探索与过程

拥抱本土和地方知识，增强社会生态韧性

专栏编辑

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若要了解能够抵御气候和环境变化的社会生态系统，就需要在地方、区域和全球尺度下整合自然科学与社会科学，同时探析那些未囿于时空限制并推动了韧性发展的本土和地方知识系统[1][2]。人口与其周遭自然景观之间的复杂作用塑造了某一特定区域的环境特征，人们的生活品质也与环境所提供的生态福祉密不可分。已有许多学者认识到本土和地方人民及其知识体系对环境状况的重要影响，认为它们能够推动塑造可适应气候变化的社会生态韧性[3][4]。数千年来，本土和地方人民从与自然的共处之道中发展出了独特的生活方式，既持续保护了环境，也实现了文化的长久繁荣。他们在这一过程中形成的综合性知识体系、对季节性周期和生态过程的深入了解，以及对生物－文化多样性的管理经验，能够帮助更多人理解应当如何适应气候变化带来的社会生态影响。

在气候和环境变化迅速席卷全球的当下，我们尤需挑战西方知识优势的神话。迫于环境危机的压力，我们开始质疑源自殖民时期的所谓“文化适应”和“文化进化”观念——是否产生于后殖民时期的“他者”必须效仿并追赶无与伦比的“西方世界”？西方知识优势的神话及其思维定势不但束缚了它的自我发展，也难于回应自其体系内部滋生的社会和环境挑战。面对环境危机，我们应当拥抱那些经过了历史长河的淘洗而被证明能够有效应对各类突发环境危机的实践和知识。在处理当今及未来气候变化所带来的社会生态问题时，这些实践和知识所具备的适应能力将愈发重要。本期的两个项目探讨了将本土和地方知识系统与高科技系统相结合的潜力，深入观察和剖析了人类如何回应并适应自然环境的波动。

在《基于本土主义的设计》一文中，朱莉娅·沃森、艾弗里·罗伯森和费利克斯·德·罗森将全球重要农业文化遗产和基于传统生态知识的基础设施（Lo-TEK）视为能够与环境协同共生的基于自然的系统。作者抨击了舶来技术方案较本土技艺创新更胜一筹的“技术神话”理念，提倡重视溶于本土生命系统之中的智慧。他们认为，在塑造文化韧性和气候韧性的过程中，这类智慧能够为设计师提供灵感，以在完整的生态系统中构建具备生产力的共生景观。对于那些最易受气候变化威胁但又缺乏资金和资源来建设昂贵高科技基础设施的社区而言，Lo-TEK无疑为设计与本土主义的结合提供了契机。文中所详细阐述的4个案例表明，运用了低技术的多功能软性防御措施能够有效应对海平面上升危机，而城市化进程也将推动农业文化遗产的再生。

在《以大众为主体的气候变化适应性多视角制图》一文中，纳欣·玛塔妮和托马斯·霍尔德内斯分享了印度尼西亚灾害地图（PetaBencana.id）项目的演进过程。PetaBencana.id是一个免费的在线平台，可供居民和应急管理人员实时绘制洪水地图。自2014年以来，平台的规模不断扩大，获得了越来越多专家的认可。制图、交叉验证及为居民和政府提供洪水信息等过程本身已经成为一种有助于减轻洪水影响的数字元基础设施。PetaBencana.id平台所提供的报告机制，以数字化的方式延续了居民对洪水态势的感知与对所在城市的深入了解。项目团队提倡运用不同尺度的城市治理策略及分权决策支持工具来应对日益复杂的城市问题。

本期的两篇文章均在寻求替代性减灾措施的过程中强调了本土和地方知识的重要性。沃森及其团队针对实体基础设施，探索了以复杂生态系统所提供能源和生物多样性为基础的自然技术；玛塔妮和霍尔德内斯则聚焦于数字元基础设施，它们结合了社区参与的方式，能够通过地面实况对现有的气候模型进行校准。这两种基础设施既满足了人们的现代生活需求，也实现了生态道德。**LAF**

EXPERIMENTS & PROCESSES

EMBRACING INDIGENOUS AND LOCAL KNOWLEDGE FOR SOCIAL-ECOLOGICAL RESILIENCE

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Understanding the characteristics of social-ecological systems that are resilient to climatic and environmental change, requires the integration of both natural and social sciences at local, regional, and global scales, and familiarity with the indigenous and local knowledge systems that have underpinned resilience across space and time[1][2]. Environmental conditions in any given area are the result of complex interactions between human populations and their immediate physical landscape, and the quality of human life is inextricably linked to the ecological well-being of the environment. Many scholars have stressed the importance of the impact of indigenous and local people and their knowledge systems on the condition of the environment and their potential contributions to ensuring social-ecological resilience to climate change[3][4]. After countless generations coexisting with nature, indigenous and local people have developed distinct ways of life characterized by a high degree of environmental and cultural sustainability. Their synthesized knowledge systems, intimate knowledge of seasonal cycles and ecological processes, and the management of bio-cultural diversity are crucial for understanding resilience and adaptability to the social-ecological effects of climate change.

The unprecedented scale and rate of climatic and environmental change call us to challenge the myth of Western intellectual superiority. It compels us to question colonial concepts of cultural adaptation and evolution, which underpin the belief that the postcolonial "rest" must emulate and catch up with the exceptional "West." That myth and its conceptual baggage cannot provide any way of transcending itself, nor can it address the social and environmental challenges that have emerged in its own wake. The environmental breakdown today requires an embrace of practices and knowledge that have proven their resilience to unpredictable environmental variations in the past, and which embody a capacity for adaptability that is suddenly much more relevant as we address the social-ecological effects of climate change now and in the future. The two projects featured in this issue explore the potential of hybridizing indigenous and local knowledge with high-tech systems to achieve high-resolution observations and insights into practices that inform how humans interact with, and adapt to fluctuations in the natural environment.

In Designing by Radical Indigenism, Julia Watson, Avery Robertson, and Félix de Rosen examine Globally Important Agricultural Heritage Systems sites and traditional ecological knowledge-based infrastructures (Lo–TEK) as nature-based systems that symbiotically work with the environment. The authors challenge "a mythology of technology" that imported technical solutions as being superior to local innovations. Instead they advocate for the wisdom embedded in the indigenous, living systems, which is crucial when designing for cultural and climate resilience, and which provides precedents for designers charged with constructing productive, symbiotic landscapes embedded within intact ecosystems. The authors position Lo–TEK at the intersection of design and radical indigenism accessible to communities most vulnerable to climate change, particularly those who lack the capital and resources for costly, high-tech infrastructures. Four detailed case studies characterized by their multi-purpose, low-tech, soft protection approaches illustrate alternative ways of coping with sea level rise, shedding light on how urbanization can be an agent for the migration of agricultural heritage systems.

In Multiperspectival Cartographies for Democratic Climate Adaptation, Nashin Mahtani and Tomas Holderness share with us the evolution of PetaBencana.id (Disaster Map Indonesia), a free online platform that enables residents and emergency managers to map flooding in real-time. Since 2014, the platform has scaled up and gained the trust of various experts. The work of mapping, cross-validating, and disseminating flood information for the use of residents and government bodies has become a digital meta-infrastructure helping mitigate the impact of flooding. It provides a reporting mechanism that is a digital extension of residents' expertise, rooted in their awareness and knowledge of the local situation in the city. In the face of increasingly complex urban challenges, the project team advocates the formation of different scales of governance and the decentralization of decision support tools.

Both articles foreground the importance of indigenous and local knowledge in their respective quests for alternative flood mitigation measures. Watson and her team explore physical infrastructure that incorporates nature-based technologies to harness the energy and biodiversity of complex ecosystems; and Mahtani and Holderness investigate digital meta-infrastructure that integrates community-based and participatory approaches to complement and ground-truth existing climate models. They reveal the potential for living in a way at once modern and ecologically ethical. **LAF**

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