Project Report - Indonesia

Developing the Capacity of Student Scientists for Supporting Disadvantaged Communities to Cope with Flooding (DECAF)

ASIA-PACIFIC NETWORK FOR GLOBAL CHANGE RESEARCH

The University of Nottingham Ningbo, China

CLEMSON UNIVERSITY

VICTORIA UNIVERSITY OF WELLINGTON TE HERENGA WAKA

香港教育大學 The Education University of Hong Kong

DINAS PUSDATARU PEKERJAAN UMUM SUMBER DAYA AIR DAN PENATAAN RUANG PROVINSI JAWA TENGAH

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PHASE 1

1.1. Announcement and Registered Students

Indonesian project team welcome Indonesian university students both at the undergraduate and master level. The information on registration of the DECAF Program were distributed through circulation of posters within university and through social media. Registration was opened from the end of March until end of April. The project attracted students across Indonesia and by the end of April, DECAF received 228 students registered. Table 1 shows the distribution of the registered students, while Table 2 shows the distribution of the academic background of these students.

Table 1: Distribution of the Registered Students

No	University	Registered Students
1	Bandung Institute of Technology	1
2	Musamus Merauke University	4
3	Sekolah Tinggi Pertanahan Nasional	1
4	Gadjah Mada University	4
5	Airlangga University	2
6	University of Amikom Yogyakarta	3
7	Universitas Negeri Malang	3
8	Sriwijaya University	1
9	Indonesia Open University Yogjakarta	1
10	Teuku Umar University Aceh	2
11	Diponegoro University	206
	TOTAL	**228**

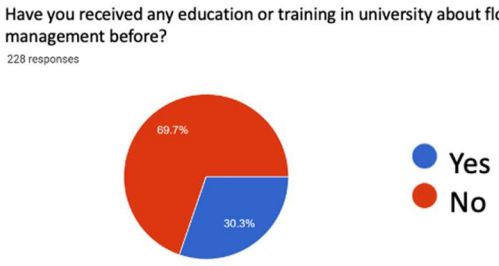
Table 2: Distribution of Academic Background

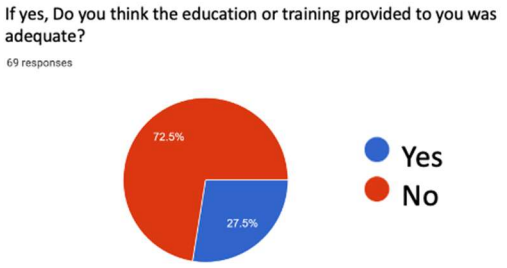
No	Major	Number
1	Agribusiness	1
2	Aquaculture	2
3	Business	1
4	Physics	1
5	Geography	4
6	International Relation	2
7	Law	1
8	Humanities	1
9	Marine Science	1
10	Soil Science	1
11	Mathematics and Natural Sciences	1
12	Oceanography	18
13	Remote Sensing	1

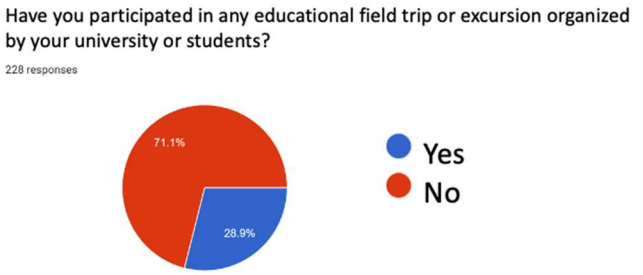
14	Spatial Planning and Land Management	5
15	Psychology	1
16	Geodetic Engineering	17
17	Environmental Engineers	6
18	Natural Disaster and Environmental Management	1
19	Urban And Regional Planning	148
20	Civil Engineering	15
	TOTAL	**228**

1.2. Entry/ Pre-Lecture Assessment

Pre-lecture assessment was conducted during the registration process. The result shows that almost 70% of the students haven't received such training. Those who have previous education and training related to flood also said that it was not adequate and more than 70% of the organized trainings did not involve fieldtrip or excursion. **Appendix 1** provides further information about the result of Pre-Lecture Assessment.







1.3. Description of Activities

1.3.1. Launching and Opening

The launching of the DECAF was conducted on 2nd of May 2023 in a hybrid mode – live in Diponegoro University, Semarang Indonesia attended in person by approximately 80 students, The Dean of Engineering Faculty Universitas Diponegoro, The Head of Department of Urban and Regional Planning and academic staff, The Head of Planning and Development Agency of Pekalongan City Government, and the representation of Agency for Water Resource and Spatial Planning of Central Java Province Government. While the rest of students in Indonesia and Myanmar attended the launching through online platform as well as the other project partners in Hong Kong, China and the US.

DECAF Project Launch in Hybrid Mode live in Diponegoro University, Semarang.

1.3.2. Hybrid Lecture 1 (Vulnerability Assessment)

Following the launch, Dr. Alex Lo and Dr. Rukuh Setiadi delivered a session of hybrid lecture on people's vulnerability to climate change impacts. Dr. Lo unpacked three key vulnerability dimensions, i.e. physical exposure, sensitivity, and adaptive/coping capacity. This lecture introduced these dimensions and their sub-components, identify their sources/causes, and indicate their differences and common elements. It will also cover the various approaches for assessing vulnerability, describe how they are used, and discuss their strengths and weaknesses. Meanwhile, Dr. Setiadi focused on the use of participatory approaches for vulnerability assessment in developing countries.

Dr. Alex Lo delivered the first Hybrid lecture on DECAF Project.

Dr. Rukuh Setiadi delivered a session of hybrid lecture on DECAF Project.

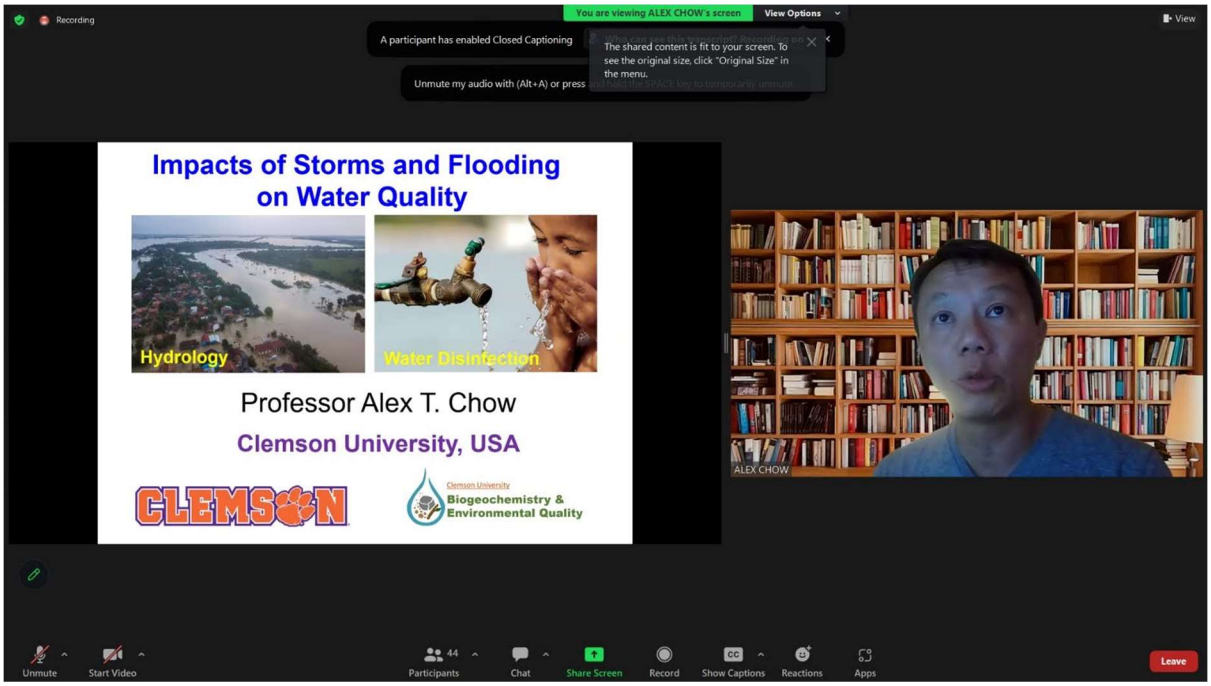
1.3.3. Online Lecture 2 (Causes of Flood)

On the 9th of May 2023, Dr. Lincoln Fox delivered an online lecture on the causes of flooding. His lecture looked at the historical perspective on flood as part of natural processes which has benefited human society in the past. Then, the lecture discusses recent perception that flooding as a major hazard along with the economic development, population growth, and the creation of towns and cities triggering the encroachment of floodplains and coastal areas. In overall, this lecture covered fundamental concepts involving the flood hazard, including its nature, magnitude and frequency, including the recent trends and geographical distribution of flood.

Left: Dr. Lincoln Fox delivered an online lecture on types and causes of flood

1.3.4. Online Lecture 3 (Water Quality Assessment)

On 15th of May, Professor Alex Chow delivered a lecture online form the Clemson University in the US. He highlighted that the increasing intensity and frequency of extreme weather events including typhoon and torrential rain due to the global climate change are expected to exacerbate water pollution. The lecture explored the mechanisms of how different land uses and land covers including urban areas and agricultural lands affects flushing pollutants and nutrients into nearby waterway and discussed its impacts to environment and human health Shortly, this lecture focused on the hydrological and biogeochemical processes under extreme flooding conditions, and discuss possible ways for alleviating the impacts.



Professor Alex Chow delivered an online lecture on water quality assessment and flood

1.3.5. Online Lecture 4 (Flood Infrastructure Management)

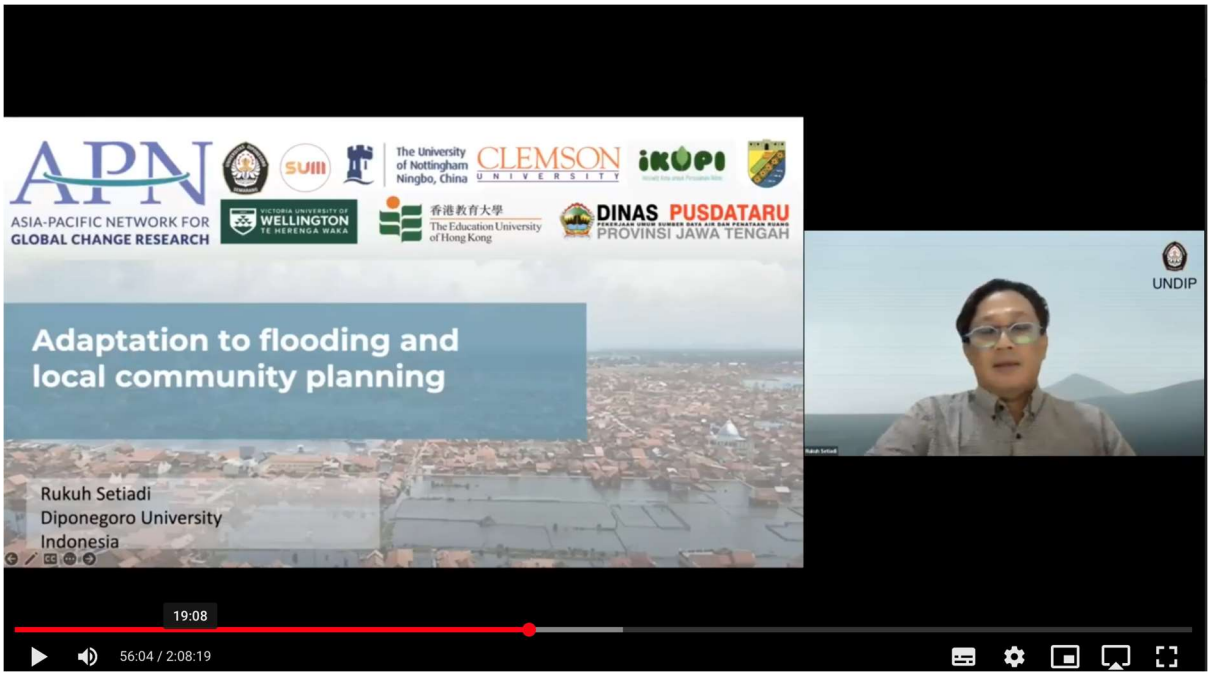
Flood infrastructure management was the fourth topic of online lecture delivered by Dr. Faith Chan. He emphasized the role of Blue-Green Infrastructure (BGI), such as forests, parks, grasslands, rivers, ponds, wetlands and bioswales interwoven as nature-based solutions to provide long- term flood protection. The lecture highlighted the capability of BGI to restore the hydrological cycle, provide adequate spaces for stormwater storage and reduce runoff and pressure on existing land drainage systems to improve flood resilience. Additionally, the lecture shared a case study, discussed the progress of the BGI and how it influenced the existing and future flood risk management practices, especially in developing countries.

Dr. Faith Chan delivered an online lecture topic of the flood infrastructure management

1.3.6. Online Lecture 5 (Adaptation Planning)

On 29th of May Dr. Rukuh Setiadi and Dr. Lo delivered an online lecture on adaptation planning. While Dr. Lo explained various conceptions of the vulnerability, Dr. Setiadi continued the lecture by introducing a strategic planning approach, which has potential to assist students in formulating strategic actions to address community vulnerability. The stages of adaptation planning were explained using a case study based on the experience of flood and tidal flood faced by Pekalongan City Government. This lecture also discussed barriers in the processes of planning and challenges in the development and governance of adaptation.

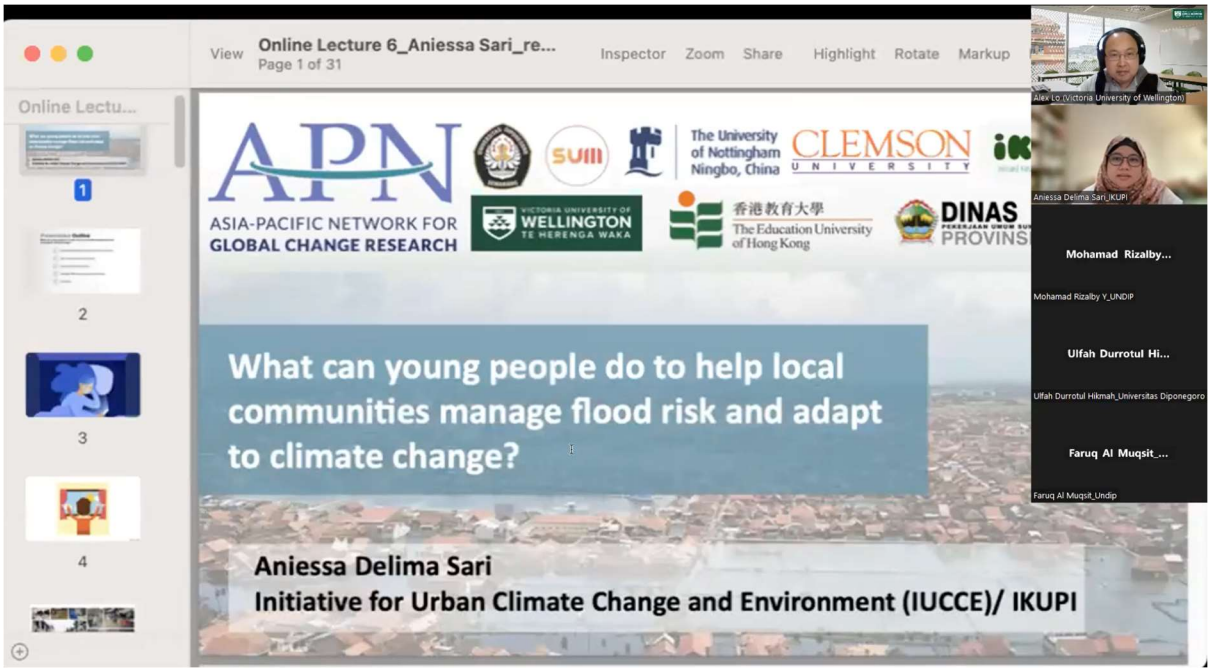
Dr. Alex Lo delivered an online lecture on climate change and the key concept of vulnerability



Dr. Rukuh Setiadi delivered an online lecture on adaptation to flood through local community planning

1.3.7. Online Lecture 6 (Youth Participation on Climate Action)

A final online lecture was delivered by Ms. Aniessa Delima Sari on 4th of June. This lecture aims to raise the awareness of students and youth that they can play an important role in helping local communities cope with flooding and adapting to the intensification of flooding events. Ms. Aniessa Delima Sari provided case study and examples of possible action such as sharing flood information, demonstrating new technologies, and improving risk communication. In short, this lecture described how the younger generations can make a difference in supporting the local community and discussed the strategies, opportunities, risks and challenges for young people to engage in a community response to flooding and climate change.



Ms. Aniessa Sari delivered the last online lecture on the role of youth in managing flood risk

1.4. Level of Participation

During the Phase 1, DECAF has fulfilled the targeted participants. In overall, 128 students have participated in this phase. Table 3 describes the target and participated students over the Phase 1.

Table 3. Level of Student Participation in Phase 1 DECAF

Phase 1 Activities	Target	Participants		
		Online	Offline	Total
Hybrid Lecture 1: Key Concept of Vulnerability Assessment	100	93	60	153
Online Lecture 2: Causes of Flood	100	93	0	93
Online Lecture 3: Water Quality Assessment	100	93	0	93
Online Lecture 4: Flood Infrastructure Management	100	93	0	93
Online Lecture 5: Community-based Adaptation Planning	100	93	0	93
Online Lecture 6: Youth Participation on Climate Action	100	93	0	93
Average	**100**	**93**	**10**	**128**

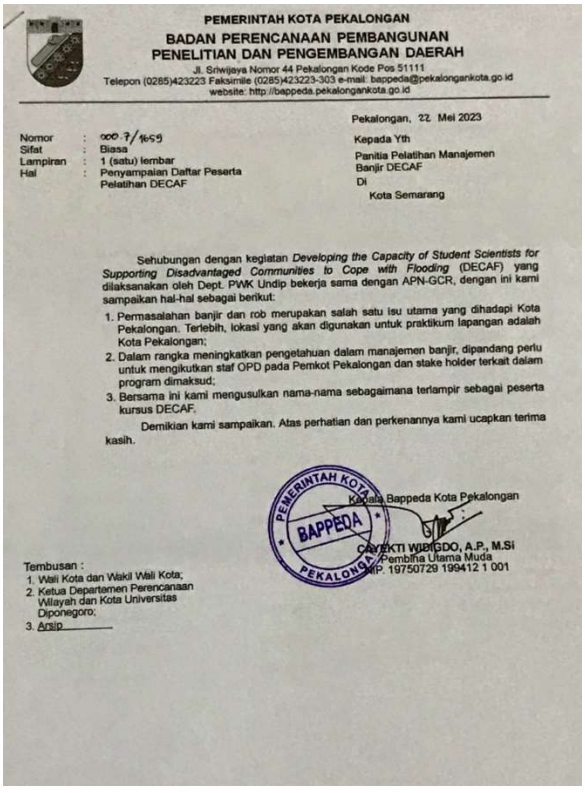
1.5. Additional Participants from Local Government Officials

In addition to student participation, the City Government of Pekalongan also assigned 18 government officials whose scope of work related to flood management to participate in the phase 1. It shows that DECAF is highly relevant to the capacity development needs of the Indonesian local government. Table 4 shows the list of participated government officials, based on the letter showing the request of the head of Planning and Development Agency (BAPPEDA) of the Pekalongan City Government to involve those listed officials.

Table 4. Listed of Participants from the Pekalongan City Government Officials

No	Name	Agency	Position
1	Imron Rosyidi, S.Pi., M.App.Sc.	BAPPEDA	Head of Division NRM and Regional Infrastructure
2	Slamet Miftakhudin, ST.	BAPPEDA	Associate Planner
3	Diah Wahyuningrum, ST.	BAPPEDA	Senior Planner
4	Herlambang Dwi Anggara, SE., MAP.	BAPPEDA	Senior Planner
5	Ginayas Farida, S.Si.	BAPPEDA	NRM & Regional Infrastructure Staff
6	Rolan Firmana, S.PWK.	BAPPEDA	NRM & Regional Infrastructure Staff

No	Name	Agency	Position
7	Lena Juliana Mardiyana, SE.	BAPPEDA	NRM & Regional Infrastructure Staff
8	Syaifudin Abdul Jabar A, ST.	BPBD	Disaster Analyst
9	Muhammad Aridudin, S.Ars.	DPUR	Junior Construction and Housing Engineer
10	Novie Abdul Salam, ST.	DPUR	Irrigation Staff
11	Dyah Putri Makhmudi, S.PWK.	DPUR	Spatial Planning and Construction Staff
12	Reza Al Mahfudz, ST.	DINPERKIM	Housing Construction Staff
13	Triwahyuni, S.Pi.	DKP	Aquaculture Staff
14	Lalu Winaran Putrangga, ST, MIL.	DLH	Senior Environmental Supervisor
15	Zakeus Bagus Nugroho, ST, MIL.	DLH	Senior Environmental Health Management
16	Hadi Riskiyanto, ST.	DLH	Senior EIA Control
17	Ayunda Agustin M.	DINPARBUDPORA	Tourism Staff
18	Nurul Aini Albar	DINPARBUDPORA	Tourism Staff



PEMERINTAH KOTA PEKALONGAN
BADAN PERENCANAAN PEMBANGUNAN
PENELITIAN DAN PENGEMBANGAN DAERAH
Jl. Sriwijaya Nomor 44 Pekalongan Kode Pos 51111
Telepon (0285)423223 Faksimile (0285)423223-303 e-mail: bappeda@pekalongankota.go.id
website: http://bappeda.pekalongankota.go.id

Pekalongan, 22 Mei 2023

Nomor : 000.7/1659
Sifat : Biasa
Lampiran : 1 (satu) lembar
Hal : Penyampaian Daftar Peserta Pelatihan DECAF

Kepada Yth
Panitia Pelatihan Manajemen Banjir DECAF
Di
Kota Semarang

Sehubungan dengan kegiatan *Developing the Capacity of Student Scientists for Supporting Disadvantaged Communities to Cope with Flooding* (DECAF) yang dilaksanakan oleh Dept. PWK Undip bekerja sama dengan APN-GCR, dengan ini kami sampaikan hal-hal sebagai berikut:

1. Permasalahan banjir dan rob merupakan salah satu isu utama yang dihadapi Kota Pekalongan. Terlebih, lokasi yang akan digunakan untuk praktikum lapangan adalah Kota Pekalongan;
2. Dalam rangka meningkatkan pengetahuan dalam manajemen banjir, dipandang perlu untuk mengikutkan staf OPD pada Pemkot Pekalongan dan stake holder terkait dalam program dimaksud;
3. Bersama ini kami mengusulkan nama-nama sebagaimana terlampir sebagai peserta kursus DECAF.

Demikian kami sampaikan. Atas perhatian dan perkenannya kami ucapkan terima kasih.

Kepala Bappeda Kota Pekalongan

CAHYATI WIDIGDO, A.P., M.Si
Pembina Utama Muda
NIP. 19750729 199412 1 001

Tembusan :
1. Walii Kota dan Wakil Wali Kota;
2. Ketua Departemen Perencanaan Wilayah dan Kota Universitas Diponegoro;
3. Arsip

Lampiran Surat Kepala Bappeda Kota Pekalongan
Nomor : 000.7/1659
Tanggal : 22 Mei 2023
Hal : Penyampaian Daftar Peserta Pelatihan DECAF Kota Pekalongan

DAFTAR NAMA PESERTA PELATIHAN MANAJEMEN BANJIR DECAF DARI PEMKOT PEKALONGAN

No	Nama	No HP	Instansi	Jabatan
1.	Imron Rosyidi, S.Pi., M.App.Sc.	085611546766	BAPPEDA	Kepala bidang PSDAIW
2.	Slamet Miftakhudin, S.T.	085226445102	BAPPEDA	JF Perencana Madya
3.	Diah Wahyuningrum, S.T	085741581952	BAPPEDA	JF Perencana Muda
4.	Herlambang Dwi Anggara, S.E., M.A.P.	085640822836	BAPPEDA	JF Perencana Muda
5.	Ginayas Farida, S.Si	085743047689	BAPPEDA	Staf bidang PSDAIW
6.	Rolan Firmanasari, S.PWK	08562557168	BAPPEDA	Staf bidang PSDAIW
7.	Lena Juliana Mardiyana, S.E.	085922116299	BAPPEDA	Staf bidang PSDAIW
8.	Syaifudin Abdul Jabar A., S.T.	085786748001	BPBD	Analis Bencana
9.	Muhammad Arifudin, S.Ars	085742022244	DPUPR	JF Teknik Tata Bangunan dan Perumahan Pertama
10.	Novie Abdul Salam, ST	085640192007	DPUPR	Staf Bidang Pengairan
11.	Dyah Putri Makhmudi, S.PWK.	0895387355971	DPUPR	Staf Bidang tata Ruang dan Bangunan
12.	Reza Al Mahfudz, S.T.	087744201993	DINPERKIM	JF Teknik Tata Bangunan dan Perumahan Pertama
13.	Triwahyudi, S.Pi	082133359680	DKP	Staf Bidang Perikanan Budidaya
14.	Lalu Winaran Putrangga, S.T., M.I.L.	08156706475	DLH	JF Pengawas Lingkungan Hidup Muda
15.	Zakeus Bagus Nugroho, S.T., M.I.L.	085643633933	DLH	JF Penata Kelola Penyehatan Lingkungan Muda
16.	Hadi Riskiyanto, S.T	085869611090	DLH	JF Pengendali Dampak Lingkungan Muda
17.	Ayunda Agustin M.	081226111935	DINPARBUDPORA	Staf Bidang Pariwisata
18.	Nurul Aini Albar	082133332091	DINPARBUDPORA	Staf Bidang Pariwisata

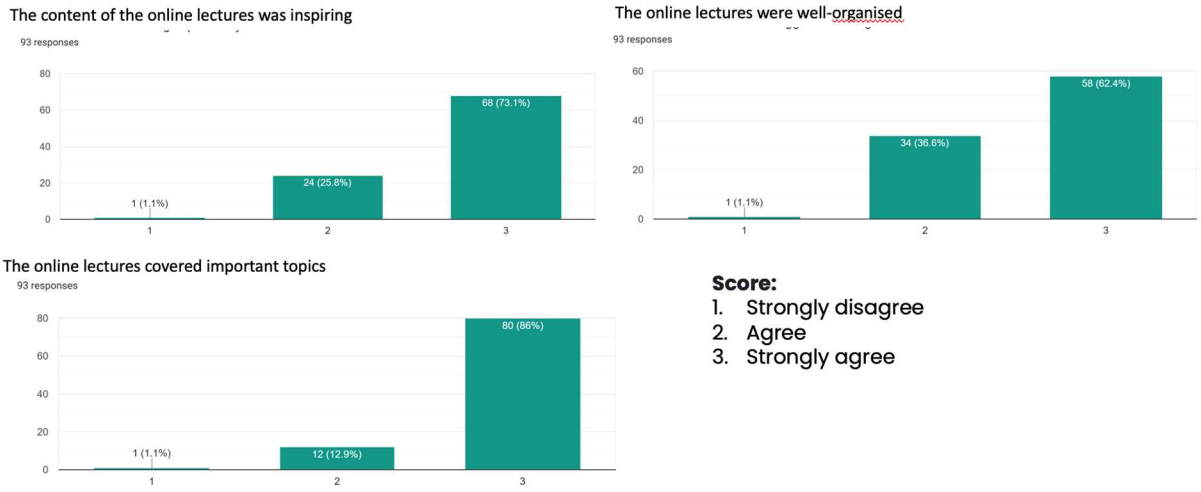
1.6. Post-Lecture

1.6.1. Online Lecture Evaluation

The content of the online lectures in the phase 1 fulfilled the expectation of the participants. Almost all (99%) students agreed that that the lectures were inspiring and well organized.

About 86% of students strongly agreed that the lectures covered an important topic for them. Further information about the evaluation on online lecture in the Phase 1 is available on **Annex 1.**

Figure 1: The Quality of the Online Lectures



1.6.2. Outcomes

The students found that the Phase 1 of DECAF project has improved their capacity in terms of knowledge about flood risk management, water pollution and community engagement. Figure 2 shows self-assessment of the student's level of confident after following the Phase 1 of DECAF Project. Further information about the evaluation on the outcome of Phase 1 is available on **Annex 1.**

Figure 2: self-assessment of the student capacity after following the Phase 1 of DECAF Project

PHASE 2

2.1. Student Selection Process

2.1.1. Criteria

Following the end of Phase 1, we developed a set of criteria to select potential candidates to proceed to Phase 2. The criteria for the second stage of DECAF are as follows.

Criteria	Sub-Criteria	Note
Primary	• Completion of the post-test	Compulsory
	• Expression of interest in proceeding to Phase 2	DECAF only considers those who confirmed to dedicate to Phase 2 in full-time
	• Attendance of at least 3 to 7 online lectures	More attendance is beneficial and valued in the selection
Secondary	• Diversity in the origin of universities attended by the applicants.	DECAF consider inclusive principle
	• Diversity in the fields of study or majors.	DECAF consider inclusive principle
Tertiary	• Balance in terms of gender representation.	DECAF consider gender equality

In Phase 2 of DECAF, applicants will be evaluated based on these criteria to determine their eligibility for further consideration in the program. Factors such as post-test completion, attendance, diversity in university background and fields of study, and gender balance will be taken into account to select the most suitable candidates for Phase 2.

2.1.2. Screening Process

The screening process is conducted based on the established criteria and considers other constraints emerged from the project, such as:

1. Number of seats availability: The screening process will consider the limited number of available seats in the program (18 seats) and select the most qualified candidates from the pool of applicants.
2. Academic backgrounds: Applicants will be assessed based on their academic qualifications and the diversity of their educational backgrounds. The selection committee will look for candidates with various majors and fields of study to create a well-rounded and diverse cohort.
3. Educational levels: The screening process will take into account the applicants' educational levels, including undergraduate and graduate degrees. Both early-stage and final-stage students may be considered to ensure a mix of experience and perspectives.
4. Gender: The screening process will be mindful of gender representation and aims to select candidates in a way that ensures a balanced mix of male and female participants in the program.

By adhering to these criteria during the screening process, the selection committee aims to identify the most suitable and diverse candidates who can contribute to the success of the DECAF Program. The goal is to create a vibrant and inclusive learning environment that benefits from the expertise and perspectives of individuals from various academic backgrounds and genders.

2.1.3. Selected Participants

After conducting interviews and the screening process, the participants for Phase 2 DECAF are as follows:

1. Aloisius Yonathan Prakoso (M)
2. Muhammad Fathi Ar-Radhi (M)
3. Salmaa Shafira (F)
4. Danik Nur Puspita Sari (F)
5. Prisita Fairuz A (F)
6. Gebi Viola Claudia Situmorang (F)
7. Naufal Sultan Azzam Khan (M)
8. Raditya Raihan Hidayat (M)
9. Anggitta Aziz Putri Dewayanti (F)
10. Nuri Setiawati (F)
11. Nilna Faroh (F)
12. Ulfa Aulia Syamsuri (F)
13. Mohamad Rizalby Yosliansyah (M)
14. Rafly Reinaldy (M)
15. Rosa Calista Prihestiwi (F)
16. Abidah Zulfa Fitriana (F)
17. Sekar Rifka Darmawan (F)
18. Khansa Salsabila Putri (F)

Participants of Phase 2 consists of 18 students from 5 disciplines; 16 students from the Diponegoro University (UNDIP) and 2 students from the University of Gadjah Mada (UGM). The 16 students from UNDIP are from 3 disciplines consists of 6 undergraduate students and 5 master's degree students from the Urban and Regional Planning (PWK), 4 undergraduate students from Civil Engineering, and 1 undergraduate student from Environmental Engineering. While the 2 master's degree students from the University of Gadjah Mada (UGM), Yogyakarta, are from Remote Sensing and from Disaster Management.

2.1.4. Student Participation

All students (100%) fully participated and contribute during the Phase 2 DECAF.

2.2. Key Findings from the Result of Phase 2

2.2.1. Pre-Program Interviews

1. **What attracted you to the DECAF program?**

Overall, while the students shared common interests in flood management and disaster mitigation, their individual motivations varied based on their academic backgrounds, research topics, and personal aspirations. Similarities among the responses are:

- Relevance to Research: Several students expressed that the program's focus on flood analysis and disaster management aligns with their research interests and thesis topics.
- Learning Opportunity: Many respondents highlighted the opportunity to learn, and gain new experiences, insights, and connections through the program.

- Field Experience: Several participants were drawn to the practical aspect of the program, including direct fieldwork and engagement in real-world flood management situations.
- Interdisciplinary Interest: Some respondents mentioned their multidisciplinary backgrounds and how DECAF's collaborative nature appeals to their broader interests.
- Foreign Collaboration: The international collaboration and involvement of foreign universities, especially from the Victoria University of Wellington, excited many respondents.

While the overall interest in flood management was common, the specific areas of interest varied, such as urban heat island, coastal areas, drainage systems, disaster mitigation, climate change, etc. Some participants saw DECAF as a valuable opportunity to enhance their career prospects and contribute positively to their communities. Some students mentioned curiosity and a desire to explore new knowledge areas as their motivation to join DECAF. Different aspects of the program structure, such as the combination of online lectures and fieldwork, appealed to different participants.

2. **How do you feel about online lectures in Phase 1?**

Overall, the students generally have a positive outlook on the experience of the DECAF program. Many of them expressed feelings of enthusiasm, satisfaction, and gratitude for the opportunity to learn from experts, gain new insights, and engage in discussions related to flood management and disaster mitigation. They appreciated the informative content, the expertise of the instructors, and the chance to explore various aspects of flood-related topics.

However, it's important to note that there were also some mixed feelings and challenges mentioned, such as the preference for in-person interactions, the language barrier, and the difficulty of balancing the program with other commitments. Despite these challenges, the students still found value in the program and acknowledged the benefits they gained from the content and interactions.

3. **Which topic did you like most about the online lectures in Phase 1?**

Overall, the respondents seemed to appreciate topics that offered innovative solutions, real-world examples, and a deeper understanding of flood-related challenges and solutions. The top three topics mentioned by the students are as follows:

Urban Flood Management and Sponge City Concept: The students showed significant interest in the Sponge City Program that was implemented in China. They found the concept of creating "sponge cities" to manage flooding through green infrastructure, open spaces, and urban planning innovative and practical. Participants appreciated the program's potential applicability to Indonesian cities and the concept of using natural elements for flood management.

Vulnerability Assessment: Vulnerability Assessment was mentioned as another topic of interest. Participants appreciated learning about different assessment methods, including indicator-based and participatory mixed-method approaches. This topic provided new insights into analysing flood vulnerability and engaging with communities.

Adaptation to Flooding and Local Community Planning: The concept of adapting to flooding and involving local community planning received positive feedback. The lecture emphasized

the importance of involving local communities in planning and adapting to floods through various strategies and approaches.

4. **What do you hope to gain/know from Phase 2 of the program (field activities)?**

In general, the students are enthusiastic about Phase 2 and are eager to translate their theoretical knowledge from Phase 1 into practical solutions and meaningful experiences on the ground. The collective expectations expressed by the students covers:

- Hands-On Experience and Knowledge: Students hope to gain practical experience and knowledge about flood management, water quality, community conditions after flooding, and water-related issues. They aim to understand flood control, water cleanliness, and community conditions after flooding while focusing on positive learning experiences from field activities.
- Direct Community Assistance: Many students aspire to apply the knowledge gained during their academic studies to help communities directly during field activities. They wish to contribute effectively within groups during the fieldwork, ensuring the maximum benefit and impact of their research efforts.
- Practical Application: They anticipate applying the knowledge acquired from Phase 1 in real-world situations during Phase 2. Their goal is to make a meaningful contribution to both the government and the people of Pekalongan who are affected by flooding.
- In-depth Understanding and Curiosity: Students expect to gain a deeper understanding of the actual flood conditions and challenges faced by the community. They are curious about the realities of flood situations, the impact on people's lives, and the effectiveness of current flood management strategies.
- Enhanced Insights and Networking: The students are excited about gaining direct, on-field insights, as well as collaborating with fellow students, practitioners, and experts. They aim to enhance their knowledge, understanding, and networking skills by engaging with various stakeholders and gaining insights from their experiences.
- Community Engagement and Solutions: Students intend to understand the actual conditions and challenges faced by the people of Pekalongan. They hope to engage with the community, listen to their concerns, and contribute to formulating practical solutions for flood management.
- Application of Planning Concepts: They anticipate applying the planning knowledge they have learned to understand the real conditions in the field and gather data for their research topics. The hands-on experience is seen as an opportunity to apply planning concepts in a practical setting.
- Mitigation Strategies: The students wish to learn about effective flood mitigation strategies and gain an understanding of how these strategies can benefit the community. They are interested in learning about the practical implementation of mitigation measures.
- Community Resilience and Adaptation: Understanding the community's resilience and adaptation strategies in the face of floods is an expectation. The students aim to explore how the community copes with and adapts to recurring flood events.

- Practical Knowledge and Physical Experiences: Participants are looking forward to gaining practical knowledge about flood conditions and experiencing the physical realities of the field. They hope to gain insights that go beyond data and statistics.

5. **Which materials from Phase 2 of the Program/field activities interested you the most? (or what topic)**

Collectively, these top three topics spark the participant's interest:

- Water Quality Assessment: The topic of assessing water quality, including practical field activities and using various measurement tools, garnered significant interest among participants. They found it valuable for understanding and improving water quality in flood-affected areas.
- Flood Exposure and Vulnerability Assessment: The materials related to assessing flood exposure and vulnerability, particularly in Pekalongan, intrigued participants. They aimed to gain insights into the direct impacts of flooding on households and the challenges faced by communities.
- Adaptation Planning: Participants expressed keen interest in the module about adaptation planning. This topic, which involves formulating strategic plans based on data and analyses, was seen as a valuable learning opportunity and a chance to contribute meaningfully.

6. **What will you do with the knowledge you learn? (for example in terms of work/career, further study, solving real world problems, or just fulfilling personal interests)**

The students have varied interests to apply the knowledge learned from DECAF:

- Personal and Skill Growth: Participants aim to develop communication, teamwork, and problem-solving skills while nurturing personal growth.
- Academics and Career: They plan to integrate the knowledge into studies, further education, and careers in water management, urban planning, and engineering.
- Real-World Impact: Many want to use the knowledge to solve real-world problems, assist communities, and enhance the quality of life affected by flooding.
- Research and Publications: Participants intend to apply their knowledge in research projects, contributing to academic journals and publications.
- Knowledge Sharing: They aim to share insights through social media, discussions, and interactions to raise awareness about flood management.
- Thesis and Recommendations: The knowledge will inform theses, research, and recommendations for local government initiatives and urban planning.
- Applied Knowledge: Engineering-focused participants plan to use the knowledge in practical settings, designing water management infrastructure.
- Community Engagement: Some intend to engage in social project management and community initiatives to address flooding challenges.

7. **Is there an opportunity for you to do this?**

Most of the students said yes (83.3%)

8. **If yes, and why?. And if not, why not?, explain**

For most of the students, they said yes because of various reasons, including the opportunity to gain valuable knowledge from the DECAF program and interact with local communities during fieldwork. They highlighted the potential for enhanced skills in teamwork, problem-solving, and communication, along with the relevance of the program's content to their academic pursuits and career aspirations. Many participants saw the chance to apply this knowledge in further studies, research projects, or even making a positive impact on real-world issues, such as flood management and community development.

The students who answered "No" provided the following reasons:

Student 1: They currently reside in an area without flood-related issues like tidal flooding. Thus, they can't directly apply flood management knowledge. However, they express a willingness to help if climate-related problems arise in the future.

Student 2: They are sceptical about the practicality of implementing proposed concepts. They believe that as future planners, they need a strong determination to turn concepts into reality.

Student 3: The reason for answering "No" is not explicitly stated, but it could be because of a lack of support or circumstances that prevent them from participating.

9. **Have you ever had the opportunity to learn about floods and climate change issues in a university lecture hall? Explain**

The students had varying experiences regarding learning about floods and climate change in a university lecture hall. Some mentioned having opportunities to learn about these topics in courses related to environmental planning, geography, disaster management, and engineering. They highlighted discussions on flood management, climate change, and related issues in these courses. Others stated that while they had some exposure to the topics, the coverage was not extensive or detailed. A few students mentioned conducting self-directed research or participating in extracurricular activities related to climate change and flooding. However, some students mentioned not having the opportunity to learn about these topics directly due to their program's curriculum or the timing of their studies.

10. **How do you feel about climate change education at your university?**

The students' responses about climate change education at their university vary. Some students find it to be sufficient, while others perceive it as being too shallow or lacking in depth. A few students also mention that the education provided is too technical. Overall, the general sentiment appears to be mixed, with some finding the education satisfactory and others expressing concerns about its depth and content.

11. **Explain why**

Some students highlight that climate change education may not be extensively integrated across all disciplines and emphasize that the understanding of climate change remains limited among the general public. Additionally, a few students mention that the education may vary depending on the department or major, with some programs offering more detailed discussions on the subject. Overall, there appears to be a mix of perceptions regarding the quality and coverage of climate change education at the university.

12. **Have you experienced any barriers to learning in the last two years, such as online learning, campus closures, shortage of teaching staff, financial/economic situation, political changes? explain further**

Students have experienced various barriers to learning in the past two years. The most prominent challenge mentioned is the transition to online learning due to the impact of the COVID-19 pandemic. Online learning has led to difficulties in understanding the material, disrupted practical experiences, and reduced the effectiveness of certain courses, especially those involving fieldwork or large amounts of coursework. Some students have faced economic challenges within their families due to the pandemic, which has affected their financial situation. For others, campus closures and the shift to online learning have impacted the academic environment and interactions with peers and professors. Overall, the transition to online learning, the limitations of virtual instruction, economic changes, and disruptions to practical experiences have been the primary barriers to learning that students have encountered in the last two years.

13. **How has this affected your learning opportunities? Explain**

The shift to online learning and various challenges posed by the COVID-19 pandemic have affected students' learning opportunities in multiple ways. Some students feel that the absence of campus facilities and government-imposed restrictions have hindered their progress and personal development. Others find that online learning provides more chances to review materials and repeat content. However, the transition to virtual learning has brought about challenges such as reduced concentration, distractions, and the difficulty of maintaining focus during online sessions. Additionally, limitations in conducting field observations, practical experiences, and face-to-face interactions have impacted the depth and quality of learning for some students. On the positive side, the flexibility of online learning has allowed some students to adjust their study schedules and learn at their own pace. Despite these challenges, some students report minimal impact on their learning opportunities due to their own self-motivation or the lack of significant obstacles.

14. **Have you ever participated in outdoor learning activities organized by your university? Explain**

Many students have engaged in outdoor learning activities organized by their universities. Before the COVID-19 pandemic, students participated in field surveys and practical exercises that provided them with real-world insights and a deeper understanding of their subjects. Activities ranged from analysing construction projects to conducting irrigation network surveys. However, some students haven't had the chance to participate in such activities, mainly due to the pandemic or being in earlier stages of their studies. Some students have attended seminars and workshops related to their field of study as outdoor learning opportunities. These experiences have contributed to their knowledge and personal development, allowing them to interact with professionals, explore urban regeneration, observe infrastructure projects, and learn about environmental issues.

15. **What do you consider to be the most important issues that must be addressed in Indonesia? Explain briefly**

The most important issues that must be addressed in Indonesia, according to the students, include poverty, resource human quality distribution, flood problems, climate change, social and economic inequality, education quality and accessibility, environmental protection, disaster management, and carbon emissions. Poverty is a crucial issue affecting various aspects of life, and the government should provide targeted assistance for the welfare of all citizens. The quality of human resources needs to be distributed more evenly to improve education, social, and economic aspects. Flood problems are particularly pressing due to inadequate infrastructure and land use practices. Climate change awareness is still lacking among the population, contributing to environmental degradation. Carbon emissions and their impact on global warming require attention. The importance of disaster management, particularly for issues like floods and landslides, is recognized due to their recurrent nature. Lastly, institutional reforms in various government sectors, such as education and information technology, are needed to ensure transparency and efficient administration.

16. **In Indonesia, what have been the most significant changes in recent years? Explain briefly**

The most significant changes in recent years in Indonesia, as highlighted by the students, include shifts in technology usage, work locations, and the economy. The COVID-19 pandemic led to remote work becoming more widespread, with increased flexibility in job locations. The rise of e-commerce and digital payments has transformed economic transactions. Moreover, there has been a noticeable transition towards a more digital lifestyle. Other notable changes include increased development in rural areas, alterations in the curriculum and education sector, a shift towards online-focused activities, changes in land use practices, infrastructure development, climate change impact, and increased awareness of environmental issues and sustainability. The reformations in the economy, the digitalization and technological innovation, and the growing attention to environmental concerns and sustainability have been particularly significant.

17. **How have these changes affected your life and your family's livelihood?**

Overall, these changes have led to varied impacts on students' lives and family's livelihoods, influenced by factors like employment type, industry, and geographic location.

Positively Impacted when considering the:

- Convenience: Changes in technology have facilitated easier communication, shopping, and package delivery, improving family interactions and networking.
- Education: Some students view government policies as improved and educationally positive, although better public understanding is needed.
- Infrastructure: Improved connectivity has positively impacted remote work and long-distance communication.

Negatively Impacted when considering:

- Economic Shifts: Families reliant on industries requiring physical presence, like export and import, have been negatively impacted by remote work disruptions.
- Climate Change: Certain livelihoods dependent on natural resources have been affected by climate shifts, altering availability of raw materials.

- Population Impact: Increased population has intensified job competition and posed challenges for some job seekers.

And Relatively No Impact when considering:

- Stable Livelihoods: Families with steady sources of income, such as civil servants or teachers, have experienced minimal impact from these changes.
- Long-Term Considerations: Anticipations of long-term effects, such as land use changes, are noted but haven't yet substantially impacted families.

18. What about the city where you live - what have been the most significant changes in recent years? Explain

In recent years, several notable changes have taken place across various cities in Indonesia. Positive changes include improved infrastructure, better road access, and increased economic growth in some areas. Urban development and upgrades to infrastructure, like drainage systems, have enhanced the quality of life in certain cities. However, the pandemic has also left its mark, causing mall closures, reduced traffic congestion, and economic disruptions.

Negative impacts are observed in cities facing challenges due to climate change, such as rising temperatures and decreased vegetation affecting local livelihoods. Changes in land use, often driven by increased housing demand, have transformed agricultural lands into housing developments. Rainfall intensity has increased in some places, leading to heightened flood risks. While urban development and public infrastructure improvements are evident, their functional impacts are still evolving in certain areas. These changes collectively shape the urban landscape, affecting economic opportunities, living conditions, and environmental resilience across different Indonesian cities.

19. How have these changes affected your life and your family's livelihood?

The changes in various cities have impacted individuals and families differently. Improved mobility and increased marketability are noted as positive effects, often related to enhanced infrastructure. For some, these changes have eased daily activities and raised economic opportunities. However, pandemic-related work adjustments, such as remote work and decreased export-import activities, have negatively affected some families' livelihoods. Climate change impacts have altered livelihoods dependent on natural resources, while rising temperatures and changing weather patterns have led to discomfort and increased costs of living.

For families with stable income sources like civil service and teaching professions, the effects have been relatively limited. The urbanization of agricultural land has transformed landscapes, which may potentially affect future food prices. The pandemic-induced shift to online activities has changed the way families work and learn, offering flexibility but also altering traditional engagement. In certain cases, improved infrastructure has led to cost and time savings, while for others, it has not caused significant changes. Overall, the impacts of these changes are wide-ranging, encompassing both positive and negative facets across different families' lives.

20. Is climate change a widely recognized issue in your city?

Approximately 72% of the respondents indicated that climate change is a recognized issue in their city, while about 28% stated that it is not widely recognized.

21. If yes, why is this an issue. And if not, why not (as there are other, more important issues)?

Students who acknowledged climate change as a widely recognized issue in their cities provided reasons such as its adverse impact on agriculture through excessive or insufficient rainfall, its overshadowing by other priorities like politics and economy in some cases, the vulnerability of smaller cities to flooding due to limited green spaces, the persistence of flood-prone areas and human behaviour contributing to flooding, its significance within education-focused areas versus the relatively lesser attention from local residents, the direct and immediate impact on communities, particularly concerning soil erosion and economic development, the emergence of phenomena like "banjir rob," the necessity for long-term planning and government initiatives, daily experiences of extreme weather impacting daily life and health, and the perception of rising temperatures and prolonged heavy rain causing regular flooding.

The reasons provided by the students who said "no" to climate change being a widely recognized issue in their cities are:

- The focus on recognized issues primarily originates from governmental sources, and the public's understanding of climate change appears insufficient.
- The lack of recognition could stem from the perception that existing problems, such as traffic congestion and urban disorganization, are more prominent and unlikely to change.
- Economic matters take precedence over climate change discussions, reflecting the minimal education on climate change dangers and the roles citizens can play in mitigating its impact.
- Flooding and traffic congestion are the primary issues drawing attention away from climate change issues.
- In the case of low minimum wages in the area, economic concerns outweigh climate change in terms of prominence.

22. What about the flood problem related to climate change in your place of residence? Explain

The students' responses regarding the flood problem related to climate change in their places of residence varied. Some mentioned that they didn't experience flood issues, while others discussed the occurrence of flooding during heavy rainfall due to inadequate drainage systems. Some students noted efforts to mitigate flooding in vulnerable areas through protection measures and community education. For some, flooding was not a prominent concern, and other issues such as politics and economy took precedence. Some mentioned occasional waterlogging due to blockages in drainage systems rather than climate change. Others mentioned minimal or no flood-related problems, and a few highlighted the occurrence of "banjir rob" (tidal floods) or flood issues due to rapid urbanization. In some regions, flooding was more common and considered a program of government intervention.

The phenomenon of "banjir lahar dingin" (cold lava flood) was noted in one region due to intensified rain, impacting areas around an active volcano.

23. **In your opinion, has the local government (district/city) made sufficient efforts to reduce the risk of flooding? Explain**

The students' opinions about whether the local government has made sufficient efforts to reduce the risk of flooding varied. Some students expressed that their areas rarely experienced floods due to effective water management, while others noted ongoing efforts such as drainage improvements. However, many students believed that the efforts were inadequate due to lack of proper waste management, insufficient education and awareness, and a focus on other priorities such as infrastructure development. Some students mentioned programs and initiatives like KOTAKU for coastal areas and disaster risk mitigation. On the other hand, a few students acknowledged the government's positive steps, such as maintenance of riverbanks and comprehensive planning, while others felt that more significant efforts were needed, especially regarding flood prevention and drainage management.

24. **How has COVID-19 affected people's lives and their vulnerability to natural disasters? (eg, lost income/jobs, higher prices, lack of support/resources) Explain.**

COVID-19 has brought about a range of effects on people's lives and their susceptibility to natural disasters. Job losses and reduced income emerged as central issues, particularly due to the shift towards online work that left those in rural areas, less tech-savvy, facing unemployment. In addition, the pandemic disrupted agricultural practices, leading to lower harvest yields and affecting the overall morale of communities. Globally, COVID-19 prompted lifestyle changes and widespread unemployment, causing inflation due to increased prices of essential items and necessitating the shift of activities to digital platforms. The loss of income was a recurring theme, impacting businesses and trades, especially within local markets. While formal employment felt less of an impact, many individuals grappled with financial difficulties. Decreased income eroded the resources available for disaster preparedness, increasing communities' vulnerability to natural disasters.

Moreover, COVID-19's economic repercussions were evident as businesses shuttered and jobs were lost, affecting families' financial stability. The reduction in income due to the pandemic markedly amplified people's susceptibility to both the immediate impacts of the virus and the potential consequences of natural disasters. Despite the varied impacts of COVID-19, the overarching concern remained its effect on livelihoods and income, exacerbating vulnerabilities to both economic and environmental challenges.

Further Details on the Pre-Program Evaluation is available on **Appendix 3.**

2.2.2. Post Program Evaluation of Phase 2

1. **Does the DECAF program meet your expectations? Please explain in more detail (please refer to your responses in the Initial Interview before the field trip).**

Most students indicated that the DECAF program met or even exceeded their expectations. They appreciated the program's ability to provide new insights, hands-on experience, and teamwork opportunities. The program's focus on flood risk management, particularly related

to flood inundation and adaptation planning, was highlighted. The fieldwork involved various modules carried out in groups, which was deemed effective for enhancing individual skills and teamwork capabilities.

Several students mentioned unexpected positive aspects, such as the provided facilities exceeding their expectations in terms of accommodation, transportation, and meals. Despite initial expectations of encountering more floods and water-related situations, the actual field conditions didn't fully match predictions. Nevertheless, the first hand experience of seeing flood-prone areas, interacting with the community, and learning about water testing left a significant impact.

Students found value in the initial phases of the program, including group introductions, activity engagement, and knowledge acquisition. They also appreciated the opportunity to interact with local communities and gather first hand insights. Many noted that the program not only met their expectations but also provided new perspectives, especially in terms of flood management systems, flood barriers, and social aspects.

The DECAF program was praised for its co-design approach, allowing participants to contribute to planning and execution. The support provided by practitioners and faculty members was commended for enhancing the overall program experience.

In conclusion, the general sentiment among the students was positive, with most feeling that the DECAF program fulfilled their expectations by offering valuable learning experiences, exposure to real-world scenarios, and opportunities for collaboration.

2. **Which materials were most successful for you?**

The students' responses regarding the most successful materials following their fieldwork can be summarized as follows:

- Module 3, focusing on community engagement and direct interaction with flood-affected individuals, emerged as a standout choice for many students due to its emotional impact and insights into the social dynamics of flooding. This module not only provided an in-depth understanding of the community's experiences but also honed their communication skills.
- Module 1, centred on water quality assessment, was widely praised for its practicality and concrete outcomes. Students appreciated its hands-on nature and the ability to apply theoretical knowledge in real-world scenarios.
- While Module 2 had mixed success due to community cooperation challenges, these two modules were consistently cited as the most impactful for their immersive learning experiences and tangible contributions to flood management understanding.

3. **Do you think what you have learned from DECAF will help you achieve what you expect? Please explain in more detail.**

Overall, the sentiment was that DECAF's immersive experiences and practical knowledge equipped the students with valuable tools to contribute effectively to their chosen fields, whether through research, policy-making, or community engagement. The program was

praised for bridging the gap between theoretical knowledge and practical application, ultimately enhancing their preparedness for future work.

Many students felt that DECAF had provided them with valuable insights and skills that align with their expectations. They appreciated the practical aspects of the program, such as direct community engagement, water quality assessment, and flood management strategies. The hands-on experience of interacting with affected communities and conducting field surveys left them better equipped to understand and address flood-related challenges.

Several students expressed confidence that the knowledge gained from DECAF, including aspects like drainage systems, coastal infrastructure, and social considerations, would be instrumental in their future endeavours, particularly in fields such as urban planning and disaster management. The program was seen as a stepping stone toward developing critical thinking skills and adapting to real-world challenges.

4. **Do you think the four modules need more time to be implemented? Please explain.**

Some students felt that Module 4, related to strategic planning, would benefit from additional time due to the complexity of analyzing and formulating comprehensive strategies. Module 3, focusing on vulnerability assessment and community engagement, was mentioned by several students as requiring more time due to the length of interviews and the depth of discussions. They pointed out that discussions with community members sometimes extended beyond the allocated time.

Overall, students generally felt that the given timeframes were adequate for the implementation of the modules. However, there were suggestions for improving the execution process, such as conducting Modules 2 and 3 together if they are in the same area. Some mentioned that Module 3, involving interviews, might need more time for a broader scope of comprehensive data collection. A few students highlighted the importance of strategic planning (Module 4) and recommended more time for data compilation and synthesis.

In conclusion, while some modules were seen as adequately timed, Module 3's interview-based approach and Module 4's strategic planning were frequently cited as areas where additional time could enhance the quality and depth of the outcomes. Overall, the responses reflected consideration for striking a balance between efficient time management and ensuring comprehensive data collection and analysis.

5. **Did you have the opportunity to influence the design and operations of the four modules? Please explain.**

Many students expressed that they had the chance to contribute to the design and operations of the modules through the co-design approach. They were involved in various aspects, such as suggesting adjustments to the survey system, proposing modifications to the order of transects and clusters, and even combining certain modules for efficiency. Several students mentioned that they played a role in selecting sampling locations, determining transect points, and adjusting the course of fieldwork to fit the real-world conditions.

However, a few students felt that their input was not fully considered, even though the program encouraged co-design. Some indicated that they could have had a more substantial influence on the design and operations of the modules. Overall, the sentiment was that the co-design concept was present, providing students with the opportunity to shape the execution of the modules and tailor them to real-world scenarios. Students valued the collaborative process and the chance to adapt the program based on practical considerations.

6. **Is there anything missing from this phase 2 program in terms of flood risk management? Please explain.**

In general, students appreciated the program's content but identified areas where refinements could enhance the overall experience and outcomes. Some students felt that the program was already comprehensive and covered various aspects of flood risk management. They believed that the modules provided a sufficient understanding of the subject matter. Other suggestions captured:

- A few students suggested additional elements, such as conducting community awareness campaigns or training related to floods and the composition of water. This could involve sharing information about water quality after testing (Module 1).
- Time constraints were mentioned by several students, particularly concerning Module 3. They felt that more time could have been allocated for certain modules to allow for more in-depth activities, like interviews and assessments.
- Some students mentioned that the communication with the local community could have been more extensive prior to field activities, to help determine suitable locations for surveys and tests.
- Suggestions for improvement included better coordination, more intensive mentorship, clearer questionnaires for interviews, and a more effective gift distribution strategy to incentivize community participation (Module 3).
- Some students highlighted the importance of direct feedback to the community about the survey results and policy proposals.
- Suggestions were made for fine-tuning the logistical aspects, like providing sufficient equipment and possibly extending the program's duration to enhance the quality of the outputs.
- A few students indicated that while the program was already quite comprehensive, additional opportunities for learning, such as more intensive field training, could be valuable.

7. **Are there any feedback (criticisms and suggestions) regarding logistics, field location selection, and field activities? Please explain.**

The feedback provided valuable insights into the strengths and areas of improvement for the program's logistics, location selection, and field activities.

- The majority of students praised the exceptional efforts of the DECAF organizing committee and found the logistics to be efficient, comfortable, and well-managed.
- Some students expressed satisfaction with all aspects of logistics, field location selection, and activities and had no specific criticisms or suggestions.

- A few students mentioned that their field location was not heavily affected by floods and suggested selecting more flood-prone areas in the future to better address the program's objectives.
- There were suggestions for more accessible field locations and leveraging local input for more impactful field activities.
- Students recommended gathering feedback directly from the community through local events or intermediaries, rather than relying solely on interviews or questionnaires.
- Some students advised enhancing the questionnaire process (Module 3) by engaging respondents more efficiently, perhaps by distributing questionnaires during community gatherings.
- A few students recommended varying gift types, especially in Module 3, to match the demographic needs of respondents more effectively.
- Some students highlighted the importance of time allocation for data compilation, beyond just field data collection.
- Coordinating logistics and field activities was seen as an area where improvement could be made, but in general, the program was regarded as effective.
- A few students suggested more diverse tracking of flood-affected areas and an extension of time to conduct more interviews.
- Coordination in logistics and field activities was noted as an area for potential improvement.
- Overall, while students appreciated the logistics and location selection, there was a call for more intensive training before fieldwork, especially for Modules 2 and 3.

8. **Are there other aspects of the DECAF program that need improvement? Please explain.**

The feedback provided insights into potential enhancements to the DECAF program to better meet participant needs and improve overall effectiveness.

- Some students felt that the scheduling of activities could be confusing for participants and suggested regular evaluations after each event.
- A few students noted that the time aspect of the program, including rushed schedules, could be improved.
- Some students believed that the program adequately fulfilled its objectives and did not identify areas needing further improvement.
- Time management for participants and more thorough preparation for FGD activities were suggested as areas for improvement, given varying levels of participant experience.
- Overall, many students felt that the program was already well-executed and did not see the need for significant improvements.
- One student mentioned that certain aspects, such as bringing props like bamboo sticks and ribbon decorations for Module 2, could be simplified to avoid unnecessary complexity.
- Additional time for data compilation and field discussions was suggested to enhance the program.

- Several students had positive views about the program and didn't see any major areas for improvement.
- Suggestions were made for more frequent evaluation of interview results and the potential use of forms for Module 3 to expedite processes.
- Involving local community leaders in FGD activities and enhancing the understanding of students through better mechanisms were recommended.
- Some students suggested exploring more engaging and relevant topics for future programs similar to DECAF.
- Improving mechanisms to enhance students' understanding and engagement, thus increasing their capacity to grasp flood risk adaptation planning, was also noted as an area for potential improvement.

9. **After visiting the field location, did you find anything different from what you expected? Please explain.**

The students' observations highlight the value of field visits in offering insights beyond theoretical expectations and the complexity of on-the-ground realities.

- Some students noted differences such as encountering reluctance from some residents to participate in interviews.
- Others were surprised by the extent of flooded houses, shorter houses compared to the road level, and the landscape's transformation due to embankments.
- A few students didn't find any significant differences from their expectations.
- Some students mentioned that the conditions in their assigned areas differed from what they anticipated, with varying degrees of impact from flooding.
- Certain students were taken aback by the prevalence of flooded homes.
- Many students reported that their field experiences aligned with their expectations and the overall outcomes were helpful.
- Some students noticed aspects that didn't align with their expectations, primarily related to the poor state of drainage systems in specific locations.
- A few students discovered that their assigned locations were affected by inundation rather than severe flooding.
- A number of students found that their experiences matched their prior knowledge and expectations regarding the impacts of flooding on coastal regions.
- Students were often surprised by the physical and economic conditions in the affected areas, including older, less-maintained buildings.
- Some students anticipated more focus on structural solutions like embankments but found that the program centered more on community interactions.
- Differences in community livelihoods and the economic aspects of the areas were noticed by some students.
- A few students realized that field conditions might not always match theoretical expectations.
- Students were grateful for the opportunity to participate and expressed hope that the program's findings could be useful for decision-makers in Pekalongan.

10. **In your opinion, do the residents of Pekalongan receive adequate support from the local government? Please explain.**

The students' responses reflect varying perspectives on the effectiveness and distribution of government support in addressing flood-related challenges in Pekalongan.

- Many students expressed that the support from the local government is insufficient. They highlighted complaints from residents about the effectiveness and distribution of aid provided.
- Some students reported that there is a disparity between the local government's efforts and the perceived needs of the residents. While the government claims to have implemented flood-reducing measures, some residents stated that these efforts are inadequate, and they continue to experience flooding.
- A few students felt that the government's support is insufficient, particularly in terms of direct assistance to affected residents and the need for better distribution of aid.
- Some students pointed out that while the local government claims to have made efforts to minimize flooding, residents often view these efforts as ineffective due to recurring issues with pumps and drainage systems.
- Several students believed that the local government's support is not evenly distributed, and some areas receive more assistance than others.
- Students observed that the local government's support has a mixed impact, with some areas experiencing adequate assistance while others remain underserved.
- A few students noted that the local government's support focuses more on infrastructure and physical measures rather than addressing systemic issues like drainage improvement.
- Some students indicated that while there is support, it may not be reaching all residents equally and that there is room for improvement in the distribution of aid.
- A number of students felt that the government's support is inadequate and doesn't fully address the concerns and needs of the residents.
- A few students noted that the local government's efforts might be more visible in terms of emergency response and evacuation rather than long-term flood management.
- Students highlighted the need for a more equitable distribution of support and the importance of addressing systemic issues related to flooding.
- Some students acknowledged that there are disparities between different neighbourhoods in terms of government support, which has led to jealousy among residents.
- A few students believed that the local government's support is satisfactory, particularly in terms of providing assistance during emergencies.
- Students recognized that while there is support, it may not fully address the needs of residents facing recurrent flooding and that capacity-building for residents is important.

11. Are there others (besides the government) who help the community in facing floods or other risks? Please explain.

Overall, the responses showed that a variety of actors, including NGOs, community groups, donors, and local initiatives, play a role in supporting the community in Pekalongan to mitigate the impacts of floods and other risks.

- Many students noted the role of community-based organizations and non-governmental organizations (NGOs) in providing assistance to the community. These

organizations often offer practical support like providing pumps, conducting awareness campaigns, and implementing initiatives such as well-digging or drainage improvement.

- Students mentioned that local residents engage in mutual aid and support each other during floods. This includes providing essentials like food, evacuating neighbours, and offering emotional support.
- Some students highlighted the contributions of donors and private individuals who play a significant role in assisting the community during flood events. Donors often provide financial aid and other forms of support.
- Students also mentioned the involvement of religious and youth organizations, like mosques and youth groups, in assisting during floods.
- Students observed that local communities are often proactive and engage in self-help measures. For instance, some residents participate in regular clean-up activities and build makeshift flood barriers.
- Students acknowledged the collaborative efforts of various non-governmental organizations, including Mercy Corps, Kemitraan, and BINTARI, which collaborate to address flood-related issues in Pekalongan.
- Some students highlighted the importance of involving multiple stakeholders through collaboration, including government, private sector, local communities, academia, and media, to collectively address flood and disaster risks.

Further Details on the Post-Program Evaluation is available on **Appendix 4.**

2.3. Fieldwork Activities

This section will provide some photos from the activities conducted by students during the Phase 2. These photos are organized based on type of modules and other activities such as focus group discussion with community, visiting some pilot projects for climate change adaptation, and planning workshops.

Module 0 (Co-design)

Introduction to the water test equipment

Evaluation on operationalizing the modules

Module 1 Activities (Water Quality Assessment)

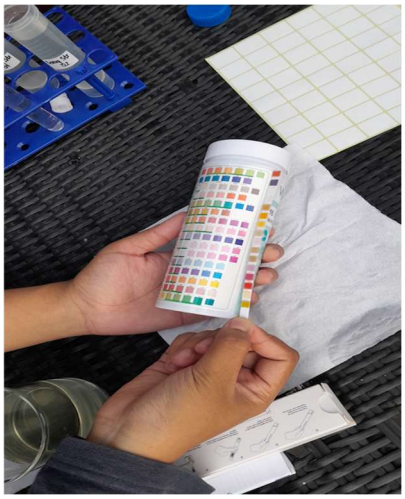
Water test in river dominated by water hyacinth

Taking water sample from rain harvesting

Taking water sample from river

Processing water test

Taking water sample used by aquaculture



Interpreting water test

Module 2 Activities (Exposure Assessment)

Module 3 Activities (Vulnerability Assessment)

Interviewing local community

Interviewing local community

Module 4 Activities (Adaptation Planning and Workshop)

Student Group 1- planning workshop

Student Group 2- planning workshop

Student Group 3- planning workshop

All student group- planning workshop

Engagement with Government Agencies

Visit to the Planning and Development Agency (BAPPEDA) of Pekalongan City Government

Visit to the Agency for Water Resource and Spatial Planning (PUSDATARU) of the Central Java Province Government

Engagement with Community Group: Focus Group Discussion (FGD)

FGD with SMEs actors

FGD with SMEs actors

FGD with women group

FGD with women group

FGD with youth

FGD with youth

Engage with local NGOs and Activists working on Adaptation Pilot Projects

Visit to a Floating Aquaculture Project

Visit to an Urban Farming Project

2.4. Outcome and Student Reports

Each student group at the end of Phase 2 resulted in a comprehensive report. It combines all outputs from each module and synthesize them into a flood risk management plan. A total of three comprehensive reports were produced by participating students, and were presented on a hybrid DECAF virtual conference. **Appendix 5** provides the final student reports.