



第250回 物質循環談話会

2026年7月21日(火) 13:30-15:00+ α

**SPEAKER : Ms. Vasanthakumary
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TOPIC:

**Hydrological Extremes and Climate Change:
Implications for Water Security and
Resilience in Sri Lanka**

Sri Lanka has experienced an increasing frequency and intensity of hydrological extremes in recent decades, largely driven by climate change and human activities. The growing risk not only threatens ecosystem health and leads to loss of life, infrastructure damage, and livelihood disruption but also continues to impose substantial impacts on vulnerable communities and the environment. These events further threaten water security through water scarcity, damage to water infrastructure, and the degradation of water quality due to pollution, salinization, and sedimentation. This situation imposes an additional financial burden on the Sri Lankan government due to higher costs for relief, recovery, and reconstruction and fosters greater accountability among relevant authorities and institutions. Lessons from past hydrological extremes in Sri Lanka clearly indicate that hazard-centric approaches are insufficient to address the complex, interacting risks they pose. As climate change reshapes hydrological processes, strengthening the resilience and ensuring water security have become critical priorities in the country. This critical situation underscores the need to develop effective strategies to ensure water security and build a climate-resilient nation capable of coping with future risks. This talk primarily highlights the impacts of hydrological extremes and climate

<July-21st 2026, 1:30 pm - 3:00 pm+ α >

会場 (in-person): 13 番講義室 (Room 13)

Online : Zoom (右の QR コードから入れます)

<https://shinshu-u-ac->

[jp.zoom.us/j/99214903330?pwd=cHfyojFguTCvJkEa1K57My50r4jJtj.1](https://us.zoom.us/j/99214903330?pwd=cHfyojFguTCvJkEa1K57My50r4jJtj.1)

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change in Sri Lanka, with particular emphasis on key challenges and strategies for strengthening water security and resilience. The talk addresses higher socio-economic vulnerability, weak infrastructure, limited early warning systems, poor land-use management, and a lack of coordination among institutions, which are major concerns in the country. Thus, climate-informed planning, resilient water infrastructure, advanced early warning systems, more effective disaster risk reduction and land-use planning, integrated river basin management, community preparedness and education, sustainable water governance and coordination, and nature-based solutions are key strategies for water security and enhancing climate resilience in Sri Lanka. These strategies align well with the Sustainable Development Goals, particularly SDG 13 (Climate Action), SDG 6 (Clean Water and Sanitation), and SDG 11 (Sustainable Cities and Communities). Thus, the urgency of shifting from conventional management systems to a resilience-based approach that ensures water security, reduces exposure, enhances preparedness, and strengthens adaptive capacity is imperative to building a safer and more resilient Sri Lanka.



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Key Words:

Climate Change, Disaster Resilience,
Hydrological Extremes, Sri Lanka,
Sustainable Development, Water Security

- ◆ 主催：信州大学 理学部理学科 物質循環学コース
- ◆ 共催：信州大学 地圏・湖沼カーボンダイナミクス研究拠点
信州大学 山岳科学研究所
信州大学 J-Peaks部局事業 「水資源と炭素循環に注目した湖沼および流域
における物質循環の解明」