

農業水資源在地協同治理創新構型：桃園埤塘 治理之農業永續實踐

Local Collaborative Governance Innovation for Agricultural Water Resources: A Case Study of Sustainable Practices in Taoyuan's Pond Irrigation System

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摘要

在氣候變遷加劇、水資源配置日益緊張的當代環境下，農業灌溉用水的治理面臨高度挑戰。極端旱象、都市發展擠壓、農工爭水與制度轉型等多重因素，使傳統以中央主導為核心的整合性水資源管理模式暴露出其在在地細緻性不足、角色彈性受限與協同實作能量缺乏的結構性缺陷。尤其在農田水利會改制為中央公部門後，地方灌區治理單位與利害關係人之間的互動關係出現顯著重組，原有的組織慣性與協作機制正面臨制度邊界重構的過渡期風險。

有鑑於此，本研究聚焦於北台灣極具代表性的桃園埤塘體系，嘗試從在地治理實作的視角，重新思考農業水資源協同治理的可能路徑，進而建構一套具備地方適應性、制度韌性與共益導向的「在地協同治理創新構型」。本研究的核心目標在於回應「如何於地方場域中，在資源有限、行動者多元且制度斷裂的情境下，實作出可持續、可協調且可回應的治理策略組合」。

本研究經建構主義紮根理論的分析過程，歸納出三組核心範疇與九組行動策略子構面，並據此發展出本研究的理論成果：在地協同治理三維度構型（TL0CG 構型）。該構型強調協同治理的實作是行動者在地方脈絡中透過以下三個維度交互展開的生成性過程：

語境調適維度：行動者在面對水情變化與政策模糊時，如何透過語言策略（如「暫緩處理」、「依區域調整」、「視現場彈性辦理」）來爭取治理空間、遞延衝突、維持合法性與操作彈性。

角色重構維度：治理過程中，原本界定為「管水者」或「用水者」的角色界線不再穩定，行動者需跨越傳統職責邊界，成為溝通者、協調者、詮釋者，甚至代議者，進行語意轉譯與責任調節。

制度對應維度：透過非正式的灌溉輪調協議、在地協商與社群資源互助，行動者共同構築一套「既不完全依賴法規、也不全然脫序」的制度性調適機制，實質回應埤塘多元利用、農工共用與區域抗旱等挑戰。

理論貢獻方面，TLoCG 構型回應了協同治理文獻中對「行動者實作邏輯」與「語境生成策略」的關注，並補足 IWRM 模式下常見的地方實作盲點。同時亦進一步將「地方治理韌性」概念具體化於語言策略與角色互構之中。政策貢獻方面，本研究提出一套具備預警適應性、社群協作機制與跨部門協調能力的在地治理制度原型，可作為政策制定者面對農業水資源配置困境時的重要參考架構，進一步提升農水治理體系在極端氣候下的回應韌性與整合能力。

總結而言，本研究不僅提出一套具地方場域特性與語意敏感度的協同治理模型，更展現出在極端氣候衝擊與制度過渡期中，台灣農業治理體系如何透過「**微觀實作、語境回應與行動協同**」三項治理動力的交互作用，共同重塑出具備農業韌性與共益導向的永續發展策略。

關鍵字：在地協同治理，埤塘治理實作，農業永續，制度韌性，農業水資源管理

Abstract

In the context of escalating climate change and increasing pressure on water resource allocation, the governance of agricultural irrigation faces critical challenges. Factors such as extreme droughts, urban encroachment, agricultural–industrial water conflicts, and institutional transitions have exposed the structural limitations of the centralized Integrated Water Resources Management (IWRM) model, particularly its lack of local responsiveness, role flexibility, and capacity for collaborative implementation. Following the institutional restructuring of Taiwan’s Irrigation Associations into centralized public agencies, the dynamics between local irrigation governance units and stakeholders have undergone significant realignment, disrupting established routines and exposing risks during the transition of institutional boundaries.

Against this backdrop, this study focuses on the representative pond irrigation system of Taoyuan in northern Taiwan. It adopts a local governance perspective to reimagine the pathways for collaborative governance in agricultural water management. The core aim of this research is to answer a more urgent question: How can place-based governance strategies be enacted in resource-constrained, actor-diverse, and institutionally fragmented contexts to ensure sustainability, coordination, and responsiveness?

Utilizing a constructivist grounded theory approach, the study identifies three core conceptual domains and nine sub-dimensions of strategic action. These findings contribute to the development of a novel theoretical framework: Tri-dimensional Local Collaborative Governance Configuration (TLoCG). This framework emphasizes that effective collaborative governance emerges from through the generative interplay of three governance dimensions shaped by local actors:

Contextual Adaptivity: Actors employ flexible discursive strategies (e.g., “temporary

postponement,” “regional adjustment,” “context-based discretion”) to negotiate legitimacy, defer conflicts, and maintain operational flexibility in the face of climatic uncertainty and policy ambiguity.

Strategic Role Reconfiguration: Traditional roles such as “water regulator” and “water user” become fluid. Local actors transcend conventional boundaries to act as communicators, coordinators, interpreters, or even representatives, engaging in semantic mediation and responsibility realignment.

Institutional Alignment-in-Action: Through informal irrigation rotation agreements, local negotiations, and community-based resource sharing, actors co-construct a hybrid institutional mechanism, neither strictly rule-bound nor completely informal, to address challenges such as multipurpose pond utilization, agricultural–industrial water sharing, and regional drought resilience.

Theoretically, the TLoCG framework addresses the practical blind spots in IWRM by highlighting actor-based operational logics and context-sensitive governance strategies. It also advances the concept of local governance resilience by grounding it in linguistic tactics and intersubjective role realignment. In terms of policy contribution, this study proposes a prototype institutional configuration characterized by anticipatory adaptation, community co-governance, and cross-sectoral coordination. It serves as a strategic reference for decision-makers confronting complex challenges in agricultural water allocation, and the institutional planning of participatory governance platforms.

In conclusion, this research proposes a governance model rooted in local context and linguistic nuance, demonstrating how Taiwan’s agricultural governance system—amid climate disruptions and institutional transitions—can regenerate adaptive and mutually beneficial sustainability strategies through micro-level practice, contextual responsiveness, and coordinated action.

Keywords: Local Collaborative Governance; Pond Irrigation Practice; Sustainable Agriculture; Institutional Resilience; Agricultural Water Resource Management