river basin management and reducing the overall risk of climate change. 6 Strengthening the capacity for responding to the impact of extreme climatic events, communicating the risk information in impacted and endangered areas, and carrying out disaster reduction education, early warnings, and drills for those areas.

(Source: Council for Economic Planning and Development, Adaptation Strategy to Climate Change in Taiwan (2012), pp. 37-40)

III. A Further Detailed Plan for Implementing the Adaptation Strategies

Due to the strategic nature of this framework document, the details for implementing these strategies are provided in nine separate documents. These include:

- The National Climate Adaptation Action Plan (2013-2017) (May 2014).
- Eight sector-specific Action Plans (2013-2017) for the disasters sector, the basic infrastructure for the living sector, the water resources sector, the land use sector, the coastal zones sector, the energy supply and industry sector, the agricultural production and biodiversity sector, and the health sector (May 2014).

The conceptual relationship between these documents is demonstrated in Figure 3.

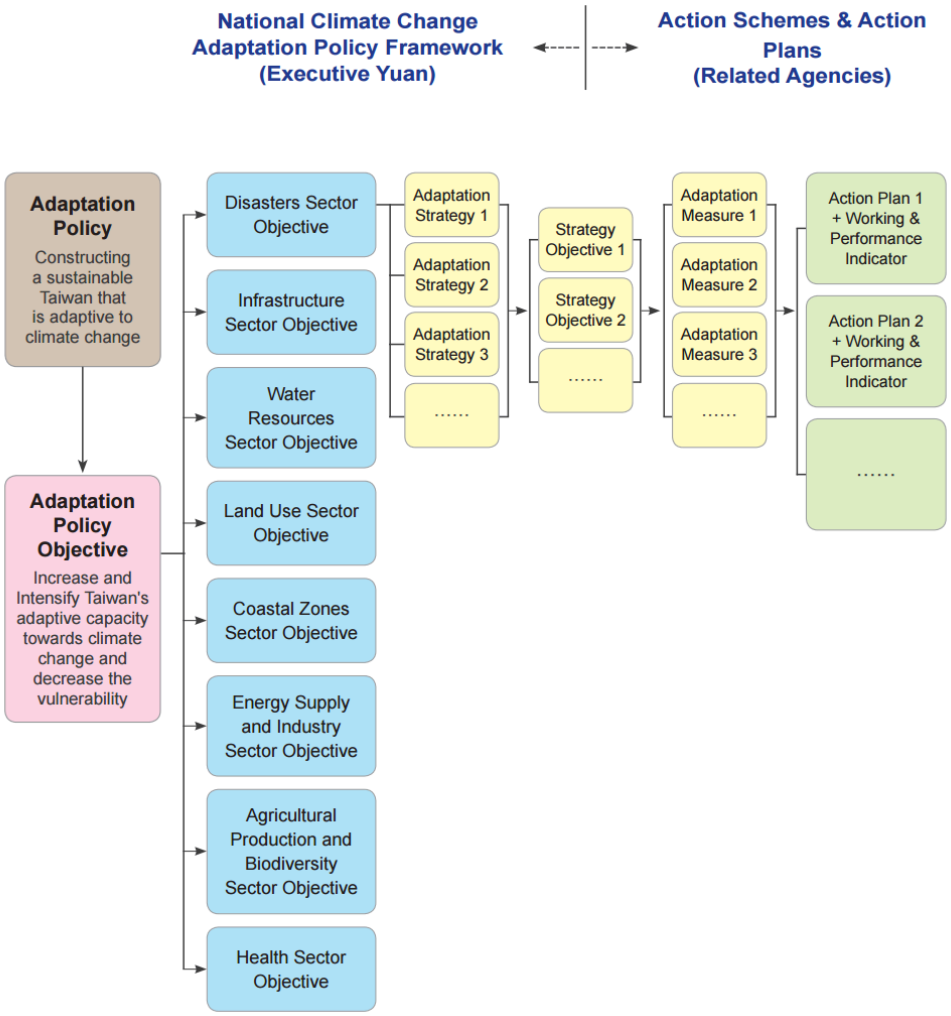

Figure 3. The Conceptual Relationship between the Adaptation Documents in Taiwan
(Source: Council for Economic Planning and Development, Adaptation Strategy to Climate Change in Taiwan (2012), p. 36)

This study would like to also provide an example in energy adaptation to illustrate the difference between the action *scheme* and the energy action *plan*. The *scheme* provides and identifies several priority fields, such as:

- The cost effectiveness of adaptation measures in the energy sector,
- The damage to energy supply facilities caused by extreme weather and development of an early warning and emergency response database and internet platform, and
- The impact assessment and vulnerability analysis of the energy supply infrastructure and its location

With such guidance, the action *plan* for the energy sector further provides:

- A more detailed institutional design. For instance, under the MOEA, two main groups, the vulnerability working group and the adaptation and action plan group, and eight subgroups are created.

- A more detailed vulnerability evaluation. This includes plans for the overall energy supply, the electricity supply, the oil and gas supply, and the total energy demand.

- Further measures, including:
    1. Industry adaptation capacity to a new environment
    2. Support to industries
    3. The opportunities for new businesses for adaptation
    4. Research and development to help the energy sector and other industries
    5. Review of the installations in the energy and industry sector to reinforce its ability to adapt to climate change and sub-measures

Finally and most importantly, it provides for securing the related research and funding by the responsible agencies for the above actions and activities.

IV. A Research Project-based and Bottom-up Approach

The essence of the Taiwan approach for dealing with adaptation can be seen in this *three-level planning* (from the abstract strategy to a more detailed action scheme and the sector action plans) process and its comprehensive research projects in the eight sector adaptation action plans. Each government agency is required to administer the related research projects to ensure the implementation or progress of the related adaptation projects for the following five years (the first phase is 2013-2017). For instance, there are 65 research projects under the Coastal Management Action Plan hosted by the Ministry of Interior Affairs. It remains to be seen if the long expected adaptation framework in Taiwan will succeed in the future. The detailed planning can be attributed to the governmental efforts and should be applauded.