

因應氣候變遷洪災韌性提升策略建構(1/2)

Construction strategies for flood resilience enhancement under climate change (1/2)

主管單位：經濟部水利署

游保杉¹
Yu, Pao-Shan

盧沛文²

Lu, Pei-Wen

郭振民¹

Kuo, Chen-Min

陳明陀³

Chen, Ming-Tuo

楊道昌¹

Yang, Tao-Chang

¹ 國立成功大學水利暨海洋工程學系

² 國立彰化師範大學地理學系

³ 禾唐工程顧問有限公司

摘要

在未來氣候變遷影響下提升洪災韌性勢在必行。提升洪災韌性的策略需考量國土規劃、政府部會政策分工與推動，及民眾需求等不同層面，其影響相當廣泛，需由下而上的推動，以建立完善之洪災韌性提升步驟與策略。據此，本計畫擬以二年為期程，執行因應氣候變遷洪災韌性提升策略建構，致力於洪災韌性提升方案與相關政策之研提，建立其政策規劃與研訂所需考量之步驟，以供後續推行之依循。然而，相關政策之研提與規劃，除以專業角度進行規劃設計外，需由下而上的先瞭解民眾意願與模式模擬成果，據以提供政府部門相關政策之規劃、調整，並達成政策與民眾需求之平衡。

本計畫提出洪災韌性提升策略建構五階段：「洪災成因分析」、「韌性提升方案建立」、「模擬提升方案成效」、「民眾參與」，以及「提案設計與效益檢核」進行洪災韌性提升方案初步設計與規劃。本年度透過京都與曼谷之洪災韌性提升方案之回顧，並配合國際近自然解決方案之蒐集與民眾感知調查，據以建立符合民眾期待之有效洪災韌性提升策略，初步以臺南市安南區總頭地區為案例，建立各項土地利用類別的洪災韌性提升方案，配合民眾需求調查與感知評量之操作，並利用 SOBEK 淹水模擬模式模擬各方案之成效，初步將各土地利用方式之洪災韌性提升方案初擬如，工業區：(1)自主墊高、(2)淹水監測與通報系統建置；農地與閒置用地：建議採緩坡式地景設計，以強化大範圍滯洪能力；住宅區：(1)多目標滯洪建築或滯洪廣場、(2)淹水監測與即時通報系統建置；道路用地：(1)主要連絡道路加高並施設透水鋪面、(2)地勢較低處架設移動式防水擋版減少主要聯絡道路積淹水，同時配合非工程相關方案可有效減緩洪災造成之影響，進而提升洪災韌性。

關鍵詞：洪災韌性、氣候變遷、近自然解決方案

Abstract

The enhancement of flood resilience is the only way to overcome the effect under climate change. The national spatial plan, the cooperation among ministries and public demand should be considered in the strategies. Thus, we should build the bottom-up procedure to propose complete strategies. This project is aim to develop the strategy to enhance the flood resilience and response to climate change in the two-year period. The framework was proposed to form the procedure of making flood resilience strategy. The framework consists the professional engineering design and public willing to balance the deficit between public and government. The flood resilience enhance methods will be tested in the demonstrated inundation area, that considering the public demands, and engineering or non-engineering methods, to enhance the flood resilience.

The flood resilience improvement strategies of Kyoto and Bangkok, and the natural-based solutions are collected for applying to the demonstration area: Zongtou region of Tainan City. The strategies are screening with the public demand and sensing assessments to balance the difference between public and government. The SOBEK model us also used to simulate the performance of flood mitigation. The preliminary strategies for the industrial area are: 1.elevation raisen, 2.flood warning and monitoring system. For the abandon farmland, the stratagies is wide range detention area with smooth slope designed. The stratagies for the residential area are: 1.multi-objective detention building or plaza, 2. inundation warning and monitoring system. For the road or steet, the stratagies are: 1.elevation raisen and infiltration pavement for the main street, 2. Using mobile waterproof barrier for low-lying area. And cooperate in non-engineering methods will effectively mitigate the impact of floods and improve flood resilience.

Keywords : flood resilience, climate change, nature-based solution.