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| C:\Users\bjaco\AppData\Local\Microsoft\Windows\INetCache\Content.Word\SLS-Teaching-Toolkit-Logo_Stacked-Initials.jpg | Technology and Social Context |
| **Discipline:** All | **Type:** Discussion and/or writing assignment | **Time Commitment:** 45-60 minutes | **Category**: Case Studies |
| **Big Ideas:** [Social, Cultural & Environmental Context](https://serve-learn-sustain.gatech.edu/big-idea/social-cultural-environmental-context); [Sustainable Urban Development](https://serve-learn-sustain.gatech.edu/big-idea/sustainable-urban-development) |
| **OVERVIEW:** This tool helps students understand how technology always carries an ethical dimension and that social context and power relations of a particular community must be taken into consideration for all projects. Social context, including history, culture, and politics, helps to determine ethical allowances and constraints, as well as what is appropriate for any given technology and environment: this is what Science and Technology Studies refers to as “interpretative flexibility.” In this tool, students will learn the basics of interpretative flexibility by critically evaluating situations with attention to the context of the communities in which engineers are working. The tool explores three different frameworks as models for what to do, and what not to do. These include: 1) unethical situations where technology is used to exploit the population; 2) situations made unethical due to a lack of attention to the particulars of a community and 3) ethical situations where technology successfully takes the local context of a community into account.This tool was contributed by Katie Martin, Bethany Jacobs, Kevin Lanza, Molly Slavin, and Jennifer Hirsch. |
| **INSTRUCTIONS:**You can use this tool as an in-class discussion activity, and a take-home assignment. See below for detailed instructions. |
| **SLS STUDENT LEARNING OUTCOMES & ASSESSMENT:**The Serve-Learn-Sustain toolkit teaching tools are designed to help students achieve not only SLS student learning outcomes (SLOs), but the unique learning outcomes for your own courses. Reflection, concept maps, rubrics, and other assessment methods are shown to improve student learning. For resources on how to assess your students’ work, please review our [Assessment Tools](http://serve-learn-sustain.gatech.edu/tool-category/assessment). **This tool achieves SLOs 1, 2 & 3. See the end of this tool for further details.** |

**Want Help?**

Jennifer Hirsch is the contact for this tool. You can reach her at jennifer.hirsch@gatech.edu.

Technology and Social Context

**Overview**

This tool helps students understand how social context can influence the success or failure of projects; as a result, students will learn to design their own projects, both local and abroad, with attention to the context and the communities in which they’re working.

Below you will find detailed instructions for two possible activities, one an in-class discussion, and one take-home writing assignment.

# **Discussion Activity: (45-60 minutes) \***

**PART I:** The case studies are divided into three categories:

1. situations where entities use social context and power structures to exploit a population;
2. situations where projects fail by not accounting for the social context of a community; and
3. situations where projects succeed by accounting for the social context of a community.

Based upon the subjects which overlap with your class, select a case study (or video) from each category for a total of 3 readings or videos. Depending on the timeframe of your class, it may be best to limit your video usage to one. You may assign these readings and videos as homework prior to class, or ask students to read them during the class period.

**PART II (15 minutes):** Ask students to read the case study you selected from the first category. After students have read the case study ask the following questions, allowing thorough discussion between questions:

1. How does this case study relate to my field and major?
2. How do the actors in this case study make decisions for communities that exploit the population through the use of technology?
3. As a student and a professional, how can I learn from these examples? How can that learning help me with designing projects in the future?

**PART III (15 minutes) \*:** Ask students to read the case study you selected from the second category. After students have read the case study, ask the following questions, allowing thorough discussion between questions:

1. How does this case study relate to my field and major?
2. How could the actors in this case study have learned about the social context of the community they were working in? In what ways do you think understanding the social context would have changed the outcome of the project?
3. In this case study, how does social context relate to the overall sustainability of the project and/or community in question?
4. When you design projects, they impact/will impact the communities in which you work. How would understanding gender inequality and gender roles in a community help your work in that community? How would understanding race and its influence and effects on a community help your work in that community? What about socioeconomics/education/disability?

**PART IV (15 minutes) \*:** Ask students to read through case study you selected from the third category. After students have read the case study, ask the following questions, allowing thorough discussion between questions:

1. How did the actors in this case study learn the social context of this community?
2. How did they apply their knowledge of the social, economic, and/or environmental context to the project in the case study?
3. In what ways can you consider social context in projects you work on now or in the future?
4. Why is it important to understand social, economic, and/or environmental context to projects you work on? What are your obligations to the community in which you operate?

\* Note: The timeframe for this activity is based on the assumption that reading each case study will take about five minutes, with discussion taking about 10 minutes. If, however, you select videos, bear in mind this will increase the activity length respective to the video length.

# **Take-Home Writing Assignment**

**PART I:** The case studies are divided into three sections:

1. situations where entities use social context and power structures to exploit a population;
2. situations where projects fail by not accounting for the social context of a community; and
3. situations where projects succeed by accounting for the social context of a community.

Based upon the subjects which overlap with your class, select a case study (or video) from each category for a total of three readings or videos. Assign these readings/videos to your students and accompany them with the writing prompt below. You may also wish to assign students the discussion questions above as a brainstorming, blogging, or more formal writing activity.

**Writing Prompt:** Write 500 words on the relevance of social context to successfully and ethically completing a project in your field. What are your obligations to the community in which you operate? What are some of the components of a community that a project team needs to understand? What are the economic, demographic, and environmental conditions which project teams should consider when planning and implementing a project in a community? What aspects of gender equality, racial justice, and community health should project teams consider when designing or helping to design a project for a community?

Mini-Case Studies

# **Category 1: Situations where entities use power structures and politics to exploit a population**

## ***El Cortito*: Agricultural Work in California**

*El Cortito* is the name of a short-handled hoe that migrant workers used on California farms in the early 20th century. These short-handled hoes required workers to stoop to do their work, a practice that was very hard on their bodies and had long-term health consequences. Farm managers maintained that these hoes were better because they reduced damage to crops in the weeding work, while critics of *el cortito* hypothesize there were ulterior motives behind the implementation of the tool, including: “a need to maintain control over the workers in an effort to assure a profitable return” (Murray, 1982).

Figure 1, Agricultural Workers in the Fields, sits.sjsu.edu

A supervisor on one of the farms using *el cortito* said, “With the long-handled hoe I can’t tell whether they are working or just leaning on their hoes. With the short-handled hoe I know when they are not working by how often they stand up” (Murray, 1982). The short-handled hoe allowed supervisors to track how many breaks their workers were taking, which meant they could prevent long or frequent breaks, thereby increasing productivity and profits for the farm. Furthermore, the short-handled hoe prevented workers from having conversations on the job, and supervisors saw this as discouraging unionization, preventing farm workers from organizing (Leydens & Lucena, 2018).

The short-handled hoe and other working conditions were at the center of several strikes and protests by farm workers (specifically, unionized workers) beginning in the 1920s and continuing into the 1970s. Organized labor leaders like Cesar Chavez pushed for better protections for workers, which would entail the banning of *el cortito.* Eventually, government hearings and a California Supreme Court ruling resulted in Administrative Interpretation No. 62, which banned the short-handled hoe in 1975, citing proven health hazards*.* Since the ban, agricultural workers have been healthier, both individually and collectively. This has resulted in less turnover, allowing unions in the industry to grow (Murray, 1982), which in turn affords agricultural workers more protections and space to advocate for further safety regulations. The success of the ban on *el cortito* has also encouraged unionized resistance to other working conditions in the agricultural industry.

**Works Cited**

Leydens, Jon A., & Lucena, Juan C. (2018). Social Justice is Often Invisible in Engineering Education and Practice. In *Engineering Justice: Transforming Engineering Education and Practice* (pp. 45-66). Piscataway, NJ: IEEE Press.

Murray, D. L. (1982). The Abolition of El Cortito, the Short-Handled Hoe A Case Study in Social Conflict and State Policy in California Agriculture. *Social Problems,* *30*(1), 26-39. Retrieved from http://www.jstor.org/stable/800182

## **Flint, Michigan Water Crisis and Lead Poisoning**

On April 25th, 2014, the city of Flint, Michigan switched water providers from the Detroit Water and Sewage Department to the local Flint River. Flint, a declining industrial town where, at the time of the switch, 41.2% of residents lived below the poverty line and 56.6% were African-American, was experiencing a dramatic economic deficit (CNN). The switch to the Flint River (billed as temporary while Flint built its own pipeline to the Karegnondi Water Authority) had the potential to save the city $200 million over the next twenty-five years (Kennedy). City officials, including Mayor Dayne Walling, asserted that, “It’s regular, good, pure drinking water, and it’s right in our backyard” (Cherry). Unfortunately, this decision to choose the cheaper option (using the Flint River as the city’s water source) proved to have a catastrophic effect on the city.

Within days, residents complained of the water’s look and smell. By August, e-coli and fecal coliform levels in the water prompted water boiling advisories. However, the most insidious effect of the water switch wasn’t obvious until several months later, when the EPA asserted that corrosive elements in the water were breaking down lead pipes. Both the EPA, and later, Virginia Tech professor Marc Edwards, notified the city that lead ppb (parts per billion) dramatically exceeded safe water levels. Water in the home of Flint resident Lee Ann Walters, for example, tested at 397 ppb. The EPA sets a safety limit of 15 ppb. The increased pollutants affecting the citizens of Flint were linked to the administration’s decision to save money on their water infrastructure and choosing not to invest in better technology in their water infrastructure.

Figure 2, Protestors in Flint, npr.org

As the crisis unfolded, one of its most disturbing elements was the insistence of state and city officials, including Governor Rick Snyder, that the water was safe, that reports to the contrary were unfounded, and that opportunities to switch the water source were untenable because of associated costs. But by January 5th, 2015, Gov. Snyder had declared a state of emergency in Flint. Over the coming months multiple city officials resigned, and as of 2018, 15 people have been criminally charged in relationship to the crisis, while the long-term effects of the lead poisoning remain unknown (Egan).

For more information please see: [SLS Case Study: The Flint Water Crisis](https://serve-learn-sustain.gatech.edu/sls-case-study-flint-water-crisis)

**Works Cited**

Egan, Paul. (2017) [These are the 15 people criminally charged in the Flint water crisis](http://www.freep.com/story/news/local/michigan/flint-water-crisis/2017/06/14/flint-water-crisis-charges/397425001/). *Detroit Free Press.*

Cherry, Anna. (2017) [How Flint’s water crisis has changes its citizens](http://www.urbo.com/content/how-flints-water-crisis-has-changed-its-citizens). *URBO*.

No author. (2017). [Flint Water Crisis Fast Facts](https://www.cnn.com/2016/03/04/us/flint-water-crisis-fast-facts/index.html). CNN.

Kennedy, Merrit. (2016) [Lead-Laced Water in Flint: A Step-by-Step Look at the Makings of a Crisis](http://www.npr.org/sections/thetwo-way/2016/04/20/465545378/lead-laced-water-in-flint-a-step-by-step-look-at-the-makings-of-a-crisis). NPR.

## **MARTA and Interstate Highway Construction**

Traffic congestion has plagued Atlanta for decades, with no clear solutions in sight. Troublingly, these conditions could have been prevented. A robust transit system could have avoided (and perhaps could still avoid) Atlanta’s traffic problems. In 1965, the Georgia General Assembly voted to create MARTA, the Metropolitan Atlanta Rapid Transit Authority, with service to the City of Atlanta and what at the time were all five metro countries: Clayton, Cobb, DeKalb, Fulton, and Gwinnett. Yet, the transit system needed approval from each county to extend its services to their citizens. Ultimately, the suburban counties of Cobb, Clayton, and Gwinnett voted against MARTA in order to maintain their separation from the inner city, a decision that has drastically limited the efficacy of the transit system and severely restricted MARTA’s funding sources.

Figure 3, Atlanta Traffic and MARTA, wsbradio.org

Why did this happen? There are a number of reasons, none of which reflect positively on the city’s race relations. Doug Monroe writes that, “The 1965 and 1971 votes against MARTA by residents of Cobb, Clayton, and Gwinnett weren’t votes about transportation. They were referendums on race” (Atlanta Magazine). The population of the suburbs grew exponentially during the post-war period, and the population growth was largely “white flight” from the inner city. People were able to move due to transportation and housing policies that “supported population de-concentration and white flight,” according to the Partnership for Southern Equity. As a result of these deliberate federal planning policies, the predominately white suburbanites of that era saw a racial division between their counties and the City of Atlanta. A rail system, they feared, would threaten that division by making it easier for people of color to get from Atlanta into the suburbs.

Suburban residents were much more inclined to use the developing interstates, a system that aligned with their image of themselves as affluent and sophisticated. Cars were (and still are, to some extent) associated with wealth and status, while public transit is associated with being poor, working-class, and from the inner city. But as Ronald H. Bayor observes in *Race and the Shaping of Twentieth-Century Atlanta,* these interstates were designed to “serve a racial function” by literally concretizing the boundary between white and black neighborhoods. The very act of building these interstates cut through and demolished black communities in the service of securing that boundary. Sweet Auburn, a neighborhood near downtown Atlanta where Dr. Martin Luther King, Jr., was born, caught the brunt of the effects of this racist interstate building project: the “downtown connector” (I-75/85) cuts right through the heart of this historically black neighborhood. The interstate has created blight, vacated buildings, and destroyed infrastructure in a formerly thriving community. Developing the highways in Sweet Auburn and other similar neighborhoods allowed those in power to limit the options of communities of color, demolishing their long-built communities, ensuring the only way to travel through these areas was by car (which discourages commerce and community), and further limiting their access to amenities like public transit.

These actions have created metro traffic conditions that have hamstringed the city and limited options for sustainable growth. And yet, today, suburban Atlantans continue to vote against the expansion of MARTA, instead opting for congested roads. Rather than viewing the system as a way to decrease congestion and air pollution, many continue to associate the MARTA with poor people of color. This prejudiced perspective fuels continuing resistance to a more encompassing transit system. The effects of that prejudice on Atlanta’s economy, air pollution, and national reputation are as unpleasant as the racism that created the problem in the first place.

This may change in the near future: the Partnership for Southern Equity notes that “regional demographics are shifting as the same neighborhoods in the City of Atlanta that were previously abandoned by the affluent are facing gentrification and displacement pressures,” with poverty subsequently becoming more suburbanized than in years past: what the Partnership calls “a demographic inversion.” Regardless of what paths the future may take, it is important that we do not repeat the patterns of years past; a focus on racial equity, or an insistence that all people are able to access rights like mobility and public transportation, regardless of their race or ethnicity. It is only then that we can begin to right the wrongs of planning decisions of years past.

**Works Cited**

Bayor, Ronald H. (1996) *Race and the Shaping of Twentieth-century Atlanta.* The Fred W. Morrison Series in Southern Studies. Chapel Hill: University of North Carolina Press.

Monroe, Doug. (2012). [Where It All Went Wrong](http://www.atlantamagazine.com/great-reads/marta-tsplost-transportation/). *Atlanta Magazine.*

Partnership for Southern Equity. (2017). [Opportunity Deferred: Race, Transportation, and the Future of Metropolitan Atlanta](http://psequity.org/wp-content/uploads/2017/10/2017-PSE-Opportunity-Deferred.pdf). Partnership for Southern Equity.

Video: [Race, Space, and Opportunity: A Tale of Two Regions](https://smartech.gatech.edu/handle/1853/56425). (2017). Serve-Learn-Sustain with Partnership for Southern Equity.

## **Dakota Access Pipeline Protests and Construction (9 min video)**

One of the largest sustainability issues of the twenty-first century so far has been the Dakota Access Pipeline, an oil pipeline that reaches from North Dakota to Illinois. There were immediate issues identified: not only does the pipeline do nothing to move the United States away from non-sustainable resources like oil, continues to prop up environmentally-unfriendly industries like drilling and fracking, and presents a danger of contaminating sources of drinking water, the Dakota Access Pipeline (DAPL) cuts through tribal, sojourn, and, in some cases, ceremonial land belonging to Sioux tribal nations resident in the areas affected. Besides DAPL’s contributions to climate change, its construction continues the erosion of Native American power of tribal land, begun with the arrival of white Europeans in the United States and continued apace throughout the centuries.

The intertwined issues of sustainability and respect for indigenous rights came together in sustained protests against the pipeline that reached wide public knowledge in late 2016. After years of protests at Standing Rock, the Obama Administration halted the Dakota Access Pipeline project on the Standing Rock Sioux Tribal Land in November 2016. A few days into President Trump’s administration, Trump signed an executive order to speed along the permitting process for DAPL. This video views some of the political and judicial events over the protest period, including the lawsuit that was filed by the Standing Rock Sioux Tribe stating that proper procedures for permitting were not enacted. The construction of the pipeline, completed in April 2017, is another link in a long chain of Native American dispossession by the United States federal government by continuing to ignore local needs and Native history.

Figure 4, Protestors at Standing Rock, medium.com

**Works Cited**

No Author. (2017). [Despite Protests, Dakota Access Pipeline Nears Completion. YouTube](https://www.youtube.com/watch?v=qJZ1-LAFOTo). PBS NewsHour.

# **Category 2: Situations where projects fail by not accounting for the competing ethical claims and power structures of a given community**

## **Pruitt-Igoe and Changing Political Landscapes**

The Pruitt-Igoe public housing development in St. Louis, Missouri was completed in 1954. Opening just prior to Brown vs. Board of Education, which desegregated American public schools, it was a high-rise, whites-only affordable housing project, consisting of 33 towers each with 11 stories. This style of public housing was implemented to provide high-density units near green space. Urban areas throughout the country had been predicted to continue to grow, though urban populations in cities like St. Louis were beginning to decline.

Figure 5, Pruitt-Igoe, theguardian.com

The Public Housing Administration objected to the original plans for Pruitt-Igoe, insisting that it should be built at a lower cost. This resulted in the use of low-quality building materials. The Pruitt-Igoe public housing units were built in a time of segregation, but following Brown v. Board of Education in 1954, there was mandated integration throughout the housing complex. This caused white residents to flee from the development, many ending up in the suburbs away from the “problems” of the inner city. Pruitt-Igoe was built as housing for the middle class, but after its opening it became an economic and racial ghetto. It began to be perceived as a place of danger and high crime, though the statistics on this are debatable. Within two decades, authorities demolished two towers of the complex on live television.

Those who use the Pruitt-Igoe project as an example of why high-rise public housing cannot be socially or economically sustainable sometimes point toward the architect, Minoru Yamasaki. His critics call him a social-engineering modernist and believe he ignored the needs of common people who were to live in the complex. But these critics often overlook the many changes occurring at the same time within the urban environment, both in St. Louis as well as throughout the country. For example, many people, specifically middle class and white, fled the inner city due to racist assumptions about crime and danger. Furthermore, housing in the suburbs was becoming more accessible to middle class citizens, especially with the changes in lending practices and the increase of highway transit (for more information, see the case study in Category 1, “MARTA and Interstate Highway Construction”).

Because of the way funding works for public housing, there are regulations which prevent government funding from going toward operations and maintenance costs (Why Did Pruitt-Igoe Fail?, n.d.). This led to operations and maintenance costs (at this time in public housing history) coming from the rents of the tenants, and therefore, the public housing buildings were not maintained at the same level as private apartment buildings. This led to the degradation of the property within a few years of opening.

While the issues surrounding Pruitt-Igoe are complicated, what’s certain is that the planning of the complex did not sufficiently consider the various social dynamics that would contribute to, and more accurately limit, its effectiveness.

**Works Cited**

Marshall, Colin. (2015). [Pruitt-Igoe: The Troubled High-Rise That Came to Define Urban America – A History of Cities in 50 Buildings, Day 21](https://www.theguardian.com/cities/2015/apr/22/pruitt-igoe-high-rise-urban-america-history-cities). *The Guardian.*

No Author. (n.d.) [Why Did Pruitt-Igoe Fail?](https://www.huduser.gov/portal/pdredge/pdr_edge_featd_article_110314.html) HUD User.

**Further Resource**

Friedrichs, Chad (dir). (2011). *The Pruitt-Igoe Myth.* (documentary film)

## **El Cajón Dam in Honduras**

El Cajón Dam was built in the early 1980s in Honduras. It was meant to decrease foreign dependency on fossil fuels and to increase the country’s energy independence and potential to sell power to its neighboring countries. However, the project ultimately failed due to issues related to power differentials and political leverage.

The World Bank, the Inter-American Development Bank (both international financial institutions), and engineering and design contractors proposed this massive infrastructure project, yet many public figures and the general public, including Honduran engineers and professionals, pushed back against it. The corporation that had the opportunity to make revenue off of the dam, the Honduran national electric utility, opposed the grandeur of the project. The main concerns of protesting individuals were the size of the project (both in cost and in disruption of local environment), the danger to people in the downstream of the dam in case of dam failure, and the use of resources within the country that could be used in other, more modest projects. It was alternatively suggested that multiple dams should be produced for the same cost of El Cajón Dam to help decrease the overall environmental and displacement effect of the dam, while allowing for a spread of the resources and energy production throughout the country. The World Bank noted that the project was massive relative to the size of the economy of Honduras, and because of the country’s small size and relatively small economy, it would take many years to pay off the projects’ debts. Regardless of the negative public feedback, the World Bank and its partners moved forward with the project.

Figure 6, El Cajón Dam, sites.lafayette.edu

El Cajón Dam is now considered a failure for many of the reasons anticipated by critics prior to its construction. The high cost of the dam’s construction has put the Honduran nation into deep debt, something exacerbated by the devaluation of its currency. The dam needed repairs and maintenance just a few years after the completion of construction, which only increased project debts. Furthermore, the dam has not realized its estimated power generating capacity because of maintenance issues and drought in the area. In later reports, the World Bank recognized that those critical of the project were correct in their predictions. Because the World Bank dismissed the social, economic, and environmental contexts that drove criticism, they have incurred millions of dollars in debt for the Honduran nation.

Lucena, Juan, Schneider, Jen & Leydens, Jon A. (2010). Listening to Community. In *Engineering and Sustainable Community Development* (pp.118-121). San Rafael, CA: Morgan & Claypool.

## **Admitting Failure in International Development (One Three-Part Case Study)**

The following three stories of international development are examples of projects failing due to not accounting for the social context of a community. Each of these stories is published on a website called [Admitting Failure](https://www.admittingfailure.org/failure/edward-carr/), a blog run by Engineers Without Borders, which views failure as a learning opportunity and a chance for innovation.

*A Nursery in Ghana*

A researcher working in a village in Ghana had some resources to put towards a village improvement project, one which he wanted the residents to identify and design themselves. He and his cohort spoke with the men and women villagers as a group, but the conversation was dominated by the men. One of the cohort spoke with the women alone and found that the women of the community wanted a nursery to give them more autonomy and a way to work outside of their households.

The researchers worked with community members to create a plan to raise the funding necessary to build a nursery, and the community only needed to mobilize the workforce to do the building. The researchers left the community and returned for regular check-ins to find that the nursery was never built. The researchers, after speaking with community members, realized that the men had halted the plan because they did not want the women of the community to have more autonomy or to work outside the household. More attention to gender relations in this community, and strategizing ways to work in that context, would have allowed the nursery to be built successfully.

Carr, Edward. (2012). [Ed Fail: Lessons in Building a Nursery](https://www.admittingfailure.org/failure/edward-carr/). Admitting Failure.

*Baking Bread*

A Peace Corps Volunteer (PCV) worked with a group of women to create a baking business, baking fresh bread for a small village where there was no access to fresh bread otherwise. The PCV asked these women to raise a small amount of capital while getting the majority of the funding from the Peace Corps ($100) to help fund the start-up of the bread-making business. While the village women made the bread and facilitated the selling, the PCV maintained the cashbox and kept thorough records. The small bread-making business was successful and brought in a small profit, which was intended to be reinvested into the bread-making business. Once the women seemed to have a good handle on the logistics of the company as well as seemed to be comfortable with managing the finances of the small company, the PCV gave the cash box and ledgers to the village women. Soon after, the bread-making stopped, and the village women split the profit. The PCV later realized that by not getting the village women to invest more of their own capital into the business, they were not as heavily invested in its long-term success. When the PCV was no longer part of the day-to-day operations, the village women decided to dissolve the business and get an immediate financial return, something that they could immediately put to good use.

Uhl, Anthony. (2012). [Why a Small Business that Started So Well, Ended So Quickly](https://www.admittingfailure.org/failure/anthony/). Admitting Failure.

*Solar Cookers*

A researcher in Kenya intended to lessen use of firewood in villages by installing solar cookers. But in order to use the cookers, villagers would have to cook outside. After making very little progress the researcher learned that this community considered it taboo to cook in the open, because in times of near starvation, it is considered rude to show that a household has food while others may not. For this reason, villagers continued to use firewood. Because the researcher did not understand the social context of these communities, he was promoting an impractical technology.

Goldmann, Mattias. (2012). [Failure to Understand Local Context](https://www.admittingfailure.org/failure/mattias-goldmann/). Admitting Failure.

## **Want to help someone? Shut up and listen! (video – 17 minutes)**

Ernesto Sirolli has been working in international aid for decades. In his TED Talk, he discusses the ways that international aid workers often harm the communities they work within, because aid workers are too impatient and do not often take the time to listen to the community’s needs. Sirolli suggests that for international aid to be long-lasting and sustainable, aid organizations need to “shut up and listen.”

Figure 8, Ernesto Sirolli, sirolli.com

**Works Cited**

Sirolli, Ernesto. (2012). [Ernesto Sirolli: Want to Help Someone? Shut Up and Listen!](https://www.ted.com/talks/ernesto_sirolli_want_to_help_someone_shut_up_and_listen?language=en). TED Talks.

# **Category 3: Situations where projects succeed, ethically and otherwise, by accounting for the social context of a community**

## **Adjusting to the Needs of the Local Population: Liberia and Mental Health (GT Example)**

In a partnership with the Carter Center and Emory University, Dr. Ellen Zegura, Professor and Fleming Chair in Telecommunications in the School of Computer Science at Georgia Tech, developed the Patient Encounter Form (PEF) software over a period of time from 2012-2015. Mental health clinicians in Liberia use this software to record data from patient visits. The goal of the project is to create and sustain a data gathering practice for mental health providers.

Because the partners were working in Liberia, understanding the context of the country was essential to success. The partners encountered various obstacles to implementing their software, including: unreliable power, limited internet access, widespread computer viruses, issues of clinician workload, and mental health providers’ limited prior experience with computing. The partners knew some of these issues prior to development of the project, while other issues became evident throughout the project’s progression.

For example, many Liberian clinicians did not enjoy using computers to record information. They distrusted the reliability of technology, and for good reason: in order for clinicians to upload patient data using PEF software, they needed a number of factors to work in their favor: the clinic itself needed to have working power, internet connectivity had to be reliable, and the laptops clinicians used needed to be free of viruses. For these reasons, clinicians felt more confident if they had a paper trail in addition to the digital file. The project partners responded by giving clinicians a writing pad with a “cheat sheet” structured to augment the computer-based process.

Figure 9, Dr. Ellen Zegura in Libera, cartercenter.org

The development of this computer-based tool was iterative and customizable, so the partners were able to adjust their process to the local needs of clinicians. This required surveys and interviews with the mental health providers to continue to adjust to their needs and the societal context, which resulted in a more successful process. This case study has been written about in more depth by the three partners in the development project. Read it [here](https://dl.acm.org/citation.cfm?id=2737856.2738016).

**Works Cited**

Dr. Ellen Zegura (personal interview) (Professor and Fleming Chair in Telecommunications, School of Computer Science, Georgia Institute of Technology)

## **Understanding the Importance of Social Cohesion: The 1995 Chicago Heat Wave**

In 1995, Chicago suffered through a catastrophic heat wave. The unexpectedly lethal natural disaster caused massive power outages, leading to the deaths of 739 people. In the years since, researchers have “failed to detect relationships between the weather and mortality that would explain what happened” (Klinenberg 2016).

Figure 10, Newspaper From 1995, chicago.suntimes.com

Many of the neighborhoods that fared the worst (highest rates of death) during the disaster were entirely black and disproportionately poor, yet a few of the neighborhoods with similar demographics had the lowest death rates across the city. Why the discrepancy? Sociologist Eric Klinenberg studied the heat wave to understand the differences in death tolls, comparing neighborhoods of similar demography to analyze why some neighborhoods had high survival rates and others did not.

It turns out that social cohesion mattered the most in whether residents survived the heat wave. When comparing two neighborhoods with similar demographics (mostly black and poor residents), one neighborhood that had lost many of its shops, churches, community organizations, and social clubs had one of the highest death rates in the city. This area was often described as “bombed out” and “abandoned” (Klinenberg 2016). However, a neighboring community that had many of these social organizations, churches, and shops had the social cohesion that prevented many deaths. This community had one of the lowest death rates in the city (3 in 100,000 residents): lower than even many white, wealthy neighborhoods in Chicago.

The sociologist found that the social cohesion had held together the neighborhood with the lowest death rate. People were checking on their neighbors, friends, and family. People were sitting in the street instead of taking shelter in their brick apartments which, without power, had become like ovens.

Understanding the importance of social cohesion in natural catastrophes can help governments plan for natural disasters, which are becoming more dangerous with our changing climate. It is not only the engineering and planning of a city, it is also the strength of community ties that determine who will survive these catastrophes. Social cohesion should continue to inform the planning and building of cities and their emergency responses. Read more about this subject in our [SLS Case Study: The 1995 Chicago Heat Wave](https://serve-learn-sustain.gatech.edu/1995-chicago-heat-wave).

**Works Cited**

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## **Urbanism, Environmentalism, and Social Sustainability: The Jolly Avenue Development Center in Clarkston, GA**

Clarkston, Georgia (about 20 miles east of Georgia Tech) has had one of the largest populations of resettled refugees in the United States since the early 1990s. The town is known as “the most diverse square mile in America” or “the Ellis Island of the South.” The non-profit [Friends of Refugees](https://friendsofrefugees.com/) (FoR) was founded in Clarkston in 1995 to meet the needs of newly arrived families, and still today organizes its goals and community development work around three pillars: well-being, education, and employment.

Though Friends of Refugees has existed for 24 years, the organization does not have a centralized home. In order to unify its work, Friends of Refugees has begun planning for and building the 20,000 square foot Jolly Avenue Development Center (JADC) on donated land at the center of the lowest-income census tract in Clarkston.

The JADC will be built in front of the site of FoR’s existing community gardens, which will allow the organization to expand its food and agricultural programs. It will also feature an edible landscape, public benches, and meeting space. It will host a full-time caretaker family who will operate the center and provide a “neighboring” presence. Overall, the JADC is being constructed with careful attention to environmental design and affordability: when completed, it will be the most operationally affordable and efficient building of its kind in the country. Friends of Refugees wants the JADC to be able to be sustained in perpetuity by the community that it serves, meaning that donors’ resources can be used for direct services, rather than upkeep of buildings and infrastructure. The JADC is to be built as a changing canvas that future generations will be able to adapt for their felt needs, rather than as a stolid and unchanging structure.

Figure 11, Image of the Future Jolly Avenue Development Center, Friends of Refugees

A key part of this changing canvas is a focus on environmental sustainability. As Brian Bollinger, executive director of Friends of Refugees, says, “You cannot have a sustainable community without environmental sustainability. Environmental sustainability is one of the legs of the tripod that will make a community resilient and able to adapt to obstacles and weather change successfully.” In addition, because so many of the new Americans that Friends of Refugees serve have had to leave their countries of origin due to resource scarcity and climate change, a focus on environmental sustainability both falls in line with the goals of the organization and of the city of Clarkston more generally. Clarkston has recently made a decision to align itself with the United Nations’ [Sustainable Development Goals](https://sustainabledevelopment.un.org/?menu=1300), which necessitate attention to the natural and social environments; focusing on the way these contexts overlap and link are one way to address a key element of the ongoing contemporary refugee and climate crises.

One of Friends of Refugees’ key beliefs is that *intelligence, ability*, and *ambition* are human assets that are equally distributed throughout the world’s population, but the *opportunity* to deploy these assets for progress is not equally distributed. To that end, the organization felt it necessary to listen to the community – their neighbors – when creating this space. Active *listening* and *incorporation* of people’s ideas and voices will allow Friends of Refugees to ensure the JADC takes into account the nuanced needs a hyper-diverse neighborhood and be able to sustain itself, both environmentally and socially, into the future. According to Brian Bollinger, “Social sustainability is not possible without environmental sustainability; they go hand in hand.” By truly listening to, and taking into account, the needs and desires of the community the center serves, the JADC will be a groundbreaking building, especially for those neighbors who are beginning their new American journeys in Clarkston, Georgia.

**Works Cited**

Brian Bollinger (personal interview) (Executive Director of Friends of Refugees)

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## **Citizen Science: ISeeChange in New Orleans**

In 2013, environmental reporter Julia Kumari Drapkin created the organization ISeeChange, a citizen science organization dedicated to helping people understand the immense effects of climate change by localizing the crisis and making it measurable, tangible, and comprehensible to those whose lives it impacts directly. Drapkin had spent a number of years reporting on the effects of climate change, and founded ISeeChange in order to help individuals see how it manifests in their own communities.

ISeeChange is a global organization “dedicated to empowering communities to document and understand their environment, weather and climate in order to increase resilience” ([www.iseechange.org/about/mission](http://www.iseechange.org/about/mission)). In order to achieve this goal, ISeeChange practices a form of citizen science, offering a multitude of tools and harnessing the power of common platforms like social media so that everyday citizens can document how climate change affects daily life in their own locations and create a community record that provides useful data for change in their local communities. Citizen-collected measurements, photos, and stories about scientific phenomena can help lead to different understandings of the problem: for instance, ISeeChange has already partnered with NASA on a project that will “correlate community experiences to space-based observations of atmospheric carbon dioxide levels,” an endeavor which will broaden researchers’ knowledge base of the effects of climate change, as well as allow people to give voice to the issues they are seeing play out on the ground.

Though ISeeChange is adaptable to anywhere in the world, needing only an individual’s interest to get started, it has taken a particular interest in New Orleans, a city uniquely at risk of being irreparably damaged by the fallout from climate change (Schleifstein, 2018). The organization has issued a focused community call to action to ask residents of New Orleans to create a sustained and comprehensive record of weather events, with the ultimate goal of presenting these findings to scientists, engineers, planners, journalists, and civic groups who are working to battle the harmful effects of climate change and encourage resilience in local infrastructure and society. This effort is particularly important in New Orleans, which recently has suffered cataclysmic storms, intense flooding, and residual sinking, all of which threaten the city’s future.

Interested New Orleans residents can [sign up](https://www.iseechange.org/neworleans) with ISeeChange to document three particular areas: “Bugs that Bite,” “Storms and Flooding,” and “Extreme Heat.” By empowering local residents to report on what they see in their own neighborhoods, ISeeChange hopes to present experts and officials with information on potential new diseases, dangerous weather patterns, and potential public health emergencies (for more information on heat waves, see [SLS Case Study: The 1995 Chicago Heat Wave](https://serve-learn-sustain.gatech.edu/sls-case-study-1995-chicago-heat-wave)). So far, ISeeChange has used the data collected from citizen scientists to publish investigations on street flooding, abnormal storm patterns, and lake algal blooms.

Data reported by ISeeChange users is collated and turned into reports and [stories](https://stories.iseechange.org/) about how observed trends fit into larger patterns reported on by scientists and researchers. A targeted focus on New Orleans in particular will hopefully result in enough evidence to be able to prevent some of the worst long-term effects of climate change from permanently destroying one of America’s greatest cities. Empowering residents and paying special attention to the needs of New Orleans residents is part of an ongoing project to account for social context in the long-term project of planning for and adapting to climate effects and events.

Figure 12, Street Flooding in New Orleans, iseechange.org

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Bryan, William. (2016). [ISeeChange](https://www.nasa.gov/solve/feature/i-see-change). NASA.

Schleifstein, Mark (2016). [Climate Report: Louisiana, Southeast at Exceptional Risk Through End of Century](https://expo.nola.com/news/erry-2018/11/b64a03f8128002/climate-report-louisiana-south.html). *NOLA.com*.

SLS Student Learning Outcomes

1. Identify relationships among ecological, social, and economic systems.
2. Demonstrate skills needed to work effectively in different types of communities.
3. Evaluate how decisions impact the sustainability of communities.
4. Describe how to use their discipline to make communities more sustainable. \*

\* *Note:* SLO 4 is intended to be used by upper division, project-based courses such as Capstone.