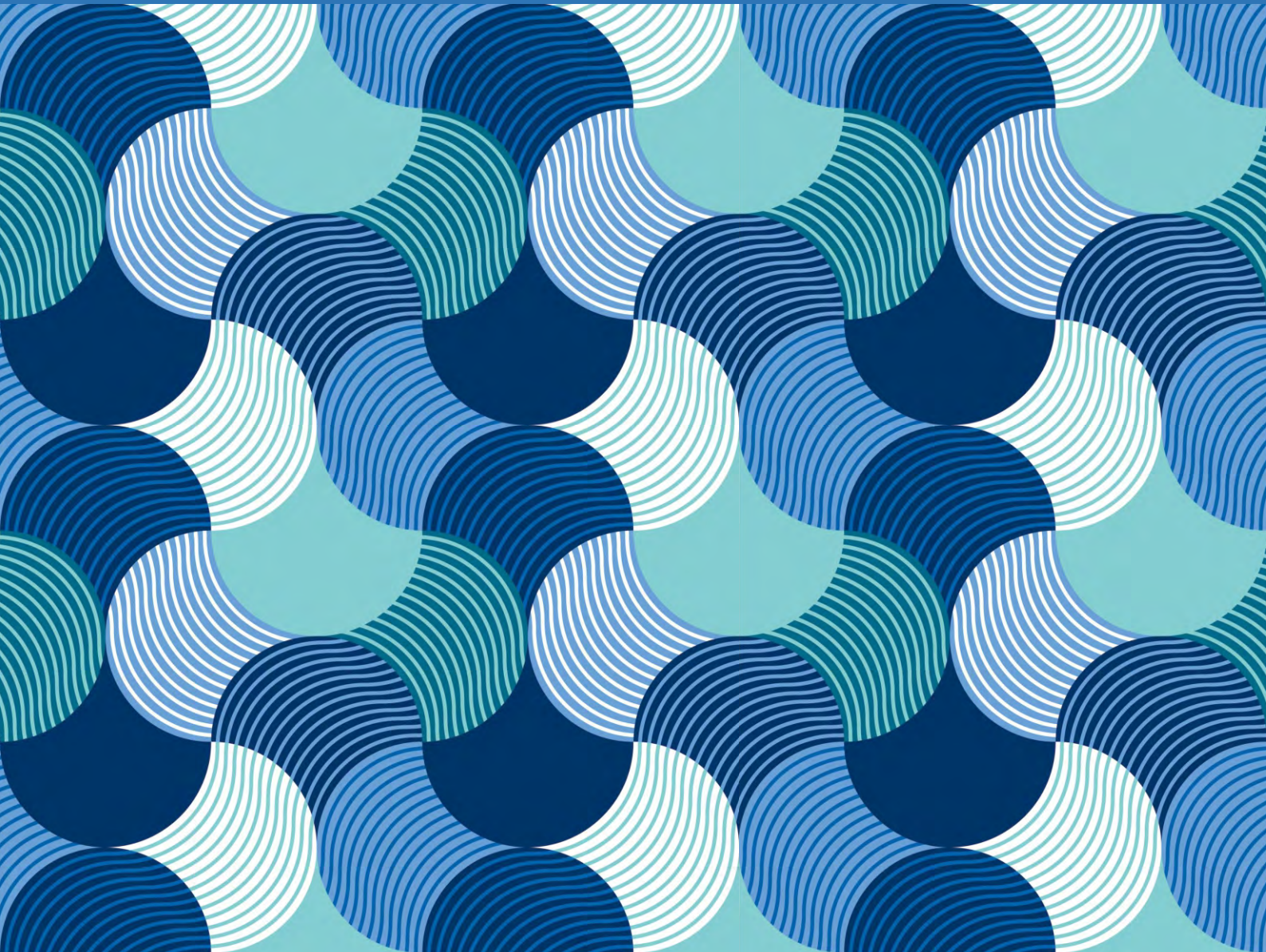


Indonesia Healthy Rivers Challenge 2020

Program Report



Government of the Netherlands



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AEBEL



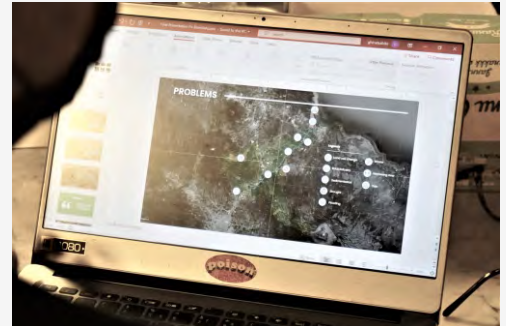
Konservasi
Alam Nusantara
Untuk Indonesia Lebih Baik



Preview



26 students from 9 well-known universities and 4 young professionals supported by a team of Dutch and Indonesian experts



Integrated flood management and masterplan for the Welang River



5 months of comprehensive capacity building and education program



Learning from the ground through field visits and direct dialogue with the stakeholders





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Introduction of IHRC 2020



Introduction

Welang Watershed area from upstream to downstream is 498 km², with the main river length of 40.6 km. The Welang River's water comes from the surface water flow and groundwater flow in Mount Arjuna and Mount Bromo. Welang River is administratively unique as it is located in three areas: Malang Regency (upstream), Pasuruan Regency (midstream) and Pasuruan City (downstream). Water Resource Department of East Java Province (Dinas Sumber Daya Air Provinsi Jawa Timur, or SDA-EJP) is responsible for managing the river.

However, the river is still plagued by a complex mix of issues that causes floods, such as sedimentation, limited discharge, infiltration capacity, tidal effects and competing community interests. **The Province of East Java** (Indonesia) and **the Netherlands** have agreed to collaborate in the coming years to address flooding in the **Welang River**.

The **Indonesia Healthy Rivers Challenge** served as a capacity building and education program to further understand the Welang River. The program is conducted by inviting Indonesian students and young professionals to create their vision and idea of integrated flood management in the Welang River. Teams will be mentored by a mix of **Indonesian and Dutch water experts** from various organisations and companies.

Timeline

Registration & selection process

10 September - 23 October 2020

Indonesia Healthy Rivers Challenge

- **Phase I**
9-13 November 2020 (in Pasuruan, East Java)
- **Phase II**
16 November 2020 – 14 March 2021 (online)
- **Phase III**
15-18 March 2021 (in Pasuruan, East Java)

Theme

At the East Java Province's request, the teams were tasked to develop their version of a Master Plan for the Welang River.

In this Master Plan, the teams should articulate their original perspective on how flooding could be reduced through a mix of solutions/interventions/approaches while balancing the interests of/impacts on the built, social, natural and economic environment.

In consultation with their expert mentors, teams were free to choose perspectives that highlighted specific technical and nontechnical approaches, such as institutional collaboration, nature-based solutions, community-participation, etc.

Partners

The following organisations have supported and provided expertise for Indonesia Healthy Rivers Challenge 2020.



The program engaged 16 partners from Indonesia and the Netherlands — the largest and most diverse involvements throughout all academies conducted by **The Water Agency**. All partners cover a wide range of backgrounds: government agencies, leading private firms, universities, and NGOs.

We collaborated with Water Resources Department of East Java Province (Dinas Pekerjaan Umum Sumber Daya Air Provinsi Jawa Timur) and the Netherlands Enterprise Agency (Rijksdienst voor Ondernemend Nederland) as our strategic partners.

Witteveen+Bos



Witteveen+Bos is an engineering and consultancy firm resolving challenges in water, infrastructure, environment and construction. With a network of 19 offices in 11 countries, we provide advice to private enterprises and cover the entire chain — from policy-making and design to contracting and supervising work performance — in the public sector.

Royal HaskoningDHV



Royal HaskoningDHV is an independent international engineering and project management consultancy leading the way in sustainable development and innovation. With over 137 years of history, the firm delivers services in aviation, building, energy, industry, infrastructure, maritime, mining, transport, urban and rural development and water.



Rebel

As a consultant and investor, Rebel offers strategic advice, policy analysis, partnership consulting, financial advice and investments management. We work on the issues that affect all our futures, from sustainability, transportation and urban development to healthcare and the social sector.



Danone AQUA

Established in 1973, Danone AQUA is the pioneer of bottled drinking water in Indonesia. We bring the mission of inspiring Indonesians with healthier hydration by providing a whole new mineral water purity level. We are committed to ensuring water sources' sustainability by protecting their ecosystem and maintaining their mineral content purity.



Royal IHC

Royal IHC provides reliable and innovative equipment, vessels and services that enable its customers to outperform in the dredging, offshore and mining industries. With a history steeped in Dutch shipbuilding since the mid-17th Century, we have in-depth knowledge and expertise of engineering and manufacturing high-performance integrated vessels and equipment and providing sustainable services.



HZ University of Applied Sciences

Located in the South-West of the Netherlands, HZ University of Applied Sciences has been in the top three Dutch multidisciplinary universities of applied sciences since 2011. The university is part of The Living Lab Indonesia, a quadruple helix collaboration to tackle sustainable port, mangrove recovery combined with sustainable fish farming and tourism, and mud volcano.



Universitas Brawijaya

Established in 1963, University of Brawijaya is one of the leading universities in Indonesia with more than 60,000 students in various degrees ranging from the Diploma Program, Bachelor's Degree Program, Master's Degree Program, Doctoral Degree Program, and Medical Specialist Program, in 12 Faculties, two faculty-level Programs, 1 Vocational Program, and 1 Postgraduate Program.



IDN Liveable Cities

IDN Liveable Cities is dedicated to promoting good practices in spatial planning, urban planning, urban design, landscape and architecture for Indonesian cities, matchmaking stakeholders with the proposal makers, and accelerating the implementations of selected proposals in the form of pilot projects.



Yayasan Konservasi Alam Nusantara

Yayasan Konservasi Alam Nusantara has worked in conservation partnerships with the government, communities and the private sector for more than 25 years. Using science-based natural resource management models, YKAN provides solutions in policy formulation and encourages governance and management, resulting in increased land and marine conservation in Indonesia.



Perum Jasa Tirta I

As an Indonesian state-owned enterprise, Perum Jasa Tirta I organizes the general usage of water yet develops qualified and adequate water sources for the sake of people's communal livelihood. We operate in five river basins: Brantas, Bengawan Solo, Jratunseluna, Serayu Bogowonto, and Toba Asahan.



Alliance for Water Stewardship Indonesia

Yayasan Aliansi Wali Sumber Daya Air Indonesia (AWS Indonesia) is a leading organisation on good water stewardship in Indonesia. We work on building a committed and capable network with the capacity to implement and uptake good water stewardship. AWS Indonesia is a country partner of the Alliance for Water Stewardship.



Drainblock

Drainblock is Europe's leading product in creating large sustainable scale underground stormwater retention reservoirs. With highly porous, eco-friendly and long lifetime products, we offer practical and straightforward solutions for floods, droughts and water quality issues.

Activities

of IHRC 2020



Registration & Selection

We challenged applicants to create an integrated masterplan with out-of-the-box ideas to educate them on how different aspects and expertise play a big part in water resources management, especially in dealing with the flooding problems in the Welang River.

For the selection process, applicants were asked to send a CV, academic transcript, as well as a one-minute video explaining their motivations and reasons on why we have to select them for the program.

Adapting to the COVID-19 situation, we do all publication and registration online, maximizing our broad network and good relationship with local universities, students' association and our alumni from previous challenges. Publication about the registration and selection was also done through Indonesia Water Challenge Instagram account (www.instagram.com/indonesiawaterchallenge/), Indonesia Water Portal website by **The Water Agency** (www.indonesiawaterportal.com/), Water Resource Department of East Java Province Instagram account (www.instagram.com/pusdajatim/).

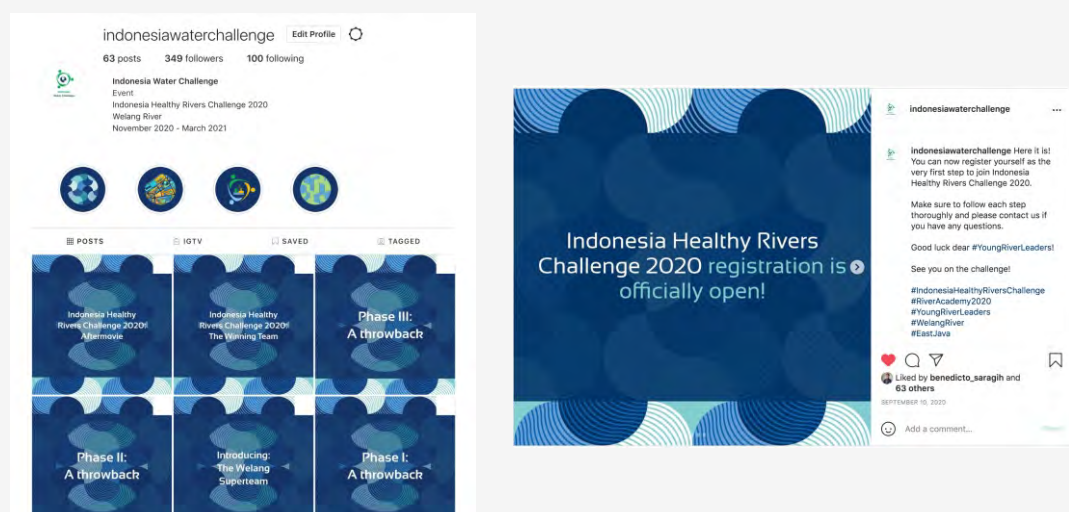


Figure: Indonesia Water Challenge Instagram Account

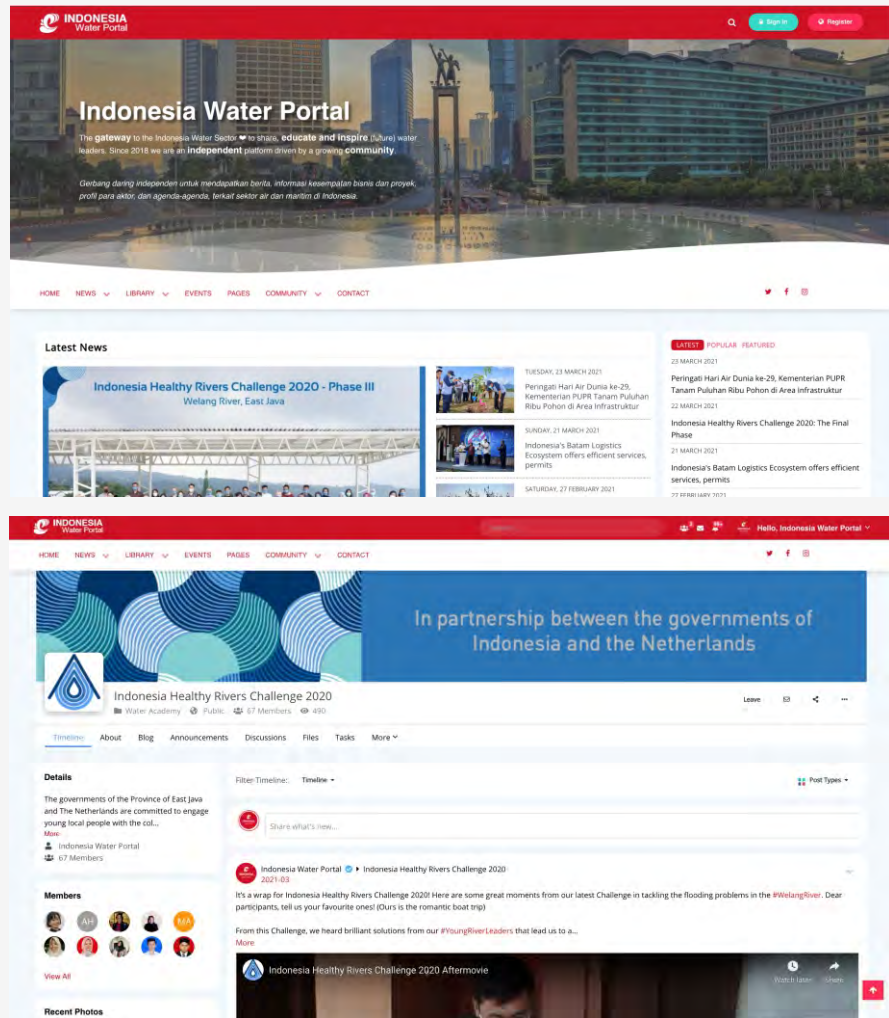


Figure: Indonesia Water Portal website by The Water Agency

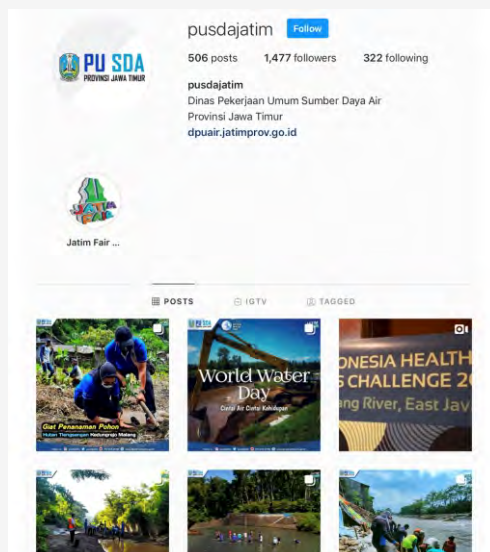


Figure: Water Resource Department of East Java Province Instagram account

All files were submitted to the Indonesia Water Portal as our online collaboration platform. Despite the COVID-19 pandemic, a total of 81 students and young professionals applied. Almost half came from the East Java Province.



Figure: Proportion of applicants and selected participants



Figure: Selected participants based on gender

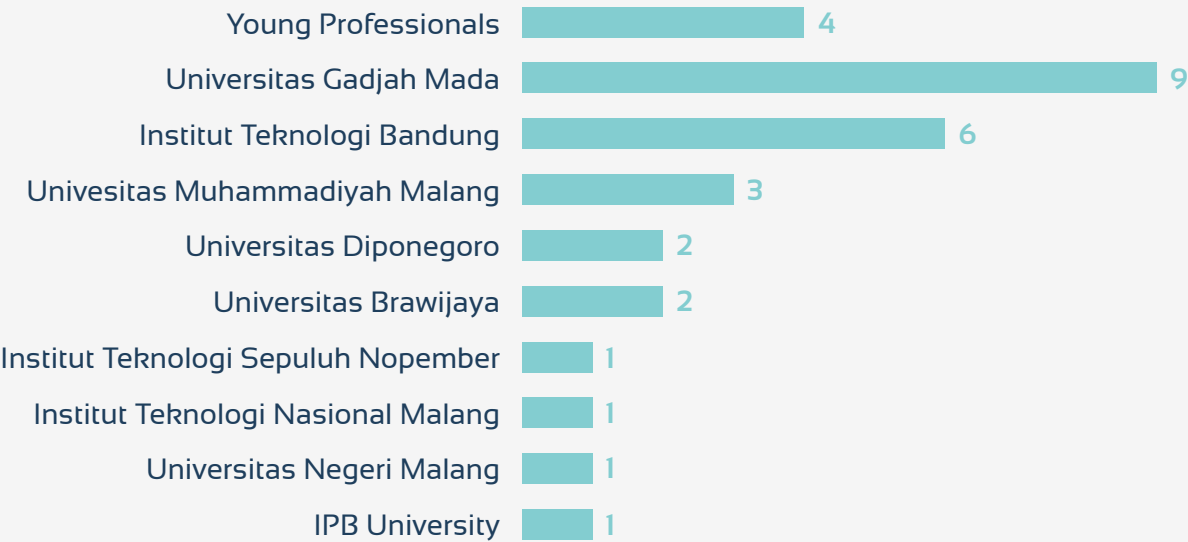


Figure: Selected participants based on university

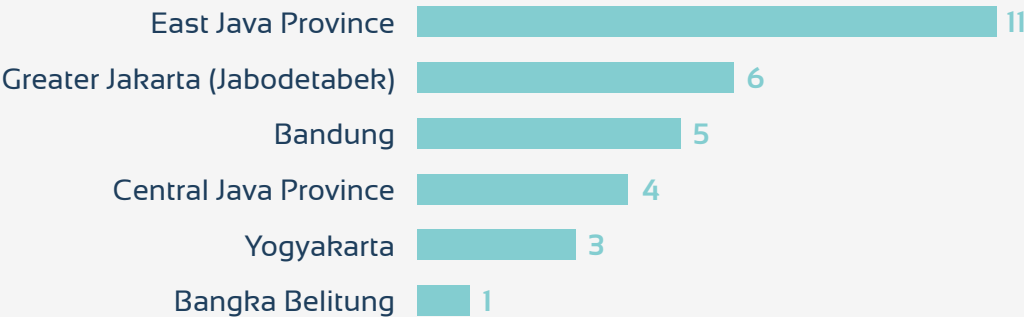


Figure: Selected participants based on hometown

A banner for the Indonesia Healthy Rivers Challenge 2020, featuring the text "INDONESIA HEALTHY RIVERS CHALLENGE 2020" and "Welang River, East Java" in white capital letters on a dark blue background. The banner is decorated with a pattern of concentric circles and is hanging in a room with a modern interior.

INDONESIA HEALTHY RIVERS CHALLENGE 2020

Welang River, East Java

IHRC 2020

Indonesia Healthy Rivers Challenge 2020 program was conducted in 3 phases from 9 November 2020 to 18 March 2021. Held with a hybrid combination of offline and online, the program was aimed to enhance the competence of participating students and young professionals throughout classroom experience with actual cases on the ground, collaboration, field trips, and mentorship in developing a holistic river masterplan.

The 30 carefully-selected participants were divided into five groups, with one expert as a mentor for each team. Their assignment was to create a masterplan to solve the current flooding problems in the Welang River from upstream to downstream. In developing their ideas, participants used the “4 Environment” approach: natural environment, built environment, economic environment, and social environment.

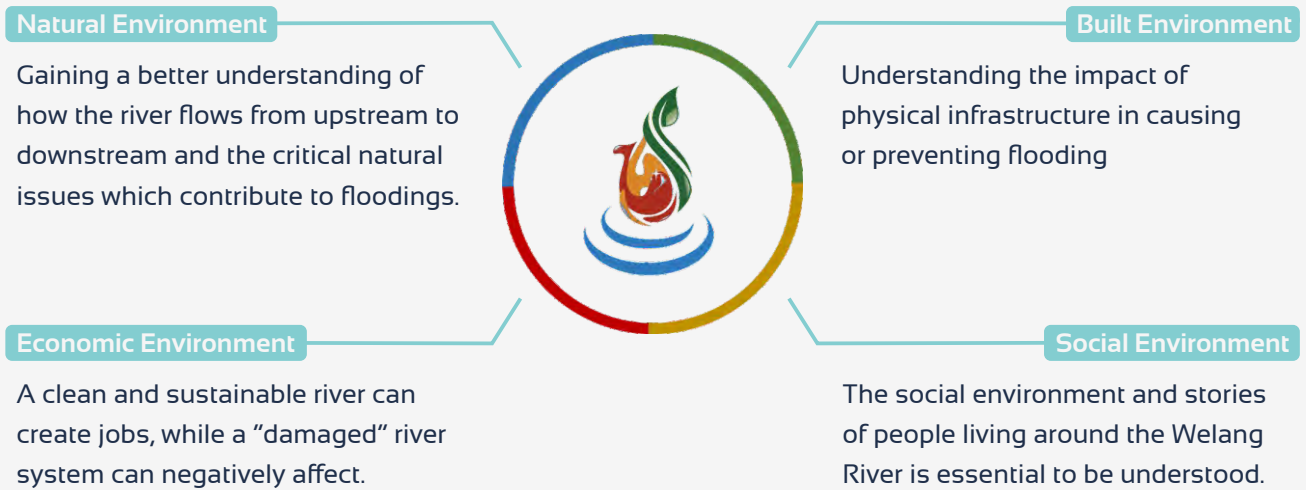


Figure: The 4 environment approach

Participants went through 6 steps in creating their solution:



Figure: Steps of the Action Plan



Phase I – First day, 9 November 2020

Mr Gugun Supriyanggoso (representing Mr M. Abduh Mattalitti, Head of the Water Resource Department of East Java Province) and Mr Rien Dam (the Netherlands' RVO) both emphasized the out-of-the-box solutions and innovative approaches to the flooding problem in the Welang River during their opening speech.

1st Action Plan – Learn

Before assigned to their tasks, the participants grasped the concept of water resources management from different aspects and expertise. These were important as the participants were challenged to approach the problems through different lenses and determine which potential solutions could be applied in the Welang River. In this action plan, the concept was introduced by Indonesian and Dutch experts from diverse backgrounds.

- Fauzy Nasruddin – East Java Provincial Government
- Victor Coenen – Witteveen+Bos
- Basja Jantowski – Alliance for Water Stewardship Indonesia
- Eline Leising – Rebel
- Liliane Geerling – Living Labs (HZ University)
- Jadfani Sidqi Fidari – Brawijaya University



2nd Action Plan – Identify

The day continued with the participants mapping out all preliminary findings from experts' presentation, identifying them through the "4 Environment" approach and summarising their findings.



Phase I – Second day, 10 November 2020

3rd Action Plan – Approach

The second day started with a field visit to the Welang River, where the participants took a boat ride and explored the river from the mid-stream to the downstream.

They learned first-hand about the river on the spot, saw with their own eyes how the condition in the Welang River was, had dialogues with the local stakeholders to learn about the locals' habit and what had been done there. They also learned about how the locals utilised the sediment from the river to produce brick. These activities were crucial to help them map out the conditions and problems.



Phase I – Third day, 11 November 2020

1st Action Plan – Learn

After the participants explored the Welang River and had a better picture of mixed problems in the river, the challenge continued with another classroom activity session and presentation from experts.

- Rob Boersma – Royal IHC
- Rudi Zapariza – YKAN

3rd Action Plan – Approach

All teams then visited Purwodadi Botanical Garden to learn how AWLR (Automatic Water Level Recorder) worked and saw the Welang River's upstream. The field visit continued to PERUM Jasa Tirta 1's new command centre.



Phase I – Fourth day, 12 November 2020

1st Action Plan – Learn

The fourth day began with another presentation session from experts.

- Cut Endah – Danone AQUA
- Astria Nugrahany – PERUM Jasa Tirta I
- Slamet Budiraharjo – Drainblock
- Wiwi Tjiok & Yulia – IDN Liveable Cities



4th Action Plan – Design

Enriched by experts and learnings from the ground through field visits, participants envisioned their preliminary masterplan for Healthy Welang River and fine-tuned their design towards the existing condition.



5th Action Plan – Trade

To help the participants understand the importance of every stakeholder in river management, we designed a River Stakeholder Game. This game had 5 different stakeholders: Government, Business, Community, NGO and Academics, where each team took turns to get the whole experience as these entities through 2 different case studies. The heated arguments, the constructive inputs and the spirit to fight for their role were the essence of the game: to challenge them in finding a win-win solution through negotiations with every stakeholder.

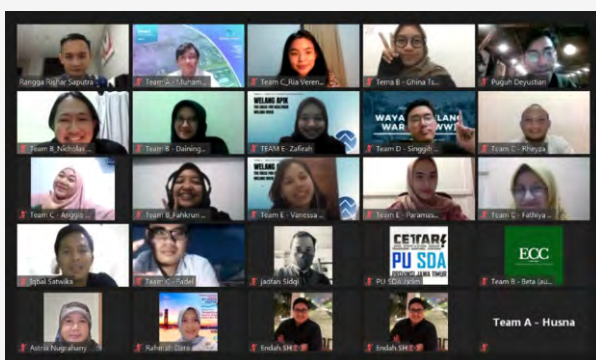


6th Action Plan – Deliver



Phase II was the ideas-brewing process. Participants were encouraged to think in more depth for their solutions, starting by carefully re-assessing the main problems in the Welang River, making sure to cover all the defining factors (flooding, land-use change, unprocessed waste, river pollution, sedimentation, local people's habit, law enforcement and economy pressure) and other relevant aspects as part of an Integrated River Basin Management.

All teams pitched their inclusive, approachable and applicable concepts in 2 virtual presentation sessions (15 December 2020 and 22 January 2021).



Phase III – First day, 15 March 2021

After 5 months of mentoring session, all teams finally gathered again in Pasuruan, East Java. Phase III was officially opened by short remarks from Mr Rien Dam (the Netherlands' RVO) and Rangga Rishar Saputra, Indonesia Waterhub Manager at **The Water Agency**.

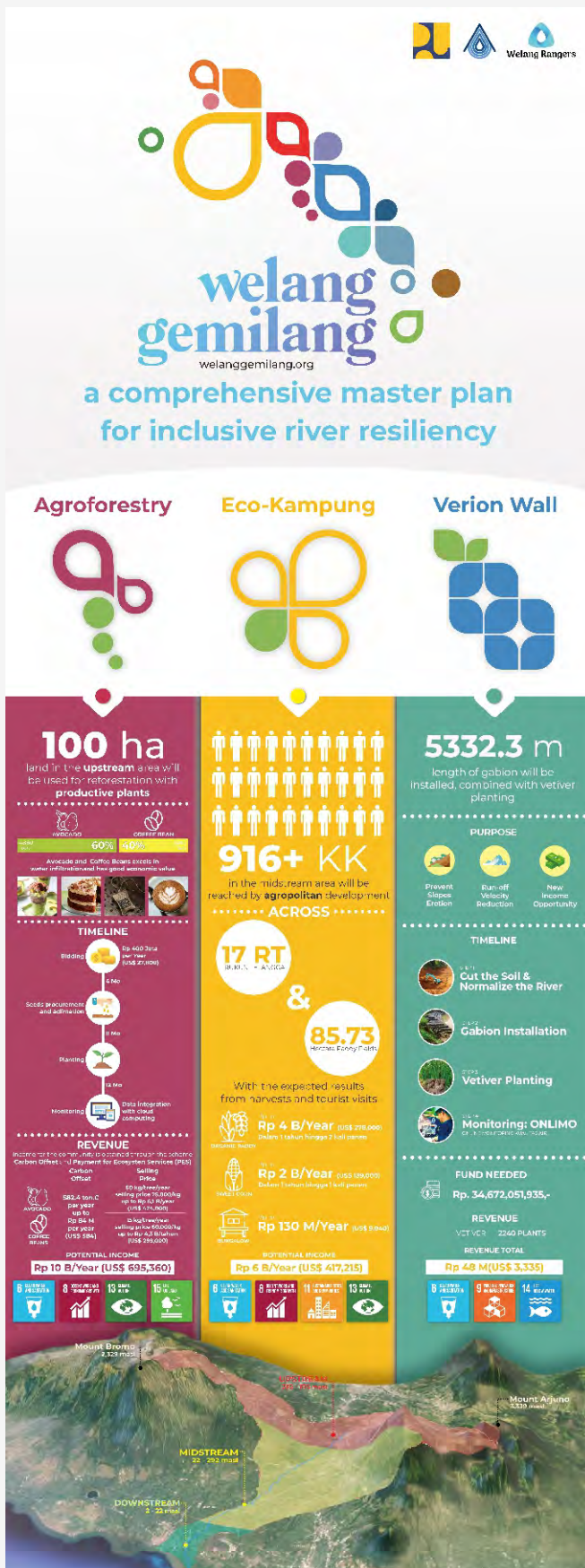
Final discussion within teams and mentor filled the first day before the final presentation on the next day.



Phase III – Second day, 16 March 2021

On the final presentation day, all of the Young River Leaders did an excellent job pitching their grand designs to the judge panels.





Team A: Welang Gemilang

Going for a comprehensive master plan for inclusive river resiliency, Team A Welang Gemilang proposed three main concept strategies: agroforestry, eco-kampung, and verion wall. The agroforestry planned to use 100 ha of land for reforestation with productive plants upstream. The Eco-Kampung program could reach an agropolitan development in the midstream area, expecting an increased number of both harvest and tourist visits. Finally, the verion wall was planned to be built for slope erosion prevention, run-off velocity reduction and a new income opportunity.



ASIK MANTAB

Aklimatisasi Sistem terintegrasi Keseluruhan (dengan mengedepankan) peMANfaatAn Bersama

OUR VISION

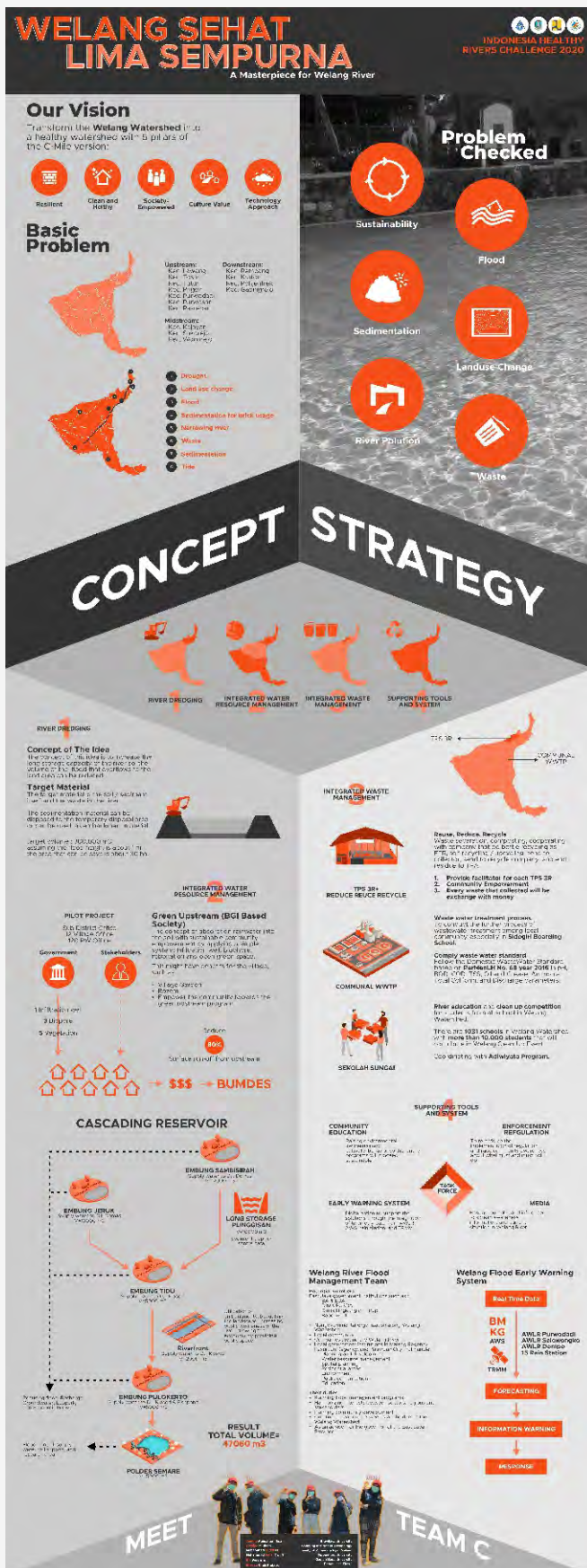
Welang Watershed, is a model, resilient community that thrives by protecting its people, commerce, and natural environment with integrated approaches.



"The implementation of all the programs offered is predicted to solve flood problems up to 50-year design discharge, as well as environmental and economic and social problems that are included in the strategic issues."

Team B: Asik Mantab

One of Team B Asik Mantab's highlighted concept was Disaster Trading. Disaster Trading applied environmental valuation to predict the impact of human activities and provided a balance investment pattern for the upstream, midstream and downstream of the Welang Watershed. Alongside that, Team B Asik Mantab also paid attention to adequate space for water: space was embedded in the environment and implemented in several options that would bring added value to the many aspects such as economy, social, climate and environment.



Team C: Welang Sehat Lima Sempurna

Putting forward three concept strategies: river dredging, integrated water resource management, and integrated waste management, Team C Welang Sehat Lima Sempurna had the vision to transform the Welang Watershed into a healthy watershed. There were five pillars of the C-mile version that the team meant to fulfil: resilient, clean and healthy, society-empowered, culture value and technology approach.



Team D: Wayahe Welang Waras

For solving the problems of the flood, unprocessed waste, sedimentation and community development, Team D Wayahe Welang Waras provided some ideas with a ten-year-long action plan for the Welang Watershed. The goal was to build a retention pond, sediment trap from bamboo, integrated waste management, communal wastewater treatment plant, rainwater harvesting, debris boom, biopore and recharge well. Team D Wayahe Welang Waras also proposed some non-structural solutions such as Welang-Weling: a digital platform for Water Management and Flood Mitigation and Pasuruan Prigel: a community development that focused on waste management.

Welang Apik: The Ideas For a Healthier Welang River

EXISTING CONDITIONS

- S** Abundant Amount of Water
Source of Irrigation
High Number of Productive People
- W** Lack of Water Catchment Area
Bad Habit & Lack of Awareness
Pollution
- O** Tourism Potential
- T** Heavy Rainfall

Steep Topography (O)

Sediment for
Brick Stone

- Kupang Shell (O)
- Eco-Pesantren (O)
- Sea Level Rise (T)

VISIONS

"Creating a beautiful and flood-free Welang River through a sustainable development that balanced social, economy, natural, and built infrastructures with smart and integrated solutions."

MISSIONS

- Optimization of Water Infiltration Areas
- Improvement of Community's Well Being and Awareness
- Utilization of Water as Resources
- Water and Sedimentation Storage
- Resilient Estuary
- Integrated Smart Mitigation System

PRIOR SOLUTIONS

UPSTREAM

The New Face of Gunung Baung



1. Hydrological regulator and water catchment area
2. Reduce flood in the mid and downstream
3. A new environmental edu-center for local community

MIDSTREAM

Sediment Bank & Industry

1. Reduce flood until 200,000 m3
2. Reduce the sediment in downstream area
3. Create Pasuruan City as a central of brick industry.



DOWNSTREAM

Pasuruan Water Space
& Ecotourism



1. Connected with other welang tourism using well-boat program.
2. Accommodating artificial lake infrastructure to support reducing flood until 1 million m3; hotels, restaurants, welang merchandise store, and edu-mangrove

INTEGRATED Pro Apik Movements

1. Pro Apik Hijau: Replanting mangroves and riparian zone
2. Pro Apik Bersih: Clean the Welang River from Waste
3. Pro Apik Juara: Challenge for villages to clean/develop Welang River Environment. Winner village will be having incentives.

Welang Apik Application

1. Facilitates local communities to collaborates
2. Increase the awareness and economy aspect of local communities



Team E: Welang Apik

Team E Welang Apik submitted solutions for each part from upstream to downstream. As an effort of integrated development, Team E Welang Apik introduced Pro Apik Movements consisting of Pro Apik Hijau (replanting mangroves and riparian zone), Pro Apik Bersih (cleaning the Welang River from waste) and Pro Apik Juara (challenging villages to clean and develop Welang River environment). They also came up with the idea of the Welang Apik mobile application to facilitate local communities to collaborate and increase the awareness and economic aspect of local communities.

The Winning Team title went to Team B “Asik Mantab” (abbreviation of Aklimatisasi Sistem terIntegrasi Keseluruhan - dengan mengedepankan - peMANfaaTAn Bersama) for their comprehensive management strategy, which focused on solving flood gradually, enhancing water resources and water quality through a structural, vegetative and management approaches as well as prioritising the readiness of each business model.



Phase III – Third day, 17 March 2021

As the challenge came to an end, participants and partners visited and explored the Nongkojajar upper catchment, part of the Welang River upstream.



Fulfilling the commitment to run a safe event by implementing safety and health protocol, all attendees were required to submit a negative swab test result before coming to Pasuruan and were tested again in the afternoon before leaving Pasuruan.

Phase III – Fourth day, 18 March 2021

On the last day of Phase III, all of the Young River Leaders went back to their hometown with a comprehensive experience developing Integrated River Basin Management.



Results

1. Over 2,500 university students across Indonesia were aware of **The Water Agency**'s capacity building programs via social media since the program began in 2014. These challenges have developed certain interest from prominent universities students and young professionals throughout the years and are highly anticipated program.
2. 81 university students and young professionals registered for the **Indonesia Healthy Rivers Challenge 2020** through Indonesia Water Portal (www.indonesiawaterportal.com/).
3. 30 university students and young professionals who participated in the **Indonesia Healthy Rivers Challenge 2020** had learned about the Healthy Rivers development under the guidance of diverse Indonesian and Dutch experts. The participants were also encouraged to develop their substantial skills: presentation, communication, perseverance, confidence, negotiation and persuasion, collaboration with a diverse team, critical and systematic thinking. These skills are reported as the key elements to succeed in a professional setting by universities' internal research.

4. Participants got to explore the first-hand experience on holistic capacity building events, combining actual case study, field visits, and mentorship on developing Integrated River Basin Management. Out of classroom and learning from the ground activities are essential to bridge the expectation from traditional learning experience to real-life working environment.
5. Fulfilling the commitment to run a safe event by implementing safety and health protocol, **The Water Agency** was glad to **see the attendees were tested negative** based on the serology and swab tests done on the final day of Phase I and Phase III.
6. All presentations and products of **Indonesia Healthy Rivers Challenge 2020** are archived in Indonesia Water Portal for public access and education.
 - Page: www.indonesiawaterportal.com/river-collaboration-east-java.html
 - Group: www.indonesiawaterportal.com/riverchallenge.html
7. As part of the Memorandum of Understanding (MoU) Water through the Letter of Intent (LoI) Water signed on 10 March 2020, the teams are scheduled to do separate presentations for the Integrated River Basin Master Plan Welang River project Consortium Team to provide inspirations and to bridge the key findings and solutions from this Challenge to the Master Plan.

Expenses

Indonesia Healthy Rivers Challenge 2020 is supported by the Water Resource Department of East Java Province (Indonesia) and the Netherlands Enterprise Agency.

Pre-Event and Social Media Publication	Budget	Actual
Organisation time April - September (26 days local team + 6 days Gregor)	€ 9,675	€ 9,675
Travel and Expenses (Jakarta-Surabaya)	€ 860	€ 336
Sub-total	€ 10,535	€ 10,011
Phase I - Research and Identification	Budget	Actual
Organisation time - 16 days local team + 6 days Gregor	€ 7,800	€ 7,800
Travel and Expenses TWA	€ 610	€ 883
Expenses Participants (COVID-related measures)	€ -	€ 272
Expenses Participants (expenses not covered by EJP: boat trip)	€ -	€ 141
Sub-total	€ 8,410	€ 9,096
Phase II - Home Works	Budget	Actual
Organisation time - 12 days local team	€ 2,250	€ 2,250
Organisation time - 16 days local team	€ -	€ 3,000
Sub-total	€ 2,250	€ 5,250
Phase III - Finalisation and Presentation	Budget	Actual
Organisation time - 16 days local team + 6 days Gregor	€ 7,800	€ 7,800
Travel and Expenses TWA	€ 430	€ 1,067
Material (certificate)	€ 75	€ 18
Winner's prize	€ 500	€ 500
Expenses Participants (COVID-related measures)	€ -	€ 380
Expenses Participants (expenses not covered by EJP: trip to Bromo)	€ -	€ 353
Sub-total	€ 8,805	€ 10,119
Total	€ 30,000	€ 34,475
Budget Deficit		€ 4,475

During the course of Indonesia Healthy Rivers Challenge 2020, these parts are covered by the East Java Province (in-kind).

Phase I - Research and Identification
Expenses Participants (hotel in Pasuruan)
Facilities for participants (venue, AVC, video/photography)
Meals (lunch, coffee break and dinner)
Transport between venues (by bus)
Phase II - Home Works
Online Collaboration Platform (Indonesia Water Portal)
Online Collaboration Platform (Zoom meetings)
Phase III - Finalisation and Presentation
Expenses Participants (hotel in Pasuruan)
Facilities for participants (venue, AVC, video/photography)
Meals (lunch, coffee break and dinner)
Transport between venues (by bus)
Expenses Participants (trip to Bromo)
Expenses Participants (Teams' banner)
Expenses Participants (Teams' jackets)



KEMENTERIAN PEKERJAAN UMUM
DAN PERUMAHAN RAKYAT



Government of the Netherlands



Pemerintah Provinsi Jawa Timur



PARTNERS
VOOR WATER



THEWATERAGENCY

Thank you for joining and supporting us throughout the
whole **Indonesia Healthy Rivers Challenge 2020**.

We are honored to have had the chance of
knowing and collaborating with you.

We hope to see you again for more adventures to come.



Konservasi
Alam Nusantara
Untuk Indonesia Lebih Baik



ALLIANCE FOR
WATER STEWARDSHIP
INDONESIA



DRAIN
BLOCK