

Department of Science Newsletter

Issue 4 | October 2026

From the HOD

It is with great pride and a strong sense of purpose that I welcome you to the fourth issue of the Department of Science Newsletter. I would like to express my sincere appreciation to our editor, Dr Vodo, for his continued commitment to keeping the Department of Science Newsletter going. Sustaining a newsletter requires dedication and a genuine commitment to capturing and sharing the achievements of our staff and students.

As I reflect, I am encouraged by the progress our Department continues to make across teaching, research, postgraduate education, community engagement, and international collaboration, with SOST's motto in mind: "Envision, Inspire, Innovate." One of the things I value most about our Department is the way our students can take what they learn in the classroom to real-world settings. This year, our students participated in activities ranging from plant biology work at the Juncao Technology Demonstration Centre to hands-on mangrove planting for coastal protection and conservation. Such experiences help students appreciate that science is closely connected to the environmental, social and developmental issues affecting Fiji and the wider Pacific.

Our academic community is also growing. We warmly welcome our new colleagues in Environmental Science, Ms Bari, and Chemistry, Ms Kumar, whose expertise will add further strength to our teaching, research and student support. Research remains at the heart of our Department's development. The Science Department continues to maintain a strong research publication record, with growing visibility and impact. Our researchers have contributed to important national and regional conversations on climate change, climate mobility, air quality, energy transitions and sustainable development.

We have also strengthened our engagement with international research partners, including our collaboration with KTH Royal Institute of Technology, Sweden, on the feasibility of small-scale biogas systems for remote island communities. The Department also contributed to the International Symposium on Climate Change Mitigation and Adaptation Strategies in the Asia-Pacific Region hosted by UniFiji in partnership with Hamburg University of Applied Sciences. Our participation at the AfOx-TEA Academic Symposium at the University of Oxford further strengthened

international networks and opened opportunities for research partnerships and postgraduate development.

Perhaps one of the most satisfying developments this year has been seeing our postgraduate programmes achieve important milestones. The Department celebrates its first graduates in the Postgraduate Diploma in Volcanology and the Master of Science in Physics. These achievements reflect the growing maturity of our postgraduate programmes and our ability to develop advanced scientific expertise here in Fiji. Another important recognition came in 2026, when the University of Fiji was recognised for its growing global research contribution through the Nature Index. This is a meaningful indication of how research from our Department is contributing to the University's broader research profile and international standing.

These achievements reflect the collective effort of our academic and professional staff, students, research collaborators and partners. I remain committed to building a Science Department that is strong in its academic foundations, ambitious in its research, open to collaboration and responsive to the needs of Fiji and the Pacific. Most importantly, I want our Department to remain a place where people feel supported to learn, question, explore ideas and contribute. Science has an important role to play in shaping Fiji's future, and I am proud that our Department is contributing to that journey.

I congratulate all members of the Department on the achievements highlighted in this issue. I would also like to extend my sincere appreciation to the wider University community, our valued collaborators, and all stakeholders for their continued commitment, partnership, and unwavering support. Your collective contributions continue to strengthen our work and advance our shared vision for excellence in science and education. Science is not simply about understanding the world around us. It is about using that understanding to solve challenges and shape our future.

Assoc. Prof. Dr Ramendra Prasad

Head of Science Department

The University of Fiji

Welcome



The Department is delighted to welcome Ms. Nunia Melissa Bari as our new Assistant Lecturer in Environmental Science. Ms. Nunia brings a wealth of professional experience spanning environmental management, climate adaptation, disaster risk reduction, and food and water security. In her new position, she will help coordinate and deliver the Environmental Science programme. Her research focuses on adaptation and resilience in a changing climate, disaster risk reduction, food security, and climate-induced displacement, alongside vulnerability assessment. Through her teaching and research, Ms. Nunia is committed to advancing sustainable, evidence-based development across Fiji and the Pacific. We look forward to her valuable contributions to our students, colleagues, and the Department.



The Department is pleased to welcome Ms. Sheemal Kumar as an Assistant Lecturer in Chemistry. Ms. Sheemal joined us in February 2026 and holds a Master of Science in Environmental Science from the University of Fiji. A former student of the University, she returns to give back through teaching in both Chemistry and Environmental Science. Her research spans environmental and atmospheric chemistry, air quality, particulate matter pollution, crop disease assessment, and sugarcane agronomy. Driven by a desire to understand the challenges facing Fiji's environment, she is committed to promoting sustainable agricultural and land management practices.

News

UniFiji has achieved the highest research Share among Fiji-based institutions in the Nature Index, highlighting its growing contribution to high-quality international research. The achievement includes research from the Department of Science, through collaboration with KTH Royal Institute of Technology, Sweden, involving Assoc Prof Ramen, Ms Ayesha Reddy and Ms Dhrishna Charan. This recognition reflects the Department's growing research capacity, international collaboration and contribution to UniFiji's research profile. A proud milestone for UniFiji and the Department strengthening research, collaboration and innovation for Fiji and the Pacific.

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Student Section

Testimonial



Christal Laurisa, a third-year Environmental Science student, has had a rewarding academic journey with the support of her lecturers. Her studies have strengthened her interest in climate change and Environmental Impact Assessment, while also inspiring her to promote sustainable development and help build a more sustainable future.



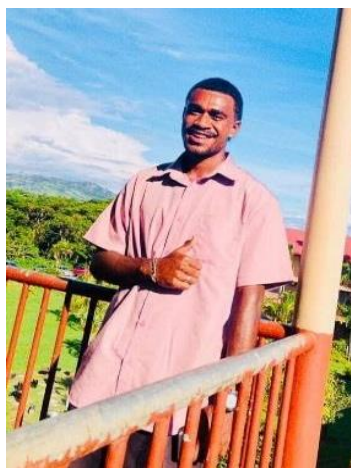
Meresiana Divusona, a third-year Bachelor of Science student, chose to major in Biology and Chemistry because of her strong interest in understanding living systems. Chemistry helps her understand the chemical

reactions and processes that take place in living organisms, while Biology focuses on their structure, function, and behaviour. Together, these subjects have helped her develop a better understanding of life and its processes. Her interest is also driven by the wide range of applications of these fields in healthcare, research, and environmental studies.



John Bola, a third-year Bachelor of Science student, is curious about how the human body and the natural world work. He has a particular interest in Chemistry and enjoys learning how small changes can lead to significant effects. He believes that learning through trial and error helps build a deeper

understanding, and he enjoys connecting scientific knowledge to real-life situations. As a full-time working student, John manages his studies and work through good organisation, prioritisation, and focus. The support of his peers and lecturers also helps him stay motivated and succeed in his studies.



Joseva Waqatabu is a second-year Bachelor of Science student who chose this programme because it covers important mathematical concepts that support his studies in Mathematics and Physics. The programme helps him develop strong critical thinking and problem-solving skills that can be applied to

real-world challenges. He is also interested in how science contributes to innovation, technological development, and sustainable development. Through his studies, Joseva hopes to use his scientific knowledge to make a positive contribution to society and help build a better future.

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Laurenzo Willy Tamtam Lile is a second-year Mathematics and Physics student from Vanuatu. His passion for numbers and physics has motivated him to explore how science helps us understand the world around us.



Since coming to Fiji, Laurenzo has enjoyed his university experience, supported by his lecturers and the welcoming, multicultural student community. He values the friendships and sense of belonging that have made Fiji feel like a second home.

Marie-Annick Rep is a first-year Bachelor of Science student majoring in Biology and Chemistry. She chose science because of her curiosity about how the world works and enjoys exploring biology, chemistry, and mathematics. Through her studies, she is developing her knowledge, critical thinking, and problem-solving skills while gaining a better understanding of both the theoretical and practical sides of science. She hopes to use the knowledge and skills gained from her degree to build a rewarding career and make a positive contribution to society.



Special thanks to Avenina Seru and Mere Wilson for coordinating and providing the student testimonial materials featured in this newsletter.

Field Trip

Juncao Technology Demonstration Centre

In Semester 1, Plant Biology students recently took their learning beyond the classroom with an educational field trip to the Juncao Technology Demonstration Centre in Legalega, Nadi. The visit provided students with an opportunity to see scientific innovation and sustainable agricultural practices in action. Through practical demonstrations and observations, students gained valuable insights into the application of plant biology concepts in real-world agricultural settings. Photos from the trip can be viewed on the SOST [f](#) website.

Planting Mangroves, Growing a Greener Future

In Wk 6, Semester 2, our science students are turning knowledge into action by planting mangroves and helping protect our coastal environment. Through this hands-on conservation work, they are seeing how science can strengthen coastal ecosystems, support biodiversity, and build resilience to climate change. This experience reminds us that science goes beyond the classroom and laboratory; it can lead to practical solutions for real-world environmental challenges.



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Teaching and Learning in Action



Events

SOST joined the global community in celebrating World Environment Day 2026 through a range of environmental activities, including tree planting across the University's campuses. The initiative was led by Dr Depika, with the support of the VC, whose encouragement enabled the activity to move forward, and HOD Associate Professor Ramen. Special appreciation is also extended to Ms Nunia and all staff and students who contributed to the planning, coordination and activities. The event provided an opportunity for the SOST community to demonstrate its commitment to environmental sustainability, climate action and a greener future. Highlights from the celebrations can be viewed on the SOST [Facebook](#) website.

Workshop

NDC3.0 Costed Implementation Plan Workshop

SOST and the department was represented at the NDC3.0 Costed Implementation Plan Workshop, organised by the Ministry of Environment and Climate Change. Ms Sheemal participated alongside sectoral stakeholders and experts from the Western Division. The workshop focused on strengthening Fiji's climate commitments and developing practical, costed implementation pathways across key sectors. SOST's participation reflects the University's commitment to climate action, sustainability and Fiji's national development priorities. Workshop pictures can be viewed on the SOST [Facebook](#) website.



Ms Nunia represented the the department and UniFiji at the National Validation Workshop for Fiji's NDC 3.0 Costed

Implementation Plan, held on 10 September 2026 at the Grand Pacific Hotel. The workshop, organised by the Ministry of Environment and Climate Change, included a divisional update on the Ocean Sector Costed Implementation Plan. The session provided stakeholders with an opportunity to engage on Fiji's climate commitments and sectoral implementation priorities. Ms Nunia's participation reflects the department's continued commitment to climate action, sustainability and supporting Fiji's national climate priorities.

Research

The department recently completed an international research collaboration with KTH Royal Institute of Technology, Sweden, involving Emma Fernler and Linn Hellström. Their field study in Raviravi Village, Beqa, examined the technical, economic and social feasibility of small-scale biogas digesters for remote island communities. The project was jointly supervised by Assoc. Prof. Per Lundqvist (KTH) and department HOD Assoc. Prof. Ramen. Photos on SOST [Facebook](#) website.

Conferences

International Symposium on Climate Change Mitigation and Adaptation Strategies

UniFiji, in partnership with Hamburg University of Applied Sciences, Germany, hosted the International Symposium on Climate Change Mitigation and Adaptation Strategies in the Asia-Pacific Region on 27–28 August 2026 in Lautoka. Ms Nunia and Ms Sheemal presented their research at the symposium. Ms Nunia presented research on community perspectives on climate risk, adaptation and mobility in Fiji, while Ms Kumar presented research on air-quality variability during termite swarming and cane-cutting seasons in Lautoka. Their participation highlights the growing contribution of early-career researchers to climate and environmental research at the Science Department. Pictures can be viewed on the SOST [Facebook](#) website.

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Climate Mobility Dialogue

Dr. Priya participated in a Climate Mobility Dialogue, held in Melbourne, Australia, from 9–10 September 2026. The dialogue formed part of research supported by the International Organization for Migration (IOM) on climate displacement in Asia and the Pacific. It brought together researchers and practitioners to discuss emerging climate mobility challenges in the Pacific; particularly how increasing climate risks are shaping displacement and mobility and the implications for future policy and planning.

Dr. Priya presented findings from her research with climate-vulnerable communities in Fiji, highlighting that communities do not simply fall into categories of “staying” or “relocating,” but rather exist along a spectrum of mobility and immobility. This includes temporary evacuation during floods and cyclones, staying with relatives or in evacuation centres, moving to safer locations within community boundaries, and considering permanent relocation under certain conditions.



The research highlights a “relocation paradox”: although communities recognize the growing risks posed by climate change and the potential safety benefits of relocation, moving can also create significant social, cultural, livelihood, and land-tenure challenges. Therefore, a preference to remain in place should not necessarily be interpreted as resistance to adaptation. Instead, it highlights the importance of the “viability of staying”, whether communities can remain safely while maintaining their livelihoods, cultural identity, and social connections. The dialogue provided an important platform for discussing how these diverse experiences of mobility and immobility can be better incorporated into climate mobility policies and planning across the Pacific.

AfOx–TEA Academic Symposium 2026



The department (UniFiji) was represented at the AfOx–TEA Academic Symposium 2026 at the University of Oxford, UK, on 7–8 September 2026. HOD Assoc. Prof. Ramen and Project Lead for the Transforming Energy Access–Learning Partnership (TEA-LP), joined more than 150 academics, practitioners and innovators from the UK and Global South to discuss energy access, climate action, research partnerships and sustainable energy transitions. Assoc. Prof. Ramen actively contributed Pacific perspectives to discussions on equitable partnerships, future energy research priorities and translating research into practical action. The engagement strengthens UniFiji’s international research networks and creates opportunities for collaboration, funding, postgraduate development and Pacific-led contributions to global energy and climate solutions. The Pacific is not just part of the energy-transition conversation, it is helping shape it.

TEA-LP Project

UniFiji’s Transforming Energy Access–Learning Partnership (TEA-LP) project continues to create valuable pathways for collaboration, capacity building and student development in energy research. Through the project, UniFiji has strengthened international partnerships, supported participation in conferences and training programmes, and provided access to specialised energy modelling software, including Xendee, HOMER and COMET.

The project has also supported Battery Ambassador activities, Smart Grid and Sustainable Energy Education conferences, TEA-LP training programmes in Kenya and Rwanda, and student scholarships, field visits and tuition support. These activities are strengthening technical skills, research capacity and international networks while creating new opportunities for students and researchers in Fiji and the Pacific. TEA-LP continues to connect learning, research and international collaboration to support Fiji's transition towards sustainable energy.

Conference Papers

Nunia Melissa Bari, Priyatma Singh, Sonali Manimaran and Kamsin Raju (2026) Staying, Adapting, or Moving? Community Perspectives on Climate Risk and Mobility in Fiji. Symposium on Climate Change Mitigation and Adaptation Strategies in the Asia-Pacific Region. 27th – 28th August 2026. Fiji.

Sheemal Kumar, Ramendra Prasad, Alexander Mamishev and Ekta Sharma (2026) Air Quality Variability during Termite Swarming and Cane Cutting Seasons in Lautoka, Fiji. Symposium on Climate Change Mitigation and Adaptation Strategies in the Asia-Pacific Region. 27th – 28th August 2026. Fiji

Prasad, N.S., Dayal, K.K. and Kumar, S.S. (2026). Wind climatology and site suitability of onshore wind farms in Fiji. 5th MeteoXchange Conference 2026: Online on Gather.town from 16-17 April 2026.

Kumar, S.S. and Dayal, K.K. (2026). Wind climatology and terrain induced flow patterns over smaller outer islands in Fiji. 5th MeteoXchange Conference 2026: Online on Gather.town from 16-17 April 2026.

Ali, S., Dayal, K.K. and Lal, R. (2026). Role of climate variability in shaping wind energy resources across selected locations in Fiji. 5th MeteoXchange Conference 2026: Online on Gather.town from 16-17 April 2026.

Priyama Singh (2026). From Global Commitments to Domestic Priorities: Policy Coherence in a Changing Political Landscape, 2020–2026. Virtual Symposium on ClimEQ and Climate-SDGs projects on policy coherence between the

Paris Agreement and the 2030 Agenda, hosted by Stockholm Environment Institute, Sweden, 28th and 29th April 2026.

Think-Tank Articles (Newspaper, Magazine)

Shirlyn Lata, Priyatma Singh, Depika Prasad, Nunia Bari, and Sheemal Kumar. (2026). International Day for Biological Diversity. (Prepared Press Release)

Shirlyn Lata, Dhrishna Charan, Nunia Bari, and Ramendra Prasad. (2026). World Environment Day. (Prepared Press Release)

Seminars, Webinars and Invited Talks

Singh, Priyatma. Beyond technocratic planning: Marine spatial planning in Pacific Small Island Developing States. Brown Bag Lunchtime Seminar Series, The University of Fiji, Fiji, 4th June, 2026.

Singh, Priyatma. Climate displacement patterns across communities in Ba and Macuata Provinces, Fiji. Presentation at the Fiji Taskforce on Relocation and Displacement Meeting, Ministry of Environment and Climate Change and International Organization for Migration (IOM), Labasa, Fiji. 23rd April, 2026.

Charan, Dhrishna. Changing the Way Fiji Moves: Decarbonizing Road Transport in Fiji. Brown Bag Lunchtime Seminar Series, The University of Fiji, Fiji, 20th August, 2026.

Papers

Kumar, S.S. and Dayal, K.K. (2026). Wind resource assessment and energy modelling of smaller outer islands in Fiji. *Royal Society Open Science*, 13: 251714. DOI: <https://doi.org/10.1098/rsos.251714>

Dayal, K.K., Singh, R.A. and Sharma, R.N. (2026). Wind resource assessment and energy potential of Natadola in Viti Levu, Fiji. *Royal Society Open Science*, 13: 251378. DOI: <http://doi.org/10.1098/rsos.251378>

Lal, R., Prasad, S. and Dayal, K.K. (2026). A non-parametric study of temperature trends in Fiji over five decades. *Royal Society Open Science*, 13: 252048. DOI: <http://doi.org/10.1098/rsos.252048>

Ochekliye, E.S., Dayal, K.K. and Sharma, R.N. (2026). Microscale wind resource and site suitability assessment of Waiheke and Chatham Islands in New Zealand. *Energy Exploration & Exploitation*, 44(2), 946-979. DOI: <http://doi.org/10.1177/01445987251390558>

Sujan Ghimire, Thong Nguyen-Huy, Ravinesh C Deo, David Casillas-Pérez, Ramendra Prasad, and Sancho Salcedo-Sanz (2026). Point and confidence interval prediction of electricity price based on hybrid dual-decomposition and deep learning model. *Energy*. Vol. 346. PP. 140692. DOI: <https://doi.org/10.1016/j.energy.2026.140692>

Tilda Eklund, Anna Fredén, Ayesha Reddy, Anders Malmquist, Ramendra Prasad, and Dhrishna Charan (2026). Feasibility of hydrogen fuel in Fiji's domestic maritime transport sector. *Energy*. Vol. 346. PP. 140236. DOI: <https://doi.org/10.1016/j.energy.2026.140236>

Browne, K., A. Dzebo, Z. Shawoo, Singh. Priyatma, et al. 2026. "National Policy Coherence Counts for Reducing Inequality in Global Climate and Development Agendas." *Sustainable Development* 1–151. <https://doi.org/10.1002/sd.71117>.

Singh, Priyatma., Linnér, B. O., & Wibeck, V. (2026). Making marine spatial planning fit for coastal indigenous communities: A Fijian case study. *Environmental Science & Policy*, 180, 104397. DOI: <https://doi.org/10.1016/j.envsci.2026.104397>

Reyes-García, V., Atttoh, E. M., Barrington-Leigh, C., Benyei, P., Singh, Priyatma, Calvet-Mir, L., Chakauya, R., ... & LICCI Consortium. (2026). Experienced climate change impacts

help explain subjective well-being—Evidence from 14 nature-dependent communities. *People and Nature*, 8(2), 461-475.

Singh, Priyatma (2026) Marine spatial planning in the Pacific Islands - a transformative approach to ocean governance? *Front. Mar. Sci.* 13:1842952. DOI: <https://10.3389/fmars.2026.1842952>

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