

MAIN ACHIEVEMENTS AND WAY FORWARD

CALOHEA Civil Engineering SAG

1-3 July 2024, Bangkok

OUTLINE

PART 1

Overview of Civil Engineering SAG adventures
2021 – 2024

PART 2

Task 1 – 6

(Impact, Dissemination & Sustainability)

PART 1

Overview of Civil Engineering SAG adventures

2021 - 2024

CALOHEA Subject Area Group (SAG) Civil Engineering

Institutional Team:

1. University of San Augustin, Philippines – USA
2. Institute of Technology of Cambodia – ITC
3. Institut Teknologi Sepuluh Nopember, Indonesia, ITS
4. Universitas Hasanudin, Indonesia – UNHAS
5. Ho Chi Minh City University of Technology, Vietnam – HCMUT
1. National University of Civil Engineering, Vietnam – NUCE
2. Chulalongkorn University, Thailand – CHULA
3. Naresuan University, Thailand – NU
9. National University of Laos – NUOL
10. Souphanouvong University, Laos – SU
11. Universiti Malaya – UM
12. Universiti Teknologi Malaysia – UTM
13. Universiti Sains Malaysia - USM

European Team Advisors:

1. Alfredo SOEIRO,
Universidade Do Porto
2. Emilien AZEMA, Universite
de Montpellier



6th GM
Kuala Lumpur
6-9 June 2023



7th GM
Porto
13-15 Dec 2023



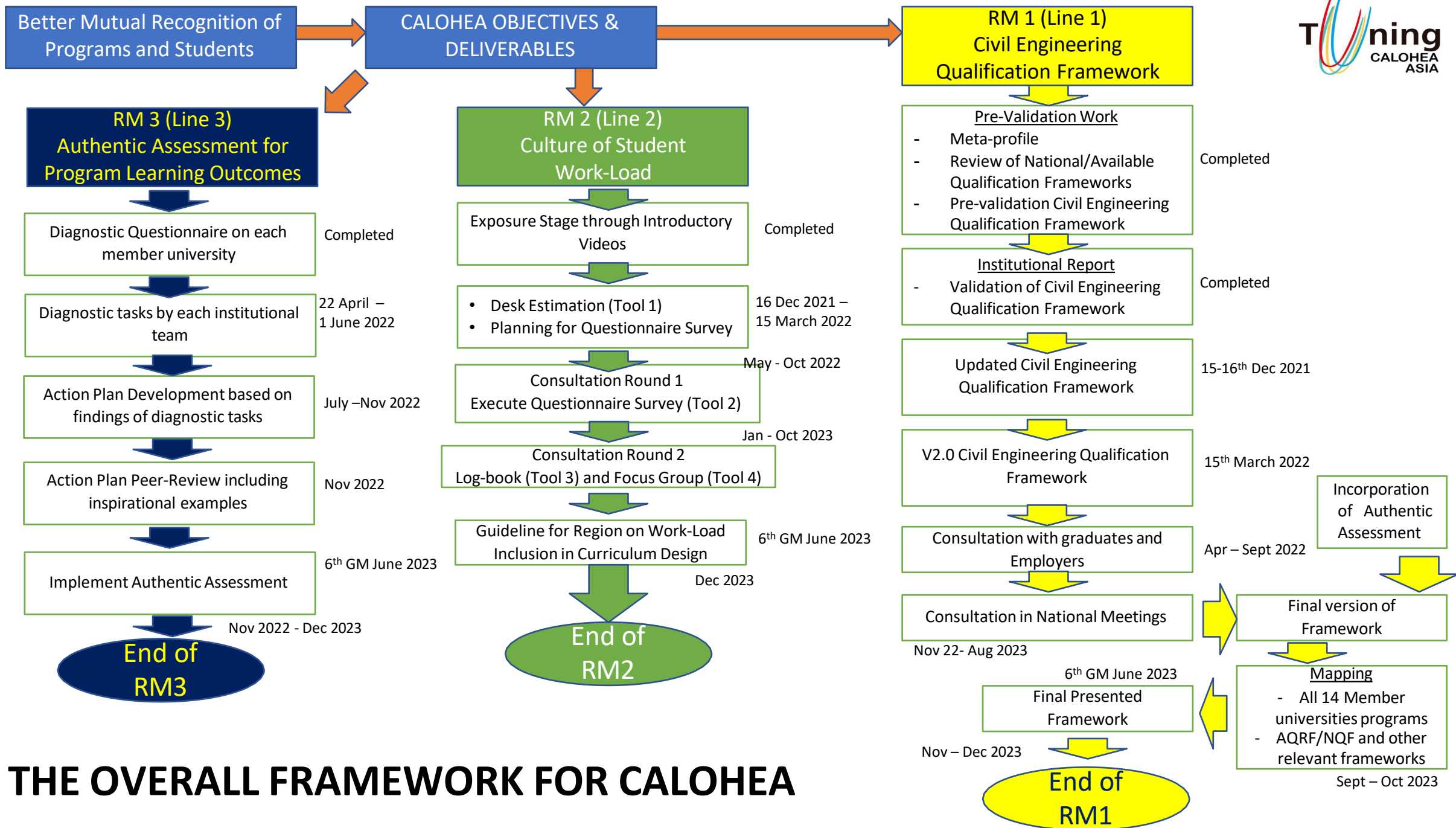
8th GM
Bangkok
1-3 July 2024

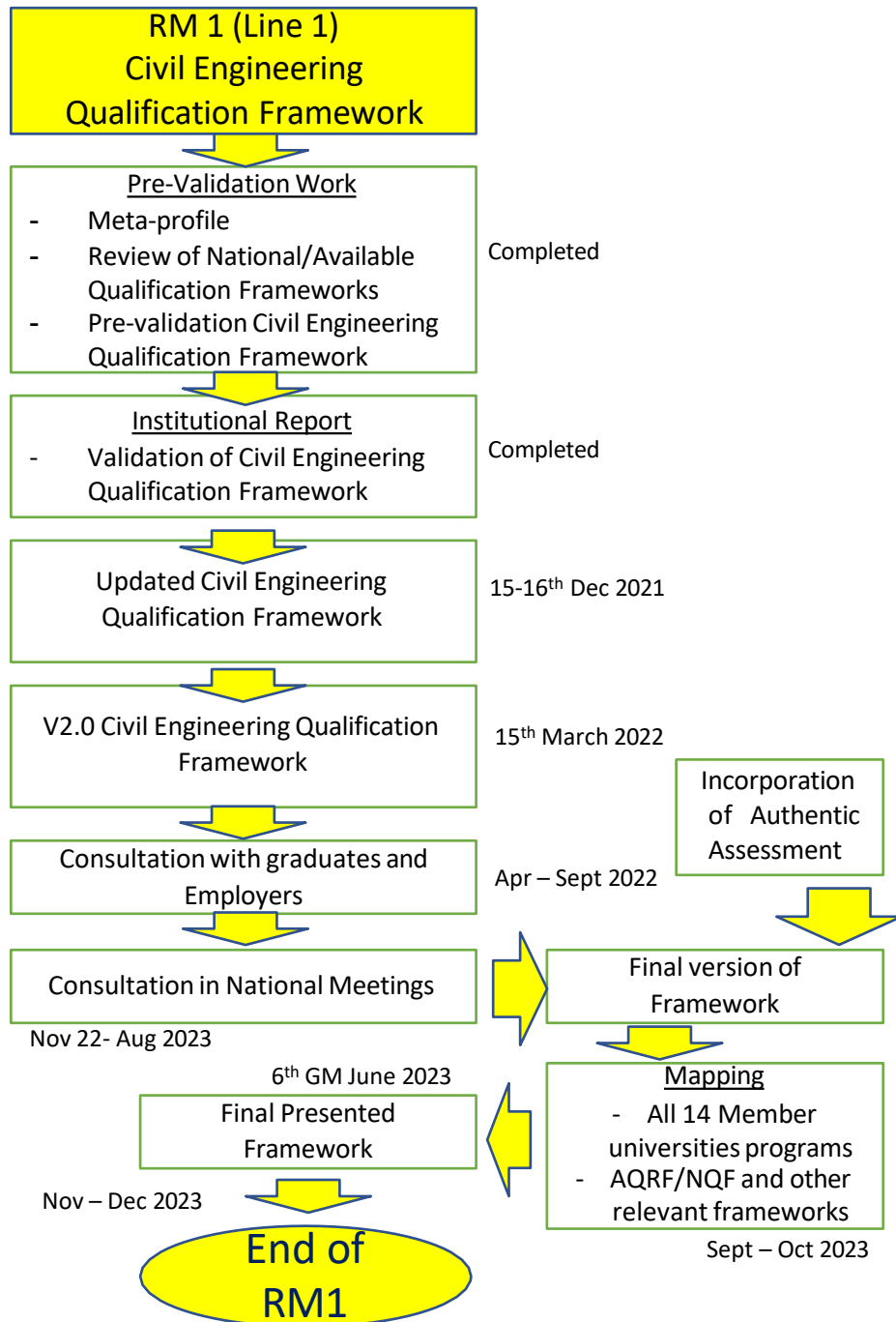
3 Key Recognition Mechanisms

RM1 Creation and use of Regional Subject-Specific Qualifications and Assessment Reference Frameworks to permit greater comparability of institutional degree programme profiles

RM2 Instalment of the culture of student workload measurement as an integral part of curriculum design

RM3 Implementation of authentic assessment of internationally comparable learning outcomes in degree programmes

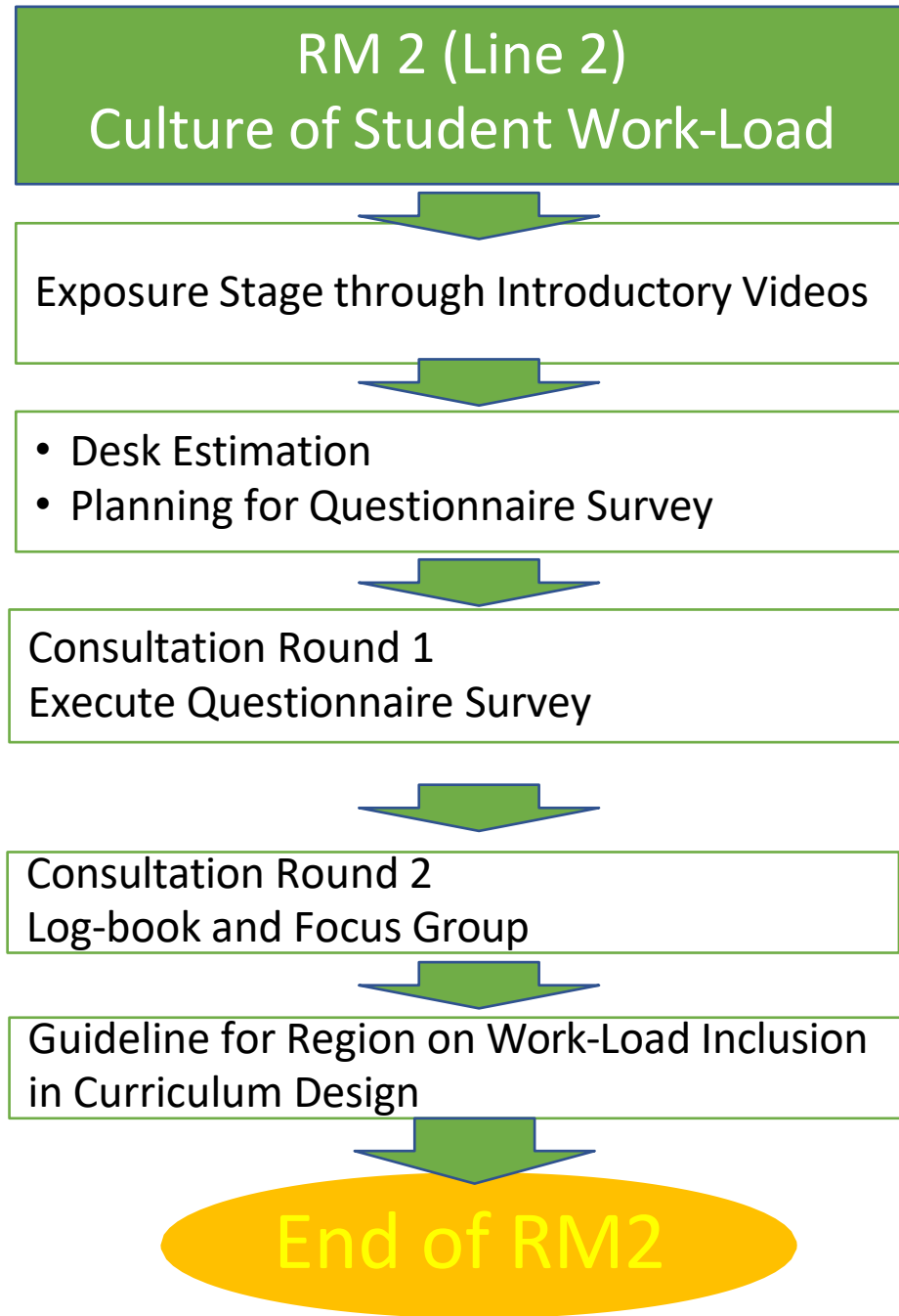




INSIGHTS

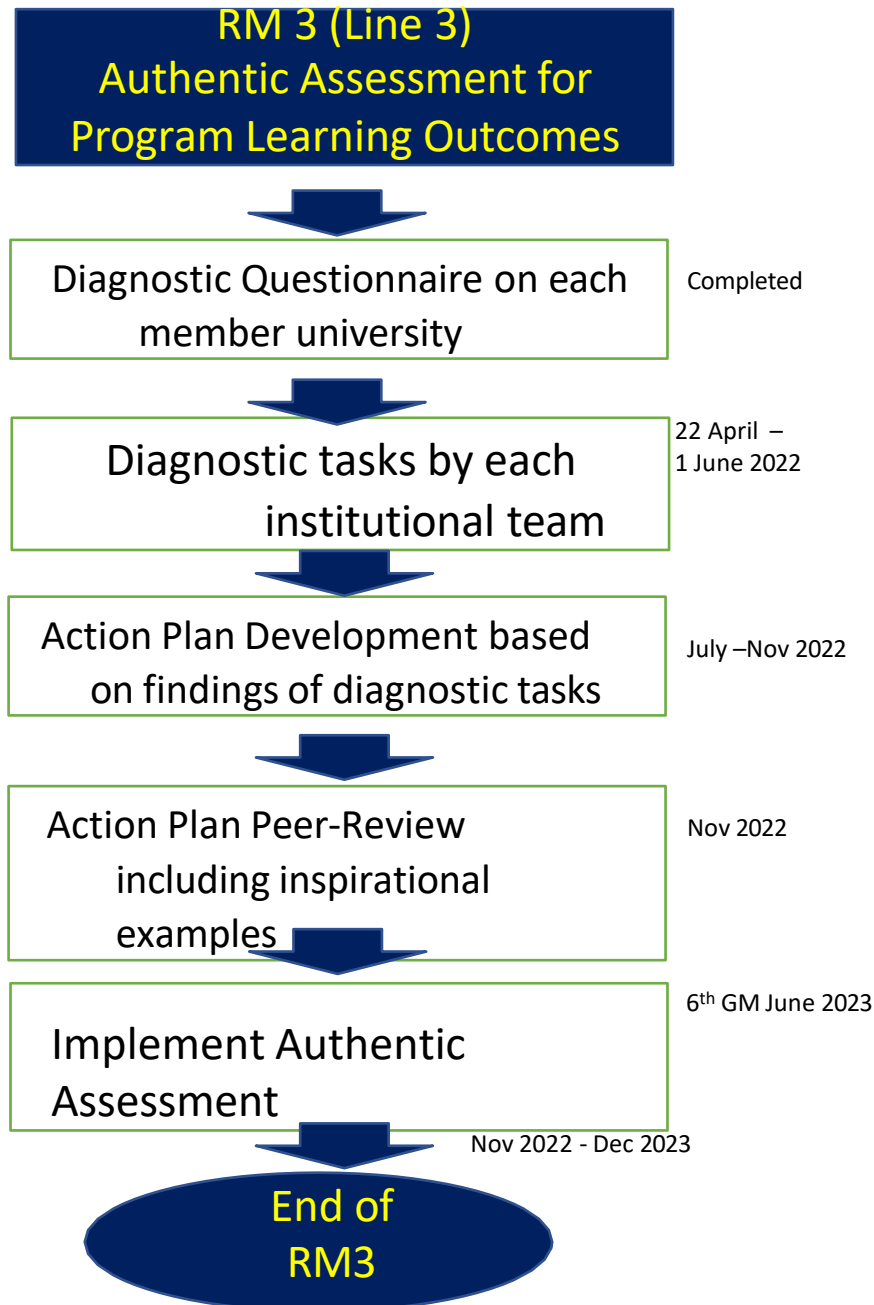
1. The Civil Engineering Subject-Specific Qualifications Reference Framework (SSQRF) will facilitate seamless credit transfer initiatives and enhance students' mobility within the region.
2. By adhering to standardized quality benchmarks and recognition mechanisms, universities can transcend geographical boundaries and collectively elevate the academic landscape of ASEAN higher education.
3. Learnt the "Art" of mapping.

INSIGHTS



1. Student work load estimation is an excellent way to manage optimal teaching and learning.
2. Some countries do not practice student work load as part of the curriculum design and when executing the teaching plan.
3. The CALOHEA methodology can help to improve the standard work load calculation.
4. Utilization of diary/logbook is a good way to understand the students learning behaviour.

INSIGHTS



1. Authentic Assessment (AuA) is relatively new to many civil engineering program owners in CALOHEA.
2. The ability to expand AuA to most courses in civil engineering can be challenging, despite its obvious benefits.
3. For AuA to be the main-stream assessment method, the teaching and learning approach may need to be transformed – especially with regards to class size.

DISSECTING THE EXPERIENCE

1. The varying experience and competency between member-universities have been challenging yet rewarding – the opportunity to co-coach has been most gratifying.
2. The 3 RM in CALOHEA may have only covered the “LEARNING” domain of the TUNING SCOPE for “Student-Centred Learning”.
3. The outcomes of learning have yet to be fully assessed.
4. The assessment of outcome attainment with regards to the designed qualification framework was not rigorously done – Thus the EVALUATING domain of the TUNING SCOPE was not addressed.
5. Without assessment of outcome attainment, the opportunities for enhancement through Continual Quality Improvement (CQI) was not fully/effectively carried out
6. Providing for post-CALOHEA project opportunities.

PART 2

Task 1 – 6

(Impact, Dissemination & Sustainability)

1-3 July 2024, Bangkok

Task 1 : Reflection

1. Integration and Impact in Civil Engineering:

- The CALOHEA framework has been **integrated into civil engineering programs and standards** across universities in Malaysia, Indonesia, Lao PDR, and Vietnam across all 14 institutional teams. For example, the Engineering Programme Accreditation Standard 2020 by the Engineering Accreditation Council (EAC) in Malaysia, and the Board of Indonesian Civil Engineering Higher Education Communication (BICEHEC) in Indonesia. **The framework has influenced curriculum design, quality assurance, student workload measurement, and authentic assessment methods within civil engineering education.**

2. Benefits to Civil Engineering Students and Staff:

- Civil engineering students have **benefited from more accurate workload calculations and practical assessments**, better preparing them for professional careers and further studies.
- Staff members in civil engineering departments have **improved their understanding of curriculum design and quality assurance**, enhancing their professional capabilities.

3. Program and Institutional Improvements in Civil Engineering:

- The project has led to **significant improvements in program-level quality assurance** within civil engineering programs. Adopting harmonized Program Learning Outcomes (PLO), Student Workload (SLT), and Authentic Assessment (AuA) mechanisms has ensured consistent and high-quality educational delivery, enhancing the credibility and recognition of civil engineering programs both locally and internationally.

Task 1 : Reflection..cont

4. National and Regional Alignment in Civil Engineering:

- Nationally, **aligning civil engineering higher education programs with global standards** has improved their quality and competitiveness, attracting international students and partnerships.
- Regionally, the project has promoted **standardized academic programs in civil engineering**, facilitating better **student and staff mobility**, academic collaboration, and mutual recognition of qualifications within ASEAN.

5. Sustainability and Dissemination in Civil Engineering:

- Efforts to sustain the project's impact in civil engineering include **dedicated web pages, continuous promotion on social media, incorporation of findings into curricula, stakeholder engagement, knowledge transfer programs**, and pursuit of **external funding**.
- Dissemination activities specifically targeting civil engineering include **workshops, seminars, and online platforms** to share insights and results, ensuring the ongoing implementation of the CALOHEA framework in civil engineering education.

Task 2 : Student Workload

Guidelines for bridging SEA Student Workload with other contexts

- *Recommendations on the use of each of the 4 tools for Higher Education programmes in your subject area*
 - *configuration/adaptation of the tool(s) you found most effective,*
 - *tips for engaging different stakeholders,*
 - *advice on how to make sure that the data collected is used to further improve curriculum design*
- *Subject area trends in the minimum and maximum number of hours in student workload per year*
- *Are there any commonalities in the findings in terms of a range of student workload per year at the level of the subject area?*
- *Would you like to make certain recommendation (e.g. in terms of agreements that will facilitate recognition)*

SUMMARY OF SWL TOOLS FOR CIVIL ENGINEERING

Country	Indonesia (ITS)	Malaysia (UM)	Indonesia (UPI)	Vietnam (HUCE)	Thailand (NU)	Laos (SU)	Laos (NUOL)	Cambodia (ITC)	Indonesia (UNHAS)	Malaysia (USM)	Malaysia (UTM)
Tool 1: Desk Estimation (hours/year)	2000-2200	1450-1670	Detailed course-specific workload	2265-1858	1440-1095	1824-1200	1680-1824	1380-1919	1640-1520	1268-1510	1000-1320
Tool 2: End-of-Semester Questionnaire (hours/semester)	750-800	700-760	N/A	42911 (students), 4425 (academics)	580 (students), 615 (academics)	838 (students), 615 (academics)	768 (students), 912 (academics)	1320-1596	718.1 (students), 621.0 (academics)	735.4 (students), 696 (academics)	646 (students), 644 (academics)
Tool 3: Diary/Logbook (hours/week)	10-12	5-7	N/A	6118 for course 1, 3264 for course 2	8.77-7.68	12-13	11-29	42	9.75 for Integrated Civil Infrastructure Design	4.73-5.27	3.73-2.73
Tool 4: Focus Group (hours/week)	40	45	N/A	40 (normal), 50 (examination)	56.86	52.6	34.75	52	39.45	42.5	46
Reflection	Contact hours to independent work ratio varies between courses	Even distribution of workload across semesters	Detailed course breakdown but overall yearly workload not summarized	Differences found between students' and academics' workload estimates	Student workload often exceeds 1500-1800 hours, suggesting a maximum of 1200 hours to avoid overload	High ratios of independent work to contact hours highlight the need for balanced workload distribution	Average workload hour per week 48 to 57	Ratio of contact hours to independent work varies from 3/7 to 6/4	Total time on independent work was 3 to 4 times higher than contact hours	Distribution of workload is not similar throughout all semesters and weeks	Independent work is approximately 1 to 2 times higher than contact hours

in Civil Engineering with Other Contexts

	Tool 1: Desk Estimation	Tool 2: End-of-Semester Questionnaire	Tool 3: Logbook/Diary	Tool 4: Focus Group Discussion
Configuration/ Adaptation	Academics should carefully estimate the time required for each learning activity within the course, considering both contact hours and independent work. In civil engineering, special emphasis should be placed on project-based courses, laboratory work, and field activities which typically require more time.	Design questionnaires that capture detailed information on the time spent by students on various activities, including lectures, assignments, projects, and exam preparation. Ensure questions are specific to civil engineering tasks, such as CAD software use, construction site visits, and group projects.	Implement a structured logbook where students can record daily time spent on different learning activities. For civil engineering students, include categories such as lab work, project meetings, study and discussion sessions, and practical training. Example of systematic logbook using digital tools or web-based logbook.	Organize focus groups with a diverse group of students and faculty members to discuss the workload of civil engineering courses. Focus on specific challenges and time-consuming activities such as design projects, internships, and complex assignments.
Engaging Stakeholders	Involve course coordinators and faculty members in collaborative workshops to standardize estimation practices and ensure consistency across different courses.	Involve students and academic advisors in the development and refinement of the questionnaire to ensure it accurately captures the workload and is easy to understand.	Train students on how to accurately fill out logbooks and emphasize the importance of honest reporting. Encourage faculty to review logbooks periodically to provide timely feedback and support.	Ensure a balanced representation of students from different year levels and specializations within civil engineering. Include faculty members who are involved in curriculum design and course delivery.
Using Data for Improvement	Regularly review and compare the desk estimation data with actual student feedback to identify discrepancies. Use these insights to adjust course designs and workloads, ensuring a more accurate reflection of the time students need to achieve learning outcomes.	Analyze the collected data to identify patterns and outliers. Use this information to modify course content, redistribute workload, and enhance resource allocation to support student learning effectively.	Compare the logbook entries with desk estimations and questionnaire responses. Identify areas where students are spending more or less time than expected and adjust course requirements or provide additional resources accordingly.	Use qualitative data from focus groups to understand the nuances of student workload. Implement changes based on the feedback, such as adjusting deadlines, modifying project scopes, or enhancing support services.

Additional Recommendations for Bridging South East Asian Student Workload

in Civil Engineering with Other Contexts

1. Subject Area Trends in Student Workload

Based on the findings from various institutions, the minimum and maximum number of hours in student workload per year for civil engineering programs vary significantly. However, commonalities can be identified:

- **Minimum Workload:** Approximately 1000 to 1500 hours per academic year. 40 hours per week
- **Maximum Workload:** Approximately 1800 to 2200 hours per academic year. 57 hours per week

These ranges reflect the intensive nature of civil engineering programs, which often include extensive practical work, projects, and field activities. To facilitate recognition and ensure consistency, it is recommended that civil engineering programs within Southeast Asia adhere to the following guidelines:

- **Standardize Workload Expectations:** Establish a common framework for estimating and reporting student workload across institutions. This could involve adopting regional guidelines that align with international standards such as ECTS.
- **Enhance Curriculum Design:** Use the data collected from the four tools to refine curriculum designs. Ensure that workloads are balanced and realistic, preventing student overload while maintaining high academic standards.
- **Promote Regional Collaboration:** Foster collaboration between Southeast Asian institutions to share best practices and develop standardized approaches to measuring and managing student workload. This can enhance the comparability and recognition of civil engineering programs across the region.
- **Support Student Mobility:** Implement agreements that facilitate the recognition of credits and workloads between institutions. This will promote student mobility and ensure that students can transfer their learning seamlessly across different programs and countries.

2. Incorporating Authentic Assessment

Authentic assessment is an integral part of accurately measuring student workload and enhancing curriculum design. In civil engineering programs, authentic assessments such as real-world projects, simulations, and practical tasks allow students to apply theoretical knowledge in practical contexts. This approach not only provides a more accurate measure of student learning and workload but also better prepares students for professional practice.

- **Configuration/Adaptation:** Design assessments that reflect real-world engineering problems and require students to engage in practical, hands-on activities. Ensure assessments are aligned with the learning outcomes and workload expectations.
- **Engaging Stakeholders:** Involve industry partners and alumni in the development and evaluation of authentic assessments to ensure they are relevant and challenging. Provide training for faculty on designing and implementing authentic assessments.
- **Using Data for Improvement:** Collect and analyze data on student performance in authentic assessments to identify areas for improvement in both the assessments and the curriculum. Use this data to refine assessment tasks, enhance student support, and adjust workload estimations accordingly.

Task 3 : CALOHEA Global Campaign 1

(AUN Newsletter)

CALOHEA Project Transforms Civil Engineering Education in ASEAN: A Journey Towards Global Excellence

Monday, July 1st, 2024

8th General Meeting of CALOHEA, Bangkok, Thailand

The CALOHEA project is making a significant impact on Civil Engineering education across ASEAN, enhancing the international appeal and recognition of academic programs. This initiative involves 14 universities from Malaysia, Laos, Cambodia, the Philippines, Thailand, Indonesia, and Vietnam. It is guided by European advisors Alfredo Soeiro from Universidade Do Porto and Emilien Azema from Universite de Montpellier and led by Prof. Dr. Taksiah A. Majid from Universiti Sains Malaysia. The project's focus on developing a comprehensive Qualification Reference Framework that includes competency-based learning, effective management of student workload, and authentic assessment methods aligns the educational system with global standards and meets the evolving needs of the region.

A notable feature of the CALOHEA project is its strategy for managing student workload. By carefully measuring and managing workload, the project promotes a balanced academic experience that reduces stress and enhances both well-being and performance. This balanced approach is crucial for creating an environment where students can thrive academically and personally. Authentic assessment practices are another key component of the CALOHEA project. By providing relevant, real-world experiences, these assessments ensure that students are well-prepared to meet the challenges of their professions. Unlike traditional exams, authentic assessments allow students to demonstrate their



Task 4 : CALOHEA Global Campaign 2

Video on the impact of the project



Task 5 : Possible follow-up joint initiatives

FOLLOW UP JOINT INITIATIVES :

1. Internship/Student mobility within ASEAN countries.
2. MoU and MoA on academic programs.
3. Exchange opportunities from European countries and ASEAN
4. Joint webinar
5. Joint degree
6. Joint publication
7. Develop framework for CE curriculum development – forum and sharing within ASEAN
 - General framework vs CE specific framework
 - Curriculum development – clear definition of workload

PRIORITIES :

1. CE specific framework in relation to AuA for each sub-domain
2. Curriculum development considers the SWL
3. Student workload exercise across all semester
4. Measurement of learning outcomes have yet to be fully assessed

Task 6 : Final Quality Assurance

Final QA

1. Conduct the Final Quality Assurance exercise
2. Respond to the Final Quality Assurance Survey *[QR code]*

ASEAN Network of Champions of Internationalization



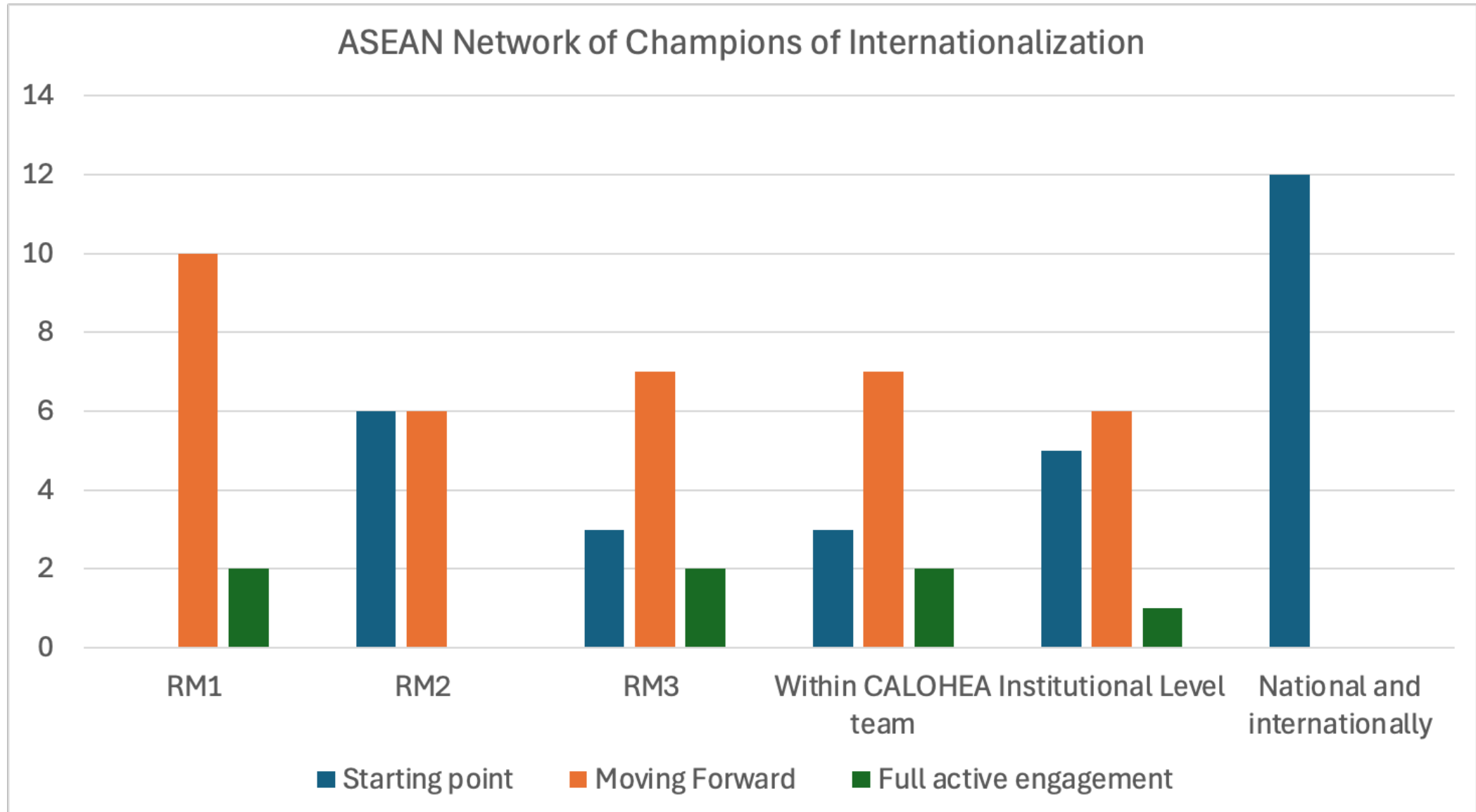
Rubric	STARTING POINT	MOVING FORWARD	FULL ACTIVE ENGAGEMENT
RM1 FRAMEWORKS	Aware of the documents (standards, norms, frameworks, etc.) that regulate/ indicate/ recommend the knowledge, skills, attitudes and competences a graduate in the subject area must develop by the end of a higher education programme (national or any international documents that are of relevance)	* Identify the differences and commonalities between the degree profile currently aimed for in own programme(s) and relevant national/international standard-setting documents * Identify the commonalities and differences between own subject-area regulatory documents and comparable documents in other ASEAN countries	* Promote institutional steps aimed at reaching a better alignment of the profile aimed for in own programme(s) with the ASEAN Subject-Area Specific Reference Qualifications Framework * Actively contribute to the ASEAN Subject-Area Specific Reference Qualifications Framework being known and adopted within one's own country and region
	0	10	2
RM2 STUDENT WORKLOAD	* Explain to colleagues and students why measuring student workload is important to (1) facilitate recognition of full programmes and study periods at inter-institutional and international levels and (2) improve quality of higher education programmes through a better consistency between theoretical time estimation and the real time students need to spend to complete the programme * Aware of different tools and approaches for estimating full student workload	* Use different tools and approaches for estimating full student workload * Analyse the results of student workload estimations in order to (1) identify possible inconsistencies between the actual student workload and the one planned for at the course and curriculum design stage and (2) take data-informed decisions to recognise full programmes and study periods at inter-institutional and international levels	* Engage different stakeholders in revising higher education programmes and courses based on the analysis of the data collected through different tools for measuring student workload * Contribute to an ASEAN-level discussion in order to promote the use of student workload as a basis for a more coherent regional recognition system
	6	6	0

ASEAN Network of Champions of Internationalization



Rubric	STARTING POINT	MOVING FORWARD	FULL ACTIVE ENGAGEMENT
RM3 ASSESSMENT	* Explain why introduction of authentic assessment of learning outcomes is an essential step in (1) facilitating recognition of full programmes and study periods at inter-institutional and international levels and (2) improving quality of higher education programmes	* Analyse current assessment practices in terms of their alignment with the principles of authentic assessment * Share concrete institutional experiences of learning outcomes authentic assessment in order to promote international peer-learning within one's own subject area * Develop a plan for gradual/full adoption of authentic assessment practices of learning outcomes	Engage different stakeholders in coordinated continuous efforts for gradual/full implementation of authentic assessment of internationally comparable learning outcomes
	3	7	2
<i>Within your CALOHEA team</i>	Identify the strengths and previous experience of each CALOHEA Team member in relation to the 3 Key Recognition Mechanisms focussed on in the CALOHEA project	Each CALOHEA Team member has a concrete role and actively contributes to the work on the different CALOHEA tasks and activities	Ensure that all the CALOHEA Team members develop as Recognition Champions thanks to the CALOHEA project activities and regardless of whether they participate or not in international project meetings
	3	7	2
<i>At institutional level</i>	Identify potential Champions - persons in your institutions who have knowledge and experience in the 3 RMs - for further development of CALOHEA activities at the institutional level	Include others at the level of your institution (academics, students, staff, university authorities) in CALOHEA activities	Promote the exploitation of CALOHEA results and products at the institutional level - beyond the CALOHEA Team directly involved in the project
	5	6	1
<i>Nationally and Internationally</i>	Identify key actors (persons, institutions, etc.) at national and international level, who can contribute to the success of CALOHEA implementation	Contribute to active participation of the identified key actors in CALOHEA activities - both within the framework of the National Dissemination Meeting and beyond	Promote the exploitation of CALOHEA results and products at national and international level - beyond the CALOHEA Subject Area Group directly involved in the project
	12	0	0

Task 6 : Final Quality Assurance



SUMMARY

1. The Civil Engineering Subject-Specific Qualifications Reference Framework (SSQRF) serves as a catalyst for fostering mutual recognition among ASEAN universities.
2. As the project continues to evolve and mature, its legacy will extend far beyond the confines of Civil Engineering, serving as a beacon of excellence and collaboration for the entire ASEAN higher education community.
3. The CALOHEA project may have achieved the intended objectives,. However, the CALOHEA project may have fallen short from fulfilling the name "CALOHEA" as the acronym represents. Providing for post-CALOHEA project opportunities.

THANK YOU

Acknowledgement:

- Team members for CIVIL ENGINEERING SAG
- Fellow Coordinators of SAG CALOHEA
- The Entire Institutional Team of CALOHEA
- CALOHEA Team from University of Groningen
- CALOHEA team from AUN
- Erasmus+ Programme