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Climate Change Narrative for the Indonesian Village

Chloe Sairs

Worcester Polytechnic Institute

Nicholas Peter Odell

Worcester Polytechnic Institute

Samantha Elizabeth Kelly

Worcester Polytechnic Institute

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Climate Change Narratives for the Indonesian Village

Team Members:

Samantha Kelly - sekelly@wpi.edu

Nicholas Odell - npodell@wpi.edu

Chloe Sairs - csairs@wpi.edu

Sponsors:

Shane French - shane@ceres.org.au

Subik Baso - subik@ceres.org.au

Advisors:

Brigitte Servatius - bservat@wpi.edu

Herman Servatius - hservat@wpi.edu



Abstract

The sponsor for this project was the Centre for Education and Research in Environmental Strategies (CERES), a community environment park in Australia. We conducted interviews with 32 Indonesian living in Melbourne collecting 10 hours of footage. Using the major themes raised by the interviewees we produced five short-form educational videos on flooding, changes in seasons and weather patterns, air pollution, development and deforestation, and improper rubbish disposal. These videos will be used by CERES to educate the school groups in the Indonesian village, and be accessible to all visitors through the CERES mobile app. We created an archive with detailed, timestamped notes that will enable the efficient creation of future videos by CERES staff as well as later IQP teams.

This report is submitted in partial fulfillment of the degree requirements of Worcester Polytechnic Institute. The views and opinions expressed herein are those of the authors and do not necessarily reflect the positions or opinions of Worcester Polytechnic Institute.

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Chapter 1: Introduction to CERES

For our project, we worked with the Centre for Education and Research in Environmental Strategies, known commonly as CERES, in Australia. CERES is a not-for-profit organization focused on sustainability, education, and community outreach. It is located in East Brunswick, Melbourne, Australia. CERES runs numerous educational programs on-site, through the Sustainability Hub (see section 2.1.2), as well as community programs fostering sustainable food practices. It also runs trips abroad to places like Indonesia, Samoa, and India, bringing visitors face-to-face with the world's environmental problems. The park is funded by supporters, as well as its social enterprises like its nursery (Figure 1), cafe, and organic grocery (Figure 2). Visitors to CERES can purchase plants and gardening materials at the nursery. The cafe at CERES serves fair trade coffee and made-in-house specialty dishes and pastries. The organic grocery offers a wide variety of buy-in-bulk products from almonds to liquid soap. All the groceries sold at the organic grocery are organic and CERES does its best to have locally sourced foods and artisanal wares.



Figure 1. CERES Nursery.



Figure 2. CERES Organic Grocery.

The 4.5 hectares that CERES occupies was the home of the native Wurundjeri people until the 1770's. During European Colonization in the 1770's, the Victorian gold rush in the 1850's, and the subsequent expansion of Melbourne and the Australian economy, this land was taken and mined for bluestone. This land was then used as a landfill for many years (The Commonwealth, 2018). The founders of CERES, beginning in 1982, worked with staff, volunteers, and labor market programs to make the land habitable once more, building the site up to how it is today.

CERES now runs various on-site attractions including farming, model cultural villages, educational exhibits, and social enterprises, which are divided into four precincts, as seen in Figure 3. CERES welcomes around 400,000 visitors annually, and reaches out to over 200,000 people through their work in the community and across Victoria.

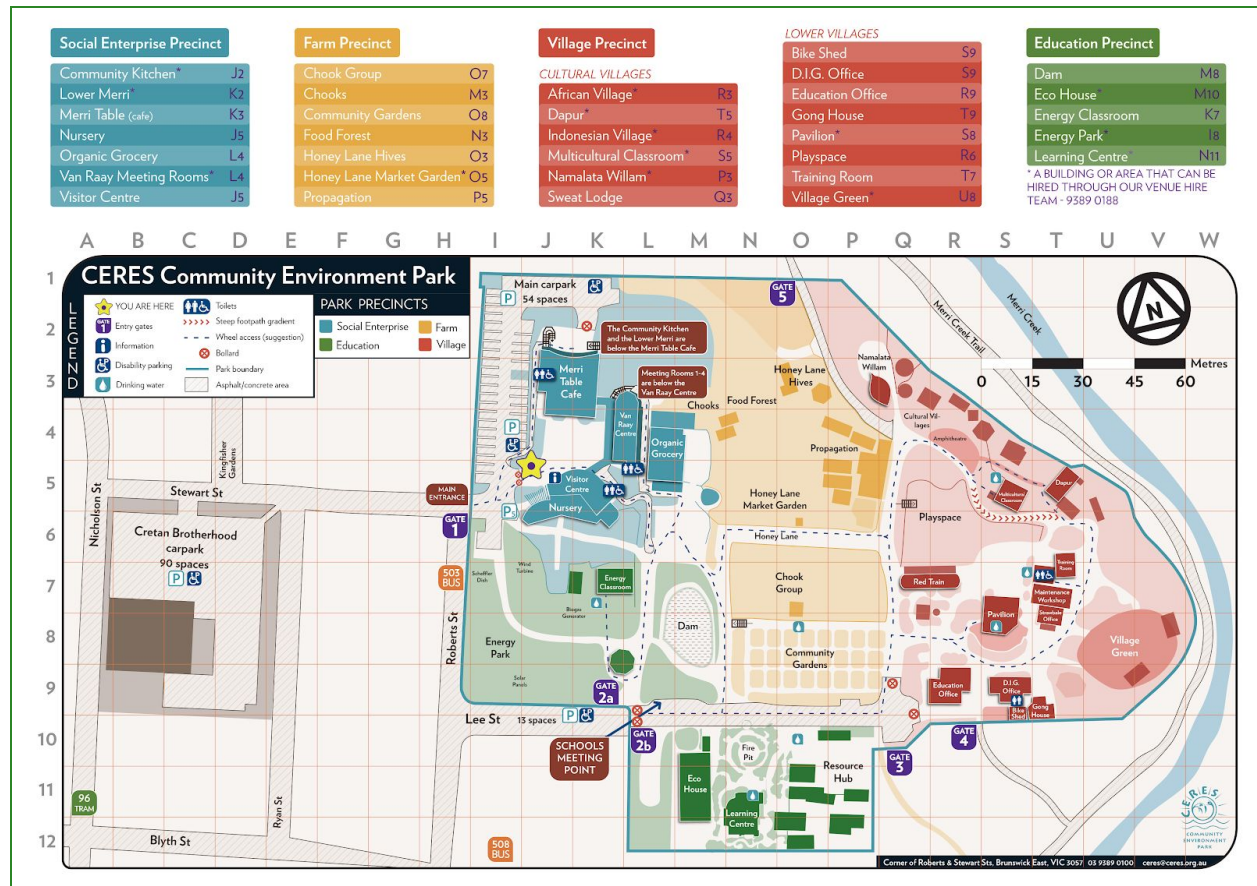


Figure 3. Map of CERES. CERES features a wide range of different programs spread out across the 4.5-hectare property. (CERES, 2018)

Our project focuses on improving CERES' Indonesian Cultural Village. CERES wants to enhance the experience for visitors to the village by sharing the voices and stories of the Indonesian people through videos which will highlight their struggles with climate change. Last year in 2017, an IQP team worked on exploring the everyday life of the Indonesian people and the hardships they face by conducting and recording interviews and producing short videos featuring the interview subjects (Scaplen et. al., 2018). Our project's goal was to continue the last group's work by conducting further interviews with participants of a wide range of ages and various islands of origin. The past project had a more broad focus than that of ours, and this team determined that problems arising from climate change were prevalent in Indonesia. By conducting additional interviews specifically with a focus on climate change we created new,

more focused videos detailing specific environmental issues. The target age range of the visitors to the village is 7 years and older, and thus the videos were edited for this audience.

Chapter 2: Background and Literature Review

2.1. CERES Educational Resources

The Indonesian cultural village is a small part of CERES' educational resources. Educational programs are coordinated through CERES' Sustainability Hub, which allows for organization of daily activities in order to maximize the number of visitors participating on site each day. For visitors not involved in an organized educational program, the CERES Chook mobile app features various resources allowing for self-guided tours. Our project will further connect the Chook app to the Indonesian village.

2.1.1. Sustainability Hub

CERES offers environmental and sustainability education at multiple levels beginning with early childhood and continuing into higher education and beyond. The Sustainability Hub is the department of CERES through which the educational programs are organized. For each visitor group, a variety of programs are offered, from guided tours of the facilities to Indonesian cultural programs. Each age group of visitors receives tailored excursion programs and learning experiences from the “Worms and Minibeasts” program for early childhood, to the “Energy and Society” program offered to those in higher education. CERES also features an EcoHouse that was implemented in 1982, which acts as a model for low-energy housing using solar energy. Along with the excursion programs, there are also incursion programs where CERES educators visit schools and other locations in the community.

2.1.2. Chook App

In 2015, CERES developed a mobile application, called “Chook - CERES Environmental Park”. This application is free to download and can be found on the Apple App Store. The Chook app is convenient for visitors at CERES location since visitors can connect via Bluetooth to get information on nearby exhibits/displays. The app does not currently have videos relating to the Indonesian village. The Chook app contains information for visitors and CERES hours of operation, links to the additional CERES social media accounts (Facebook, Twitter, and Instagram) and their newsletter, and an interactive map (CERES Environmental Park, 2015). The

Chook app also incorporates different articles on the topics of water, food, energy, and the environment. There are activities involving the history of CERES and seven games that a group of Worcester Polytechnic Institute students developed in 2015. These games include Tree Hugging, Age of Trees, Sounds of CERES, Past and Present of CERES, Aboriginal Hand Talk Charades, Art Scavenger Hunt, and Weather Rock (Bradford et al., 2015). The goal of these activities is to engage visitors and help the visitors learn important information in a fun way. All of this information on the current features of the CERES app is important to us since we need to understand what issues are currently being addressed through the activities and articles, and how our educational videos can be used to spread more awareness.

2.2. Climate Change Issues

Climate change is caused by the process of global warming and other factors such as industrialization and deforestation (Holten, 2015). CERES wants to spread awareness to visitors of all age groups on the effect that climate change has on everyday life. In our educational videos, we addressed changes in seasons and weather patterns, flooding, rubbish disposal, air pollution, and deforestation, which are all environmental problems which affect the Indonesian way of life. This section details the problems relating to climate change in Indonesia today.

2.2.1. Global Warming

The greenhouse effect is the process by which atmospheric gases trap heat near to the Earth's surface. The resulting rise in earth's atmospheric temperature is termed global warming. The main greenhouse gas (GHG) contributing to the warming climate is CO₂, emitted from the combustion of fossil fuels (National Geographic Warming, 2018). This temperature increase is exhibited in both the atmosphere and the ocean, leading to higher occurrences of extreme weather (such as floods or droughts), and unpredictable precipitation patterns across the globe (Moreland City Council, 2015). Increasing global temperature has affected Indonesia in many ways, including the more frequent occurrence of flooding in Indonesia.

2.2.2. Flooding and Natural Disasters

Indonesia's annual seasonal patterns are dictated by the summer and winter monsoons, and result in the nation experiencing primarily a wet and a dry season, with variation of the timing and intensity of each season throughout the country (Loo et al., 2015). Increasing temperatures affect monsoon rainfall patterns, which have led to more extreme seasonal differences. The added rainfall during the wet season increases the flooding risk in areas which already experience significant precipitation. The flooding is worsened by rising sea levels, which are caused by global warming and the resulting melting of ice caps. The sea level in Indonesia rises around 3-5mm per year, further increasing the risk of flooding in areas along Indonesia's 81,000 km of coastline (Holten, 2015). Places such as the capital city of Jakarta, much of which sits below sea level, experience severe flooding, with one such flood displacing over 6,000 people in February of 2018 (Falvey, 2018). Limited Indonesian government programs exist for mitigating the effects of these catastrophic events. More needs to be done to slow the increase in climate extremes which threaten the safety of Indonesia (Soesilo, 2014).

2.2.3. Industrialization and Waste Management

Indonesia's economy has expanded rapidly over the past decades, as seen in Figure 4. This expansion has come as a result of heavy industrialization.



Figure 4. Growth of Indonesian economy. GDP of Indonesia since 1967 (The World Bank, 2018).

Indonesian coal production, for example, increased sixfold from 2004 to 2016 (U. S. Energy Information Administration, 2016). With an increase in industry comes an increase in waste production. In 2015, Indonesia produced 64 million tons of waste, and the nation's overflow of waste was considered a state of emergency by the Environmental and Forest Ministry (Jong, 2015). In 2015, recycling made up only 1.9% of waste disposal across Indonesia. Efforts to spread the mindset of recycling have had limited success. In 2016, the Indonesian Government imposed a tax on plastic bags in an attempt to reduce the amount of single-use plastics in circulation, but soon ended it due to pushback from industry and local communities. (Taylor, 2018). Stricter policies and enforcement will be necessary if the situation is to be improved.

2.2.4. Pollution

Many of the nation's critical rivers have become dangerously polluted, such as the Citarum river, which supplies 80% of the surface water for the capital city of Jakarta (Hewson, 2013). In some places, this river's surface is often entirely obscured by personal and industrial

waste. In 2013, the Citarum was found to have lead levels 1,000 times worse than US drinking water standards (Tarahita & Rakhmat, 2018).

Indonesia's pollution problems are not just limited to water. Uncontrolled forest fires, many a result of slash-and-burn tactics utilized by the palm oil industry, released over 801 megatonnes of CO₂ in 2015 (Pribadi & Kurata, 2017). Comparatively, 383 megatonnes of CO₂ were released into the atmosphere by Australia in 2015 (Australian Government, 2018). The resulting air pollution from Indonesian forest fires and other industrial emissions have severely affected air quality in cities. In 2010, it was found that 58% of the population in Jakarta suffered from diseases related to air pollution (Yudha, 2016).

Soil pollution is also a problem that Indonesians face. In South Sulawesi, close to the Antang landfill near the residential area of the city of Makassar, it was found that at a depth of 10 to 20 cm there was a significant amount of *E. coli*, with the highest level being found to be 93x10⁵ colony forming units per gram of soil. The area that was sampled was in parallel with the flow of groundwater and the closest to human activity such as septic tanks. The other areas that were sampled had a much lower *E. coli* count, providing evidence that the landfill is the main source of this pollutant. Those who depend on the groundwater for drinking and household use could be at risk (Andi et al, 2018).

2.2.5. Coastal Development

Climate change can cause increased variation in wave height and a rise in sea levels, which is a significant problem since land may become partially or even completely submerged. This is of major concern for islands since islands are much smaller than continents, containing less land and space for people to live. If too much of an island is submerged then it will become completely uninhabitable. On islands, land may become submerged on all sides simultaneously rather than only one side.

Indonesia is particularly affected since it contains over 17,500 islands, making it the largest archipelagic country in the world. Therefore, the rising sea level is a major obstacle to continuing life on Indonesia's numerous small islands. There have been several studies on sea level variations across Indonesia. One particular four-year study depicts the rise in sea level trends for the Indonesian cities of Medan, Pemangkat, Ambon, and Manokwari (Zirka et al.,

2015). As seen in Figure 5 below, all graphs show a trend towards a higher sea level, but there is a substantial amount of variation which implies instability.

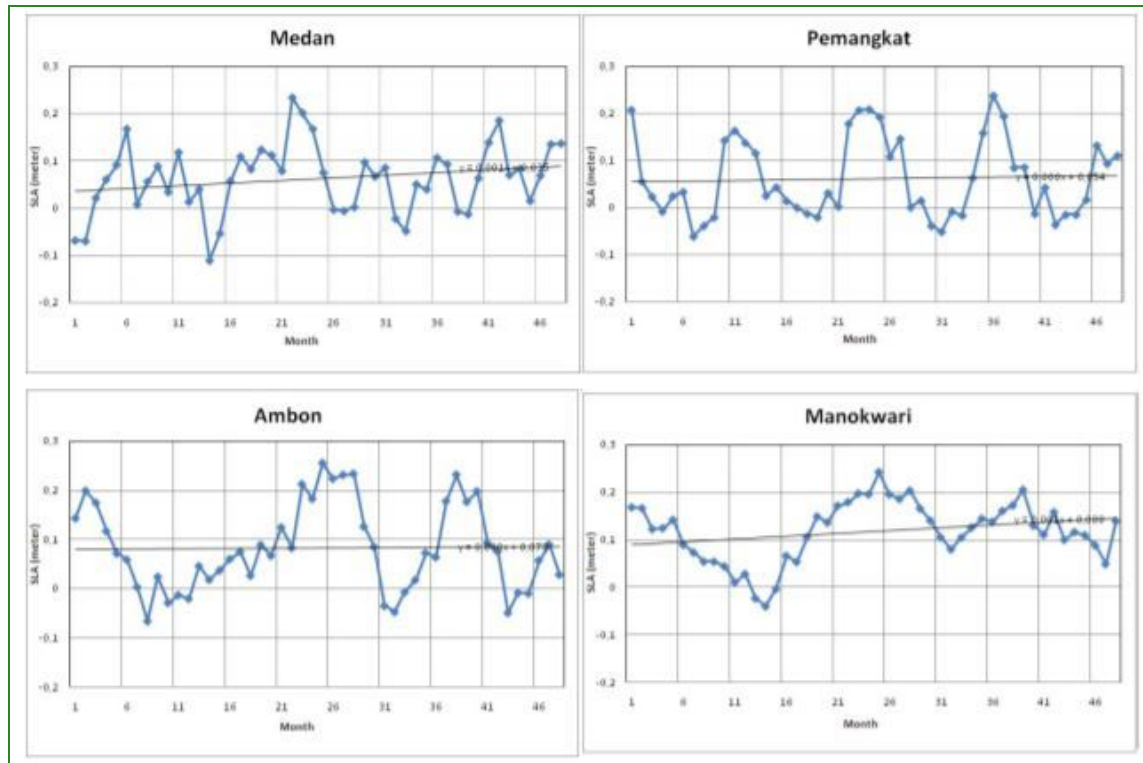


Figure 5. Graphs depicting the rise in sea level trends for Medan, Pemangkat, Ambon, and Manokwari. (Zirka et al., 2015)

Out of the four cities, Manokwari had the greatest rise in sea level at approximately 14 mm/year. This is over four times larger than the average global rate of sea level rise, at approximately 3.1 mm/year since 1993 (Lindsey, 2018). The sea level around Indonesia's islands is increasing at a much faster rate than the average global sea level. This causes a higher frequency of flooding which can lead to the destruction of Indonesian communities and hinder coastal development.

Coastal regions in Indonesia are of significant importance for the Indonesian economy. As shown below in Figure 6, the coasts of Indonesia generally have a higher population density than the mainland (Indonesia Population 2018).

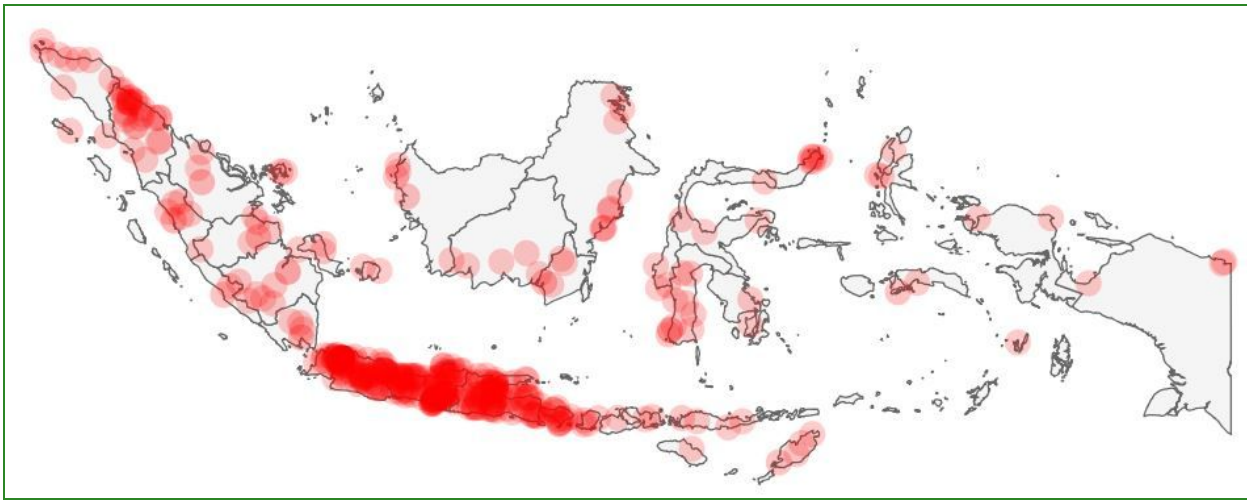


Figure 6. Map of Indonesia. The map shows the population densities within Indonesia. Bright red indicates the most densely populated areas. (Indonesian Population 2018).

This population density is a result of the significance of Indonesia's aquaculture and fisheries sector in society. Fish is a vital food source in the diets of coastal residents, and thus there is a great need for fish agriculture (Ariansyach, 2017). Indonesia is a dominant producer and exporter of seaweed, tuna, shrimp, and other forms of aquaculture (Global Business Guide Indonesia, 2014). The fish agriculture has lead to economic prosperity for coastal communities. It was reported that "[Indonesia's] fishery sector's GDP growth increased from 7.3 % in 2014 to 8.3% in 2015, which is almost double the growth of the national GDP of 4.7% in 2015" (EIBN Sector Reports, 2017). Therefore, a loss of Indonesia's coastal areas will negatively influence Indonesia's economy.

2.2.6. Palm Oil and Deforestation

The palm oil industry is vital to the Indonesian economy since palm oil is in high demand in Australia and worldwide. Indonesia is expected to produce 37,500,000 metric tons of palm oil from 2017 to 2018. Palm trees can generate ten times more oil per hectare when compared to other oil producing crops. As a result of economic pressures from importers, such as China, Pakistan, and India, the palm oil industry has been pushed to expand and destroy natural lands even when regulations are in place. Most vegetable oil throughout the world is made of palm oil. Many of the foods and commodities that an average consumer in Australia purchases contain this

oil. Some examples include cookies, donuts, other snack foods, toothpaste, and soaps (Palm Oil Production - Indonesia, 2018).

Palm oil production has serious negative impacts, as “oil palm plantations often replace tropical forests, killing endangered species, uprooting local communities, and contributing to the release of climate-warming gases” (Global Palm Oil Demand Fueling Deforestation, 2018). The increasing demand for palm oil causes more and more clearing of natural land and results in significant deforestation. Studies have shown that Indonesia, Latin America, and Africa have the fastest deforestation rates in the world (Withgott and Laposata, 2019). It is estimated that plantations in Indonesia have eradicated more than 20 million acres of rainforest (Withgott and Laposata, 2019). Animal species that live in the rainforest, such as orangutans, elephants, rhinoceroses, and tigers, are forced out of their habitats as a result of this deforestation. This greatly impacts the species’ population sizes as a whole, as many may not survive the upheaval of their natural habitats.

Deforestation from palm oil plantations causes a loss of biodiversity and accelerates of global warming. Trees that could block out most of the sun’s rays disappear, revealing more exposed surface. Trees also absorb greenhouse gases; with fewer trees, more greenhouse gases are emitted into the atmosphere. This can lead to unpredictable changes in temperature and an increased rate of global warming (Deforestation and Its Effect on the Planet, 2017).

2.3. Indonesian Community in Australia

Due to Indonesia's close proximity to Australia, Indonesian people have migrated to Australia over the past 150 years. Currently, one of the most popular reasons Indonesians choose to move to Australia is for their post-graduate education. This section provides details on the Indonesian population in Australia and the migration patterns that resulted in this population residing in Australia.

2.3.1. Demographics of the Indonesian Community in Australia

The approximate population of Indonesia itself is 267,411,000 people, making Indonesia the fourth most populated country in the world (Indonesia Population 2018). Based on Australia’s 2016 census, there are approximately 73,000 Indonesian-born people residing in

Australia (Indonesian Culture - Indonesians in Australia, 2018). Using the total Australian population from this 2016 census, the percentage of the Australian population that comprised individuals who had been born in Indonesia was found to be 0.3%. The general population distribution for this group of people is 42.5% in New South Wales, 24.4% in Victoria, 16.1% in Western Australia, and 10.4% in Queensland.

2.3.2. Migration Patterns to Australia

In the 1870's, many Indonesians came to Australia to work as pearlers or in the sugar cane industry. However, in 1901, Australia implemented the White Australia Policy, which sought to limit foreign immigration to Australia, and thus most Indonesians left the country. This policy was lifted in 1970, allowing over 12,000 Indonesian-born people to become residents of Victoria by 1996 (Museums Victoria, 2013). A significant portion of present-day Indonesians come to Australia for educational pursuits. In 2017, there were over 20,000 Indonesian students enrolled in Australian institutions (Australian Embassy Indonesia, 2017). These students have a unique perspective on the environmental issues in Indonesia, as they have grown up facing them.

2.4. Use of Interviews for Gathering in Depth Information

This project explored the perspectives of Indonesian people on climate change using an oral history approach. According to the Oral History Association, “Oral history is a field of study and a method of gathering, preserving and interpreting the voices and memories of people, communities, and participants in past events. Oral history is both the oldest type of historical inquiry, predating the written word, and one of the most modern, initiated with tape recorders in the 1940s and now using 21st-century digital technologies” (Oral Histories, 2017). A key trait of this method is that the in-depth questions are developed before the interview is conducted. Since the advent of video and audio recording, the term oral history has changed with the times to take many forms such as podcasts and highly edited videos (Oral Histories, 2017). This section will describe how interviews can be used to record such narratives.

2.4.1. Semi-Structured Interview Style

The interview style we used was the semi-structured method (Jamshed, 2014). This interview method begins with the basics of preparation and focus. The first stage of interviewing is planning. The second stage is to ensure that during the interview all parties stay on task (Troll, 1964). Interview methods that are tailored to social science field research appear on a spectrum from highly structured to unstructured. Interviews that are too structured often yield data that is impersonal. However, if an interview has no structure, and is allowed to flow like a conversation, then an open-ended time frame is required for collecting a more complete data set. A semi-structured interview is the compromise, allowing for a gentle steering of conversation to the topics of interest in a manageable period of observation. In his article, Jamshed, a social scientist who wrote about qualitative research methods, suggests that a less structured method of interviewing would also allow for more natural responses from the participants (Jamshed, 2014).

2.4.2. Rapport in Interviews on Personal Experiences

Interviews regarding personal experiences have the potential to bring up painful or uncomfortable memories, and we as researchers had to be aware of how far we could “push” to get a direct answer. Brady and Boyce state, in their article from the *International Journal of Qualitative Methods*, that interviews lead the subject to reflect on potentially difficult experiences, and that the more troubling a memory is, the more difficult it is for the interviewer to glean information. Thus, researchers must build a strong rapport and significant trust before these questions are asked (Brady & Boyce, 2018). Ryan and Dundon, researchers from The National University of Ireland Galway, stress how important it is for building rapport that the interview flow be carefully crafted, giving time and material for establishing common ground. Less focused, general questions should be employed to get the subject talking and allow them to become more comfortable with the interviewers.

When a rapport is not as strong as necessary, there is a greater risk of eliciting a strong negative emotional response. In their article in the journal *Law and Method*, Melville and Hincks say that in the event of some sort of breakdown, interviewers must have a bailout protocol, such as temporarily focusing on simpler, more factual questions to allow the subject to recover before returning to the central question. They also stress the importance of being patient and not rushing sensitive interviews (Melville & Hincks, 2016). By giving subjects ample time to think through

and elaborate on their responses, it helps to ensure that they feel comfortable, and know that their responses are important to the researchers. It is also important to express to the subject that there is no shame in sharing such experiences (Melville & Hincks, 2016).

Due to the cultural differences that exist between Indonesia and the US, the point at which people raised in a western culture get uncomfortable can be markedly different from that of those who were raised in an eastern culture. Indonesians specifically tend to be shyer and more reserved than people of western cultures (Global Affairs Canada, 2018). We have to be aware of how we are going to be perceived as researchers who are asking personal questions about a culture we have no place in.

2.4.3. Participant Awareness and Storytelling for Social Change

As the researcher, we did not want to unconsciously influence the responses, but rather allow the participant to share their own story and reveal their true perspective on the problem. A social science researcher, Holmes, recognized that foreign reporters often skew the stories of refugees unintentionally. They do this by imposing their ideas of data collection on that culture rather than allowing the culture of the participants to be reflected in the work (Holmes 2017). As the researcher, we did not want to impose our culture on any of the interview subjects. For instance, we tried to avoid leading questions as they often only serve to reinforce the researchers' assumptions, not to reveal novel truths or conclusions. The goal of these interviews was to allow the interviewee to share any experience or memory that relates to climate change problems. To elicit their stories and that which they find important was the goal, not to educate them on American expectations of life.

As social science researchers, transparency on the behalf of those conducting the interview is vital in establishing trust between both parties. Transparency also helps to make the subjects more comfortable in the interview and allows for more honest and open responses to be recorded. The intention of the interview should be stated from the beginning. Social science researchers Ryan and Dundon affirm that care must be taken to ensure that the subject is made aware of exactly what the project goal is, and how their contributions will have a positive impact. This is said to eventually result in the interviewee becoming self-motivated to help with the research, and thus more inclined and open to answering more difficult questions (Ryan & Dundon, 2008). A consent form (Appendix B) with all details concerning the publication and

distribution of data collected is required for social science field research (Perecman & Curran 2006).

Storytelling was utilized to share the experiences of the Indonesian people. Storytelling is often valuable when presenting information with an overarching goal of promoting change. David Clark, a Professor of psychology expresses how stories and the act of storytelling allow the listener to learn about someone's inner life and what motivates them (Clark, 2014). Stories and experiences can “engage people at every level – not just in their minds but in their emotions, values and imaginations, which are the drivers of real change” (Hodges, 2014). Engagement was critical to our project since we needed to attract visitors to the CERES Indonesian village through the use of stories from the Indonesian people.

2.4.4. Examination of the Methods of the 2017 IQP Team

The past IQP team that conducted interviews with the Indonesian people specified key features of a successful interview. These included asking only one question at a time, and asking questions that could not be answered with a simple yes or no. Both of these techniques allow for clear answers to be recorded as well as room for the participant to elaborate if needed. This group also took pains to not ask biased questions, allowing for interpretation by the subject, not the interviewer (Scaplen et al., 2017). Upon reviewing their footage, it was clear that more preparation was needed and additional specific follow up questions would have been helpful for more thorough data collection. The challenge was to phrase these follow up questions in an unbiased way to encourage authentic responses. The IQP team from 2017 would also have benefited by introducing their project more clearly and transparently before the interview to ensure the subjects knew the purpose of the interviews.

Chapter 3: Methodology

Our project was broken into the following objectives: to capture the perspectives and experiences of the Indonesian people in regards to climate change, to create short-form videos showcasing the topics and themes from the interviews, and to make suggestions to CERES, the group from Engineers Without Borders, and future IQP teams for improvements to the Indonesian Village. In this chapter, we describe how we accomplished these tasks.

This project team applied for an exemption from its Institutional Review Board to conduct these interviews and it was granted. Before each interview, interviewees signed a consent form (see Appendix B and Appendix C).

3.1. Capture the Perspectives and Experiences of the Indonesian People in Regards to Climate Change

In order to capture the opinions and backgrounds of the Indonesian people, we conducted semi-structured interviews with Indonesians in Melbourne to better understand the potential gaps in information regarding climate change. The recordings of these interviews were cataloged and utilized to produce short-form videos to educate the visitors of CERES on current climate change problems in Indonesia.

3.1.1. Establishing Contact Within the Indonesian Community

Before interviews could be conducted, we first had to identify and contact members of the Indonesian community. The 2017 IQP team interviewed 22 individuals, gathering them through snowball sampling based on a few starting individuals, and had to establish initial contact (Scaplen et. al., 2017). Our team benefited greatly from the help of I Gede Sukma “Dede” Adisatria Sukadana, an Indonesian graduate student from Victoria University, who was working at CERES for his placement. Dede was studying international community development, with the goal of working with his father’s foundation to help disadvantaged communities in Bali. Dede was part of a network of Indonesian students and elders which he was able to leverage in order to set up and schedule interviews. As this project interviewed students from Indonesia who are studying in Australia, knowing a member of the Indonesian community assisted us greatly in formulating questions and establishing a friendly rapport. With his help, a sample of 32

Indonesian people was found using the snowball sampling technique that was employed by the 2017 IQP team. This resulted in a pool of 32 interviewees, 5 of which were elders. This was an improvement over the 2017 IQP team, which interviewed 22 individuals. These 32 individuals were from a variety of islands in Indonesia (see Figure 7 below). Some interviews were first conducted with 3-5 subjects in a group as discussions, due to the large number of participants. The group interviews allowed the participants to build off of each others' responses and personal experiences. This was also done by the 2017 IQP team but the group discussions were not filmed. This allowed us to identify which participants to interview individually afterward in order to elicit more in-depth responses.



Figure 7. Map of interviewee locations of origin in Indonesia. Numbers indicate how many interviewees were from each location.

3.1.2. Conducting Semi-Structured Interviews

We employed the semi-structured interview style (see section 2.4.1) when conducting the interviews. We used responses from the group interviews to assemble a general set of topics that were then pursued in more depth by asking chosen individuals specific questions. The goal of our semi-structured interview process was to elicit elaborate and authentic responses to a set of

questions that were prepared beforehand (see Appendix A). This semi-structured interview process was effective for our particular project (see section 2.4.1).

With the benefit of previous work having been done in this area, there was the opportunity to improve upon this practice (see section 2.4.4). The project goal was introduced to the interviewees at the beginning and it was explained to them how they were a vital part of a larger whole. For each interview, the questions were made in advance (see Appendix A) and adjusted based on responses being positive or negative to them. Each question was asked by itself, and always phrased as an open-ended question.

While conducting these interviews, our team played to our individual strengths and each member took on a specific role. One team member was the primary interviewer, while the other two members supported the primary interviewer by taking notes and suggesting additional questions. This allowed us to be adaptable and efficient within the interviews, even with the disadvantage of having a smaller team than that of last year's project.

3.1.3. Interview Question Formation

The goal of these interviews was to elicit sentiments about climate change that revealed opinions and perspectives on environmental issues. The interview questions (see Appendix A) were formed based on the themes that were discovered by the 2017 IQP team: flooding, industrialization, and general climate change. A list of general and open-ended questions was prepared beforehand (see Appendix A). During the interviews, the designated team member synthesized additional questions for specific participants. We formatted these questions in a way which they could not simply be answered yes or no (Rubin & Rubin, 1995). This encouraged the interviewees to give longer and more personal responses. Other, more structured interview styles would not have accommodated the multi-role, improvisational system we used.

3.1.4. Interviewing on Emotionally Significant Topics

Some of our questions delved into personal experiences, with the potential to be emotionally charged. A strong rapport critical for such questions. Our team factored the principles detailed in section 2.4.2 into our design and conduction of the interviews. In our efforts to build the necessary rapport, we were also mindful of cultural differences when probing for more personal information (see section 2.4.2). Differences in lingual nuances had the

potential to lead to misunderstandings, and variations on expected body language could have lead to unintentional discomfort or even offense. We kept these practices in mind when conducting our interviews in order to capture more poignant details about the hardships the subjects may have faced.

3.1.5. Challenges of Interviews on Potentially Sensitive Topics

Asking questions which may delve into emotionally significant experiences carried the risk of eliciting emotional distress in the subjects (see section 2.4.2). As such, we had to be prepared to handle cases where there was a risk of losing control of the situation. In the worst case scenario, the interview may have needed to be stopped so as to avoid causing a negative impact on the subject. The building of rapport was intended to mitigate this risk, but it was important to maintain the subjects' comfort. In performing these interviews, we had a plan of action for responding to emotionally distressing situations. Through showing understanding and empathy, giving the subject time to work through their responses, and being prepared to back off and give them space if it became too intense, we could avoid causing distress. We were fortunate that we did not encounter any extreme situations where this would have been needed.

3.1.6. Challenges of Interview Process with Limited Time Scope

After reviewing the footage from the 2017 IQP team, it was evident to us that the greatest challenge we faced was not actually the conduction of the interviews, but the elicitation of meaningful responses that related thematically and could be used in the final videos. Many of the interviewees from the 2017 project were excited to be speaking with the team and used that energy to pursue tangential conversations that were not relevant. We encountered similar reactions to our broad questions as well. Our challenge was to keep the interviewees on task without moving too quickly or being rude in our direction of the conversation. This was largely successful, and our team was able to complete with 32 individuals within our first three weeks at the project site, collecting almost 10 hours of footage. After which we were able to shift our focus purely to the editing and production of the videos.

3.2. Edit and Produce Short-Form Videos

The initial editing of the videos required gathering numerous 5-30 second clips from our 10 hours of footage. This process was greatly accelerated by our creation of a catalog of interview footage content (see section 4.3 and Appendix D). Using the detailed notes in the catalog, we created timelines of relevant clips for five short-form videos, each focused on one of the five key themes that emerged: climate change and changes in weather patterns, flooding, deforestation and development, rubbish disposal, and air pollution. Rough cuts of each of these videos were then produced containing all of the clips from the timelines. Then, the clips were re-ordered and refined in order to create a logical presentation of the content.

Due to technical limitations, we used Adobe Premiere Elements for editing, instead of a more full-featured editing suite. The 2017 project team used a free program called ShotCut, but we concluded this to be insufficient for our purposes as our videos had more cuts and integrated graphics.

All of the interviewees that spoke in the videos were introduced using captions at the bottom of the screen with their name and where in Indonesia they spent the majority of their childhood. A map showing the location of origin was displayed in tandem with each caption. Photos from Indonesia were displayed in between clips of people talking to show visuals related to the theme being discussed. Music was implemented for the title page, transitions, and credits to keep the videos engaging and to avoid stretches of silence in the videos.

After the videos were finalized we analyzed the videos and created a sentence by sentence transcript, then matched the sentences to the timestamps in the videos. This transcript was formatted into SRT files (.srt) a standard file type for displaying subtitles in videos (see Appendix E for all five SRT files). These subtitles will be useful when the videos are being played outdoors or in a noisy environment. The subtitles will also allow for easy translation to other languages by future translators, allowing CERES to educate more visitors.

At the end of the short form videos, websites where the viewers can go to help the Indonesian people, either through donations or volunteering, were displayed. Following this, a credit page was displayed and showed the CERES logo along with the WPI logo. The credits contained our names as producers and editors of the videos. These short videos were edited to be approximately four minutes to be sure that the entire video could be viewed while walking through the Indonesian Village, or in a classroom setting as supplemental teaching material.

3.3. Make Recommendations for Improvements to the Indonesian Village

While our project's primary deliverables were the videos we produced, we were also involved in the planning for the improvement of the Indonesian village itself. Upon arrival of the project site, we were briefed on the status of the village as an exhibit, and were able to observe it firsthand (see Figure 8). When deciding which themes to focus the individual videos on, we took into account the applicability of these themes to the various exhibit areas of the village.



Figure 8. Initial observations of model Indonesian Village at CERES.

A: Model Rice Patty

B: Model Well

C: Palm Trees

CERES' plans for revamping the village included bringing in a group from Engineers Without Borders (EWB) to assist in the construction of new signage and features. Thus, our videos and the information gleaned from the interviews were utilized in making recommendations to EWB on how to use their signage to tell stories of the Indonesian people. The created signage will connect our videos directly to the Indonesian village at CERES, improving the features currently

in place in the village. As seen in Figure 8 (above), the Indonesian village currently consists of model rice patties, a model well, and palm trees along with a building used as a teaching space. The improved exhibits and signage will be designed to raise awareness of the climate change problems occurring in Indonesia.

Chapter 4: Results

In our interviews, we identified numerous environmental issues and themes. The most central and frequently discussed topics were: changes in seasons and weather, flooding, air pollution, rubbish disposal, deforestation and loss of natural areas, attitudes towards change, and sustainable life practices in education. The first five were selected to be used as topics for our short-form videos. While our project's deliverables were primarily the completed educational videos, we also took time to take detailed notes of our collected interview footage, in order to build a catalog (see section 4.3 and Appendix D) of the content. This catalog was created for our own use in completing the videos, and for future use by CERES and later IQP groups. Our team organized and named the video files consistently, keeping track of the topics discussed by each individual interviewee, and took in-depth, timestamped notes of each video's content.

4.1. Origins of Interviewees

We were interested in how each of the regions of Indonesia were represented. Therefore, we recorded the location of origin of each of the interviewees. The number of people from each region was graphed below in Figure 11. This information can also be seen in Figure 7.

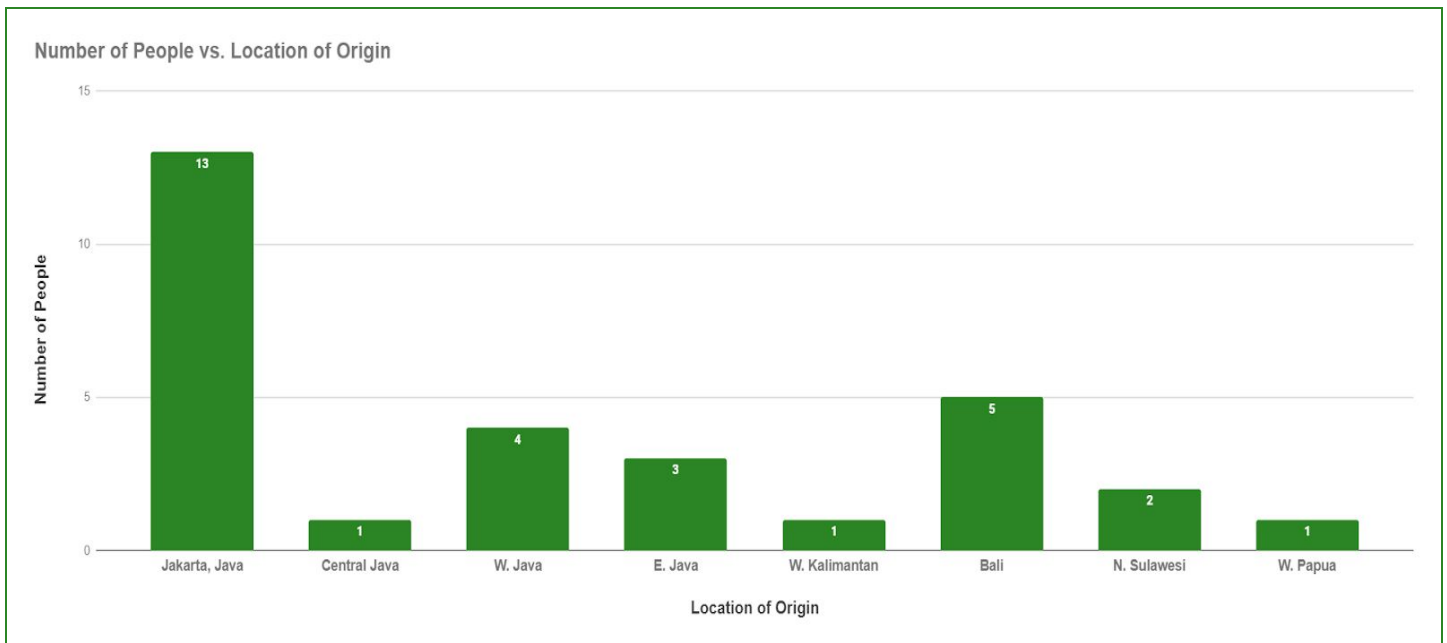


Figure 11. Graph showing the distribution of locations of origin of interviewees.

This graph demonstrates that a significant portion (38%) of interviewees are from Jakarta. This is assumed to be due to the fact that most of our interviewees were students, and that Jakarta is Indonesia's largest and most developed city. Thus, the results of our interviews were likely skewed towards the mindset of those who are from more urban areas.

4.2. Topics Discussed in Interviews

We used the initial notes we took during each interview to identify the themes discussed. A total of 6 primary and 4 supporting topics were tracked in our summarization of the notes, pictured below in Figure 9. The interviewees discussed these topics in detail. The frequency of mentions of these topics was also graphed (Figure 10).

Climate Change Narratives for the Indonesian Village

Int. #	Name	Email / Contact	City/Region of Origin	Seasonal & Weather Changes	Flooding / Natural Disasters	Waste Management	Deforestation / Palm Oil	Air Pollution	Attitudes Towards Change	Sustainable Education	Government Corruption / Regulations	Corporations / Privatization	Lack of long-term solutions	Primary Topic Supporting Topic
1	Indra	-	West Kalimantan [Rural]	X	X	X	X	X	X	X				
2	Rakha	-	Jakarta	X	X	X		X		X	X			
3	Andi	-	Everywhere [Mostly Rural]			X			X	X	X	X	X	
3	Eia	-	West Java [small village]	X	X						X			
3	Pandu	-	Jakarta, but lived in small town in South Sulawesi before		X	X			X		X			
4	Melly	-	Jakarta	X	X	X		X	X	X				
4	Yunianti	-	Jakarta		X	X		X	X	X				
4	Raka	-	Jakarta		X	X		X	X	X				
5	Anton (Elder)	-	Jakarta		X	X		X		X				
6	Fajar	-	Bali [village in the mountains]	X	X	X		X	X				X	
6	Tia	-	Bali [big city]	X	X	X			X		X			
7	Jason	-	West Java [small city]	X	X	X			X		X		X	
7	Aldino	-	West Java [small city]						X					
7	Caesario	-	East Java	X		X								
7	Adam	-	West Java		X	X			X	X	X		X	
7	Dodi	-	Bali	X	X	X	X		X	X	X	X		
8	Cesaria	-	East Java	X	X	X		X	X	X				
8	Govinda	-	Bali	X		X	X			X	X		X	
8	Daffa (Famous)	-	Jakarta		X	X	X	X			X			
9	Ida	-	Bali			X			X	X	X			
9	Asep [Audio]	-	1 hour from Jakarta		X		X	X			X	X		
10	Ravella	-	Jakarta	X		X	X	X			X			
10	Nadhira	-	Jakarta		X	X		X	X	X	X	X		
11	Raissa	-	Jakarta	X		X	X	X	X	X	X		X	
11	Carmel	-	Jakarta		X		X	X	X	X	X		X	
12	Phillips (Elder)	-	North Sulawesi	X	X			X			X	X		
13	Gilbert	-	West Papua [agricultural city]	X		X		X		X				
14	Putri	-	East Java [small city by mountains]	X		X	X	X	X		X			
14	Mesiani	-	North Sulawesi	X		X	X	X	X					
15	Sri (Elder)	-	Semarang, Central Java	X		X		X	X	X		X		

Figure 9. Interviewee-specific details summary. Provides an overview of mentioned central and supplementary topics for each interviewee.

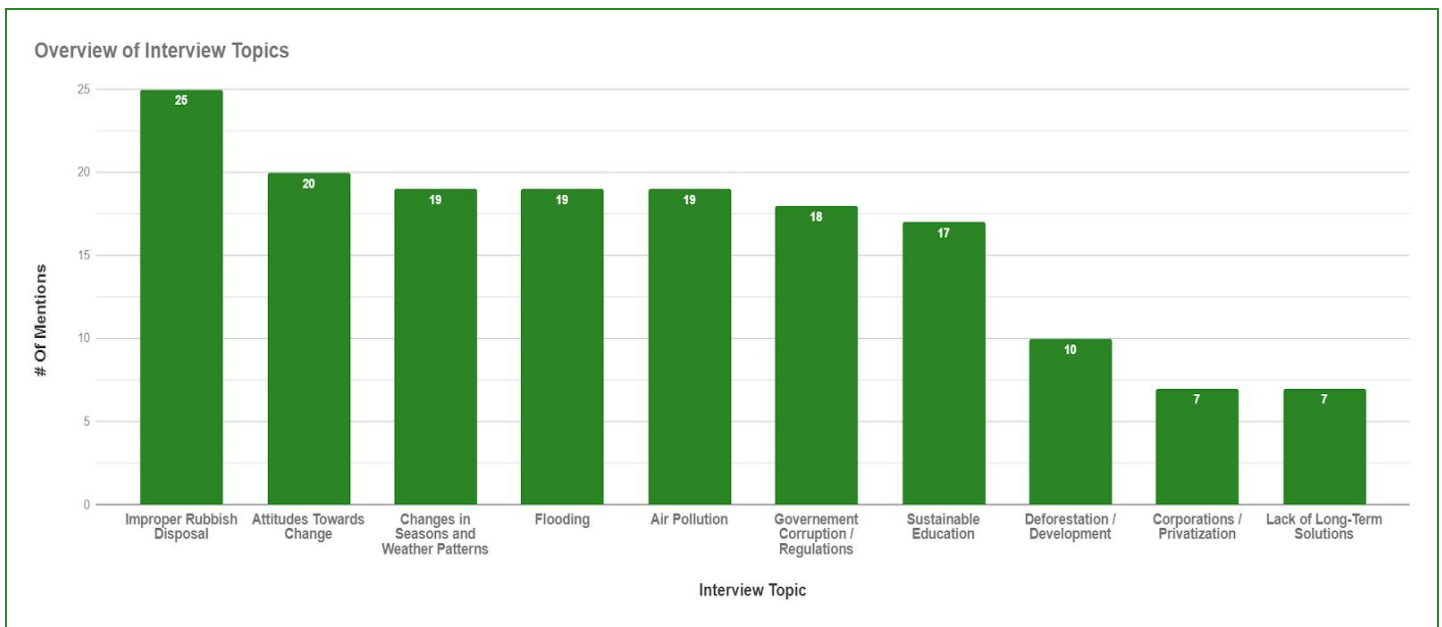


Figure 10. Graph showing the frequency of mentions of each topic tracked in our notes.

In the above graph, a mention was recorded only if the interviewee elaborated on the topic. For example, if an interviewee responded to a question about deforestation saying that they hadn't had any notable experiences with it, and they did not go into any more detail, it would not be considered a mention. Thus, despite the fact that many of these topics were asked about directly (see Appendix A for interview questions), the summary of mentioned topics still reflects the issues the interviewees felt was important. This summary guided our decisions as to which topics to choose for the final videos.

4.2.1. Summary of Seasonal and General Climate Change Within the Interviews

When the interviewee mentioned the weather being unpredictable, the temperature increasing or that the sea level was rising, they were noted as speaking about seasonal and general climate change. Out of the 32 interviewees, 19 of them spoke about general climate change problems (Figure 9). When unpredictable weather was mentioned it was in the context of the weather forecast being unreliable, or non-existent. It was also discussed that the rainy season and the dry season no longer occur at the same time every year. They mentioned that the unpredictability of the weather and seasons negatively impacts the rice farmers and reduces the crop yield and in turn, their yearly income. They indicated that the rainy season not happening at the same time each year also causes the flooding to be random and this makes it difficult to

estimate when the flood will begin or end. They also stated that increased temperatures have changed everyday life in Indonesia, causing children to stay inside more instead of playing outside. They mentioned that the use of air conditioners has also increased, and that they are used all year round now that the rainy season has become just as hot as the dry season. The unpredictability of the weather and the increase in temperatures were seen as problems by the interviewees, and these issues directly impacted their lives. Unlike the other consequences of climate change, the rise in sea levels was not felt in their everyday lives even for those who lived near the coast. When the rise in sea levels was mentioned it was in regards to the water being closer to the walkways on the beach, and that it would be a problem in the future more than it is now.

4.2.2. Summary of Flooding Within the Interviews

In Indonesia, the capital city of Jakarta sits below sea level, causing flooding to be experienced frequently. Of the 32 interviewees, 13 of them were from Jakarta (Figure 11) and 19 of the individuals mentioned flooding (Figure 10), either experiencing it first hand or relaying stories that their relatives or colleagues had told them about floods. Most of the time the subjects viewed the floods as a regular occurrence, and something that was part of their everyday lives. When their city, or village, floods, most people view it as a national holiday because no one can go to work or to school. Children even swim in the flood waters. However, some interviewees were not allowed to walk in the flood waters because their parents knew that it could make them sick. The timing of the floods is random and no one can predict when the flood will come or when the flood waters will go down. For this reason, most families are always prepared for the flood with a raft in their home and extra food and water. However, some families, such as the lower income families that live on the banks of the river do not have the ability to prepare for floods. The government, in some places of Indonesia, has attempted to relocate the population living on the river banks, but the people have become attached to their homes and refuse to leave. The Indonesian communities that experience frequent flooding view it as their fate, or just simply bad luck and accept it as part of life.

4.2.3. Summary of Air Pollution Within the Interviews

As many of the interviewees were from urban areas, especially Jakarta, air pollution was a frequently mentioned subject, discussed by 19 of the 32 interviewees. Those who talked at length about air pollution described that the air felt dirty and uncomfortable, and that it had gotten worse over their lifetime. The majority of the interviewees stated that they prefer not to go outside without a car. The interviewees felt that air pollution was significantly worsened by the large number of personal vehicles used. It was stated that many families had cars or motorcycles for each of their family members. Motorcycles especially were regarded to be relatively inexpensive to acquire and convenient to use. The reasons for using personal vehicles as opposed to public transport were numerous. Public transport was described as uncomfortable, unsafe, unclean, and overcrowded. It was mentioned that improvements in some cities were slowly being made. Some interviewees mentioned a regulation in Jakarta in which odd and even numbered license plates could only be driven on alternating days in an attempt to reduce the number of vehicles on the road. These interviewees believed, however, that this regulation was focused primarily on helping the extreme traffic problems, as opposed to being for environmental sustainability. The general perspective of most urban-based interviewees was that air pollution made it undesirable to spend time outside for recreation as well as for transportation in the form of walking or biking.

4.2.4. Summary of Rubbish Disposal Within the Interviews

As one of the most prominent and well-known issues within Indonesia, rubbish disposal became one of the most discussed topics. All but 7 of the 32 interviewees discussed rubbish disposal to a significant degree (Figure 9), and most felt strongly that it was a serious issue. Many interviewees talked about the presence of large amounts of rubbish in streets, on beaches, and in rivers. The overflow of rubbish was described as contributing negatively to public health and tourism, as well as to flooding risk due to backup of rubbish in dams and drainage systems. It was also notable that most of the interviewees expressed that the majority of people in their culture either did not understand the consequences of improper rubbish disposal, or simply didn't care. An "out-of-sight, out-of-mind" mentality was described as common. It was mentioned that proper rubbish disposal was not well taught in the educational system, and often not enforced outside the classroom. Those interviewees who had regularly practiced proper waste disposal

expressed that they often felt alone in their efforts, and that little is done to make such practices easy to maintain.

4.2.5. Summary of Deforestation and Loss of Natural Areas Within the Interviews

Indonesia is well known as a tourist destination, especially Bali. Of the 32 participants, 5 were from Bali (Figure 11), and 10 of them discussed how much the land around them has changed since their parents' childhoods or their own childhood. The participants focused on how the land has changed from farmlands, rice fields and fruit orchards to palm oil plantations for profit and to keep up with the demand for palm oil. Along with the deforestation for the palm oil industry, deforestation occurs as residential areas expand. This deforestation has caused the destruction of ecosystems that orangutans, and other animals, depended on for their species' survival. The subjects from Bali spoke about how the natural land, specifically that of the beaches, has been developed for the tourism industry. In some cases, especially in Bali, reclamation projects have created new islands which have significantly decreased the habitat available for the sea turtles. The interviewees expressed sorrow about the deforestation and loss of natural areas, especially when they spoke about how children now only stay inside and focus on electronics instead of playing in the parks or orchards.

4.2.6. Summary of Attitudes Towards Change Within the Interviews

While conducting the interviews we realized that the culture in Indonesia has a distinct attitude towards change, especially when it came to changing for the benefit of the environment. The general sentiment towards changing one's daily routine was that it was not worthwhile if the positive results were not immediately seen. The other factor in this was that many people in Indonesia as a whole have no way to change their lifestyle to help the environment. This, combined with the older generation being stubborn, makes changing the mindset of even small communities towards living more sustainably difficult. Even those who live near the river, and depend on the river for everyday life, refuse to stop throwing their waste into the river because it was how they were raised and they don't see how it impacts the environment. Some members of the younger generation struggle to balance the respect for their elders with their desire to make a change. Those who do want to make a change in their lifestyle to be more environmentally conscious are met with the challenge of being the minority. The interviewees who did want to

bring sustainable practices to their communities stressed that early education was necessary in order to make a lasting change.

4.2.7. Summary of Sustainable Life Practices in Education Within the Interviews

In the interview process, the interviewees mentioned that the presence and effectiveness of education for promoting sustainable life practices in many Indonesian schools was limited. Many of the interviewees stated that topics such as proper rubbish disposal, sustainability, and global awareness weren't taught at all at their schools. Those who had received such education expressed that it often didn't resonate with students, who went home and simply followed the habits of their families.

4.3. Interview Content Catalogue

As part of our process for creating the final videos, we conducted a thorough analysis of each interview's recording. Interviews were watched at increased playback speed, and the points that were originally marked as significant in the notes from the day of the interview were located, and their timestamps recorded. With this process, we produced a detailed catalog of relevant sections of each interview, and color-coded it by the topics mentioned above in section 4.2. (see Figure 12). Notes were used to create timelines for the content of each video, an example of which can be seen in Figure 13.

Indra	
V1 06:00	Deforestation, palm oil, smoke & pollution
V1 07:00	Flooding
V1 07:30	Also Flooding, and water access
V2 00:30	Main, popular issues in Indo shifting towards global awareness
V2 04:30	Working to be "more effective" at using resources. Deforestation
V2 05:30	Climate education now present, learned from parents before
V2 06:35	Differences in awareness: rural vs. city, where the impact is
V2 07:25	Use of personal vehicles, air pollution
V3 00:35	Temperatures hotter
V3 01:50	Waste disposal, no separation -- Now changing. Rural vs. City
V3 06:00	Cost of developing, need for resources. Expanding development
V3 07:40	Hotter environment
V4 01:00	Seasonal changes
Rakha	
V1 03:50 ">"	Everything is polluted and hot, things were cleaner and cooler before
V1 04:50	Air pollution, government policy on breaking laws related to waste/pollution
V1 05:45	Separating waste but, only one bin provided by gov
V1 07:43 *	Flooding in Jakarta, economy, moving tmp.ly, waste, education, gov, etc.
V2 02:10	Feel unable to make change without being involved in politics
V2 04:00 *	Government campaigns "false promises"
V2 05:07	No education for waste disposal
V2 07:38 ">"	How to change the perspective of people in Indo -- can't, need to be politician
V3 00:35	Politician who wants to do good, but doesn't understand logistics, false promises
V3 03:40	Hotter now, rainfall/weather unpredictable
V3 04:55	Change in temp, climate from Elders

Figure 12. Excerpt from the interview content catalog, showing notes for two interviewees.

Cesaria	G3 05:00–05:30 ** people trapped in houses due to floods, can't go to work, common to keep a raft at home	
Raissa and Carmel	G2 04:44 always prepared for the flood	
Adam	S1 03:03 *** Grandma's sister's swimming story	
Adam	B2 01:12 ** Dam blocked by trash story -- huge flood	
Adam	S1 02:06 *** Roof patching story	
Raissa and Carmel	G2 04:00 the flood lasted for 2 weeks- ran out of food- ran out of water	
Melly + Yuni + Raka	G1 02:20 couldn't go to school or anywhere- comes through our houses	
Ravella	V1 06:20 Father cannot go to work in floods	
Daffa	G3 00:00 flooding, people stuck in traffic and can't get back to houses, have to wait for the water to go down	
Raissa and Carmel	G2 03:40 took her jeep car- dad wouldn't let her walk in the flood waters	
Raissa and Carmel	G2 04:30 some people swim in the flood- accept that it happens	
Melly + Yuni + Raka	G3 01:50 is there is a flood it is a public holiday for everyone- no one knows when it will come or end	
Philips	V7 04:35 the water can make people sick	
Fajar	G6 05:50 so many natural disasters have occurred in the past year in Indonesia	
Tia	G6 04:15–04:35 big earthquake, could still feel shaking even though on island next to Bali	
Pandu	G4 01:06 * Gov. tried to relocate people near rivers to protect them from floods, people do not want to move	
Adam	S1 08:00 ** ">" Floods are just "Bad Luck", fate people believe the have can't change the floods	

Figure 13. Content timeline for the flooding short-form video. Contains all notes relevant to the topic. Those which were selected for use in the final video were highlighted in grey.

The content catalog in its entirety can be viewed in Appendix D.

Chapter 5: Presentation to The Indonesian Consulate and Recommendations to CERES

Upon completion of the IQP term, we presented our project results, as well as the five videos, in front of the Indonesian Consulate. The presentation was well received, and gave the representatives of CERES the opportunity to discuss in detail their plans for the Indonesian village with the representatives of the Consulate. The Consulate General stated that the videos should be used only in tandem with later videos showing the efforts that Indonesians are making to improve the situation, and the potential solutions. She stressed that the videos send a strong message about the severity of the environmental problems in Indonesia, but paint too dire a picture of the state of Indonesia as a whole without the addition of more positive videos in the future. Future IQP teams will be able to produce more videos to act as the necessary teaching material showing how positive change is being effected in Indonesia.

The Consulate representatives recognized that our project was just the first step towards making a more engaging and educational experience for CERES visitors to the Indonesian village. They agreed with our recommendations to CERES, being that CERES should produce additional short and long form videos using the archive we created, and physical signage in the Indonesian village relating directly to the themes of the videos. CERES should also make it clear that these videos only show the problems Indonesia faces, and that efforts are being made in Indonesia to make positive change. CERES should produce future videos highlighting the current efforts to improve the situation, in order to tell the whole story of the Indonesian people's relationship with the environment. In doing so, CERES should also ensure that all islands and regions of Indonesia are represented in these videos. In parallel with these improvements, CERES should enable the Indonesian village to function as a standalone exhibit, as well as open and promote it to all visitors of CERES.

Annotated Bibliography

Andi Artiningsih, Hazairin Zubair, A.M. Imran, Sri Widodo. (2018). Distribution of Escherichia Coli as Soil Pollutant around Antang Landfills. *Journal of Physics: Conference Series*. doi :10.1088/1742-6596/979/1/012042 Retrieved from:

<http://iopscience.iop.org/article/10.1088/1742-6596/979/1/012042/pdf>

This research study was carried out by four Indonesian researchers at Indonesian universities. The study was published in 2018 and was carried out in two parts, one where the samples were taken in parallel to the groundwater flow and one perpendicular. The highest level of *E. coli* was found at a depth of 10 to 20 cm but the soil was sampled up to a 30 cm depth. The study was conducted during the rainy season. The Antang Landfill was supposed to be in use for 10 years, and since it was opened in 1995 it is estimated to have had 1,240,000 metric tonnes of inorganic and organic waste has been dumped into it.

Australian Embassy Indonesia. (2017). More Indonesian Students Studying in Australia.

Retrieved from https://indonesia.embassy.gov.au/jakt/MR17_059.html

This 2017 article on the Australian Embassy website details the increasing enrollment of Indonesians in Australian Universities. It includes statistics on numbers of Indonesian students in Australia and the kinds of subjects studied, as well as detailing its popularity for Indonesians due to the limited local choices.

Australian Government: Department of Energy and Environment. (2018). National Greenhouse Gas Inventory - Kyoto Protocol classifications. Retrieved from:

<http://ageis.climatechange.gov.au/>

This website is part of the Australian government department of energy and environment. It contains a very useful tool that enables quick access to greenhouse gas emission amounts for each calendar year up until 2016. There is a “gas tree” that allows for the selection of specific

greenhouse gasses, or all of the equivalents of CO₂. This website uses the Kyoto protocol classification system to track the amount of greenhouse gas emissions.

Ariansyach, I. (2017). Fisheries Country Profile: Indonesia. Retrieved from

<http://www.seafdec.org/fisheries-country-profile-indonesia/>

This article was written by a 2017 Regional Fisheries Policy Network (RFPN) Member for Indonesia. This article is useful to us since it shows the importance of the fisheries sector in Indonesia. Coastal regions of Indonesia are densely populated so Indonesia's aquaculture and fisheries sector is a major part of society. For example, fish is a vital food source in the diets of coastal residents. This article also contains statistics on fish production, inland capture fisheries, marine capture fisheries, fish trade, and aquaculture.

Bradford, N. S., McGrath, C. J., Skourtis, I., & Stump, J. C. (2015). *Dynamize CERES: Bringing*

Activities to a Community Environment Park (Undergraduate Interactive Qualifying Project

No. E-project-121315-180517). Retrieved from Worcester Polytechnic Institute Electronic

Projects Collection: <https://web.wpi.edu/Pubs/E-project/Available/E-project-121315-180517/>

This is an IQP from 2015 that involves CERES. The main goal of this project was to engage visitors by implementing fun family activities at CERES and on the CERES Chook app. The team created activities based on design criteria, evaluation factors, discussions with CERES staff, and surveys of visitors. The team developed seven activities: Tree Hugging, Age of Trees, Sounds of CERES, Past and Present of CERES, Aboriginal Hand Talk Charades, Art Scavenger Hunt, and Weather Rock. Although this IQP is not directly related to our project, there are many benefits that we can take from it. For example, the group utilized algorithms to determine location hotspots at the CERES community park. The group then represented this data into a heat map. This can be very useful for our team since one of our deliverables is to create individual story signage correlating to specific themes in exhibit areas. We will need to choose the best locations to put the signs where visitors will see them. This past IQP group's heat map will help us decide upon locations.

Bradya, W. C. & Boyce, T. D. (2018). Indonesia. Retrieved from

<http://journals.sagepub.com/doi/pdf/10.1177/160940691401300115>

A journal article which describes strategies for interviewers when interviewing on topics which have the potential to involve emotionally charged experiences. It describes how interviews become an internally reflective experience for the interviewees, and thus are likely to trigger emotionally significant memories. The article stresses the importance of comfort and a strong rapport in such interviews.

CERES. (2018). CERES. Retrieved from: <https://ceres.org.au>

The Centre for Education and Research in Environmental Strategies, (CERES), is a not-for-profit, educational, community environment park in Melbourne, Australia. CERES aims to promote sustainable lifestyles, environmental education, and social justice, through their various on-site exhibits and outreach. Among their exhibits are the four cultural villages, which feature cultural immersion activities and events coordinated by the Sustainability Hub. This project is working with the Indonesian Village.

CERES Environmental Park. (2015). Chook - CERES Environmental Park (Version 2.3.0b771) [Mobile application software]. Retrieved from <http://itunes.apple.com>

This source is the CERES Chook app. The app does not currently have videos relating to the Indonesian people. In 2015, CERES developed this app, called “Chook - CERES Environmental Park”. This application is free to download and can be found in the Apple App Store and the Google Play Store. The Chook app is convenient for the user when at the CERES location, since visitors can connect to Bluetooth and get notifications of nearby exhibits/displays. The Chook app contains visitor information and CERES hours of operation, links to the additional CERES social media accounts (Facebook, Twitter, Instagram) and Newsletter, and an interactive map.

Clark, D. (2014). The power of story *Sharing Culture*, Retrieved from <http://www.sharingculture.info/5/post/2014/07/the-powerof-story.html>

This source is from David Clark, the author and founder of the organization: *Sharing Culture*, has done this to help the Indigenous people of Australia heal from their traumas. David Clark is a Professor of psychology and lives in Perth, Australia. This website and his blog is a great resource to learn about how these peoples recover from these traumas, as we will be examining

recovery stories as well. Clark expresses how stories and the act of storytelling allows the listener to learn about someone's inner life and what motivates them. It is important for us to understand why we are using stories to raise awareness and educate rather than other mediums. This blog allows us to have a source that is credible but also draws on many other sources in every blog post giving us information on how to evaluate if a story is being told effectively.

Deforestation and Its Effect on the Planet. (2017) . Retrieved from

<https://www.nationalgeographic.com/environment/global-warming/deforestation/>

This article is from National Geographic, a reliable source. This article explains in detail the negative effects that result from deforestation. Deforestation results in the removal of large amounts of trees. Trees that could block out most of the sun's rays are now gone and the land surface is more exposed. Trees also act as absorbers of greenhouse gases, so if there are fewer trees, more greenhouse gases are emitted into the atmosphere. This can lead to unstable changes in temperature and an increased rate of global warming.

The Commonwealth. (2018). Australia: History. Retrieved from

<http://thecommonwealth.org/our-member-countries/australia/history>

A short but detailed account of the history of the Australian continent. Describes its initial population by the aboriginal peoples, followed much later by the arrival of the European colonists. It then details the expansion of Australia's European population, development, and politics, with information on the process by which Australia formed into the independent nation it is today. A useful source for general Australian history.

EIBN Sector Reports - Fisheries and Aquaculture. (2017). Retrieved from

http://indonesien.ahk.de/fileadmin/ahk_indonesien/Publications/EIBN/Fisheries_and_Aquaculture_Sector_Report_2017_FULL.pdf

This source is a sector report published in 2017 by the EIBN, the EU-Indonesia Business Network. This report delves deep into Indonesia's fisheries sector in relation to Indonesia's economy. It helps support how Indonesia's coast/ocean has a lot to offer and has contributed to economic growth. Indonesia's "fishery sector's GDP growth increased from 7.3 % in 2014 to 8.3% in 2015, which is almost double the growth of the national GDP of 4.7% in 2015".

Therefore, climate change can negatively affect Indonesia's economy.

Pribadi, A. & Kurata, G. (2017). Greenhouse gas and air pollutant emissions from land and forest fire in Indonesia during 2015 based on satellite data. *IOP Conf. Ser.: Earth Environ. Sci.* 54 (ND) (012060). Retrieved from:

<http://iopscience.iop.org/article/10.1088/1755-1315/54/1/012060/pdf>

A Technical paper describing a 2015 study of CO₂ and other greenhouse gas emissions in Indonesia, focussing on determining what percentage of these emissions were due specifically to forest fires. This source contains detailed data, statistics, and visualizations on the extent and type of emissions caused by deforestation fires. It mentions that many of these fires are due to clearing land for farming by businesses.

Falvey, D. (2018). Catastrophic Flooding and Landslides Cause Thousands to Flee Their Homes. Retrieved from

<https://www.express.co.uk/news/world/914977/Indonesia-floods-Jakarta-landslides-thousands-flee-homes-natural-disaster>

A short news article from February 2018 describing the then-recent floods and landslides in Jakarta. Shows and expresses the extent and severity of the disaster, and gives the number of people displaced and affected. A small, but poignant, snapshot into a time that exemplifies the effects that climate change is having on Indonesians' lives.

Global Affairs Canada. (2018). Indonesia. Retrieved from

https://www.international.gc.ca/cil-cai/country_insights-apercus_pays/ci-ic_id.aspx?lang=eng

An informative source describing the cultural differences of Indonesian natives in comparison to that of Canadians. While not a comparison to American or Australian culture, it is still useful in general from the perspective of western cultures. This source is quite in-depth and details differences across many types of interactions, from business to personal matters. It also details typical Indonesian practices and ideals in regard to things like family, authority, and social hierarchy.

Global Business Guide Indonesia - Indonesia's Aquaculture, Fisheries, Fish, and Seafood Sector.

(2014). Retrieved from

http://www.gbgindonesia.com/en/agriculture/article/2014/indonesia_s_aquaculture_and_fisheries_sector.php

This source is a guide to Indonesia's aquaculture and fisheries sector. This source further supports our argument that aquaculture and coastal regions are important to Indonesia's economic prosperity. There is a global need for fish agriculture. In this field of fish agriculture, Indonesia is a dominant producer and exporter of seaweed, tuna, shrimp, and other aquaculture.

Global Palm Oil Demand Fueling Deforestation. (2018). Retrieved from

<http://www.worldwatch.org/node/6059>

Palm oil is a major part of Indonesia's economy. This source explains the problems that arise from palm oil production. This source specifically focuses on how palm oil production further leads to deforestation. The increasing demand for palm oil causes more and more destruction to lands. "Oil palm plantations often replace tropical forests, killing endangered species, uprooting local communities, and contributing to the release of climate-warming gases".

National Geographic. (2018). Global Warming and Climate Change. Retrieved from:

<https://www.nationalgeographic.com/environment/global-warming/global-warming-causes/>

This source explains that global warming is caused by humans and the emissions of greenhouse gasses. The most prevalent greenhouse gas is CO₂ which is mostly released into the atmosphere by burning fossil fuels. Another and more powerful greenhouse gas is methane, which stores 20 times the amount of heat as CO₂, humans also release methane into the atmosphere when landfills are created.

Hewson, J. (2013). Pollution Flows Freely In Indonesia's rivers. Retrieved from:

<https://www.aljazeera.com/indepth/features/2013/11/pollution-flows-freely-indonesia-rivers-2013112013166643513.html>

A lengthy article on the serious state of pollution in Indonesia's rivers, focusing specifically on the Citarum river. This article goes into detail about the state of waste and pollution management in Indonesia, and of how the situation has gotten dangerously out of control. It

includes quotes and accounts from locals who discuss the river's historical importance as a water source, as well as the dangers of its current state. It also describes the political situation, specifically in regards to the lack of proper policy and enforcement to control the factories which continue to dump toxic chemicals into the Citarum.

Hodges, S. (2014). The importance of storytelling for social change. Positive. News, Retrieved from <https://www.positive.news/2014/perspective/15464/whats-special-storytelling-social-change/> Sharing personal stories and experiences can be useful since it often helps engage an audience. Audience members generally relate more to these stories which capture their attention. "Stories engage people at every level – not just in their minds but in their emotions, values and imaginations, which are the drivers of real change". Sharing the stories of the Indonesian people and their resiliency strategies might spark a push towards sustainability and environmental change.

Holmes, A. (2017). Disposable perspectives: UCL student's photo project helps refugees tell their stories their way. *UCL News* Retrieved from <http://www.ucl.ac.uk/news/students/062017/062017-0806207-disposable-perspectives-ucl-student-photo-project>

This projects intentions are similar to the ones of the project Holmes explains, involving disposable cameras given to refugees helped to show the humanity in the masses. Instead of having strange news reporters or journalists intrude in their struggle, the participants were given cameras of their own to express what it means to be an asylum seeker. Through sharing their own stories their own ways, the social impact was much greater because it was personal. The study also collected note cards with the participants' sentiments behind the photos so their meaning would be clearly communicated. Personal narratives are an incredibly effective tool for sharing the actual stories of individuals, not just the assumptions that others project upon them.

Holten, Y. V. (2015). The impacts of global climate change in Indonesia: Jakarta as a case study.

Retrieved from:

<http://iamproworld.com/2017/05/11/the-impacts-of-global-climate-change-in-indonesia-jakarta-as-a-case-study/>

A detailed study on the changes in climate that have come about in Indonesia. Describes the changes in seasonal rainfall, temperatures, and sea levels. Gives an overview of Indonesia's climate historically, the human actions which have contributed to climate change, and projections for the future climate. Details Indonesia's particular vulnerability to climate change, and the issues that have arisen. Contains numerous statistics and data visualizations.

Indonesia Population 2018. (2018). Retrieved from

<http://worldpopulationreview.com/countries/indonesia-population/>

In general, the coasts of Indonesia have a larger population density than the mainland. This source has a map of Indonesia that depicts population densities and we are using this map as a figure in our paper. This source also contains statistical information on Indonesia's population. An important piece of information is that Indonesia is the fourth most populated country in the World.

Indonesian Culture - Indonesians in Australia. (2018). Retrieved from

<https://culturalatlas.sbs.com.au/indonesian-culture/indonesians-in-australia>

This source provides an overview of Indonesian culture and information from Australia's census in 2016. Based on Australia's 2016 census, there were approximately 73,213 Indonesian-born people residing in Australia.

Jamshed, S. (2014). Qualitative research method-interviewing and observation. *Journal of Basic and Clinical Pharmacy*, 5(4), 87–88. <http://doi.org/10.4103/0976-0105.141942>

The semi-structured interview style is the most applicable style for the type of interviews we will be conducting. This interview method begins with the basics of preparation and focus. Creating an agenda for the meeting as well as specific questions and sharing both with the subjects before the interview is crucial to this method. Interview methods that are tailored to social science field research appear on a spectrum from highly structured to unstructured. A

less structured method of interviewing will allow for more natural responses from the participants and the semi-structured form allows us to create detailed and pointed follow-up questions to be created on the spot for a more complete data set.

Jong, H. N. (2015). Indonesia in state of waste emergency. Retrieved from

<http://www.thejakartapost.com/news/2015/10/09/indonesia-state-waste-emergency.html>

An article which describes the difficulties that the Indonesian people are having with waste management. It details the lack of cultural motivation toward waste control, and the government's efforts to introduce and promote better practices (with limited success). Also, it says that the Environment and Forestry Ministry has declared the waste management situation a state of emergency, and that the Ministry has plans both in the government and on the local level to help improve the conditions.

Lindsey, R. (2018). Climate Change: Global Sea Level. Retrieved from

<https://www.climate.gov/news-features/understanding-climate/climate-change-global-sea-level>

This source contains information on how climate change affects sea levels across the globe. The average global sea level rate has been approximately 3.1 mm/year since 1993. This is important since it can be used in comparison to the rise in sea level in Indonesia.

Loo, Y. Y., Billa, L., and Singh, A. (2015). Effect of climate change on seasonal monsoon in

Asia and its impact on the variability of monsoon rainfall in Southeast Asia. *Geoscience Frontiers*, 6(6), 817-823. Retrieved from

<https://www.sciencedirect.com/science/article/pii/S167498711400036X>

A paper detailing the mechanics of the monsoon season in southeast Asia, and the changes to it in recent years, likely as a result of climate change. It presents temperature and rainfall data which shows the drastic increase since 1970, and elaborates on the increased risk of flooding due to these changes. Solid source showing the logos side of climate change's negative effects on Indonesia and the surrounding monsoon area as a whole.

Melville, Angela & Hincks, Darren. (2016). Conducting Sensitive Interviews: A Review of Reflections. *Law and Method*. 10.5553/REM/.000015. Retrieved from https://www.researchgate.net/publication/305269799_Conducting_Sensitive_Interviews_A_Review_of_Reflections

An article for the journal *Law and Method* which describes practices, guidelines, and dangers when it comes to interviews which involve sensitive topics and the potential for significant emotional reaction. It stresses the importance of building trust and keeping the subject(s) comfortable in their situation. It also includes detailed guidelines on achieving these, as well as for obtaining informed consent, and maintaining confidentiality.

Moreland City Council - CERES Environment Park. (2015). Retrieved from <http://www.moreland.vic.gov.au/environment-bins/environment/local-environment-organisations/ceres-community-environment-park/>

The Moreland City Council is an important partner of the CERES Environmental Park as it helped establish CERES in 1982. It offers funding and land areas for CERES to work on. The council's "vision is for a sustainable Moreland that supports a resilient community who live in an attractive, accessible and safe environment, with a strong local economy and services that meet their diverse needs". The Moreland City Council is also dedicated to reaching a net zero of greenhouse gas emissions in Victoria by the year 2050, meaning that the increases and decreases in gas emissions should cancel each other out. The council also addresses the causes of climate change and how climate change is affecting the world. When fossil fuels are used and burned, more greenhouse gases are released into the air. The greenhouse effect occurs as the sun's energy warms the Earth's surface and the surface releases the energy back into the atmosphere. Greenhouse gases act to absorb some of the heat energy released back into the atmosphere. If there are more greenhouse gases, the Earth's surface heats up to a greater extent and causes an increase in global temperature. This increase in global temperature has produced higher temperatures both in the atmosphere and in the ocean, higher occurrences of extreme weather, such as floods or droughts, and unpredictable precipitation patterns across the globe.

Museums Victoria. (2013). History of immigration from Indonesia. Retrieved from:

<https://museumsvictoria.com.au/origins/History.aspx?pid=27>

A short article describing the history of Indonesian immigration into Australia, from the earliest recruitment for the sugar cane industry, to the White Australia Policy, to the later influx and modern-day patterns. Includes some historical dates and statistics.

Oral history: Defined. (2017). Retrieved from <http://www.oralhistory.org/about/do-oral-history/>

This source explains how the practice of storytelling is a way of passing down ancestral information and experiences, and how it is the oldest form of recording history. As we will be using a form of this oral storytelling it is important to recognize that this is a cultural practice that has been in existence since the beginning of language. It is also important to explain that the purpose of exploring these sometimes painful memories is to share this culture's story as they have lived it, not to pass judgment on their life experiences. The oral histories will be them telling their stories for their own community, we are simply providing a platform for their stories to be heard.

Palm Oil Production - Indonesia. (2018). Retrieved from

<http://www.palmoilindonesia.com/palm-oil/palm-oil-production/>

This source provides information on palm oil production, why palm oil is used, and what it is used for. The palm oil industry is vital to the Indonesian economy since palm oil is in high demand. 37,500,000 metric tons of palm oil is expected for Indonesia's 2017-2018 production. Palm oil production is systematic and efficient. Palm trees can generate ten times more oil per hectare when compared to other crops.

Perecman, E., & Curran, S. R. (2006). *A handbook for social science field research: Essays & bibliographic sources on research design and methods*. Thousand Oaks, Calif.: Sage Publications.

This handbook stresses the importance of transparency in the interview process. This means that the mission of the interview will be stated beforehand, this allows for more honest responses to be given by the subject as the interviewee will also be revealing information and the exchange will not be one-sided. This is especially important for our project as we are

expecting the subjects to reveal personal information so it is vital that we communicate clearly our objective and what these interviews will be used for. Transparency on both sides of the interview process is also important when establishing a friendly rapport and making both parties comfortable to broach personal and sometimes uncomfortable topics.

Régnier, P. and Bruno Neri and Stefania Scuteri and Stefano Miniati. (2008). Disaster Prevention and Management: An International Journal Vol. 17. No. 3. 410-430. From emergency relief to livelihood recovery: Lessons learned from post, tsunami experiences in Indonesia and India.10.1108/09653560810887329. Retrieved from:
<https://doi.org/10.1108/09653560810887329>

This source explains how the media portrayal of the natural disasters aftermath is often oversimplified. The international aid for poor countries relies on the media portrayal to raise awareness of the real-time effects felt by the local population. When the portrayal is oversimplified the message that is distributed globally is not accurate and often the severity is underestimated. This in turn makes the situation seem less serious than the reality and can decrease the amount of financial support given to the countries.

Rubin, H., Rubin, I. (1995). *Qualitative Interviewing: The Art of Hearing Data*. Thousand Oaks, California: Sage Publications. ISBN: 0-8039-5095-0

This source supports why a flexible interview design is extremely vital for this project as it will allow for a complete data set as follow up questions can be modified for specific responses. These interviews will also be with various age groups such as elders and graduate students so having the flexibility allows for the questions to be adapted to the age group being interviewed as language use and interpretations vary. This flexibility will allow for more personal and in-depth questions to be asked so we can gather personal stories.

Ryan, P. and Dundon, T. (2008). Case Research Interviews: Eliciting Superior Quality Data. *International Journal of Case Method Research & Application*. 4. 1554-7752. Retrieved from http://www.wacra.org/PublicDomain/IJCRA%20xx_iv_IJCRA%20pg443-450%20Ryan.pdf
A paper in the *International Journal of Case Method Research & Application* which describes the methodologies of case studies involving interviews. Discusses specifically the process of

building rapport, as well as its importance. It also describes the five stages used to develop good rapport in the study, giving suggestions for future studies on how to use these practices.

Scaplen, T., Walsh, J., Courteau, B., & Korn, X. (2017). *Life Stories in a Cultural Village Educational Exhibit*. (Undergraduate Interactive Qualifying Project No.121017-180121)

Retrieved from Worcester Polytechnic Institute Electronic Projects Collection:

<https://web.wpi.edu/Pubs/E-project/Available/E-project-121017-180121/>

The project that was completed in 2017 B term in Melbourne is the jumping off point for our project. This team used a highly researched interview method to conduct interviews with 22 people from Indonesia studying in Melbourne. Through these interviews, it was found that the major environmental and climate change issues were focused on water access (15/22 interviews) as well as increased industrialization (15/22), flooding and a rise in pollution (17/22 concerned with one or the other). The team then used this footage to create short videos to highlight these concerns. This project is crucial for us in terms of finding our direction and how we can make our project stand out and go above and beyond what was done before. This document, as well as their videos and footage, are key resources for information on the sponsor, the project area and what will be expected of us moving forward. One surprising revelation made in the videos was that the children in Indonesia do not view these environmental issues as dangerous. Instead, the children see a flood as a holiday from school and a place to play. My team will use the information they collected to continue to narrow the interview topics as well as fully integrate these videos in with the rest of the education activities at CERES.

Soesilo, I. (2014). Climate change: Indonesia's adaptation and mitigation efforts. In The Jakarta Post, 26-04-2014. Retrieved from:

<http://www.thejakartapost.com/news/2014/04/26/climate-change-indonesia-s-adaptation-and-mitigation-efforts.html>

A 2014 article from a local Indonesian newspaper which describes the recent changes in terms of climate and environment. It details Indonesia's current climate change mitigation strategies, involving coastal and reef preservation, as well as for general emissions and climate change.

Steinberg, Florian. (2007). *Habitat International*, Vol. 31. No. 1. Housing reconstruction and rehabilitation in Aceh and Nias, Indonesia, Rebuilding lives. Retrieved from:

<https://doi.org/10.1016/j.habitatint.2006.11.002>

<http://www.sciencedirect.com/science/article/pii/S0197397506000579>

This article explains the case studies done in 2004 and 2005 on the rebuilding efforts of the villages in Indonesia after a severe tsunami and earthquake. The studies found that the local population needed to be actively involved in the planning and rebuilding of their homes and villages after being devastated by natural disasters in order for the efforts to be most effective and lasting. It also identified that most often the short-term recovery plan is unrealistic and the actual execution takes much longer than the proposed time.

The Sustainability Hub. (2018). CERES Excursions Programs. Retrieved from

<https://sustainability.ceres.org.au/school-programs/excursion-programs/>

This source explains that CERES offers environmental and sustainability education for multiple levels beginning with early childhood and continuing into higher education. For each group, a variety of programs are offered from guided tours to Indonesian cultural programs. The Indonesian Village exhibit it what we will be adding to enhance the interactive experience. Each age group receives tailored classes and learning experiences from the “Worms and Minibeasts” for early childhood to the “energy and society” program offered to those in higher education. This is where we can gather information to evaluate and characterize the exhibits in place. From this point, we could move forward to determine the age group and the activities that might accompany our videos.

Tarahita, D. and Rakhmat, M. Z. (2018). Indonesia’s Citarum: The World’s Most Polluted River. Retrieved from:

<https://thediplomat.com/2018/04/indonesias-citarum-the-worlds-most-polluted-river/>

An article describing the serious situation of the Citarum river which provides water and power for the capital city of Jakarta. It explains how that the Citarum has become extremely polluted and dangerous for those living near it, being full of toxic chemicals, its surface covered with garbage, and having dangerous amounts of dangerous metals such as lead. It also talks about the efforts and promises that have been made by the government for cleaning up the river.

Taylor, L. (2018). Clean-up Events Shed Light on Indonesia's Waste Crisis. Retrieved from: <http://www.thejakartapost.com/life/2018/02/28/clean-up-events-shed-light-on-indonesias-waste-crisis.html>

This article on the Jakarta Post describes the state of the waste management problem in Indonesia, as well as the efforts which have been made so far. It mentions the lack of awareness of the importance of recycling, and the Indonesian government's attempt to reduce the usage of plastic bags with a tax. It additionally goes into detail on the clean-up programs in Bali, and the importance of a bottom-up approach to changing the mindset of communities.

Troll, S. (1964). Strategies of Effective Interviewing. *Harvard Business Review*. Retrieved from: <https://hbr.org/1964/01/strategies-of-effective-interviewing>

In this source, the author, Troll, provides strategies for effective interview procedures, including the importance of establishing a friendly rapport. Even though this is for a business interview, the preparation phase still applies as the research and questions should be done before the interview starts, regardless of the type. This also enables the questions to be shared before the interview so that the subject is not caught unprepared. This article also stresses the importance of having an agenda made before as this will keep the interview on track and provide the best results and most complete data set.

U. S. Energy Information Administration. (2016). Retrieved from:

<https://www.eia.gov/beta/international/data/browser/>

An interactive data explorer for global statistics on energy production and consumption. Contains data from 1980 to 2015. A good source for basic statistics as well as for visualizations of said data.

What's Driving Deforestation: Palm Oil. (2018). Retrieved from

<https://www.ucsusa.org/global-warming/stop-deforestation/drivers-of-deforestation-2016-palm-oil#.W6I3y2hKhPa>

This source is from the Union of Concerned Scientists and describes palm oil production, deforestation, and peatlands. The rate of global warming can escalate as a result of peatlands.

Peatlands are lands created when vegetation does not completely decompose, forming a layer of peat and organic materials. Peatlands are able to “hold up to 18 to 28 times as much carbon as the forests above them; when they are drained and burned, both carbon and methane are released into the atmosphere—and unless the water table is restored, peatlands continue to decay and release global warming emissions for decades”. When fossil fuels from peatlands are used and burned, more greenhouse gases are released into the air.

Withgott, J., & Laposata, M. (2019). *Essential Environment: The Science Behind the Stories*. NY, NY: Pearson.

This source is an educational textbook used for Environmental Biology classes at Worcester Polytechnic Institute. This textbook contains some information on climate change and deforestation in Indonesia. The increasing demand for palm oil causes more and more destruction to lands and results in deforestation. Studies have shown that Indonesia, Latin America, and Africa have the fastest deforestation rates in the world. It is estimated that plantations in Indonesia have eradicated more than 20 million acres of rainforest.

The World Bank. (2018). Retrieved from: <https://data.worldbank.org/country/indonesia>

A credible source with numerous statistics and tools for visualizing them. Gives a great overview of relevant data on Indonesia in one place. Also has links to raw data which could be used to create our own visualizations, and to other relevant sources such as surveys and data sources.

Yudha, S. W. (2016). Air Pollution in Indonesia. Retrieved from:

<http://nbr.org/research/activity.aspx?id=665>

This source is the National Bureau of Asian Research, it contains many credible statistics and discussion of air pollution and quality. In 2010, it was found that 58% of the population in Jakarta suffered from diseases related to air pollution. With the Indonesian government’s current focus on economic growth, controlling these sources of pollution is an ongoing struggle.

Zikra, M., Suntoyo, & Lukijanto. (2015). *Climate change impacts on Indonesian coastal areas*.

Retrieved from <https://www.sciencedirect.com/science/article/pii/S1878522015002362>

Climate change can have a major effect on coastal regions. Climate change can cause variation in wave height. Global warming can also increase ocean water temperatures. “This warming may lead to big changes in oceanic circulation patterns and salinity, affecting species that inhabit these areas”. Global warming also causes sea levels to rise, which is a major concern for islands (like those found in Indonesia). This article contains graphs depicting the rise in sea level trends for Medan, Pemangkat, Ambon, and Manokwari. Indonesia contains over 17,500 islands, making it the largest archipelagic state in the world. The coasts of Indonesia have larger populations than the mainland. The coast/ocean has a lot to offer and has caused much of Indonesia’s economic growth. Climate change can negatively affect Indonesia’s economy if the coast/ocean is greatly affected.

Appendices

Appendix A. Interview Questions

1. *Can you state your name and where in Indonesia you spent the majority of your childhood?*
2. *Why did you choose to come to Australia to study?*
 - a. *[Specific follow up questions- based on response of subject.]*
3. *Please describe an average day in Indonesia in your childhood.*
 - a. *How has that changed for the children now compared to when you grew up?*
 - b. *How has that changed for the children now compared to when your parents grew up?*
 - c. *Was there anything unusual about the way your family raised you that you notice now when you are here in Australia?*
 - d. *[More specific follow up questions- based on response of subject.]*
4. *Have you noticed changes in the weather or environment since you were younger?*
 - a. *Growing up did any of your elders tell stories about how the weather or the environment was different “back in their day”?*
 - b. *Is this change positive or negative?*
 - c. *How does that generation view the change, and is that different from this generation?*
 - d. *[More specific follow up questions- based on response of subject.]*
5. *Can you tell us about how you disposed of your waste when you were younger?*
 - a. *How does that compare with Australia's system of waste removal?*
 - b. *How has that system changed in recent years (if it has)?*
 - c. *How does the government policies affect this in reality vs practice?*
 - d. *Did you receive education on proper waste disposal?*
 - e. *Do you feel you have to capacity to make a change in your community?*
 - f. *[More specific follow up questions- based on response of subject.]*
6. *Have you had experiences with flooding or other natural disasters?*
 - a. *If so how did these issues change your daily routine?*

- b. Was it short-lived, or a routine that was familiar and expected?*
 - c. How did daily life compensate for this issue or take advantage of it?*
 - d. How did this affect your community?*
 - e. [More specific follow up questions- based on response of subject.]*
- 7. Is air pollution an issue you have experienced first-hand?*
 - a. Is it something you notice on a daily basis?*
 - b. Do you use personal or public transport? Why?*
 - c. [More specific follow up questions- based on response of subject.]*
- 8. Now that you have received higher education and spent time in Australia, has that changed your perspective on the issues faced back home?*
 - a. What is an aspect about Australia you would like to “bring back” home to Indonesia?*
 - b. Do Indonesians take things for granted and is that now changing, and how?*
 - c. [More specific follow up questions- based on response of subject.]*

Appendix B. Interview Consent Form

Informed Consent Agreement for Participation in *Climate Change Narratives in the Indonesian Cultural Village Educational Exhibit*

Investigators: Sam Kelly, Nick Odell, Chloe Sairs

Email Contact: gr-iqp-ceres-b18@wpi.edu

Sponsor: CERES

You are being asked to participate in a research study. Before you agree, however, you must be fully informed about the purpose of the study, the procedures to be followed, and any benefits, risks or discomfort that you may experience as a result of your participation. This form presents information about the study so that you may make a fully informed decision regarding your participation.

Purpose of the study

The purpose of the study is to elicit and record stories from those who have lived in Indonesia, specifically those stories which illustrate the effect(s) of climate change on their everyday lives. The stories will be used to further educate school children and other visitors of CERES about the climate-related struggles that the Indonesian people have experienced.

Procedures to be followed

The participant will be required to complete approximately a 45-60 minute interview with the investigators to share their stories about their life in Indonesia. The interview will be recorded, and the footage may be used to create a video that highlights their experiences in relation to climate change. The participant will be contacted when any videos are complete to ask for their approval of accuracy and appropriate depiction of both the culture and participant. Once the participant has reviewed and approved the videos, they will be integrated into the Indonesian cultural village experience at CERES.

Risks to study participants

Some questions may evoke memories that may bring discomfort to the participant. In this case, the participant has the full freedom to not answer the question and move on to a new topic of discussion.

Benefits to research participants and others

This project will benefit CERES in its expansion of its Indonesian cultural village exhibit and in its ability to teach the community about the impact of climate change on life in Indonesia. It will also benefit those of the communities being interviewed, as it will provide a platform for them to share their stories.

Record keeping and confidentiality

The recordings from this study will be only available to the staff at CERES and to the group conducting this project unless given permission to do otherwise. Records of your participation in this study will be held confidential so far as permitted by law. However, the study investigators, the sponsor or its designee and, under certain circumstances, the Worcester Polytechnic Institute Institutional Review Board (WPI IRB) will be able to inspect and have access to confidential data that identify you by name.

Compensation or treatment in the event of injury

We do not believe that participation in this project will involve risk of injury or harm, but if something of that nature does occur, we will not be held liable for such injury or harm. You do not give up any of your legal rights by signing this statement.

Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit.

Initial each statement that you agree with

- I give permission for my name to be used in the videos. _____
- I give permission to release other personal information that may enhance the videos.
Examples: birthplace, age, etc. _____
- I give permission for my face to be shown in the videos. _____
- I give permission for this video to be published on the CERES visitor app. _____
- I give permission for this video to be published on the CERES Youtube Channel _____

By signing below, you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before signing. You are entitled to retain a copy of this consent agreement.

Study Participant Signature

Date

Study Participant Name (Please print)

Signature of Person who explained this study

Date

Appendix C. Consent Form Signature Pages

The following 32 forms are the signed signature pages from our consent form (Appendix B) for each participant in the study.

Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit.

Initial each statement that you agree with

- I give permission for my name to be used in the videos. AW
- I give permission to release other personal information that may enhance the videos.
Examples: birthplace, age, etc. AW
- I give permission for my face to be shown in the videos. AW
- I give permission for this video to be published on the CERES visitor app. AW
- I give permission for this video to be published on the CERES Youtube Channel AW

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Study Participant Signature

29 OCTOBER 2016

Date

ADAM WINKEL

Study Participant Name (Please print)



Signature of Person who explained this study

29 OCTOBER 2016

Date

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Examples: birthplace, age, etc.
- I give permission for my face to be shown in the videos. ✓
- I give permission for this video to be published on the CERES visitor app. ✓
- I give permission for this video to be published on the CERES Youtube Channel ✓

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Study Participant Signature

29-10-18

Date

Aldino Putra Mupido
Study Participant Name (Please print)



Signature of Person who explained this study

29-10-18

Date

Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit.

Initial each statement that you agree with

- I give permission for my name to be used in the videos. ~~Yes~~ Yes
- I give permission to release other personal information that may enhance the videos. Examples: birthplace, age, etc. Yes
- I give permission for my face to be shown in the videos. Yes
- I give permission for this video to be published on the CERES visitor app. Yes
- I give permission for this video to be published on the CERES Youtube Channel Yes

By signing below, you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before signing. You are entitled to retain a copy of this consent agreement.



Study Participant Signature

25-10-2018

Date

Audi Angga Rahardian Dwiyana

Study Participant Name (Please print)



Signature of Person who explained this study

25-10-18


Date

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Initial each statement that you agree with

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- I give permission to release other personal information that may enhance the videos.
Examples: birthplace, age, etc. ✓
- I give permission for my face to be shown in the videos. ✓
- I give permission for this video to be published on the CERES visitor app. ✓
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By signing below, you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before signing. You are entitled to retain a copy of this consent agreement.



Study Participant Signature

28/10/18

Date

ANTON KIMIN

Study Participant Name (Please print)



Signature of Person who explained this study

10/28/18

Date

Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit.

Initial each statement that you agree with

- I give permission for my name to be used in the videos. X
- I give permission to release other personal information that may enhance the videos.
Examples: birthplace, age, etc. ✓
- I give permission for my face to be shown in the videos. X
- I give permission for this video to be published on the CERES visitor app. X
- I give permission for this video to be published on the CERES Youtube Channel X

By signing below, you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before signing. You are entitled to retain a copy of this consent agreement.



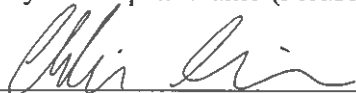
Study Participant Signature

30 October 2018

Date

ASEP TATIP NUGRAHA

Study Participant Name (Please print)



Signature of Person who explained this study

30-10-18

Date

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Initial each statement that you agree with


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Examples: birthplace, age, etc. CP
- I give permission for my face to be shown in the videos. CP
- I give permission for this video to be published on the CERES visitor app. CP
- I give permission for this video to be published on the CERES Youtube Channel CP

By signing below, you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before signing. You are entitled to retain a copy of this consent agreement.


Study Participant Signature

29 Oct 2018
Date

CAESARIA PRAMITA SUTOYO
Study Participant Name (Please print)


Signature of Person who explained this study

10/29/18
Date

Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit.

Initial each statement that you agree with

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- I give permission to release other personal information that may enhance the videos.
Examples: birthplace, age, etc. ✓
- I give permission for my face to be shown in the videos. X
- I give permission for this video to be published on the CERES visitor app. ✓
- I give permission for this video to be published on the CERES Youtube Channel ✓

By signing below, you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before signing. You are entitled to retain a copy of this consent agreement.



Study Participant Signature

29 OCTOBER '18
Date

CAESARIO PRAYOSO SUTOYO

Study Participant Name (Please print)



Signature of Person who explained this study

29-10-18
Date

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Initial each statement that you agree with

- I give permission for my name to be used in the videos. CS
- I give permission to release other personal information that may enhance the videos. Examples: birthplace, age, etc. CS
- I give permission for my face to be shown in the videos. CS
- I give permission for this video to be published on the CERES visitor app. CS
- I give permission for this video to be published on the CERES Youtube Channel ES

By signing below, you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before signing. You are entitled to retain a copy of this consent agreement.

[Signature]
Study Participant Signature

30 Oct 2018
Date

Carmel Saron
Study Participant Name (Please print)

[Signature]
Signature of Person who explained this study

30-Oct-2018
Date

Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit.

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Examples: birthplace, age, etc. ✓
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Study Participant Signature

29/10/18

Date

Daffa Wardhana

Study Participant Name (Please print)

Nick Orelli

Signature of Person who explained this study

10/29/18

Date

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- I give permission for this video to be published on the CERES Youtube Channel ✓

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Study Participant Signature

25 Oct 2018
Date

Ela Nurhayati
Study Participant Name (Please print)


Signature of Person who explained this study

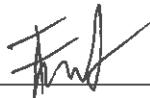
25-10-18
Date

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Study Participant Signature

28/10/18

Date

Fajar.

Study Participant Name (Please print)



Signature of Person who explained this study

28/10/18


Date

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Initial each statement that you agree with

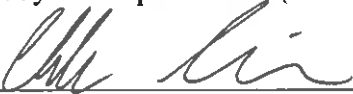
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Examples: birthplace, age, etc. ✓
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- I give permission for this video to be published on the CERES Youtube Channel ✓

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Study Participant Signature

1 - NOV - 2018.
Date

Clifford Shova
Study Participant Name (Please print)


Signature of Person who explained this study

1 - Nov - 2018
Date

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Initial each statement that you agree with

- I give permission for my name to be used in the videos. G
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Examples: birthplace, age, etc. G
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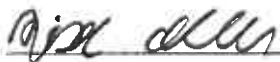
Study Participant Signature

29/10/2018

Date

Govinda Karang

Study Participant Name (Please print)



Signature of Person who explained this study

10/29/18

Date

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Study Participant Signature

30/10/2018

Date

Iida Hermala Wilaya

Study Participant Name (Please print)



Signature of Person who explained this study

30-10-18

Date

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Study Participant Signature

10/25/18
Date

Indra Owi Prasetyo

Study Participant Name (Please print)



Signature of Person who explained this study

10/25/18
Date

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Initial each statement that you agree with

- I give permission for my name to be used in the videos. JSM
- I give permission to release other personal information that may enhance the videos.
Examples: birthplace, age, etc. JSM
- I give permission for my face to be shown in the videos. JSM
- I give permission for this video to be published on the CERES visitor app. JSM
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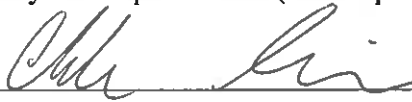
Study Participant Signature

29-10-18

Date

Jason Susanto Maslim

Study Participant Name (Please print)



Signature of Person who explained this study

29-10-18

Date

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Examples: birthplace, age, etc. ✓
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Study Participant Signature

26 October 2018

Date

Melly Anggreani

Study Participant Name (Please print)



Signature of Person who explained this study

26-10-18

Date

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Initial each statement that you agree with

- I give permission for my name to be used in the videos. MW
- I give permission to release other personal information that may enhance the videos.
Examples: birthplace, age, etc. MW
- I give permission for my face to be shown in the videos. MW
- I give permission for this video to be published on the CERES visitor app. MW
- I give permission for this video to be published on the CERES Youtube Channel MW

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Mfrediakan
Study Participant Signature

1/11/2018
Date

MESIANI WENUR
Study Participant Name (Please print)

[Signature]
Signature of Person who explained this study

1/11/2018
Date

Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit.

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Study Participant Signature

30 OCTOBER 2018

Date

NADHIRA ANINDITA

Study Participant Name (Please print)



Signature of Person who explained this study

30/10/18

Date

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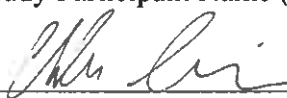
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- I give permission to release other personal information that may enhance the videos. Examples: birthplace, age, etc. ✓
- I give permission for my face to be shown in the videos. ✓
- I give permission for this video to be published on the CERES visitor app. ✓
- I give permission for this video to be published on the CERES Youtube Channel ✓

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Study Participant Signature

16 - 11 - 2018
Date

NINGSIH MILLANE
Study Participant Name (Please print)


Signature of Person who explained this study

16-11-18
Date

Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit.

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- I give permission for this video to be published on the CERES Youtube Channel Yes

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Study Participant Signature

25/10/2018

Date

IGEDE PANDU WIRAWAN

Study Participant Name (Please print)



Signature of Person who explained this study

25-10-2018

Date

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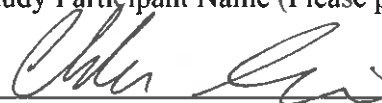
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- I give permission to release other personal information that may enhance the videos. Examples: birthplace, age, etc. ☒
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Study Participant Signature

31.10.18
Date

PHILIPS TUMILAAK
Study Participant Name (Please print)


Signature of Person who explained this study

31-10-18
Date

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- I give permission for this video to be published on the CERES visitor app. PE
- I give permission for this video to be published on the CERES Youtube Channel PE

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 Putri Egom
Study Participant Signature

1/11/2018
Date






 Putri Egom
Study Participant Name (Please print)


Signature of Person who explained this study

1/11/2018
Date

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Study Participant Signature

30 Oct 2018.

Date

Raissa Janet

Study Participant Name (Please print)



Signature of Person who explained this study

30/10/18

Date

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Study Participant Signature

26/10/2018

Date

Raka Wijaya Efendy

Study Participant Name (Please print)



Signature of Person who explained this study

26/10/18

Date

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Study Participant Signature

25 - 10 - 2018

Date

RAKHA PURBAWISESA

Study Participant Name (Please print)



Signature of Person who explained this study

25-10-2018

Date

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Ravella

Study Participant Signature

30 / 10 / 18

Date

Ravella

Study Participant Name (Please print)



Signature of Person who explained this study

30-10-18

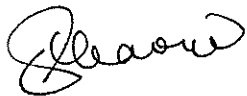
Date

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Study Participant Signature

16/11/2018.

Date

SITI KARJATI

Study Participant Name (Please print)



Signature of Person who explained this study

16/11/18

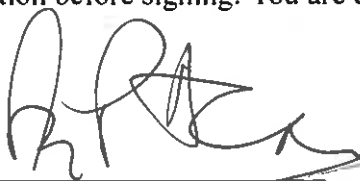
Date

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Study Participant Signature

11/9/18
Date

SRI P. DEAN
Study Participant Name (Please print)


Signature of Person who explained this study

11/9/18
Date

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Study Participant Signature

29 OCT 2018.

Date

I MADE SUKMA ADISTETIRWAN.

Study Participant Name (Please print)



Signature of Person who explained this study

29/10/18

Date

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Study Participant Signature

28/10/2018
Date

Tia
Study Participant Name (Please print)


Signature of Person who explained this study

28/10/2018
Date

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- I give permission for this video to be published on the CERES Youtube Channel ✓

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Study Participant Signature

26/10/2018

Date

Yunianti Efendy

Study Participant Name (Please print)







Signature of Person who explained this study

26-10-18

Date

Appendix D. Interview Content Catalogue

This collection of notes functions as an index and catalog for the content recorded in each of the interviews conducted. It is organized by individual subject when possible. Notes which relate to one of the 5 main topics are color-coded as such. Notes which relate generally to the common supporting theme of attitudes towards change are also color coded. The notes are all compiled by topic in each of the 6 additional sheets, one for each main theme and another for attitudes towards change. Each sheet includes all relevant notes, as well as a final re-ordering, which acts as a timeline for the corresponding video. No video was created for attitudes towards change, and thus it lacks a timeline. The color coding is as follows:

	Changes in Seasons and Weather Patterns
	Destruction of Nature
	Rubbish Disposal
	Flooding
	Air Pollution
	Attitudes Towards Change

The camera used for recording was a GoPro Hero 6. This camera splits the video files up every 8m and 3s (8:03), and thus each complete interview consists of 3-5 MP4 (.mp4) videos. The video files are named according to the preferred first names of all participants, appended by the video number (For example, "Ravella+Nadhira_2.mp4"). Some interviews were individual, and some were in groups of 2-5.

Each of the notes in the listings consists of a video code, timestamp, and description of what was said. For example:

G3 03:30 People only thinking about business, not nature

This note from Andi's listing indicates that in the third video from the group interview which Andi was part of, at time 3:30, he was recorded as talking about people only thinking about business, and not considering nature.

The video codes are a combination of the type of interview and the number of the video in the sequence. All video code interview types used in the catalog are as follows:

V - Individual Interview

G - Group Interview (2+ Participants)

S - The smaller of the group interviews the subject was part of

B - The bigger of the group interviews the subject was part of

B and S are only used to differentiate the 3 vs 5 subject interviews that Jason, Adam, and Dodi were part of.

Additional Notes:

- Notes which were found to be particularly interesting may be marked with 1-3 (*).
- Notes which represent a concise, specific quote about a subject may also be marked with (">").
- Asep desired not to show his face, and requested only to have his audio used in the videos.
- Due to an unfortunate mistake, the video file "Gilbert_3.mp4" was permanently lost. The notes which were from this video are marked clearly with a red highlight and border.
- Daffa was famous.

Students

<u>Indra</u>
V1 06:00 Deforestation, palm oil, smoke & pollution
V1 07:00 Flooding
V1 07:30 Also Flooding, and water access
V2 00:30 Main, popular issues in Indo shifting towards global awareness
V2 04:30 Working to be "more effective" at using resources. Deforestation
V2 05:30 Climate education now present, learned from parents before
V2 06:35 Differences in awareness: rural vs. city, where the impact is
V2 07:25 Use of personal vehicles, air pollution
V3 00:35 Temperatures hotter
V3 01:50 Waste disposal, no separation -- Now changing. Rural vs. City
V3 06:00 Cost of developing, need for resources. Expanding development
V3 07:40 Hotter environment
V4 01:00 Seasonal changes
<u>Rakha</u>
V1 03:50 ">" Everything is polluted and hot, things were cleaner and cooler before
V1 04:50 Air pollution, government policy on breaking laws related to waste/pollution
V1 05:45 Separating waste but, only one bin provided by gov
V1 07:43 * Flooding in Jakarta, economy, moving tmp.ly, waste, education, gov, etc.
V2 02:10 Feel unable to make change without being involved in politics
V2 04:00 * Government campaigns "false promises"
V2 05:07 No education for waste disposal
V2 07:38 ">" How to change the perspective of people in Indo -- can't, need to be politician
V3 00:35 Politician who wants to do good, but doesn't understand logistics, false promises
V3 03:40 Hotter now, rainfall/weather unpredictable
V3 04:55 Change in temp, climate from Elders
<u>Melly + Yuniarti + Raka</u>
G1 00:30 very hot in Jakarta played inside more

G1 01:00 too hot to stay outside
G1 01:20 stay inside more now
G1 02:20 couldn't go to school or anywhere- comes through our houses
G1 02:45 n. Jakarta is the worst- a little rain and it just floods so much
G1 02:50 the culture is not there to put the rubbish in bins- one of our bad habits
G1 03:10 just simple habits- effects us even more
G1 04:06 a lot of people- becomes a bad habit throwing rubbish from the car
G1 04:30 in her household her mom hates that- put it in her bag until she found a bin
G1 05:00 used to throw rubbish from their cars but dont now
G1 05:50 the people are very stubborn- hard to change habits
G1 06:20 hard to break bad habits- everyday lives
G1 06:50 definitely becomes hotter- intense sun
G1 07:00 buying more transport- bad traffic- hotter environment
G1 07:45 gov regulation for car plates odd or even- air pollution and traffic
G2 00:15 the regulation doesn't change anything
G2 00:30 lots of regulations about traffic but it's making things worse
G2 01:00 not a popular attitude- surprised her mom actually educated her on waste disposal- waiting to find a rubbish bin
G2 01:30 teaching us to throw out our trash but then the teachers don't follow the rules
G2 01:50 most Indo families have maids so they don't care- or clean their own houses
G2 02:00 mostly people don't care- there are some that do
G2 03:00 different culture in dev. Country than developing countries
G2 03:20 difficult to change the cultures
G2 03:30 can't just be from gov, has to be from the people too
G2 03:50 people actually care in Aus
G2 04:00 a lot of factors impact it, economy etc
G2 05:20 for oceans in Bali- organization- for the beaches in Bali
G2 05:40 a foreign organization- in Bali- not Jakarta
G2 06:45 so many bins here-easy to throw away trash- not in Jakarta. Indo doesn't have the technology to recycle properly
G2 07:20 the better location the cleaner the area
G3 00:40 the people don't want to change- dont care- doesnt think throwing a single piece of trash will affect anything
G3 01:00 people in Indo stop education earlier- dont have the knowledge about how the

environment is affected by their actions
G3 01:50 is there is a flood it is a public holiday for everyone- no one knows when it will come or end
G3 02:15 the gov cleans the river
G3 02:30 if you go to Jakarta you see the river is full of trash
G3 02:40 the gov is doing their best but then no one is educated so they keep throwing the trash in the river- creates the same problem
G3 06:41 it is hard- but if it's not from people like us who want to change- it is possible to change- but it will be hard- we don't have the thoughts on how
G3 07:12 we can make a movement to educate- set an example
G3 07:35 the river in Jakarta live right on the river- unhealthy and throw everything in the river
G3 07:55 gov wants to move them
G4 00:00 the people living them don't want to move to the nice place
G4 00:20 they create pollution in the river-
G4 00:35 they don't want to move
G4 00:44 the ones that are not as educated- education comes first
G4 01:20 they don't care about the environment they just keep making it worse- and complain to gov about it still
G4 02:30 corp responsibility isn't something they are passionate about- its okay to have a low CSR
G4 02:55 the people don't care- the businesses don't care
G4 03:20 the regulations are in place but they aren't working
G4 03:25 tried to create new public transport- in progress
G4 04:10 so cheap to buy motos in Indo- that's why they all have so many in a household
G4 04:20 the transport creates pollution
G4 04:45 you can't walk anywhere in Indo- smoke and bad air-
G4 05:05 no one follows the no smoking signs in Indo

Ela
G1 00:25 Rice fields disappearing
G1 05:00 Seasonal changes, unpredictable, 4 vs. 2 Growing seasons
G1 05:50 Temperature is hotter
G2 01:59 Waste disposal -- throw in river, burn in summer
G2 07:45 No education, NGO, organizations, taught her importance of disposal

G3 01:28 Floods, working in Kalimantan mining city
G3 01:55 Flood experiences
G3 06:10 No intervention from gov, community, etc. about handling flooding
G4 05:25 NGO/Gov work to raise awareness, not effective
G4 06:20 Have to change habits
G4 07:30 No rubbish bins at beach
G5 06:24 Past life happier when could live from land, now have to buy everything
G5 07:25 ** Bananas leaves story
V1 00:15 ** Growing season changes, loss of livelihood
V1 01:55 Rice fields become residential buildings, privatized
V1 02:55 ** Have to sell fields, no longer profitable
V1 05:00 Water access -- wells need to be dug much deeper, polluted from mining
Andi
G1 01:30 [Minor] Towns vs. Cities mentality
G1 07:20 Cycle of nature, Horses vs. Motorbikes example
G2 03:00 Waste isn't natural anymore, people do not know to not still throw in nature
G2 03:40 Some private companies taking charge of rubbish disposal
G2 06:50 Self-learned on waste disposal, force of habit, "character"
G3 02:38 Flooding in Jakarta, orig. Dutch govt, vs, Indo
G3 03:30 People only thinking about business, not nature
G3 03:48 * ">" People want a change, but they don't want to change
G3 07:08 Flooding depends on Gov, Netherlands also below sea level but they manage
G3 07:52 Gov. projects abandoned by new gov., lack of long-term solutions
G5 00:07 * NGO seen as "entertainment" -- don't get message
G5 04:10 City vs. village, producer vs. consumer
G5 05:00 Water access -- could boil river water before, now can't
G6 00:06 * People Have to pay for plastic bag, not the company
V1 00:22 Corporations always need to continue growing
V1 01:07 * Corporations take land, people end up as workers, lose self-sufficiency
V1 03:02 Economy is so fast, people can be left behind
V2 00:30 Difficult for gov. to be strict on plastic w/ corp.'s, "what else would they use", not fair to hold individual responsible
V2 01:35 ">" Gov stricter to people vs. corp

V2 02:28 Land grabbing, Farmers forced out of their land for airport
V2 03:10 Land grabbing, Highway
V2 03:55 *** "destroying character" "No signature"
<u>Pandu</u>
G1 02:35 River disappeared?
G2 01:05 Seasonal changes, unpredictable
G2 04:35 Separating Waste, force of habit
G2 05:10 Gov. working to improve waste management, people don't understand
G2 04:45 Flooding in Jakarta
G4 01:06 * Gov. tried to relocate people near rivers to protect them from floods, people do not want to move
G4 03:45 NGO stuff
G4 07:04 Mindset of community -- hard to change
G4 04:58 NGO's work doesn't last
G4 02:41 Habits of older generation
G5 07:50 ** Plastic bag cost story
V1 00:55 NGO, succeeds in getting plastic bag policy in place, but awareness of WHY is not there
V1 01:40 Price of plastic bags is v low, not much of an impact on decisions
V1 02:15 Even store employees not aware of policy
V1 04:00 Mindset of community, not concerned with environment
<u>Fajar</u>
G2 05:50–06:05 climate change, air feels heavier, hot
G2 06:55–07:00 people get air conditioners to “solve” problems, we need to do something
G3 00:10–00:16 air changed, feels dirty, skin feels yuck
G3 01:00–01:08 how we use the environment
G4 00:40–00:50 grandma said how different in past, greener
G4 01:10–01:25 everything has an impact
G4 03:50 imagine telling children about how there used to be a sea there, they can't witness it
G4 05:20–05:50 has a different perspective since he has knowledge
G5 03:05–03:35 “someone will just pick it up”, also social status, some can do whatever they want

G6 00:15–00:35 need proper rubbish bins and knowledge, need to set example

G6 03:00 you can't control the result , but you can control the process

G6 05:50 so many natural disasters have occurred in the past year in Indonesia

Tia

G2 07:25–07:35 weather change, not as cold in morning

G5 01:45–01:55 each family only gets one garbage bin for everything

G5 02:20–02:30 very hard to find a rubbish bin if walking around outside, people throw stuff around

G6 04:15–04:35 big earthquake, could still feel shaking even though on island next to Bali

G6 07:10–07:35 some elders refuse to move even if natural disaster coming

G7 01:30 government didn't announce and there was an eruption

G7 02:00 people blame the government

Jason

B1 07:10 Temperature increased

B2 00:50 Rubbish everywhere, rules not obeyed

B2 06:30 Culture doesn't care, just follow each other

B3 02:25 Air pollution and traffic bad, lots of cars

B4 01:14 Public transport super uncomfortable

B4 06:19 * Older generation, Gov. caring about self more than environment

B5 05:56 * Wants to see better technologic improvements, more global awareness

S1 00:30 * Seasons timing change

S1 05:23 * Flooding is yearly

Aldino

B1 02:45 Weird education thing, trying hard vs. not

Caesario

B1 06:00 Rainy/Dry season rainfall changes

B2 03:45 Waste disposal -- cultural problem, following parents

B5 01:12 ** Gov. changing every 5 years -- never continue programs

Adam
B1 04:15 More active lifestyle as a kid
B1 06:30 Increasing air pollution issues. "feel sticky"
B2 01:12 ** Dam blocked by trash story -- huge flood
B2 01:58 * ">" Trash -- out of sight, out of mind
B2 03:18 * ">" Comes down to individual, domino effect, following habits
B2 05:00 Private school good about awareness
B2 05:26 ">" Comes back to individual, can be shown reasons to change, but if you don't want to do it, you won't
B2 06:50 ** Importance of a community in protecting environment. Want to help community, but when separate from community it isn't there
B2 07:51 Older generation describe things as much cleaner when in more tight-knit community
B3 02:53 ** Old videos story, showing how Jakarta was greener and more natural back in the day
B3 03:26 * Migration to cities, things get all "stacked" on top of each other
B3 04:30 ** Old bus black smoke story, bad, cheap maintenance
B3 05:15 * ">" People leave Jakarta to get fresh air
B3 06:18 [minor] ">" No bike lanes
B4 00:02 * Cheap cost of motorbikes / cars, every person has one
B4 01:33 * Story about people riding on top of trams/busses
B4 02:42 *** ">" Don't care how to solve problem, but, if, solved -> out of sight out of mind
B4 05:50 * Think things will start to change over next generations
B4 07:13 *** Corruption major problem, story about cheap railway
B5 00:01 ">" As long as it doesn't affect me anymore, I'm good
B5 02:04 ***** Story about pillars up for years from abandoned project
B6 00:02 *** Mentality of Indonesians, "why can't we be on par w/ Singapore?" ** Good things product of mentality **
S1 02:06 *** Roof patching story
S1 03:03 *** Grandma's sister's swimming story
S1 06:05 Really bad floods happen every 4 years or so
S1 07:32 * No gov. help with flood response
S1 08:00 ** ">" Floods are just "Bad Luck" / fate people believe the have can't change the floods
S2 02:19 * Gov. didn't want to declare state of emergency from tsunami
S2 02:42 ** ">" Help in Indonesia is individual to individual, not gov

S3 03:33 * Badly maintained trash cans, bad connotation

Dodi

B1 07:48 Rice fields becoming buildings

B2 02:16 Tourism in Bali -- Gov. focuses on maximizing profit, doesn't enforce environmental protection

B3 00:45 * Sunday community cleaning lost culture

B4 03:50 * ">" Just need to start from yourself

B4 04:02 * People just take environment for granted

B4 04:48 * People just following the majority (wrt rubbish disposal)

B5 05:01 * Australia's environment culture vs. Indo's

S2 01:05 ** People independently helping victims of tsunami, family/community/culture

S2 05:05 Reclamation project

S2 06:00 Turtles dying

S2 07:48 *** Sunday cleanup story, loss of community connection

S3 01:30 ** ">" Indonesian culture of community working together

Cesaria

S1 04:55 hotter now, used to see breath in mornings since cold, now different

S1 05:25 sky in Jakarta is gray due to pollution

S1 05:50 air pollution, common for people to wear masks in Jakarta

G1 07:40 maybe lack of awareness or culture

G2 01:55-02:10 elders setting example, habits

G3 01:00-01:15 people throw rubbish into river, think it will go away and go to sea, water is brown

G3 05:00-05:30 ** people trapped in houses due to floods, can't go to work, common to keep a raft at home

Govinda

S1 04:08 beach areas affected, tides, less trees

G1 03:00-03:45 don't separate trash, don't have the culture of doing it, garbage men don't do their job well, have to use hands, manual, equipment not good enough

G1 06:30-07:00 loopholes in regulations, bribing

G2 05:40 sea level rising, people are scared since water is getting closer to them
G2 06:40–07:00 trees cut down to build more hotels, tourism, used to have a lot of rice and corn fields, but now hotels and villas
G4 00:50–01:00 we can all make a change, even small changes like throwing away waste in the right place helps
<u>Daffa (Famous)</u>
G1 01:30 weather more unexpected now, talks about rain and dry season
G1 05:50 regulations aren't strict
G2 00:10–00:30 inequality, gap in education, less educated = not aware
G2 07:50 waste management causes flooding, the waste clogs the sewage system
G3 00:00 flooding, people stuck in traffic and can't get back to houses, have to wait for the water to go down
<u>Ida</u>
V1 04:38 lots of trash on the beach, rubbish bins not provided
V1 04:50 Always flooding in Jakarta- no flooding in Bali
V2 01:40 the people cleaned the beach, in November they banned plastic
V2 02:38 bali never really flooding, responsibility is still on the individual
V2 02:50 in bali they have the culture- waste everywhere
V2 03:15 they parents need to educate the kids to throw away everything and care about the environments
V2 05:00 Indonesia has power distance- sons of ministers or politicians you can do whatever you want- bribe everything there- start to fix it
V2 05:28 "corruption is kind of a culture in Indonesia"
V2 05:40 many poor indonesians
V2 06:00 corruption is really bad, it's the worst
V2 06:45 the elections next year- politicians spreading rumors and promises- they get votes
V2 07:15 a lot of corruption and really hard to fix it- the teachers as well
V2 07:38 from the bottom
V3 00:20 some politicians don't want to take the risk for long term solutions because it costs a lot of money
V3 00:30 tho MRT started in '98 and just now has started
V3 03:45 always been hot in Bali, didn't notice as a kid
V3 04:20 cannot predict the climate now

V3 07:00 people use car instead of public transport
V3 07:20 Bali people need to get education from gov about air pollution- people don't know how to take care of environment
V4 01:35 The gov will make a park- green spaces
V4 03:08 the lack of knowledge about the environment is the main issue- that is why they don't care about it
V4 03:25 the gov needs to explain to people so that people will care- education is important
V5 01:40 it's too late for Bali to make public transport
V5 02:10 lots of cars there- take too long to make public transport
V5 "The puppies just poo everywhere"
<u>Asep [Audio]</u>
V1 05:27 experienced flooding in Jakarta in 2013
V1 05:45 every 5 years heavy downpours
V1 06:00 terrifying when we experienced flooding in Jakarta- no one could go to work
V1 07:00 hard to go to work- some offices closed
V1 07:30 flooding can be used for political issue- they promise to be a leader and promise no more flooding
V2 00:25 Some politicians clean the river- some areas no longer experience flooding- sometimes no action only promises
V2 03:35 the Gov. needs to do regulations to dispose the waste properly in neighborhoods
V2 04:00 not only the individuals but also the government should enact regulations
V3 01:08 the new regime will not use the same program about environmental issue, it happens everywhere- other countries too
V3 01:40 the previous project that has used a lot of money will be stopped and it is a waste of money
V3 02:55 when I was a kid it was cold, now it is higher temps, hotter
V3 03:20 very hot in Jakarta
V3 04:30 rainy season has changed- the whole year could be draught or rainy season- not fixed
V3 06:05 small islands in Indonesia will be drowned soon
V4 00:05 in Jakarta pollution is a big problem
V4 00:30 in Jakarta there is regulation for using car on certain days
V4 00:56 it is not about pollution issue it is about traffic issue
V4 01:15 it is only for the traffic jam, not to improve environment

V4 03:45	when the environmental issues affects their daily life they will notice
V4 04:10	the mayor doesn't care about the rubbish- would rather develop the rural areas
V4 04:35	when the new leader was elected would take care of that issue
V4 05:00	in general Indonesian people don't care about the environment
V4 05:20	reclamation issues on seashore-
V4 06:00	only environmental experts are aware of that issue- not the general public
V4 06:50	in W. Java the gov developed rural area for infrastructure
V4 07:18	didn't focus on the rubbish in the capital city
V5 00:52	maybe Indonesia can learn from Melbourne- compact housing and sidewalks

<u>Ravella</u>	
V1 04:50	Increase in traffic, less fresh air, hotter
V1 06:20	Father cannot go to work in floods
V2 01:33	Not enough bins
V2 01:53	People grow up with habit of not throwing rubbish in bins
V2 02:58	* In other countries, enforced to not litter
V2 04:26	* Have to save the earth yourself
V2 05:54	* Government should start the effort to make change
V2 08:00	** Father told story about temperature, too hot to ride bike, 40C
V3 03:08	* Air pollution is on individual -- too many cars, really bad traffic
V3 05:29	*** Odd/Even license plates rule
V4 00:53	** (Having been in AU) Will use public transport now, improvements have been made
<u>Nadhira</u>	
V1 04:05	Increase in pollution, development, air feels dirty
V1 05:51	Flooding affecting roads,
V2 00:25	Separation of rubbish, not many bins makes sewer clogged
V2 02:19	">" Taught proper waste disposal in schools but not important
V2 05:05	">" Proper waste disposal is difficult, no fines / enforcement
V2 06:18	Both gov and individual responsibility, lower classes more seriously effected by fines
V3 00:38	[Minor] Aircon stuff
V3 01:44	* Starting to rebuild forests, corruption

V3 02:58 Pollution on corporations, not strict rules
V3 04:26 * Gov. wants to make Indo better, but don't want to force people to change
V3 06:08 ** getting around license plate rule
V3 07:10 Gov. should be stricter, should start to learn from other countries
V4 00:16 * Smoking, used to throw butt on street, changed bc AU
V4 01:39 ** Never walk in Indo -- now improving
<u>Gilbert</u>
V1 02:00 mentions weather changes and can't forecast it
V1 03:55-04:20 bad and good things about deforestation and development
V1 05:40 climate change and beaches used to be better
V1 07:40 trash not just from his place, windy
V2 03:10 place used to play is very dirty now
V2 04:45 more pollution from cars and airplanes
V2 06:40 long term change, not quick, personal transportation to public transportation
V3 00:40 ** Sea level rise -- story of not being able to stand in water
V3 01:25 Sea level rise no impact, no concern
V3 02:20 Flooding issues often due to rubbish disposal, not a huge issue
V3 03:28 Buildings expanded a bit, have to travel out to natural areas
V3 04:35 Nature is important to culture, gov. policies in place to protect it
V3 05:32 * ">" This is my place, I want to protect it
V3 06:10 More about the people than regulation
V3 06:30 Gov. protects natural land from development, can't buy it
V4 00:38 ">" Can't blame the country for corruption
V4 01:14 ">" As long as you protect the nature
V4 03:20 * ">" System's aren't centralized, everywhere is different when it comes to Nature
V4 04:07 * Planes are major air pollution issue
V4 07:20 *** ">" Can't prevent climate change, but can minimize the impact
<u>Putri</u>
G1 01:00-01:20 blanket story
G1 04:50-05:20 no such thing as recycle and general waste bins, all in one, never taught to separate
G1 07:45 it starts with ourselves, even a little change can help

G2 01:05-01:35 at least one family have their own motor bike, impact on air pollution, don't care about environment

G2 04:25 shower since air pollution

G2 06:00-06:50 palm oil, get rid of trees, greedy and just want money, takes years to grow trees back

G3 01:50 the AU government policies are stronger, Indonesia can follow

G3 02:20-02:30 hard to make a change

G3 03:30-03:40 describes how other countries are stricter when it comes to waste management

Mesiani

G1 02:15-02:40 seasons changed

G1 07:00 parents didn't teach about waste so grew up not caring

G2 02:10-02:30 and around 3:45, – one family with 3 children and each kid has a car/motor bike, traffic

G2 04:10 can feel air difference when they visit Jakarta

G3 03:30-03:40 describes how other countries are stricter when it comes to waste management

Raissa + Carmel

G1 01:10 would play on social media as a child

G1 02:40 the traffic is getting worse, because of the CO2 increase can see the fog from the cars and its very visible

G1 03:00 obvious now- way too hot to go out without a car

G1 03:15 cant hang out outside like in their childhood- sun will burn them so fast

G1 03:50 was taught to throw the trash in the bin but not implemented well

G1 04:10 she was not educated- can't tell bt trash and recycling

G1 04:40 not much care about the environment

G1 05:10 its on the individual to make the change- not the gov

G1 05:45 it's dangerous and dirty to go out without a car- can't wait outside for more than 10 minutes

G1 06:15 the public transport is too expensive and crowded

G1 06:30 hoping the developing public transport will help

G1 07:20 every individual

G1 07:35 if I pay for this I can do whatever I want
G1 07:45 the attitude that they don't want to change
G2 00:07 embedded in indo people
G2 00:25 they destroyed the gates-stepped on the grass- given facilities but don't take care of
G2 01:08 they feel like they are paying taxes so they don't have to do it themselves
G2 01:15 with the rubbish they think that the garbage men will pick it up for them
G2 02:05 the older generation attitude is embedded- half of the younger gen changes their mentality, half just follows the older generation
G2 03:20 experienced the flood twice- 2 km walk to school
G2 03:40 took her jeep car- dad wouldn't let her walk in the flood waters
G2 04:00 the flood lasted for 2 weeks- ran out of food- ran out of water
G2 04:10 not a pleasant memories- got better but now worse bc of new gov
G2 04:30 some people swim in the flood- accept that it happens
G2 04:44 always prepared for the flood
G2 05:10 last gov repaired everything
G2 05:15 the gov changed and the trash is everywhere again
G2 06:00 buys their drinking water- can boil the tap water
G2 07:38 the heat is from the ozone getting thinner
G3 0:30 in front of the house used to be a park- now its a shanty town
G3 01:07 no one really cares
G3 01:10 burning down the forest to make it a farm- palm oil plantation
G3 02:50 the AUS gov and citizens give more effort- tax on cars lower price on miky
G3 03:20 the mentality
G3 03:35 the people in indo are very stubborn about following rules
G3 04:15 the effort is there- but people are not listening- small groups could do it but not large scale
G3 04:40 the gov needs to change rules- too strict of rules- people will protest about it- dont care its good for the environ.
G3 05:40 harsher rules- penalties
G3 05:50 bribe the police
G3 06:00 if you have money you can survive- not follow the rules
G3 07:20 we get the education- but the kids have to listen to the parents who will give the opposite message
G3 07:50 all about education

G4 00:05 the parents wont let us teach them if it's against their beliefs
G4 00:30 there is a gap, the upper class can go to school, the lower class can't afford to continue school, has to work for their parents
G4 01:00 just bc they are educated doesn't mean they dont do bad stuff to the environment
G4 01:30 the only difference is who raised them
G4 03:00 the corp are the issue- burning the forests- killing the orangutans- would still take place even without the people
G4 03:30 stronger regulations and better people in the government
G4 04:15 the recent government- prosecuted the politician bc he quoted the Quran on tv and went to jail- lots of false promises- but it doesn't actually do anything
G4 05:20 publications about stuff they did- but they don't work
G4 05:35 the people choose politicians on religion bases- only obey those in your religion
G4 07:00 no weather forecast in Indo
G4 07:25 it was consistent- in the last 10 years it changed- now the tornados are happening- not regular winds
G5 01:04 on the beach and on the river you can see the rise in water- comes into the house
G5 01:25 on the seaside the house sank down

Elders

Anton

V1 07:30 Mentality of People

V2 00:00 Pollution of Jakarta, positive work by government

V2 01:02 NGO, change is slow, not easy

V2 02:05 Change in Jakarta due to government, two governors

V2 03:55 Government making change, difference between City and Village

V2 04:55 Government must be careful on how to teach, not easy, takes time

V2 07:55 Culture of change -- started

V3 03:00 Air Pollution in Jakarta

V3 04:20 Jakarta sea level rise "Disappearing"

V3 06:25 Jakarta flooding getting worse, more stuff about Ahok

V4 00:25 Can't go back, can't stop the clock

V4 01:00 ">" Collective sin, can't blame one person

V4 03:30 ** ">" Indirect teaching, lead by example, there is hope

Sri

V1 02:00 describes forest as a child, wowwww

V1 03:05-03:40 difference when she came back

V1 06:10 mentions river difference

V1 07:50 a lot more can be done

V2 02:00 weather unpredictable

V2 05:15 pollution and using fan to get bad smells away

V2 06:25 everyone should be responsible

V2 07:30 orange peels, feel like have the right to do whatever they want

Phillips

V1 03:35 it was comfortable when he was small- smaller pop.

V1 04:00 much more pure air- breath- spent more time at beach

V1 04:25 a lot of the beaches he spent time at as a child are gone

V1 04:40 there were more trees- cut down for new buildings
V1 05:10 air pollution
V1 05:40 it was more nature- more fun than for kids now
V1 06:55 a change in the climate there
V1 07:40 waste management tackled by gov, and transportation
V2 00:04 horses used to be part of the transportation
V2 00:20 very rarely motor vehicles
V2 00:35 so nice and clean
V2 00:40 lately he feels the climate changing and environmental
V2 01:10 noticed some change was happening
V2 01:20 the issue of health- challenge for gov- provide clean water- waste management- high on the agenda of gov.
V2 02:10 malaria, leprosy,
V2 02:30 dengue fever and TB
V2 02:50 the system there is dif than in AUS and the behavior
V2 03:35 there are improvements but a long way to go
V2 03:45 the clean water- drinking water- left with what the dutch gov provided
V2 04:10 the well was the source of the household water- no plumbing
V2 04:30 overpopulated areas
V2 04:40 some can afford for a septic tank
V2 04:50 nearly every house has their own septic tank-
V2 05:00 those who can't afford it discharge their waste to the sea or the river- that is the challenge (waste as in sewage)
V2 06:10 the problem with coughing-
V2 06:20 air pollution created by so many vehicles for a small city- too many
V2 07:10 the way that people treated their waste
V2 07:25 some dig hole and bury it- no land so they burn the trash
V2 07:40 very very bad for people's health
V3 00:00 They view the sea as a place to store their waste
V3 00:13 the lack of knowledge about what actually happens to the environment
V3 00:30 now the gov realized and making a big change- local government
V3 00:50 getting educated on how that affects the health of the people
V3 01:15 it goes in stages- rubbish from household
V3 01:35 putting rubbish in gutter causes flooding

V3 01:50 people start to realize- stages of change
V3 02:00 every block in the city got a collection bay- for rubbish and it was removed
V3 02:30 sometimes it is just taken to a cliff- becomes a landfill- still not good
V3 03:40 they stopped doing it that way
V3 04:10 small truck for rubbish to go to collection place
V3 05:05 when they build the well there is a distance limit bt septic tank and well to prevent contamination
V3 05:35 sometimes this is ignored
V3 05:50 of they don't have the big area they take shortcut- lack of knowledge or dont care or can't afford to do it properly
V3 06:40 the level of E. coli on the beaches is too high
V3 07:20 if they live near the sea or the river- becomes the source of waste disposal
V3 08:00 people forced to stop by fines
V4 00:30 challenge for the gov to enforce the regulations- but people are just trying to make a living
V4 01:20 the gov has to do things in a big scale bc of the population growth
V4 01:45 the responsibility is on the gov to make a change, but there is limitations- still exists
V4 02:20 the area they used to swim is no longer there- shopping centers and malls
V4 02:55 to provide clean water
V4 03:00 in dry season and lack of water
V4 03:20 can be short lived
V4 03:30 no rain for months last year and people suffer there
V4 04:00 water from the well
V4 04:15 maybe too much water- maybe climate change
V4 04:30 there was a big flood in the city
V4 05:15 clearing of the uplands for housing doesnt help flood
V4 05:30 if the river is clean the water can flow faster
V4 06:10 used to be plenty of rain in Dec and now it can be different
V4 06:30 it is affecting the agriculture
V4 06:50 they rely on the harvests
V4 07:45 when he was 10 there was a war '58
V5 00:05 local gov friction with central gov- rough time
V5 01:00 petitions and warnings
V5 01:20 left the city to take refuge in the jungle- plantations

V5 01:55 there was a war happening there
V5 02:00 had to survive on whatever they had- no gov there
V5 02:40 would walk 2k to the "school" in a church
V5 03:35 lived close to the river- would get water running off of the side of the cliff
V6 00:45 when he was young the impact was not happening at that time so there wasnt anyone telling him about the environment
V6 01:00 it was stable environment
V6 01:30 things starting to change
V6 01:38 the chopping of trees for new building is to cope with demand of tourism
V6 03:00 have to give away the nature to build more
V6 03:30 where he used to go to the beach and swim as a child is no longer there
V6 04:05 the best place to build shopping centers is to do it on the seaside reclamation of land which is why where he used to play is gone now.
V6 05:12 must go further from the city to have fresh air and trees
V6 06:06 the government must manage how things don't just go into the sea
V6 06:50 the attitude has changed in the gov and in the people- more knowledge now
V6 07:15 at the schools its mentioned now too
V6 07:35 the future is depending on it
V6 07:45 not just part of the school but also the churches- spreading knowledge
V7 00:30 newspaper and media
V7 00:48 people living in the rural areas there- cannot afford to build proper place to manage their waste
V7 01:10 much better now than before
V7 01:43 must look closely on how to provide the services to the people
V7 02:15 flooding when he was young- 2013 was the biggest one
V7 02:35 didn't have flood like that
V7 02:50 overpour of rain that time
V7 04:16 effected transportation and schooling
V7 02:25 the clean up
V7 04:35 the water can make people sick
V7 05:20 septic tanks underwater
V7 06:15 the gov did help to clean up after the flood

Notes by Topic and Timelines For Videos

Attitudes Towards Change

Sri	V2 06:25 everyone should be responsible	Elders
Anton	V4 00:25 Can't go back, can't stop the clock	
Anton	V4 01:00 ">" Collective sin, can't blame one person	
Anton	V1 07:30 Mentality of People	
Pandu	G4 02:41 Habits of older generation	Parents attitudes
Pandu	G4 07:04 Mindset of community -- hard to change	
Tia	G6 07:10–07:35 some elders refuse to move even if natural disaster coming	
Caesaria	G1 07:40 maybe lack of awareness or culture	
Caesaria	G2 01:55-02:10 elders setting example, habits	
Ida	V2 02:50 in bali they have the culture- waste everywhere	
Ida	V2 03:15 they parents need to educate the kids to throw away everything and care about the environments	
Ravella	V2 01:53 People grow up with habit of not throwing rubbish in bins	
Raissa + Carmel	G2 02:05 the older generation attitude is embedded- half of the younger gen changes their mentality, half just follows the older generation	
Raissa + Carmel	G4 00:05 the parents wont let us teach them if it's against their beliefs	
Raissa + Carmel	G4 01:30 the only difference is who raised them	
Ceasario	B2 03:45 Waste disposal -- cultural problem, following parents	Stubborn Attitudes / towards change
Mesiana	G1 07:00 parents didn't teach about waste so grew up not caring	
Melly + Yuni + Raka	G3 00:40 the people don't want to change- dont care- doesnt think throwing a single piece of trash will affect anything	
Melly + Yuni + Raka	G1 05:50 the people are very stubborn- hard to change habits	
Melly + Yuni + Raka	G4 00:00 the people living there don't want to move to the nice place	
Melly + Yuni +	G4 00:20 they create pollution in the river-	

Raka		
Melly + Yuni + Raka	G4 00:35 they don't want to move	
Andi	G3 03:48 * ">" People want a change, but they don't want to change	
Adam	B2 05:26 ">" Comes back to individual, can be shown reasons to change, but if you don't want to do it, you won't	
Raissa + Carmel	G1 07:45 the attitude that they don't want to change	
Raissa + Carmel	G3 03:35 the people in indo are very stubborn about following rules	
Ela	G4 06:20 Have to change habits	
Indra	V2 00:30 Main, popular issues in Indo shifting towards global awareness	
Rakha	V2 02:10 Feel unable to make change without being involved in politics	
Rakha	V2 07:38 ">" How to change the perspective of people in Indo -- can't, need to be politician	
Melly + Yuni + Raka	G2 03:20 difficult to change the cultures	
Melly + Yuni + Raka	G3 06:41 it is hard- but if it's not from people like us who want to change- it is possible to change- but it will be hard- we don't have the thoughts on how	
Nadhira	V3 04:26 * Gov. wants to make Indo better, but don't want to force people to change	
Raissa + Carmel	G3 04:40 the gov needs to change rules- too strict of rules- people will protest about it- dont care its good for the environ.	
Raissa + Carmel	G2 00:07 embedded in indo people	
Melly + Yuni + Raka	G2 01:50 most Indo families have maids so they don't care- or clean their own houses	
Melly + Yuni + Raka	G2 02:00 mostly people don't care- there are some that do	
Melly + Yuni + Raka	G4 01:20 they don't care about the environment they just keep making it worse- and complain to gov about it still	
Melly + Yuni + Raka	G4 02:55 the people don't care- the businesses don't care	
Andi	G3 03:30 People only thinking about business, not nature	

Jason	B2 06:30 Culture doesn't care, just follow each other	
Adam	B4 02:42 *** ">" Don't care how to solve problem, but, if, solved -> out of sight out of mind	
Adam	B5 00:01 ">" As long as it doesn't affect me anymore, I'm good	
Dodi	B3 00:45 * Sunday community cleaning lost culture/S2 07:48 *** Sunday cleanup story, loss of community connection	
Dodi	B4 04:02 * People just take environment for granted	
Dodi	B4 04:48 * People just following the majority (wrt rubbish disposal)	
Asep	V4 05:00 in general Indonesian people don't care about the environment	
Asep	V4 04:10 the mayor doesn't care about the rubbish- would rather develop the rural areas	
Raissa + Carmel	G3 01:07 no one really cares	
Raissa +Carmel	G2 01:08 they feel like they are paying taxes so they don't have to do it themselves	
Raissa +Carmel	G2 01:15 with the rubbish they think that the garbage men will pick it up for them	
Raissa +Carmel	G1 05:10 its on the individual to make the change- not the gov	
Anton	V2 07:55 Culture of change -- started	
Anton	V2 01:02 NGO, change is slow, not easy	
Sri	V1 07:50 a lot more can be done	
Philips	V6 07:35 the future is depending on it	
Philips	V6 07:45 not just part of the school but also the churches- spreading knowledge	

Changes in Seasons and Weather Patterns

Ravella	V2 08:00 ** Father told story about temperature, too hot to ride bike, 40C	Hotter Now
Fajar	G4 03:50 imagine telling children about how there used to be a sea there, they can't witness it	
Indra	V3 00:35 Temperatures hotter, "winter taste of water"	
Indra	V3 07:40 Extremely hot, >40c	
Melly + Yuni	G1 01:00 [Quick] too hot to play outside	
Rakha	G1 06:50 definitely becomes hotter- intense sun	
Ela	V1 00:15 ** [Long] Growing season changes, loss of livelihood	
Ela	G1 05:50 Temperature is hotter	Hotter Now
Tia	G2 07:25–07:35 weather change, not as cold in morning	
Fajar	G2 06:55–07:00 people get air conditioners to “solve” problems, we need to do something	
Jason	B1 07:10 Temperature increased, keep people inside	
Cesaria	S1 04:55 hotter now, used to see breath in mornings since cold, now different	
Asep	V3 03:20 very hot in jakarta	
Putri	G1 01:00-01:20 blanket story	Hotter Now
Raissa +Carmel	G1 03:00 obvious now- way too hot to go out without a car	
Raissa +Carmel	G2 07:38 the heat is from the ozone getting thinner	
Phillips	V2 01:10 noticed some change was happening	
Phillips	V4 04:15 maybe too much water- maybe climate change	
Phillips	V2 00:40 lately he feels the climate changing and environmental	
Indra	V4 01:00 Seasonal changes	Unpredictability and Seasonal Changes
Jason	S1 00:30 * Seasons timing change	
Cesario	B1 06:00 Rainy/Dry season rainfall changes	
Daffa	G1 01:30 weather more unexpected now, talks about rain and dry season	
Rakha	V3 03:40 Hotter now, rainfall/weather unpredictable	
Pandu	G2 01:05 Seasonal changes, unpredictable	
Ida	V3 04:20 cannot predict the climate now	Unpredictability and Seasonal Changes
Asep	V3 04:30 rainy season has changed- the whole year could be draught or rainy season- not fixed	

Mesiani	G1 02:15-02:40 seasons changed	
Phillips	V4 03:30 no rain for months last year and people suffer there	
Ela	G1 05:00 Seasonal changes, unpredictable, 4 vs. 2 Growing seasons	
Gilbert	V1 02:00 mentions weather changes and can't forecast it	
Raissa +Carmel	G4 07:00 no weather forecast in Indo	
Raissa +Carmel	G4 07:25 it was consistent- in the last 10 years it changed- now the tornados are happening- not regular winds	
Sri	V2 02:00 weather unpredictable	
Pandu	G1 02:35 River disappeared?	Sea Level Rising
Govinda	S1 04:08 beach areas affected, tides, less trees	
Govinda	G2 05:40 sea level rising, people are scared since water is getting closer to them	
Asep	V3 06:05 small islands in Indonesia will be drowned soon	
Gilbert	V1 05:40 climate change and beaches used to be better	
Raissa +Carmel	G5 01:04 on the beach and on the river you can see the rise in water- comes into the house	
Raissa +Carmel	G5 01:25 on the seaside the house sank down	
Anton	V3 04:20 Jakarta sea level rise "Disappearing"	
Phillips	V2 03:35 there are improvements but a long way to go	
Gilbert	V4 07:20 *** ">" Can't prevent climate change, but can minimize the impact	
Reordering:		
Ravella	V2 08:00 ** Father told story about temperature, too hot to ride bike, 40C	
Raissa +Carmel	G1 03:00 obvious now- way too hot to go out without a car	
Raissa +Carmel	G2 07:38 the heat is from the ozone getting thinner	
Jason	B1 07:10 Temperature increased, keep people inside	
Rakha	V3 03:40 Hotter now, rainfall/weather unpredictable	
Fajar	G2 06:55-07:00 people get air conditioners to "solve" problems, we need to do something	
Phillips	V2 00:40 lately he feels the climate changing and environmental	

Pandu	G2 01:05 Seasonal changes, unpredictable	
Jason	S1 00:30 * Seasons timing change	
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Raissa +Carmel	G4 07:25 it was consistent- in the last 10 years it changed- now the tornados are happening- not regular winds	
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Gilbert	V4 07:20 *** ">" Can't prevent climate change, but can minimize the impact	

Destruction of Nature

Ela	G1 00:25 Rice fields disappearing	
Ela	V1 01:55 Rice fields become residential buildings, privatized	general deforestation
Dodi	B1 07:48 Rice fields becoming buildings	
Gilbert	V1 03:55-04:20 bad and good things about deforestation and development	
Indra	V1 06:00 Deforestation, palm oil, smoke & pollution	
Indra	V2 04:30 Working to be "more effective" at using resources. Deforestation	
Fajar	G4 00:40–00:50 grandma said how different in past, greener	
Adam	B3 02:53 ** Old videos story, showing how Jakarta was greener and more natural back in the day	
Sri	V1 02:00 describes forest as a child, wowwww	
Sri	V1 03:05-03:40 difference when she came back	
Raissa + Carmel	G3 01:10 burning down the forest to make it a farm- palm oil plantation	
Phillips	V1 04:40 there were more trees- cut down for new buildings	development and tourism
Phillips	V1 05:40 it was more nature- more fun than for kids now	
Putri	G2 06:00-06:50 palm oil, get rid of trees, greedy and just want money, takes years to grow trees back	
Indra	V3 06:00 Cost of developing, need for resources. Expanding development	
Dodi	B2 02:16 Tourism in Bali -- Gov. focuses on maximizing profit, doesn't enforce environmental protection	
Govinda	G2 06:40–07:00 trees cut down to build more hotels, tourism, used to have a lot of rice and corn fields, but now hotels and villas	
Andi	V1 01:07 * Corporations take land, people end up as workers, lose self-sufficiency	
Andi	V2 02:28 Land grabbing, Farmers forced out of their land for airport	
Andi	V2 03:10 Land grabbing, Highway	
Asep	V4 06:50 in W. Java the gov developed rural area for infrastructure	
Phillips	V1 04:25 a lot of the beaches he spent time at as a child are gone	
Phillips	V4 02:20 the area they used to swim is no longer there- shopping centers and malls	
Phillips	V6 01:38 the chopping of trees for new building is to cope with	

	demand of tourism	
Phillips	V6 03:00 have to give away the nature to build more	
Phillips	V6 03:30 where he used to go to the beach and swim as a child is no longer there	
Asep	V4 05:20 reclamation issues on seashore-	reclamation
Dodi	S2 05:05 Reclamation project	
Dodi	S2 06:00 Turtles dying	
Raissa + Carmel	G4 03:00 the corp are the issue- burning the forests- killing the orangutans- would still take place even without the people	
Reordering:		
Ela	G1 00:25 Rice fields disappearing	
Dodi	B1 07:48 Rice fields becoming buildings	
Gilbert	V1 03:55-04:20 bad and good things about deforestation and development	
Indra	V1 06:00 Deforestation, palm oil, smoke & pollution	
Fajar	G4 00:40–00:50 grandma said how different in past, greener	
Adam	B3 02:53 ** Old videos story, showing how Jakarta was greener and more natural back in the day	
Sri	V1 02:00 describes forest as a child, wowwww	
Sri	V1 03:05-03:40 difference when she came back	
Putri	G2 06:00-06:50 palm oil, get rid of trees, greedy and just want money, takes years to grow trees back	
Indra	V3 06:00 Cost of developing, need for resources. Expanding development	
Govinda	G2 06:40–07:00 trees cut down to build more hotels, tourism, used to have a lot of rice and corn fields, but now hotels and villas	
Phillips	V4 02:20 the area they used to swim is no longer there- shopping centers and malls	
Dodi	S2 05:05 Reclamation project	
Dodi	S2 06:00 Turtles dying	
Raissa + Carmel	G4 03:00 the corp are the issue- burning the forests- killing the orangutans- would still take place even without the people	

Rubbish Disposal

Ceasaria	G3 01:00–01:15 people throw rubbish into river, think it will go away and go to sea, water is brown	
Adam	B2 01:58 * ">" Trash -- out of sight, out of mind	
Philips	V3 02:30 sometimes it is just taken to a cliff- becomes a landfill- still not good	
Ela	G2 01:59 Waste disposal -- throw in river, burn in summer	
Ela	G5 07:25 ** Bananas leaves story	
Ida	V1 04:38 lots of trash on the beach, rubbish bins not provided	
Melly + Yuni + Raka	G3 02:30 if you go to Jakarta you see the river is full of trash	
Jason	B2 00:50 Rubbish everywhere, rules not obeyed	
Nadhira	V2 05:05 ">" Proper waste disposal is difficult, no fines / enforcement	
Adam	S3 03:33 * Badly maintained trash cans, bad connotation	
Ravella	V2 01:33 Not enough bins	
Ela	G4 07:30 No rubbish bins at beach	
Indra	V3 01:50 Waste disposal, no separation -- Now changing. Rural vs. City	
Rakha	V1 05:45 Separating waste but, only one bin provided by gov	
Melly + Yuni + Raka	G2 06:45 so many bins here-easy to throw away trash- not in Jakarta. Indo doesnt have the technology to recycle properly	
Tia	G5 01:45–01:55 each family only gets one garbage bin for everything	
Tia	G5 02:20–02:30 very hard to find a rubbish bin if walking around outside, people throw stuff around	
Govinda	G1 03:00-03:45 don't separate trash, don't have the culture of doing it, garbage men don't do their job well, have to use hands, manual, equipment not good enough	
Nadhira	V2 00:25 Separation of rubbish, not many bins makes sewer clogged	
Putri	G1 04:50-05:20 no such thing as recycle and general waste bins, all in one, never taught to separate	
Melly + Yuni + Raka	G2 01:00 not a popular attitude- surprised her mom actually educated her on waste disposal- waiting to find a rubbish bin	
Melly + Yuni + Raka	G1 04:30 in her household her mom hates that- put it in her bag until she found a bin	
Melly +	G1 05:00 used to throw rubbish from their cars but dont now	

Yuni + Raka		
Pandu	G2 05:10 Gov. working to improve waste management, people don't understand	
Pandu	G5 07:50 ** Plastic bag cost story	
Putri	G1 07:45 it starts with ourselves, even a little change can help	
Fajar	G6 03:00 you can't control the result , but you can control the process	
Govinda	G4 00:50–01:00 we can all make a change, even small changes like throwing away waste in the right place helps	

Flooding / Natural Disasters

Cesaria	G3 05:00–05:30 ** people trapped in houses due to floods, can't go to work, common to keep a raft at home	
Raissa and Carmel	G2 04:44 always prepared for the flood	
Adam	S1 03:03 *** Grandma's sister's swimming story	
Adam	B2 01:12 ** Dam blocked by trash story -- huge flood	
Adam	S1 02:06 *** Roof patching story	
Raissa and Carmel	G2 04:00 the flood lasted for 2 weeks- ran out of food- ran out of water	
Melly + Yuni + Raka	G1 02:20 couldnt go to school or anywhere- comes through our houses	
Ravella	V1 06:20 Father cannot go to work in floods	
Daffa	G3 00:00 flooding, people stuck in traffic and can't get back to houses, have to wait for the water to go down	
Raissa and Carmel	G2 03:40 took her jeep car- dad wouldnt let her walk in the flood waters	
Raissa and Carmel	G2 04:30 some people swim in the flood- accept that it happens	
Melly + Yuni + Raka	G3 01:50 is there is a flood it is a public holiday for everyone- no one knows when it will come or end	
Philips	V7 04:35 the water can make people sick	
Fajar	G6 05:50 so many natural disasters have occurred in the past year in Indonesia	
Tia	G6 04:15–04:35 big earthquake, could still feel shaking even though on island next to Bali	
Pandu	G4 01:06 * Gov. tried to relocate people near rivers to protect them from floods, people do not want to move	
Adam	S1 08:00 ** ">" Floods are just "Bad Luck", fate people believe the have can't change the floods	

Appendix E. SRT Files for Short Form Videos

1) Destruction of Nature

1

00:00:13,300 --> 00:00:19,250

When I was [in my] childhood, there were many rice fields there and also green forests.

2

00:00:19,260 --> 00:00:25,150

But after I graduated from university I think it's different

3

00:00:25,200 --> 00:00:28,430

so most of the area now has become the residential area.

4

00:00:34,170 --> 00:00:37,400

There [were] many rice fields before when I was a kid

5

00:00:38,000 --> 00:00:43,250

and then gradually the rice fields just changed to become buildings.

6

00:00:47,500 --> 00:00:57,400

There [was] a lot of deforestation. The cause of this deforestation ... palm oil plantations.

7

00:00:57,500 --> 00:01:05,040

It smokes up to like Singapore and even like Malaysia and Brunei

8

00:01:05,140 --> 00:01:10,240

So the impact itself is not only in the area, but to other countries too.

9

00:01:13,560 --> 00:01:23,140

I listen[ed] to my grandma about how everything changed

like even before she said everything was very traditional

10

00:01:23,340 --> 00:01:30,240

like how the trees [were] very green and everything just buildings everywhere

11

00:01:34,380 --> 00:01:41,340

And if you watch the old videos, a lot of it was shot in Jakarta. But then there were areas like Cinere or even Ciputat

12

00:01:41,540 --> 00:01:46,340

And if you watch the videos there's still a hill. It's all green. The road is still a dirt road.

13

00:01:47,040 --> 00:01:53,310

It's basically just all green like you're in the countryside. You go to Cinere now and there's at least three malls.

14

00:01:57,240 --> 00:02:05,380

We used to have plenty of space that we children would run around and particularly we would play hide-and-seek, those kind of things

15

00:02:05,480 --> 00:02:15,400

Because right behind my house happened to be a - it wasn't really a forest - but to our eyes it's just like wow

16

00:02:15,480 --> 00:02:21,280

But now when I came back, particularly after I spent a lot of time in Jakarta and came back

17

00:02:21,380 --> 00:02:31,480

Oh my god is it really my world where I grew up? No because every inch has become a two-story house

18

00:02:35,180 --> 00:02:40,230

... houses are everywhere. And it's not just houses, it's also concrete

19

00:02:44,290 --> 00:02:52,380

Because they want to build their palm oil trees ... they get rid of all of the trees

20

00:02:52,520 --> 00:03:01,120

Without considering whether it is giving
a good impact [to] the environment

21

00:03:01,300 --> 00:03:07,240

But it's just because they are greedy and
they just want to make [themselves] rich

22

00:03:12,020 --> 00:03:16,020

The trees are cut down because they want to
build
another hotel and another villa so that's why

23

00:03:16,520 --> 00:03:20,270

You keep getting tourists [to] come, but
the environment is not having a good time

24

00:03:26,370 --> 00:03:30,400

We used to have a lot of rice fields and
corn fields and all that stuff

25

00:03:30,520 --> 00:03:36,130

But now it's just hotels and villas, just a place
for the tourists that come to attract more tourism

26

00:03:39,280 --> 00:03:43,420

And now the area we used to go swimming,
... it's no longer there

27

00:03:43,570 --> 00:03:49,150

Because that [was] made into malls,
hotels, shopping centers

28

00:03:52,170 --> 00:04:00,460

By building or making a new island around the bay,
it will destroy the ecosystem around the area

29

00:04:01,310 --> 00:04:04,280

We used to have - we call it Penyu - like a turtle

30

00:04:07,360 --> 00:04:13,310

You see on the news they would still have
deforestation
by burning it down, killing off the orangutan

31

00:04:13,460 --> 00:04:16,140

They would still take place even without the people

2) Flooding

1

00:00:13,060 --> 00:00:17,120

Jakarta will have one very big flood
like once in five years.

2

00:00:18,000 --> 00:00:25,000

And because of that I have [a] colleague
who was trapped in his apartment

3

00:00:25,300 --> 00:00:30,300

He couldn't go to work because all over
outside the apartment it was flooded everywhere.

4

00:00:31,000 --> 00:00:38,300

And now it's common that some families
in Jakarta have a raft at home

5

00:00:40,000 --> 00:00:47,470

because sometimes when the flood comes in they
can't go anywhere and they [have] to use the raft.

6

00:00:52,290 --> 00:00:55,060

We're always prepared for floods

7

00:01:00,050 --> 00:01:03,040

Let's say this is the house roof.
It was completely flooded.

8

00:01:03,340 --> 00:01:07,340

Everything in the house was just gone.
She was sixty at that point or seventy.

9

00:01:08,300 --> 00:01:13,010

She only had that much room to breathe so she was
swimming like this outside of the house to get out

10

00:01:17,340 --> 00:01:21,190

One time around when I was ten
the dam got so blocked up

11

00:01:22,040 --> 00:01:27,000

and it was the rainy season to the point where because
the trash had blocked up the dam, everything
overflowed.

12

00:01:28,340 --> 00:01:31,190

Even though the dam is about
a kilometer from my house

13

00:01:31,490 --> 00:01:33,470

the water was spilling over to my house.
That's how bad it was.

14

00:01:38,380 --> 00:01:43,190

I remember at first that the rain was pouring
down so hard that the roof would just cave in.

15

00:01:44,040 --> 00:01:50,190

I remember this, it was nighttime and from
night until morning it didn't stop raining

16

00:01:51,040 --> 00:01:56,490

so my dad and mom and a couple other
people were helping to patch up
the roof, but you couldn't because the whole
house was already flooded.

17

00:01:57,490 --> 00:02:03,040

And then because of that, the next day the
water came in through
the front of the house even though it was a
kilometer away.

18

00:02:07,410 --> 00:02:13,530

Back when I was still five I think
the flood was around one week or two weeks

19

00:02:14,230 --> 00:02:17,130

and then we ran out of food,
we ran out of water

20

00:02:21,280 --> 00:02:24,290

We couldn't go to school.
We couldn't go anywhere basically.

21

00:02:29,210 --> 00:02:33,080

Every time we have a really heavy rain
my father will not go to work

22

00:02:33,380 --> 00:02:38,210

because there are lots of high water
so the car can't go through

23

00:02:43,400 --> 00:02:47,380

We are really affected from flooding because when
there's a huge rain people just get stuck in traffic.

24

00:02:47,530 --> 00:02:52,350

People don't go back to their houses.
They have to wait until the flood goes down.

25

00:02:57,070 --> 00:03:02,120

If there's a flood then it's just going
to be like a public holiday for everybody

26

00:03:03,570 --> 00:03:07,510

Because we don't know when the flood
comes and when the flood stops

27

00:03:13,260 --> 00:03:17,570

The government tried to relocate
them to a safer place,

28

00:03:18,270 --> 00:03:24,560

but the communities don't want to move
because
they said they grew up there and they
can't move.

29

00:03:30,270 --> 00:03:33,050

Let's say if one house gets flooded,
bad luck.

30

00:03:33,290 --> 00:03:36,570

If a whole complex gets flooded,
bad luck.

31

00:03:37,270 --> 00:03:42,270

But if it's a whole area or a whole
neighborhood
that gets flooded, people just say it's still
bad luck.

32

00:03:42,480 --> 00:03:44,420

You know it is what it is.
It's your fate.

3) Air Pollution

1

00:00:13,190 --> 00:00:16,150

Traffic's getting bad and
then from that, the CO2 rises

2

00:00:17,300 --> 00:00:25,470

and you can see the fog coming from the cars
and vehicles everywhere and it's really visible

3

00:00:30,000 --> 00:00:36,300

How you feel the air like so dirty,
even your skin feels like yuck

4

00:00:36,450 --> 00:00:41,000

It's very different from Australia,
how we get 40 degrees and going outside.

5

00:00:41,300 --> 00:00:46,440

In Bali at 26 degrees it feels like 50 [degrees]
or something because of the air pollution.

6

00:00:50,570 --> 00:00:54,000

On top of just climate change there's also
a lot more pollution in the air as well.

7

00:00:54,300 --> 00:00:58,150

I don't think there was as much of a traffic
problem - in Jakarta at least -when I was growing
up.

8

00:00:58,450 --> 00:01:03,340

It wasn't as bad as it is now and
now there's a lot more smog.

9

00:01:04,000 --> 00:01:07,180

You can go out and you just feel heat right away
in the sense that you just feel sticky

10

00:01:07,490 --> 00:01:11,200

whereas back in the day - even when I was in
junior high school - it wasn't as bad

11

00:01:16,530 --> 00:01:21,190

I drive because I can't really go out
without cars because it's dangerous.

12

00:01:21,490 --> 00:01:28,190

The first thing is dangerous and then
it's very dirty like the air pollution.

13

00:01:29,040 --> 00:01:32,550

I can't stand waiting outside
for more than ten minutes.

14

00:01:37,240 --> 00:01:42,190

The need of motor vehicles ...
the air gets polluted

15

00:01:42,340 --> 00:01:48,150

and that's very very bad
for people's health

16

00:01:53,440 --> 00:01:58,110

Here they just walk whenever, but in Jakarta
you can't just because of the pollution.

17

00:02:03,340 --> 00:02:07,390

If you go from our city to Jakarta,
you can really feel the air pollution.

18

00:02:12,510 --> 00:02:18,590

A lot of vehicles in Jakarta so
the air pollution is really bad too

19

00:02:22,040 --> 00:02:25,450

In Jakarta, it's very common when you
see people always [wearing] masks
everywhere

20

00:02:31,010 --> 00:02:34,080

It gets to a point where people go out
of Jakarta to go get fresh air

21

00:02:34,380 --> 00:02:35,370

because you can't get it anymore in the city

22

00:02:40,130 --> 00:02:42,530

When they don't like something
oh oh this smells or something

23

00:02:43,230 --> 00:02:49,530

and then they use their electric fan
to drive the smell away, well that's not good.

24

00:02:50,230 --> 00:02:54,230

If you spray something then once again
you put something in the air.

25

00:02:57,420 --> 00:03:01,210

They have a lot of regulations about traffic,
but it's just making things worse.

26

00:03:05,170 --> 00:03:10,120

For me, I think it's more individual
because each person can have lots of cars

27

00:03:11,120 --> 00:03:17,260

and they have to go everywhere by car
because we don't have lots of public transport

28

00:03:20,480 --> 00:03:24,250

In my experience, it's not that safe
using public transport in Indonesia

29

00:03:27,490 --> 00:03:30,420

There are no bike lanes in Indonesia.
Everything's kind of just like phew crazy.

30

00:03:34,220 --> 00:03:36,570

These friends in high school - they would be
a family of five - and they would have five cars

31

00:03:37,270 --> 00:03:41,050

and I'd be like why do you need five cars?
It's like ah there's one for every person.

32

00:03:44,480 --> 00:03:48,440

You can't even take the public transport.
Either it's too expensive or it's too packed.

33

00:03:51,590 --> 00:03:54,420

People already have their mindset
for a very long time

34

00:03:55,270 --> 00:03:59,120

that "I'll just use my personal vehicle"
so it's really hard

35

00:03:59,420 --> 00:04:04,430

to get people out of their comfort zone,
catching a bus or catching a tram

36

00:04:08,260 --> 00:04:15,460

Making this big change ... I guess it's very
hard to make just in one or two years change.

37

00:04:16,460 --> 00:04:22,110

It's going to be more like a long term
development, long term of change

4) Rubbish Disposal

1

00:00:11,400 --> 00:00:17,000

In my hometown,so usually people
live nearby the river

2

00:00:19,000 --> 00:00:28,000

... Indonesian people with a low income
condition
and I can say that they are less educated too

3

00:00:29,000 --> 00:00:35,070

so they have like less awareness
about how you should treat the river.

4

00:00:36,000 --> 00:00:42,000

And also like throwing the rubbish too
because
they think that "okay we just put the rubbish
there

5

00:00:42,300 --> 00:00:47,290

and the rubbish [goes] away and [goes] to
the sea or something" so that's the problem
too

6

00:00:51,340 --> 00:00:54,000

When I was a child,
[we] did [it] like that.

7

00:00:54,300 --> 00:00:59,510

We throw the rubbish into the river, but
in summer, we just burn[ed] all the rubbish

8

00:01:04,010 --> 00:01:09,260

If you go to Jakarta, like the river, ...
wherever you go you will see rubbish everywhere

9

00:01:13,050 --> 00:01:20,580

The government provide[s] a collection bay.
People can put the rubbish in there

10

00:01:22,040 --> 00:01:28,340

and a truck that can ... from the government that come
at a certain time ... pick up and then

11

00:01:29,140 --> 00:01:36,520

sometimes when they do that they just take
it to where there is a cliff there

12

00:01:37,170 --> 00:01:40,360

and just drop it there,
and it later become[s] a landfill

13

00:01:44,400 --> 00:01:51,010

People sometimes enjoying the beach
but there was a lot of trash.

14

00:01:52,060 --> 00:01:58,390

They just threw [it] ... probably because
they didn't provide us the rubbish bins.

15

00:02:02,540 --> 00:02:08,080

It's made really difficult by the government
because they don't provide like enough bins

16

00:02:12,080 --> 00:02:18,500

and then they don't have any rules. Like in
Singapore,
they get fined if they throw something on the
street.

17

00:02:19,190 --> 00:02:25,360

In [Indonesia], it's just normal like
people just throwing stuff on the street.

18

00:02:30,010 --> 00:02:36,080

In my household my mom hates that so like
I could never like throw the [waste] everywhere.

19

00:02:37,100 --> 00:02:42,080

I usually just put it in my bag or like
put it in my pocket until I found a rubbish bin.

20

00:02:43,370 --> 00:02:49,130

But I guess that's just me
not like most Indonesians.

21

00:02:53,090 --> 00:02:56,080

We don't separate our trash.
In Indonesia, we just have

22

00:02:56,450 --> 00:03:04,120

like this big one and all in for that one
and we don't have like the culture of

23

00:03:04,510 --> 00:03:08,340

throwing stuff where it's supposed
to be ... just throw it all away

24

00:03:12,400 --> 00:03:16,130

There's no such thing as a
recycle or general waste bin.

25

00:03:17,070 --> 00:03:23,070

They don't put it separate. They just
started to, but that doesn't really work

26

00:03:24,120 --> 00:03:30,100

because since we were so young they
never teach us like we have to separate

27

00:03:32,000 --> 00:03:37,430

our things that we don't use when we want
to throw it so we just have no idea.

28

00:03:41,320 --> 00:03:49,150

Now the government [tries] to put the rubbish
bin for recycle and then I recycle things.

29

00:03:50,120 --> 00:03:56,260

However, the government is not really
[giving]
much information about that so like

30

00:03:57,230 --> 00:04:04,160

people don't know what exactly it is. I think
it's one
of the weaknesses ... why it's not really
effective.

31

00:04:08,360 --> 00:04:13,020

Sometimes I throw some rubbish
outside of my car

32

00:04:13,500 --> 00:04:20,080

but since I came here and she told me not
to throw trash into places or streets

33

00:04:21,000 --> 00:04:28,330

and just put it in the rubbish bin and I start[ed]
to learn that the environment is very
important

34

00:04:33,180 --> 00:04:36,160

I think we all do. We all have the
ability to change because just

35

00:04:38,150 --> 00:04:41,200

one thing you could do is just
throw trash in the right place

36

00:04:42,150 --> 00:04:45,590

and I think it's a small step towards
a bigger one, helping the community

37

00:04:47,000 --> 00:04:51,150

and also setting an example
to the younger generation

5) General Climate Change

1

00:00:13,180 --> 00:00:20,000

My father told me ... because like in the past there [was] not a lot of transportation and

7

00:00:58,250 --> 00:01:02,350

It's way too hot. You could burn your skin right away.

2

00:00:20,300 --> 00:00:28,000

they all [went] by bike and I asked him like "It's really hot now. I can't even ride a bike

8

00:01:04,000 --> 00:01:10,050

It's very different from my childhood. We used to hang out outside

3

00:00:29,000 --> 00:00:34,000

in the street because it's too much pollution and it's really hot like it's almost 40 degrees"

9

00:01:11,150 --> 00:01:14,290

but now we can't really do that anymore. I think the heat is because of

4

00:00:36,000 --> 00:00:42,000

and I asked my dad "How can you ride a bike like far far away with this temperature?"

10

00:01:15,240 --> 00:01:18,260

the ozone getting thinner. I think that's the reason.

5

00:00:43,000 --> 00:00:48,000

and my dad told me that "it's not this hot it's only around 20 or 30 [degrees]

11

00:01:24,070 --> 00:01:28,000

Now because of the climate change, the temperature increased

6

00:00:49,000 --> 00:00:52,590

and they [had] lots of trees before so it's totally different"

12

00:01:30,000 --> 00:01:32,470

and maybe it prevent[s] kids from going outside

13

00:01:37,460 --> 00:01:40,540

They told me that back in the
day Jakarta was a lot cleaner.

14

00:01:41,250 --> 00:01:48,530

The environment [was] very good compared
to this
day and it was a lot colder back in the day

15

00:01:54,410 --> 00:01:57,070

I can't accept it like we just say
"Oh because the world's getting hotter ...

16

00:01:57,430 --> 00:02:02,580

oh yeah we need to build this or we need to
buy
[an] air conditioner". That's not solving the
problem.

17

00:02:03,400 --> 00:02:07,050

I think to solve the problem we need to
do something for the best for the world.

18

00:02:12,240 --> 00:02:18,420

Lately, it's the changing of
[the] climate and environment

19

00:02:24,120 --> 00:02:29,200

I remember like a rainy season and summer.
We [could] predict because it's exactly

20

00:02:29,530 --> 00:02:35,000

like six months and then another
six months, but now it's unpredictable.

21

00:02:38,450 --> 00:02:41,440

Indonesia basically has two seasons:
the rainy and the dry season.

22

00:02:42,070 --> 00:02:45,060

But it's just becoming more
and more random basically.

23

00:02:48,210 --> 00:02:52,070

All that we get from the school is that
the rainy season starts from October to March

24

00:02:52,460 --> 00:02:54,550

and the dry season starts from
March until October.

25

00:02:55,360 --> 00:02:58,550

But now rain can happen any time and
the dry season can happen any time also.

26

00:03:03,240 --> 00:03:08,070

It was consistent, but then in the
last ten years it changes a lot.

27

00:03:12,160 --> 00:03:17,290

The weather is more
unpredictable to me

28

00:03:22,100 --> 00:03:25,140

Some days it just rain[s]
for the whole day and then

29

00:03:25,560 --> 00:03:33,330

the next day is hot ... just confused ...
not really something we can forecast

30

00:03:38,320 --> 00:03:42,120

I never check the weather in Indonesia
because in the morning it could be super hot

31

00:03:42,420 --> 00:03:45,080

and then raining, but there's
no forecast about it

32

00:03:49,400 --> 00:03:53,430

These rains ... sometimes you get too much
water ... maybe climate change or something

33

00:03:58,380 --> 00:04:03,100

... the rainy season, but like perhaps
there's some days where it's still pretty dry

34

00:04:06,550 --> 00:04:12,150

I know that they have no
rain for quite some time

35

00:04:13,260 --> 00:04:18,090

... probably months and people suffer
there when there is no rain

36

00:04:22,350 --> 00:04:27,110

When I was a [child], it was still good
in terms of the growing seasons because

41

00:05:06,590 --> 00:05:10,530

You can't prevent climate change,
but you can minimize the impact of it

37

00:04:27,530 --> 00:04:37,030

it was still four times a year but ...
since ten years ago I think, the farmers

38

00:04:38,160 --> 00:04:45,590

sell the rice field[s] and then
they work by going to another country

39

00:04:46,220 --> 00:04:53,080

because they don't have any choices
anymore to work in the rice field

40

00:04:57,300 --> 00:05:03,190

I know even though there are improvements
that there's a long way to go