

Report on WP 3.8: Re-Training of Teachers in the EU with an Emphasis on Gender Equality

Prepared by Chethika Abenayake & Amila Jayasinghe, Department of Town & Country Planning, University of Moratuwa, Sri Lanka.

1. Introduction

The re-training of teachers from Sri Lankan universities at European Union (EU) institutions, particularly at the Technical University of Dresden (TUD), Germany as part of Work Package 3.8 (WP 3.8), was a significant step towards enhancing the professional capacities of educators in Sri Lanka. This initiative did not only aim to refine teaching methodologies but also to promote gender equity within academic environments. As participants from the University of Moratuwa (UoM), Sri Lanka we found this opportunity to be transformative for our teaching practices, our perspectives on gender inclusion, and our overall professional development. The initiative facilitated by WP 3.8 was designed to empower us as educators by providing the knowledge, skills, and exposure needed to elevate the quality of education in Sri Lanka.

After our return to Sri Lanka, we initiated to implement what we had learned and share best practices with our colleagues and students at the University of Moratuwa and beyond. This experience not only enhanced our professional growth but also fostered a culture of continuous learning and international collaboration. Our journey through the European academic landscape allowed us to experience the value of cross-cultural academic exchange and gave us tools to better navigate the global academic field.

Program Overview

The structured program under WP 3.8 provided us with a month-long immersive experience at the Chair of Mobility System Planning, "Friedrich List" Faculty of Transport and Traffic Sciences, TUD from 26th May to 26th June 2024, where we had the opportunity to engage in both theoretical and practical learning. This program included participation in lectures, lab-based exercises, and hands-on training sessions, all of which were aimed at modernizing our pedagogical methods and increasing our technical proficiency.

One of the key objectives of the program was to address gender equity, ensuring that female educators were given equal opportunities to participate. Given that many women in academia often face challenges due to family commitments, the program was designed with flexibility in mind. We were encouraged by the inclusive environment at TUD, where gender equity was actively promoted, especially in fields such as transport planning and urban planning, traditionally dominated by men.

We at TUD was rich in learning and collaboration. We engaged deeply with TUD faculty and students, participated in collaborative research projects, and developed new reading lists and course materials for the UoM curriculum. Through this collaboration, we were able to align our teaching materials with

international standards and incorporate the latest trends in urban planning, environmental planning, and transport planning.



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Key components of the training program include:

- Attendance at lectures conducted by TUD faculty, which offers insights into various teaching methodologies and content delivery.
- Participation in lab-based practices and hands-on exercises, helping participants gain practical skills and familiarity with cutting-edge equipment.
- Access to TUD's extensive library and online resources, which facilitates the development of updated reading lists and module content.
- Direct engagement with TUD faculty and students through collaborative work, which promotes cross-cultural exchange and enhances participants' teaching and research capabilities.

The program is further structured to address gender equity by encouraging female educators to participate, recognizing the unique challenges faced by women, especially those with family commitments. The inclusion of female staff in the re-training program not only supports gender equity but also strengthens the representation of women in academia, particularly in fields like urban planning, which have historically been male-dominated.

During our visit, we were deeply grateful for the exceptional organization and unwavering support provided by Prof. Dr.-Ing. Regine Gerike and Jonas Krombach. Their dedication to ensuring that every aspect of our experience was enriching and seamless made our time at the Technical University of Dresden not only productive but also incredibly welcoming. Their guidance, both in academic matters and in facilitating our immersion into the culture and academic environment at TUD, was invaluable. We felt truly supported, both professionally and personally, and their hospitality made our stay both enjoyable and meaningful.

2. Implementation Plan for University of Moratuwa Teachers' Retraining at TUD

As part of our engagement at the Technical University of Dresden (TUD) under the WP 3.8 initiative, the retraining program was designed to modernize and enrich the curriculum of the degree programs offered by the Department of Town & Country Planning (TCP) at the University of Moratuwa (UoM). This initiative is pivotal in ensuring that the curriculum remains up-to-date with international standards and the latest advancements in urban planning, transportation systems, and environmental sustainability.

The curriculum enrichment effort focused on several key modules across both undergraduate and postgraduate programs. These modules were identified for development or update based on emerging trends in the fields of urban planning and informatics, environmental planning, and sustainable infrastructure development. The following are the modules that were addressed during our retraining at TUD:

Module Title	Module Code	Degree/Diploma	Module Level
Regional Infrastructure Planning and Design	PL3510	Honours Degree of Bachelor of Science in Urban Informatics & Planning	Bachelor
Transit City Planning and Design Studio	PL3604	Honours Degree of Bachelor of Science in Urban Informatics & Planning	Bachelor
Planning and Design Studio III	PL2302	Honours Degree of Bachelor of Science in Urban Informatics & Planning	Bachelor
Resilient Infrastructure Systems	TP5212	M. Sc. in Environmental Planning/PG Dip in Environmental Planning	Master
Smart Urban Transport & Infrastructure	UI6217	M.Sc. in Urban Informatics/PG Dip/Certificate in Urban Informatics	Master
Ecology for Spatial Planning	PL1104	Honours Degree of Bachelor of Science in Urban Informatics & Planning	Bachelor
Environmental Planning Studio I (Local Scale)	TP5109	M. Sc. in Environmental Planning/PG Dip in Environmental Planning	Master

3. Training Activities

The retraining program comprised several critical activities, each designed to enhance the academic and professional capacities of UoM staff:

i. Development of Lesson Plans and Lecture Material

During our visit, we engaged in collaborative discussions with Prof. Dr.-Ing. Regine Gerike and Jonas Krombach from TUD, focusing on the module descriptors that had been either modernized or newly introduced at UoM. These modules, which are part of the Department of Town & Country Planning and the Transport Engineering Group within the Department of Civil Engineering, represent the core of the Curricula Enrichment initiative that aims to integrate Location-Based Services (LBS) into Intelligent Transport Systems (ITS).

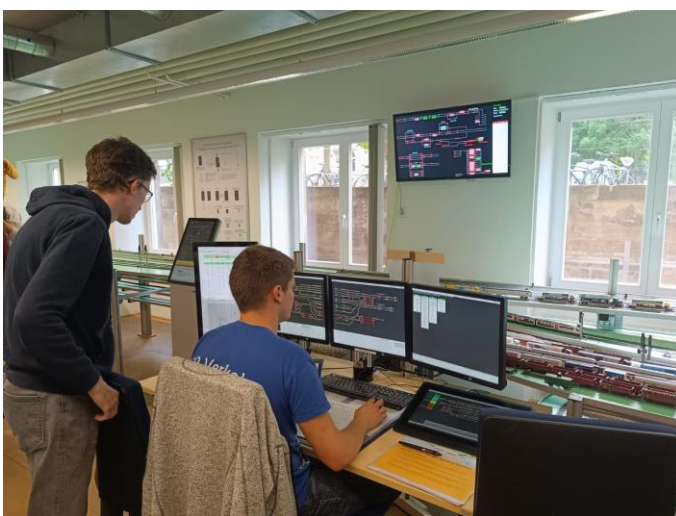


The collaboration with TUD faculty allowed us to align our lesson plans and lecture material with the latest trends and research in transport planning and sustainable urban development. We worked closely with TUD experts to ensure that the materials reflected current technological advancements and teaching practices, particularly in the areas of sustainable mobility planning. This effort involved not only modernizing content but also incorporating practical applications and case studies that would provide students with real-world perspectives on the topics covered in the modules.

The feedback and insights gained from these discussions proved invaluable in refining the curriculum to better meet the needs of UoM students. We focused on making the material more engaging and interactive by integrating Problem-Based Learning (PBL) approaches, which encourage students to actively participate in solving complex real-world problems, rather than merely absorbing theoretical knowledge. This collaborative effort is expected to have a long-term impact on improving the quality of education at UoM.

ii. **Participation in Lectures, Lab-based Practices, and Hands-On Exercises**

Another significant component of our retraining involved active participation in lectures, lab-based practices, and hands-on exercises. Attending lectures delivered by TUD faculty exposed us to a diverse range of teaching methodologies, many of which were unfamiliar to us and provided valuable insights into different ways of engaging students. These lectures covered a wide variety of topics, including sustainable transport systems, transport modeling and R.



Beyond lectures, we participated in lab-based practices and hands-on exercises that were instrumental in improving our technical proficiency. These sessions allowed us to work with

advanced teaching tools, simulation software, and modern equipment that are typically used in European educational settings. This exposure helped us understand how technology can be better integrated into our teaching practices back at TCP, UoM.

For instance, we learned how to utilize simulation software for transport modeling, which we can now incorporate into practical sessions for our students. Hands-on exercises allowed us to familiarize ourselves with new equipment, which will improve the quality of our practical sessions at UoM. This training has enhanced our ability to deliver more engaging and technologically advanced lessons, better preparing our students for the modern workforce.

iii. **Presentation of Research Works**

An important aspect of our retraining program was the presentation of our ongoing research to Chair of Mobility System Planning faculty and research students. We had the opportunity to showcase our work in areas such as urban planning, transport and mobility planning, and the application of LBS in Sri Lanka context. These presentations provided a platform for interactive discussions and feedback sessions, which greatly benefited our research.



The exchange of ideas during these sessions not only improved the quality of our research outputs but also helped lay the groundwork for future collaborative research projects between UoM and TUD. One area of particular interest was the potential for joint research in Streets as Places and Pathways: Estimation of Pedestrian Volumes on Streets Based on Built Environmental Data, where both institutions have significant expertise. We discussed the possibility of compare and contrast German and Sri Lankan context to address the unique challenges faced by different cities, which provided exciting prospects for future research collaborations.

This collaborative atmosphere fostered by TUD also introduced us to new research methodologies and tools, which we can now apply to our ongoing projects in Sri Lanka. This cross-pollination of ideas has opened up new avenues for exploration and has given us a fresh perspective on how to approach urban planning and transport-related challenges in our own country.



iv. **Development of Reading Lists for Modules**

Utilizing the extensive resources available at TUD's library, We developed comprehensive reading lists for the revised modules. These updated reading lists ensured that UoM's curriculum remained current with the latest academic and technological developments in urban informatics, environmental planning, and related fields. The vast resources available at the TUD library helped us gather relevant materials and stay updated with the latest advancements in our fields.

v. **Collaboration and MoU Discussions**

One of the more strategic outcomes of our retraining at TUD was the exploration of long-term collaboration opportunities between our institutions. Discussions with TUD researchers and administration focused on applying joint funding.

The purpose of this joint funding is to establish a framework for future collaborations in joint teaching, degree programs, and laboratory partnerships. By formalizing this partnership, we aim to enhance academic ties and facilitate the exchange of knowledge and expertise between the two institutions. The joint funding would also enable student and faculty exchange

programs, allowing UoM students and staff to benefit from the advanced research and teaching facilities at TUD.

This collaboration represents a significant step forward in long term sustainability of the project and our efforts to internationalize our curriculum and provide our students with global perspectives on urban planning and transportation.



vi. **Study of Transport System in Dresden**

A critical part of our retraining involved an in-depth study of Dresden's transport system. Dresden, known for its efficient and sustainable public transportation network, provided us with a real-world example of how multimodal transport systems can be integrated into urban environments.

We examined various aspects of Dresden's transport planning, implementation, and operations, with a particular focus on the city's use of intelligent transport systems (ITS), LBS, and sustainable mobility solutions. The city's approach to integrating trams, buses, cycling infrastructure, and pedestrian-friendly zones provided us with valuable insights that could be applied to transport planning in Sri Lanka.

We were especially impressed with Dresden's use of MOBI points—designated hubs where different modes of transport converge to offer last-mile connectivity. This system, along with the city's emphasis on pedestrian safety and accessibility, serves as a model for urban mobility that we plan to incorporate into the UoM curriculum.



4. Capacity Building Contributions

The retraining program offers significant contributions to capacity building of UoM staff members:

- **Knowledge Enhancement:** The exposure to TUD's teaching methodologies and modern equipment significantly enhances the knowledge and teaching capacity of UoM staff, enabling them to incorporate these innovations into their own teaching practices.
- **Research Competence:** The interactive research sessions at TUD foster collaboration and improve the research capabilities of UoM staff, allowing them to contribute meaningfully to global academic discourse.
- **Curriculum Enrichment:** The retraining program informs curriculum updates that align UoM's academic offerings with international standards, ensuring students receive a modern and globally relevant education.
- **Global Collaborations:** The potential MoU between UoM and TUD creates opportunities for ongoing collaboration, joint research, and academic exchange, broadening the international exposure of UoM staff and students.
- **Best Practices Sharing:** UoM staff will share best practices learned from the Dresden experience with other Sri Lankan universities and industry partners, fostering a broader culture of continuous improvement.

5. Gender Equity and Inclusion

WP 3.8 places a strong emphasis on gender equity by ensuring the inclusion of female educators in the program. The challenges faced by female staff, particularly those with family commitments, are taken into account, with the program's structure designed to accommodate their needs. The inclusion of female participants in fields such as urban planning and environmental planning highlights the project's commitment to fostering gender balance in traditionally male-dominated disciplines.

6. Reflections from Dr. Chethika Abenayake & Dr. Amila Jayasinghe on their Stay at the TUD

During our time at the Technical University of Dresden (TUD), we experienced significant growth in both our research and teaching capacities, especially in the area of collaborative research. Over the past three years, we have worked closely with colleagues from the Chair of Mobility System Planning to develop various modules and teaching materials. Our visit provided an opportunity to refine these materials, allowing us to assess the efficacy of our approaches. In the process, we identified many similarities between the challenges faced in Germany and Sri Lanka, particularly in transportation behavior. This realization has opened the door to exciting comparative research opportunities. We are optimistic about the immense potential for future collaborations that can merge our knowledge and expertise to address pressing transportation challenges faced by both regions.

The international academic environment at TUD was another eye-opening experience. During discussions with Dr. Michael Krieg, we learned about the wide array of courses available to international students at TU Dresden. This insight was invaluable, as it provided us with information that we can now share with our students back in Sri Lanka, opening up new opportunities for them to pursue higher education in Germany. The vibrant academic life in Dresden, characterized by a strong foundation in research and a supportive learning environment, offers students the opportunity to truly flourish in their studies and beyond.

Our stay at TUD also deepened our understanding of what it means to promote sustainable development. Sustainable development, we realized, goes beyond merely imparting academic knowledge and skills. It involves fostering the right attitudes and mindsets in students and researchers alike. The freedom in research and teaching that we witnessed at TUD was incredibly inspiring. It showed us that when individuals are given the autonomy to explore and innovate, the impact on sustainability and other critical global challenges can be profound.

One of the most striking aspects of our time in Dresden was the city's public transport system. We were thoroughly impressed by how efficiently it connected popular destinations with the city's outskirts. The concept of multimodal transport and MOBI points—hubs that offer last-mile connections—opens up incredible opportunities for people to move seamlessly throughout the city. Additionally, Dresden's pedestrian-friendly design serves as an exemplary model of sustainable mobility. The city's thoughtful urban planning and focus on providing accessible and sustainable transport options left a lasting impression on us, and we hope to apply some of these concepts to our own work in Sri Lanka.

Looking to the future, we reflect on our visit as an invaluable learning experience. It was not just about adopting new ideas but also about adapting them to fit the unique conditions of our own country. The exchange of experiences with our colleagues in Dresden was reciprocal; we learned that Western knowledge does not always translate perfectly to our context, but it certainly sparks innovative solutions. This mutual learning is where scholarship can truly thrive, and we are excited to continue exploring these new ideas in our academic and professional endeavors.

In addition to the knowledge gained, one of the most rewarding aspects of our visit was the network of beautiful and inspiring individuals we connected with. We learned about the work being done in other chairs and departments at TUD, and we look forward to sharing this knowledge with our students back home in Sri Lanka. Although this marks the official end of our project, we view it as the beginning of many future collaborations. We are eager to build on the relationships we have formed and continue working together to tackle global challenges in urban planning, transportation, and sustainability.

7. Conclusion

The retraining program at the Technical University of Dresden (TUD) was an invaluable experience that significantly enhanced our teaching methodologies, research capabilities, and commitment to promoting sustainable practices within the academic space. By immersing ourselves in the vibrant academic environment of TUD, we were able to modernize and enrich the curriculum at the University of Moratuwa (UoM), aligning it with global standards in urban planning, transport systems, and environmental sustainability. Our exposure to cutting-edge teaching tools and research practices, combined with hands-on exercises, has empowered us to create a more engaging and impactful learning environment for our students. The program also fostered critical cross-cultural academic exchanges, which laid the groundwork for future collaborations between UoM and TUD, with the potential for joint research and teaching initiatives. Moreover, the program's emphasis on gender equity reaffirmed our dedication to supporting female educators and students, ensuring they have equal opportunities to thrive in traditionally male-dominated fields. This experience was not just a professional milestone; it sparked a culture of continuous learning and international collaboration that will continue to influence higher education in Sri Lanka for years to come.