BEYOND DOLLARS AND DAMS: REIMAGINING COST-BENEFIT ANALYSIS, FLOOD CONTROL, AND INDIGENOUS RIGHTS IN HAWAII

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ABSTRACT

Federal flood control relies heavily on cost-benefit analysis (CBA), a methodology that prioritizes monetizable property values and economic outputs when allocating disaster-mitigation funds. Because CBA prioritizes monetizable property values and economic losses, high-value tourist districts consistently qualify for robust protection, while rural Native Hawaiian communities remain underserved. These inequities reveal deeper tensions between federal CBA frameworks and governing legal norms. The principle of Free, Prior, and Informed Consent under the U.N. Declaration on the Rights of Indigenous Peoples, as well as Hawai‘i's constitutional public trust doctrine, impose obligations to protect cultural resources, ensure meaningful participation, and safeguard Indigenous relationships to land. This Note argues that flood-control policy requires reorientation rather than abandonment of CBA: a regulatory framework that integrates intangible cultural harms and elevates Indigenous decision-making. Such an approach reframes flood mitigation away from economic efficiency toward dignity, accountability, and equitable climate adaptation.

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INTRODUCTION

> *Environmental justice embraces the principle that all communities, all people, are entitled to equal protection of our environmental laws, housing laws, transportation laws, civil rights laws, human rights laws, and health laws and regulations. Environmental justice basically is the treatment of all communities and all peoples, equal and not somehow given less weight because the community happens to be poor or happens to be physically located on the wrong side of the tracks, or the wrong complexion for protection. Now that's all encompassing.*
> – Robert Bullard, May 5, 2020[1]

As climate change intensifies coastal hazards and drives extreme weather events, state and federal agencies have dramatically ramped up investments in flood control infrastructure.[2] Yet these

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1. Southern Environmental Law Center, *Dr. Robert Bullard: Environ mental Justice Is Equal Justice,* BROKEN GROUND, (May 5, 2020), https://www.southernenvironment.org/episode/dr-robert-bullard-environmental-justice-is-equal-justice.

2. At the federal level, the Biden Administration significantly increased funding for flood mitigation through FEMA's Building Resilient Infrastructure and Communities (BRIC) program and Flood Mitigation Assistance (FMA) program. These programs collectively received $4.5 billion under the Bipartisan Infrastructure Act to enhance resilience against extreme weather events. *See* Press Release, FED. EMERGENCY MGMT. AGENCY, BIDEN – HARRIS ADMINISTRATION ANNOUNCES $1.35 BILLION TO INCREASE CLIMATE RESILIENCE NATIONWIDE (Jan. 6, 2025), https://web.archive.org/web/20250224131419/https://www.fema.gov/press-release/20250106/biden-harris-administration-announces-135-billion-increase-climate (explaining the Bipartisan Infrastructure Law invested more than 4.5 billion dollars) (on file with the *Columbia Human Rights Law Review*). For state-level initiatives, *see* CAL. LEGIS. ANALYST'S OFF., THE 2024-25 BUDGET FLOOD MANAGEMENT PROPOSALS (Feb. 26, 2024) https://lao.ca.gov/Publications/Report/4856 (explaining California's commitment between $25 billion and $30 billion over the next 30 years to improve flood management infrastructure in the Central Valley, which includes investments in urban flood risk reduction projects and multi-benefit flood projects); *see also* Kris Smith, HEADWATERS ECONOMICS, BUILDING FUNDING STRATEGIES FOR FLOOD MITIGATION PROJECTS (2020) https://headwaterseconomics.org/natural-hazards/funding-strategies-flood-mitigation/ (explaining that cities like Tulsa, Oklahoma have implemented innovative local solutions as stormwater utility fees to fund detention basis that double as recreational spaces during dry periods). Such expansion in flood-control investments may be subject to rapid change under the second Trump Administration.

interventions often overlook the very communities most susceptible to displacement and cultural disruption—a reality that underscores the persistent inequities in disaster relief. While a wealth of scholarship has documented the environmental justice implications of disaster management, comparatively fewer works have focused on how Indigenous people specifically fare under flood control measures. Against this backdrop, Hawaii offers a compelling case study. On the one hand, it is a major tourism location. At the same time, Hawaii is home to Native Hawaiian communities whose cultural and spiritual traditions are inseparable from their land and water.[3]

Cost-Benefit Analysis (CBA) has been the dominant tool for guiding federal flood-control funding decisions. This systematic process aggregates the positive and negative impacts on affected parties, converting them into a common monetary unit.[4] The core criterion is whether the benefits exceed the costs, thereby determining the feasibility or desirability of the project in question.[5] This Note argues that CBA is both inadequate and discriminatory, particularly when applied in contexts where there is a stark difference between tourist districts with high-value properties and rural Indigenous areas. CBA's narrow focus on quantifying property damage and economic loss fails to capture intangible cultural and spiritual values, traditional knowledge, and communal rights that Indigenous communities hold in relation to their lands and waters.

Part I sets the stage by analyzing Hawaii's flood crisis, the legal framework governing flood control, and the increasing reliance on CBA in federal disaster funding. Part II critiques the flaws of this economic model, highlighting unrecognized values and the disproportionate burdens borne by Indigenous communities. Part III explores two key legal frameworks—the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and Hawaii's State Constitution—to demonstrate how purely cost-driven models infringe upon international standards and the state's public trust doctrine. Finally, the conclusion proposes reforms aimed at expanding the CBA framework to account for cultural and spiritual values, ensuring that Native Hawaiian communities are not marginalized by policies that

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3. *See* discussion *infra* Section II.C.

4. Tim Stobierski, *What Is Cost-Benefit Analysis & How to Do It*, HARV. BUS. SCH. ONLINE (Sep. 05, 2019), https://online.hbs.edu/blog/post/cost-benefit-analysis [https://perma.cc/UM8S-WFP3].

5. *Id.*

prioritize short-term economic gains over long-term sustainability and justice.

I. CURRENT STATUS OF FLOOD RISK AND CONTROL

This Part first examines the flood crisis affecting the state, tracing the rise in extreme rainfall events, ongoing erosion of shorelines, and the profound socio-cultural impacts of these environmental threats. It then explores the current legal and regulatory landscape governing flood control in Hawaii, highlighting the prominent role of CBA within federal statutes. Finally, this Part discusses recent shifts in policy and practice that raise pressing questions about how effectively the existing frameworks address the particular vulnerabilities of Hawaii's Indigenous and low-income communities.

A. Flood Crisis in Hawaii

Hawaii has experienced a significant increase in flood events in recent years, largely due to climate change. Since the 1960s, annual flood days in Hawaii have surged, with Honolulu recording 37 flood days in 2017—compared to an average of only four in the early 2000s.[6] Specifically, in May 2024, all of Hawaii's land 'was placed under a flood watch for seven days.[7] The regional weather forecast characterized this as a "rather strange weather pattern," noting that eastern Oahu experienced nearly seven inches of rainfall within a 24-

6. HAWAII CLIMATE CHANGE MITIGATION & ADAPTATION COMM'N, RISING SEA LEVEL (2024), https://climate.hawaii.gov/hi-facts/sea-level-rise/ ("Minor flooding has become the new normal for coastal communities. As sea level rises, the gap between the ocean and coastal infrastructure decreases meaning we are reaching the flooding threshold more often. This has already increased the frequency and reach of coastal floods. Between 1970 and 1980, Hawai'i saw only 2 minor high tide flood days. Between 2010 and 2020, we experienced 40.") [hereinafter Rising Sea Level]; *see also* HAWAII CLIMATE CHANGE MITIGATION & ADAPTATION COMM'N, LESS & HEAVY RAIN (2024) https://climate.hawaii.gov/hi-facts/rain/ ("The number of floods per year has increased sharply since the 1960s and is expected to keep rising. In Honolulu alone, high tide flooding has increased from 6 days per year to 11.").

7. Christine Hitt, *Heavy rain pummels Hawaii, causing landslides and flooding,* S. F. CHRONICLE (May 15, 2024), https://www.sfgate.com/hawaii/article/hawaii-flooding-weather-19460416.php [https://perma.cc/8V3H-WSSQ].

hour period, accompanied by severe thunderstorms.[8] As global warming continues, according to the studies of National Oceanic and Atmospheric Administration, Hawaii's coastal areas are projected to see a rapid increase in tidal flooding events beginning in the mid-2030s.[9]

Numerous studies have highlighted that Hawaii's distinct geography, with its steep mountain ranges and narrow coastal plains, renders the state particularly vulnerable to flooding.[10] Global warming and rising sea levels create a vicious cycle, with each factor exacerbating the other.[11] According to projections, sea levels of Hawaiian islands will rise between 1.3 and 8.0 feet by year 2100 (relative to the year 2000), with an intermediate estimate of 3.9 feet, making it one of the most vulnerable urban areas in the United States.[12] Another primary driver of flooding in Hawaii is elevated

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8. Jonathan Erdman, *Unusual May Hawaii Storm To Bring Mountain Snow, Severe Weather, Flooding*, THE WEATHER CHANNEL (May 11, 2024), https://weather.com/forecast/regional/news/2024-05-10-hawaii-storm-mountain-snow-severe-thunderstorms-may [https://perma.cc/QLX6-2XLT].

9. Rising Sea Level, *supra* note 6.

10. UNIVERSITY OF HAWAIʻI AT MĀNOA SEA GRANT COLLEGE PROGRAM, CLIMATE CHANGE IMPACTS IN HAWAIʻI – A SUMMARY OF CLIMATE CHANGE AND ITS IMPACTS TO HAWAIʻI ECOSYSTEMS AND COMMUNITIES 23 (2014). https://seagrant.soest.hawaii.edu/wp-content/uploads/2018/05/smFINAL-HawaiiClimateChange.pdf ("High intensity rainfall can cause flash flooding, which is common in Hawaii due to steep terrain and concrete stream channels, and has occasionally resulted in multimillion dollars of damage to infrastructure. It can also affect nearshore ecosystems."); *see* CITY AND COUNTY OF HONOLULU, SEA LEVEL RISE & CLIMATE CHANGE: FINAL WHITE PAPER 8 (2022) https://www.honolulu.gov/rep/site/dpptod/dpptod_docs2/Sea_Level_Rise_Final_White_Paper.pdf ("The coastal plain is backed by steep valleys leading to the headwalls of the Koolau Mountains. This steep topography adds to flood risks within [Primary Urban Center of Honolulu].") (on file with the *Columbia Human Rights Law Review*); *see also* UNITED STATES GEOLOGICAL SURVEY, MAGNITUDE AND FREQUENCY OF FLOODS ON KAUAʻI, OʻAHU, MOLOKAʻI, MAUI, AND HAWAIʻI, STATE OF HAWAIʻI, BASED ON DATA THROUGH WATER YEAR 2020 11 (2023) https://pubs.usgs.gov/publication/sir20235014/full [https://perma.cc/49KA-E7U6] ("Streams in Hawaii tend to be flashy—that is, they respond quickly to rainfall and have short-lived discharge peaks—because of small and steep drainage basins and high-intensity rainfall from storms. Flood hydrographs generally have a characteristic steep triangular shape, indicating a rapid rise and fall in discharge.").

11. Rising Sea Level, *supra* note 6 ("These floods were fully attributed to climate change / sea level rise. . . . As global warming continues, sea level rise will accelerate").

12. HAWAII STATE CLIMATE COMM'N, HAWAII SEA LEVEL RISE VULNERABILITY AND ADAPTATION REPORT para. 3, at A1 (2022)

ground water tables, which rise in conjunction with sea levels, causing inundation[13] in low-lying coastal areas during high tides and heavy rainfall.[14] Given these factors, flooding events in Hawaii are expected to intensify.

The detrimental impact of flooding in Hawaii is vast and multifaceted. Rising sea levels are already eroding shorelines and destroying land. For instance, thirteen miles of beaches across the state have already disappeared due to coastal erosion, including 10% of Oahu's shoreline, where the iconic Sunset Beach is located.[15] 70% of Hawaii's beaches are projected to be under risk from further erosion. [16] The resulting erosion in shorelines is particularly detrimental in Hawaii, as much of its population and critical infrastructure is concentrated along the coast.[17]

The repercussions of erosion extend beyond the coastal lands, as the tides encroach upon the inland areas. A 3.2-foot rise in sea levels would result in chronic flooding, rendering more than 25,800 acres of land across Hawaii unusable and resulting in over 20,000 displaced residents.[18] Simulating future flood scenarios in the urban

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https://climate.hawaii.gov/wp-content/uploads/2023/04/Sea-Level-Rise-Adaptation-and-Vulnerability-2022-Update_Final2-1.pdf.

13. "Inundation" was used "to denote the process of a dry area being permanently drowned or submerged." *See* Reinhard E. Flick, et al., *"Flooding" Versus "Inundation"*, *in* 93 EOS, TRANSACTIONS, AMERICAN GEOPHYSICAL UNION 365, 365 (2012).

14. *See* UNIVERSITY OF HAWAIʻI AT MĀNOA SEA GRANT COLLEGE PROGRAM, CLIMATE CHANGE IMPACTS IN HAWAIʻI – A SUMMARY OF CLIMATE CHANGE AND ITS IMPACTS TO HAWAIʻI ECOSYSTEMS AND COMMUNITIES 19 (2014) https://seagrant.soest.hawaii.edu/wp-content/uploads/2018/05/smFINAL-HawaiiClimateChange.pdf (explaining that "inundation caused by elevated groundwater tables due to sea-level rise may breach the land surface in low-lying areas during higher tides").

15. *70 percent of Beaches Eroding on Hawaiian Island Kauai, Oahu, and Maui*, SCIENCEDAILY (May 7, 2012) https://www.sciencedaily.com/releases/2012/05/120507165601.htm [https://perma.cc/7FJA-QBFM] (referencing the U.S. Geological Survey as a source of the press release).

16. *Id.*

17. Rising Sea Level, *supra* note 6.

18. HAWAII STATE CLIMATE COMM'N, HAWAII SEA LEVEL RISE VULNERABILITY AND ADAPTATION REPORT, at ix (2014) https://www.soest.hawaii.edu/GG/FACULTY/ITO/GG740/Hawaii_state_Sealevel_Report.pdf ("Some of that land will have eroded into the ocean, some will become submerged by inches or feet of standing water, and some areas will be dry most of the year, but repeatedly washed over by seasonal high waves. State-wide, about

core,[19] Dr. Shellie Habel, a Coastal Geologist and Hydrologist at University of Hawaii, said that "[t]his flooding will threaten $5 billion of taxable real estate; flood nearly 30 miles of roadway; and impact pedestrians, commercial and recreation activities, tourism, transportation and infrastructure."[20]

Moreover, values that are more difficult to quantify and measure, including human health, natural and cultural resources, and wildlife habitats, will be profoundly impacted. In the event of a 3.2-foot rise in sea levels, more than 2,000 on-site sewage disposal units are expected to flood, resulting in significant degradation of water quality.[21] This degradation poses serious public health risks due to the potential contamination of drinking water sources.[22] Combined with the persistent inadequacies of roadways, as previously discussed, local communities will have impeded access to

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34% of that potentially lost land is designated for urban use, 25% is designated for agricultural use, and 40% is designated for conservation.")

19. An urban core is a densely populated area that's the center of a city or metropolitan area. *See* FIVEABLE CONTENT TEAM, URBAN CORES, https://library.fiveable.me/key-terms/hs-hawaiian-studies/urban-cores [https://perma.cc/9L8W-BR3W] (last visited Feb. 26, 2025) (explaining that "urban cores refer to the central areas of cities that are often characterized by high population density, economic activity, and infrastructure").

20. Press Release, University of Hawai'i at Mānoa Sea Grant College, School of Ocean and Earth Science and Technology, As Sea level rises, much of Honolulu and Waikiki vulnerable to groundwater inundation (Mar. 26, 2017) https://www.soest.hawaii.edu/soestwp/announce/press-releases/as-sea-level-rises-much-of-honolulu-and-waikiki-vulnerable-to-groundwater-inundation [https://perma.cc/Z9NX-CKN2]; *see also* Habel et al., *Development of a model to simulate groundwater inundation induced by sea-level rise and high tides in Honolulu, Hawaii*, 114 WATER RSCH. 122, 728 (2017), https://www.sciencedirect.com/science/article/abs/pii/S0043135417301276 (research from the University of Hawaii, Department of Geology and Geophysics, School of Ocean and Earth Science and Technology, revealing that a large part of the heavily urbanized area of Honolulu and Waikiki is at risk of groundwater inundation).

21. HAWAII STATE CLIMATE COMM'N, *supra* note 18, at xi.

22. *See, e.g.*, Press Release, Wastewater Digest, 607,000 gallons of wastewater spills from Hawaii treatment plant (Jun. 25, 2024), https://www.wwdmag.com/wastewater-treatment/press-release/55090755/607000-gallons-of-wastewater-spills-from-hawaii-treatment-plant [https://perma.cc/Y7UN-5LVB] (reporting an untreated sewage discharge into Hilo Bay, Hawaii that prompted health advisories, with officials warning against water contact due to potential health risks from fecal bacteria contamination).

essential infrastructures and critical emergency services during environmental crises.[23]

The loss and harm to native species and entire ecosystems due to the land erosion will have profound implications for Hawaiian cultural traditions and practices, which are intricately linked to the natural environment.[24] The adverse effects of sea level rise and increased flooding will directly impact traditional practices, including the maintenance of fishponds, cultivation of salt, and nearshore fishing, thus threatening the cultural heritage and livelihoods of local communities.[25] The report from the University of Hawaii at Manoa Sea Grant College predicts nearly 550 cultural sites across Hawaii will be inundated by rising sea levels, irreparably altering some cultural sites.[26] In sum, the significant threats posed by sea level rise and flooding to Hawaii's overall habitability highlights the urgency of the issue and urges a bold demand for the implementation of sustainable flood control measures in Hawaii.

B. Current Flood Control Landscape

1. Federal and State Frameworks

The legal framework for flood control in Hawaii is governed by a combination of federal laws, including the Stafford Act and the National Flood Insurance Program under the National Environmental Policy Act (NEPA), and state and local regulation.[27]

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23. HAWAII STATE CLIMATE COMM'N, *supra* note 18, at ix. ("[U]tilities, such as water, wastewater and electrical systems of ten run parallel and underneath roadways, making lost road mileage a good indication of the extent of lost utilities. This chronically flooded infrastructure would have significant impacts on local communities as well as reverberating effects around each island through loss of commerce, loss of access to emergency services, and increased traffic on other roads and highways.").

24. HAWAII STATE CLIMATE COMM'N, *supra* note 18, at xi.

25. Rising Sea Level, *supra* note 6. ("Traditional and cultural practices are affected. Sea level rise affects traditional and customary practices, including fishpond maintenance, cultivation of salt, and gathering from the nearshore fisheries. This can have a negative effect on people's spiritual and mental health.").

26. HAWAII STATE CLIMATE COMM'N, *supra* note 18, at xi. (acknowledging that "[i]n some cases, these natural and cultural resources could be allowed to migrate inland or carefully relocated. In other cases, the resources are inextricably bound to place and would be permanently altered by flooding.").

27. Haw. Dept. of Land and Nat. Res., *Regulatory Guidance*, HAWAII STATEWIDE GENERAL FLOOD CONTROL PLAN,

At the heart of these frameworks is CBA, a systematic method for assessing the economic and social impacts of a proposed policy by weighing its total costs against its total expected benefits.[28] In essence, CBA involves determining whether the benefits of a regulation outweigh its costs in monetary terms.[29]

The Flood Control Act of 1936[30] first embodied the CBA principle by mandating the U.S. Army Corps of Engineers only execute water-control projects whose predicted benefits exceeded their costs.[31] The CBA principle was solidified as a standard for regulatory review when President Reagan issued Executive Order 12,291, which required all agencies—not only the Army Corps of Engineers—to ensure that "major" regulations demonstrate that the potential societal benefits outweigh the potential costs.[32] Additionally, the Order tasked the Office of Management and Budget (OMB) with overseeing and ensuring agency compliance with these requirements.[33] Building on this foundation, the 1988 Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act),[34] established the first federal mitigation program, reinforcing CBA as a cornerstone of the nation's flood-control policies.

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https://floodplan.hawaii.gov/Regulatory.aspx (offering guidance on regulatory frameworks and contact information for flood control, drainage management, and related planning efforts, as well as, providing hyperlinks to federal, state, and county agencies for further reference).

28. ALAN GILPIN, DICTIONARY OF ENVIRONMENTAL AND SUSTAINABLE DEVELOPMENT 50 (1996) (defining cost-benefit analysis as "a technique for evaluating projects or policies by comparing the total expected costs with the total expected benefits [where both] costs and benefits are expressed in monetary terms, and are adjusted for the time value of money, so that all flows of benefits and costs over time are expressed on a common basis in terms of their present value").

29. *Id.*

30. Pub. L. No. 74-738, 49 Stat. 1570 (codified at 33 U.S.C. § 701a).

31. *Id.*; *see also* Don Bradford Hardin, Jr., Comment, *Why Cost-Benefit Analysis? A Question (and Some Answers) About the Legal Academy,* 59 ALA. L. REV. 1135, 1143 (2008) (explaining how the Corps was the first agency to systematically use CBA).

32. Exec. Order No. 12,291, 3 C.F.R. § 128–30. Major rules are defined as those having "[a]n annual effect on the economy of $100 million or more," "[a] major increase in costs or prices for consumers," industry, or government; or "[s]ignificant adverse effects on competition, employment, investment, productivity, [or] innovation." 3 C.F.R. 127.

33. Exec. Order No. 12,291, 3 C.F.R. § 128–30.

34. Pub. L. No. 100–707, § 102 Stat. 4689 (1988) (amending Public Law No.93-288, 88 Stat. 143 (1974) (codified as amended at 42 U.S.C. s.s.5121-5202)).

FEMA's flood-mitigation programs, which assist communities in preparing for and minimizing the impacts of future flooding, follow this same CBA-based scheme.[35] With the increasing frequency and severity of floods driven by global climate change, FEMA is compelled to allocate its limited federal funds more strategically, subjecting fund applicants to heightened scrutiny.[36] To qualify for financial support through any of FEMA's Hazard Mitigation Assistance (HMA) programs, applicants must demonstrate the cost-effectiveness of their projects.[37] In doing so, FEMA adopted a stricter interpretation of cost-effectiveness, one that requires applicants to show that their benefits are clearly greater than the costs.[38] In other words, rather than merely ensuring that no other option delivers equivalent benefits at a lower price,[39] applicants must show a positive net benefit. This heightened standard requires that FEMA-funded flood mitigation actions are not just the most feasible among possible options but also deliver an unequivocal benefit relative to their overall expenditure.[40]

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35. FEMA, FLOOD MITIGATION ASSISTANCE GRANT PROGRAM, https://www.fema.gov/grants/mitigation/learn/flood-mitigation-assistance [https://perma.cc/T9XC-SYSN] (stating "FEMA chooses recipients based on the applicant's ranking of the project, eligibility, and cost-effectiveness of the project").

36. Kelly McGee, *A Place Worth Protecting: Rethinking Cost-Benefit Analysis Under FEMA's Flood-Mitigation Programs,* 88 U. CHICAGO L. REV. 1925, 1936 (2021).

37. *See, e.g.*, 42 U.S.C. § 5170c(a) (stating that Hazard Mitigation Grant Program (HMGP) funds may be used for "mitigation measures which the President has determined are cost effective and which substantially reduce the risk of, or increase resilience to, future damage, hardship, loss, or suffering in any area affected by a major disaster"); 42 U.S.C. § 4104c(2)(A)(i) (stating that Flood Mitigation Assistance funds may be used for "mitigation activities that the [FEMA director] determines are technically feasible and cost-effective."); 42 U.S.C. § 5133(b) (stating that Building Resilient Infrastructure and Communities (BRIC) may be used "to assist in the implementation of pre-disaster mitigation measures that are cost-effective and are designed to reduce injuries, loss of life, and damage and destruction of property").

38. *See* 44 C.F.R. § 206.434(c)(5)(ii) (interpreting cost-effectiveness by showing that the project "[w]ill not cost more than the anticipated value of the reduction in both direct damages and subsequent negative impacts to the area"); 44 C.F.R. § 78.11(a) (defining cost-effectiveness as "not costing more than the anticipated value of the reduction in both direct damages and subsequent negative impacts to the area if future floods were to occur.").

39. In some contexts, cost-effectiveness is simply defined as having "the lowest costs expressed in present value terms for a given amount of benefits." *See, e.g.*, OFF. OF MGMT. & BUDGET, CIRCULAR A-94, GUIDELINES AND DISCOUNT RATES FOR BENEFIT-COST ANALYSIS OF FEDERAL PROGRAMS 5 (2003).

40. *Id.*; 44 C.F.R. § 206.434(c)(5)(ii).

When FEMA allocates disaster funds to states based on their cost-effectiveness criteria, state governments play a central role in distributing these disaster funds.[41] In Hawaii, a key element of the state's flood mitigation strategy involves the National Flood Insurance Program (NFIP).[42] Here, the state government collaborates with federal agencies on updating Flood Insurance Rate Maps (FIRMs), enforces floodplain management practices, and conducts public outreach to raise awareness about flood risks and insurance requirements.[43] Although the Hawaii State government plays a key role, its direct influence on policy outcomes is limited, as its primary duty is to ensure local compliance with federal guidelines. As a result, state-led initiatives must conform to federal management frameworks, such as NFIP, which rely on FEMA's CBA methodology. This reliance on federal decision-making limits the state's ability to address localized concerns, including the specific needs to Hawaii's Indigenous communities.

2. Evolving CBA Requirements and Equity Considerations

Recent political shifts reflect an increasing recognition that CBA should not be confined to calculating net benefits but also should explicitly consider equity and distributional impacts.[44] One of the first

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41. *See* FEMA, A GUIDE TO THE DISASTER DECLARATION PROCESS AND FEDERAL DISASTER ASSISTANCE (affirming that "[o]nce FEMA/EPR obligates funds to the State, further management of the assistance, including disbursement to subgrantees is the responsibility of the State"); *see also* DIANE P. HORN, CONG. RSCH. SERV., IF 10988, A BRIEF INTRODUCTION TO THE NATIONAL FLOOD INSURANCE SYSTEM (updated Oct. 3, 2024) (acknowledging that "[Federal regulations standards] have the force of law only because they are adopted and enforced by a state or local government.").

42. All four of Hawaii's counties participate in the NFIP, which is crucial for property owners seeking flood insurance. The participation allows residents access to federally subsidized flood insurance and disaster aid in the event of presidentially declared disaster. *National Flood Insurance Program*, STATE OF HAW. ENGINEERING DIV., https://dlnreng.hawaii.gov/nfip/flood-insurance/ [https://perma.cc/2K93-Q9JZ] [hereinafter *Flood Insurance*].

43. Residents are invited to informational open houses on updates to FEMA's Flood Insurance Rate Maps for FIRMs and Public Outreach. *See* Press Release, City and County of Honolulu, FEMA unveils updated Flood Risk Maps for Oahu (Oct. 17, 2024); *see also Flood Insurance*, *supra* note 42.

44. Recognizing the possibility that the second Trump Administration may revise or rescind equity-integrated CBA frameworks, this Note proceeds with the understanding that political climates can shift. Nonetheless, the legal and ethical arguments presented herein remain pertinent to shaping future flood control policies and establishing best practices for inclusive environmental governance.

steps in this direction occurred during the Obama Administration, with the issuance of Executive Order 13,563. This order directed agencies to integrate broader social considerations into their regulatory reviews.[45] Building on this mandate, the White House Council on Environmental Quality (CEQ) introduced revisions to water resource policies that explicitly incorporate socio-economic considerations like gender, age, and race or ethnicity, thereby moving CBA beyond purely economic metrics.[46]

The Biden Administration continued to promote this principle, particularly with regard to addressing "systemic racial inequalities."[47] In January 2021, President Biden issued Executive Order 14,008, directing the Office of Management and Budget to propose procedures that assess the distributional impacts of new regulations, ensuring that they benefit marginalized communities without imposing undue burdens.[48] The "Justice40 Initiative" is one of the notable initiatives stemming from this equity-central approach. The initiative mandates that 40% of federal clean energy and climate investments be directed toward disadvantaged communities,[49] who

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45. Exec. Order No. 13,563, 3 C.F.R. 216 §1(c) (2012) directs agencies to take into account intangible benefits such as "equity, human dignity, fairness, and distributive impacts" when conductive regulatory reviews.

46. *See* U.S. COUNCIL ON ENVIRONMENTAL QUALITY, CHAPTER III INTER-AGENCY GUIDELINES 13 (2014), https://obamawhitehouse.archives.gov/sites/default/files/docs/prg_interagency_guidelines_12_2014.pdf [https://perma.cc/SPA8-JPPN] (guiding agencies to consider economic, social, and environmental measures when analyzing sustainable economic development); *see also* Press Release, The White House, Obama Administration Releases Final Principles, Requirements and Guidelines for Federal Water Investments in Water Resources (Dec. 17, 2014), https://obamawhitehouse.archives.gov/the-press-office/2014/12/17/obama-administration-releases-final-principles-requirements-and [https://perma.cc/9VTA-3E36]. The second Trump Administration could potentially curtail or eliminate CEQ's guidelines for socio-economic considerations in CBA. This Note's broader analysis, emphasizing the need for cultural, spiritual, and distributive considerations, continues to offer a meaningful framework for reform that may guide future policymaking, even if immediate executive priorities differ.

47. Modernizing Regulatory Review, 86 Fed. Reg 7223 (Jan. 20, 2021).

48. *Id.* at §2(b)(ii); Exec. Order No. 14,008, 86 C.F.R. 7619 (2021).

49. *Justice40 Initiative*, THE WHITE HOUSE, https://bidenwhitehouse.archives.gov/environmentaljustice/justice40 [https://perma.cc/X57C-2T2B] (last visited Feb. 28, 2025); *see also* Thomas Frank, *'We know we have work to do' on equity FEMA tells lawmakers,* E&E NEWS BY POLITICO (June 24, 2022), https://www.eenews.net/articles/we-know-we-have-work-to-do-on-equity-fema-tells-lawmakers [https://perma.cc/GN4K-7V3Q] (announcing that two of FEMA grant programs would be under President Biden's Justice40 initiative, which

are disproportionately burdened by the impacts of climate change, such as flooding.[50] This initiative includes funding for FEMA grant programs, linking the fight for climate justice with federal disaster relief and mitigation efforts.[51]

Acting on this directive, in November 2023, the Office of Information and Regulatory Affairs (OIRA) released updated "Circular A-4" guidance, clarifying that agencies must assess not only the aggregate net benefits of a project but also who benefits—and who may be left behind—when implementing CBA.[52] The guidance also stresses that agencies should include this distributional analysis as part of their quantitative or qualitative calculations.[53] The NEPA guidance revisions also play a key role in this transformation, which has long required agencies to incorporate environmental justice concerns into their review processes.[54] Subsequently, CEQ provided guidance on incorporating environmental justice into NEPA reviews, stressing the importance of identifying minority and low-income communities potentially affected by a proposed project. This was intended to determine whether these communities would bear disproportionately high and adverse effects and ensure meaningful public participation throughout the NEPA process.[55]

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directs 40 percent of federal climate and clean energy investments to disadvantaged communities).

50. *See* U.S. ENV'T PROT. AGENCY, CLIMATE CHANGE AND SOCIAL VULNERABILITY IN THE UNITED STATES 6 (2021) (finding that minorities are disproportionately affected by climate change impacts, with Black and African American individuals 40 percent more likely to reside in areas experiencing the highest projected increases in mortality in the case of 50 cm of global sea level rise or 2°C of global warming. Similarly, Hispanic and Latino individuals face 43 percent higher risks of labor hour losses due to extreme heat and 50 percent greater exposure to traffic delays from high-tide flooding.).

51. Frank, *supra* note 49.

52. Press Release, The White House, Biden-Harris Administration Releases Final Guidance to Improve Regulatory Analysis (Nov. 9, 2023), https://bidenwhitehouse.archives.gov/omb/briefing-room/2023/11/09/biden-harris-administration-releases-final-guidance-to-improve-regulatory-analysis/ [https://perma.cc/W7XJ-HTBU] (providing newly released guidance on conducting CBA, including the discussion of how equity and distributional issues should be considered).

53. *Id.*

54. Exec. Order No. 12,898, 32 C.F.R. 651.17 (1994) (instructing federal agencies to integrate environmental justice into their missions, emphasizing that NEPA procedures be used to identify and address distributional impacts on minority and low-income populations).

55. COUNCIL ON ENVIRONMENTAL QUALITY, ENVIRONMENTAL JUSTICE GUIDANCE UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT 3–5 (1997)

Despite these advances, significant challenges remain. Inherent difficulty in quantifying "intangible" or distributional benefits within a traditional CBA framework remains, potentially leaving inequities unacknowledged. Moreover, future political shifts add another layer of uncertainty that could roll back or weaken equity-oriented mandates. [56] In January 2025, President Trump signed executive orders (E.O.s) that disband environmental and climate justice considerations in federal decision making.[57] The recent political shift coupled with the fragility of environmental justice policies underscore the urgency of fundamental revision of CBA in decision making, rather than ad hoc directives that can be revoked at the executive level.

(outlining agency responsibilities under NEPA to analyze disproportionate adverse effects and facilitate meaningful public participation).

56. In the light of President Trump's previously stated commitment to roll back federal regulations, including environmental and climate justice considerations, there is reason to believe the second Trump Administration will continue or deepen these deregulatory trends. Nadja Popovich et al., *The Trump Administration Rolled Back More Than 100 Environmental Rules. Here's the Full List.*, N.Y. TIMES, (Jan. 20, 2021), https://www.nytimes.com/interactive/2020/climate/trump-environment-rollbacks-list.html [https://perma.cc/32PH-CSQJ]; *see also* Tatiana Schlossberg and Hiroko Tabuchi, *Settlements for Company Sins Can No Longer Aid Other Projects, Sessions Says*, N.Y. TIMES, (Jun. 9, 2017), https://www.nytimes.com/2017/06/09/us/politics/settlements-sessions-attorney-general.html (referencing Republican efforts during the first Trump administration that sought to limit the use of settlement funds by nongovernmental, third-party organizations or by government agencies for initiatives such as environmental cleanups). Indeed, since taking office in January 2025, the second Trump Administration has actively pursued these deregulatory goals by issuing executive orders that immediately terminated all federal environmental justice offices and rescinded prior mandates directing agencies to evaluate equity in their environmental policymaking. *See* Gwendolyn Keyes, *President Trump's week-one Executive Orders signal significant changes coming to environmental law*, DLA PIPER (Jan. 28, 2025), https://www.dlapiper.com/en-us/insights/publications/2025/01/president-trumps-week-one-executive-orders [https://perma.cc/NQX7-NTV4] (detailing the executive order terminating all environmental justice plans developed under the Biden Administration).

57. *See* Exec. Order No. 14148 (Jan. 20, 2025) (revoking President Biden's E.O. 14008, "Tackling the Climate Crisis at Home and Abroad," which expanded the environmental justice directive to EPA and established the Justice40 Initiative); *see also* Exec. Order No. 14173 (Jan. 21, 2025) (revoking President Clinton's E.O. 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations", which directed some executive branches, including EPA, to identify and address disproportionately high and adverse human health or environmental effects on vulnerable populations).

II. FLAWED NATURE OF COST-BENEFIT ANALYSIS

Many scholars have criticized traditional CBA for its ethical concerns of placing monetary values on human health, life, or endangered species as well as its technical nature, which makes it susceptible to partisan misuse.[58] Building on this scholarship, this Part examines how these broader critiques of CBA become particularly acute in the flood control context. Although CBA offers a framework for weighing monetary costs and benefits, it fails to capture cultural traditions, spiritual values, and ancestral ties to land. Nor does it fully address the compound burdens that certain communities—especially Indigenous groups—experience under a uniform cost-effective formula. As a result, CBA may inadvertently perpetuate inequitable outcomes, reinforcing the very disparities it is intended to mitigate.

A. CBA Guidance and National Risk Index

A core limitation of the existing CBA paradigm is its narrow focus on quantifiable losses. FEMA's CBA methodology is primarily used to evaluate whether the benefits of a proposed mitigation project outweighs its costs,[59] ensuring that federal funds are allocated

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58 . *See generally* Steijger et al., *Challenges and Limitations in Distributional Cost-Effectiveness Analysis: A Systematic Literature Review*. 20 INT. J. ENVIRON. RES. PUB. HEALTH 505 (2023) https://doi.org/10.3390/ijerph20010505 [https://perma.cc/NTG6-ZHZN] (discussing the ethical limitations of traditional economic evaluation models in healthcare settings and the technical challenges of integrating equity and social values into the analysis); *see generally* David E. Adelman & Amy Sinden, *The Misleading Success of Cost-Benefit Analysis in Environmental Policy,* MICH. J. ENV'T & ADMIN. L. 13:2 (2024) (arguing that cost-benefit analysis in environmental policy is fundamentally flawed due to the impossibility of accurately monetizing ecological values); *see* MATTHEW J. KOTCHEN, *Cost-Benefit Analysis*, *in* ENCYCLOPEDIA OF CLIMATE AND WEATHER 3–4 (2nd ed., Stephen H. Schneider ed., 2011) (arguing that CBA's reliance on monetization leads to concerns about distributional equity); *see also* Rachel Samson, *Cost-benefit analysis is wrong tool for tackling climate change*, CANADIAN CLIMATE INST. (Aug. 11, 2021), https://climateinstitute.ca/cost-benefit-analysis-is-the-wrong-tool-for-tackling-climate-change/ [https://perma.cc/WS32-4LHW] (evaluating the shortcomings of CBA, such as how policy-certainty benefits are not captured given that certainty on policy directions can generate economic benefits).

59. *See* 44 C.F.R. § 206.434(c)(5)(ii) (explaining cost-effectiveness as that the project "[w]ill not cost more than the anticipated value of the reduction in both direct damages and subsequent negative impacts to the area"); 44 C.F.R. § 78.11(a) (incorporating the same definition of cost-effectiveness).

efficiently. Under the current FEMA methodology, the benefits of potential flood-mitigation projects are calculated by estimating the extent of losses that can be averted such as physical damage to properties, loss of life and injury, interruptions to commercial activities, and environmental degradation. [60] These anticipated benefits are weighed against the costs of the proposed project, which include expenses for construction and implementation, administration and planning, maintenance, and opportunity costs based on alternative uses of resources or land allocated to a mitigation project.[61]

In August 2021, FEMA developed a more comprehensive approach to risk assessment, known as the National Risk Index (NRI), to remedy the shortcomings of such a strictly numerical approach.[62] The NRI is designed to "help identify communities most at risk for natural hazards."[63] The NRI aggregates three dimensions of hazard vulnerability:[64] (1) social vulnerability, which measures the susceptibility of populations to harm based on socio-economic and demographic factors like income, education, race/ethnicity, age, and housing conditions; [65] (2) community resilience, which assesses a

60. FEMA, INTRODUCTION TO BENEFIT-COST ANALYSIS INSTRUCTOR GUIDE UNIT 3: THE BENEFIT-COST MODEL 3-9 to 3-23 (2019).

61. *Id.* at 3-28.

62. The full application of the NRI, featuring enhanced customization and reporting capabilities, was officially launched in August 2021. The initial version of the NRI was announced in November 2020 with limited functionality. *See* Press Release, U.S. Department of Homeland Security, FEMA Launches National Risk Index Update (Aug. 16, 2021), https://www.fema.gov/press-release/20210816/fema-launches-national-risk-index-update [https://perma.cc/V7FD-YZGE] (announcing FEMA's new National Risk Index, which includes interactive mapping and can generate customized analyses and reports, such as community risk profiles and risk comparison reports).

63 . FEMA, NATIONAL RISK INDEX TECHNICAL DOCUMENTATION 1-1 [hereinafter FEMA NRI] (2020).

64. *Id.* at 4-1.

65. *Id.* FEMA uses the social vulnerability index developed by the Hazards & Vulnerability Research Institute at the University of South Carolina, which incorporates twenty-nine socioeconomic variables. *See Social Vulnerability Index for the United States – 2010-2014,* HAZARDS & VULNERABILITY RSCH. INST., UNIV. OF S.C., https://sc.edu/study/colleges_schools/artsandsciences/centers_and_institutes/hvri/data_and_resources/sovi [https://perma.cc/B9D2-PVDC] (explaining that social vulnerability synthesizes various socioeconomic variables that may contribute to the reduction in a community's ability to prepare for, respond to, and recover from hazards).

community's capacity to recover from disasters;[66] and (3) expected annual loss, which quantifies the dollar value of damages likely to result from natural disaster.[67] By combining these variables into a single risk score, FEMA encourages emergency planners to refine mitigation plans, communicate risk levels more effectively, and prioritize resource allocation.[68] Yet, while the NRI indicates an attempt toward a more holistic assessment of risk, it does not supplant the longstanding CBA criteria for federal funding.[69] That is, projects must still demonstrate cost-effectiveness under FEMA's traditional framework, making the NRI's role—at least for now—largely advisory when it comes to actual grant eligibility.

B. Marginalizing the Marginalized

1. Good Intentions, Unexpected Outcomes

In theory, the NRI is designed to identify disaster-prone areas, especially those with limited infrastructure and resources, and prioritize them.[70] By considering social vulnerability and community resilience, it aims to steer federal relief to communities that need it most. In practice, however, the NRI produces counterintuitive results. Wealthier neighborhoods often record equally high or higher NRI scores, thereby qualifying for a substantial share of federal resources.[71] According to Dr. Cristina Muñoz De La Torre, a researcher specializing in climate equity and disaster resilience, one driving factor of this paradox is that "the NRI places significant

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66. FEMA NRI, *supra* note 63, at 4-3 (defining community resilience as a community's ability "to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions").

67. *See* FEMA NRI, *supra* note 63, at 4-4 to 4-5 (defining expected annual loss as expected monetary value of lost property, lives, and agriculture based on historic losses and predicted annual frequency of storms).

68. *Id.* at 1-1.

69. *Id.* at 3-4 (limiting the scope of NRI's applicability "for planning purposes only" without replacing the CBA as a whole).

70. U.S. CLIMATE RESILIENCE TOOLKIT, NATIONAL RISK INDEX (NRI), https ://toolkit.climate.gov/tool/national-risk-index-nri [https://perma.cc/NUM2-L38L] (last visited Feb. 28, 2025) ("The NRI can assist communities in: . . . prioritizing and allocating resources; identifying the need for more refined risk assessments").

71. Cristina Muñoz De La Torre, *The National Risk Index: Funding Disaster Resilience and Mitigation in Frontline Communities,* JUST SOLUTIONS, (Jul. 21, 2023), https://justsolutionscollective.org/the-national-risk-index-funding-disaster-resilience-and-mitigation-in-frontline-communities [https://perma.cc/EEW4-6SCM].

weight on property market value in its determination of hazard exposure and potential disaster losses," overshadowing social vulnerability in the final risk score.[72] Other factors that might contribute to this tendency are matching-funds or administrative requirements associated with many FEMA programs.

Indeed, a study confirms that FEMA-funded property buyouts[73]—which allow homeowners to sell flood-prone properties to the government for conversion into open space—have disproportionately benefited whiter, wealthier communities over more racially diverse, low-income areas.[74] Specifically, most of the 40,000 property buyouts occurred in neighborhoods that were over 85% white and non-Hispanic.[75] The data suggests that whiter communities have greater access to FEMA-funded buyouts, while communities of color—who often face greater climate risks—may receive fewer opportunities to relocate from flood-prone areas. The study also demonstrates that "after disasters, black residents lose wealth on average, and white residents gain wealth."[76] Taken together, these observations underscore the limitations of well-intentioned index like NRI in practice.

This cycle—where wealthy areas build resilience while poorer ones fall behind—is especially troubling in Hawaii, where tourist districts receive robust infrastructure investment while rural Indigenous communities face neglect.[77] Native Hawaiian communities

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72. *Id.*

73. Press Release, FEMA, FEMA Grants for Home Acquisitions (Dec. 5, 2024), https://www.fema.gov/fact-sheet/fema-grants-home-acquisitions [https://perma.cc/S5BA-8C8V] (explaining the process of FEMA home acquisition process).

74. Rebecca Hersher and Robert Benincasa, *How Federal Disaster Money Favors the Rich*, NPR (Mar. 5, 2019), https://www.npr.org/2019/03/05/688786177/how-federal-disaster-money-favors-the-rich [https://perma.cc/FW8T-9AFD].

75. *Id.*

76. *Id.* See the country-level model developed by sociologist Junia Howell and James R. Elliott illustrating the "cumulative property damage from natural disasters and its effects on racial wealth gaps in the United States"; *see also* Junia Howell and James R. Elliott, *As Disaster Costs Rise, So Does Inequality*, 4 SOCIUS 1, 1 (2018) (analyzing the county-level model of cumulative property damage from natural disasters and its results which indicate that a greater level of natural disasters increases wealth disparities between Black and white respondents).

77. *See generally* Jenifer Sunrise Winter et al., *Opportunities and Challenges for First-mile Development in Rural Hawaiian Communities*, J. CMTY INFORMATICS (Dec. 22, 2013) https://pdfs.semanticscholar.org/3c6f/10b0c1c297c9d9b7e4bbb750142de9ecee48.pd

are disproportionately situated in rural areas, such as Molokai and parts of Big Island, where critical infrastructure like electricity,[78] broadband,[79] and healthcare is limited.[80] In contrast, heavily developed tourist areas such as Waikiki or resort zones on Maui and Kauai receive substantial investment in infrastructure to support the tourism industry.[81] These areas benefit from well-maintained roads,

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f [https://perma.cc/LCX9-DSG9] (illustrating the lack of critical infrastructure for Indigenous Hawaiians and the resulting lack of opportunities for education, healthcare, and linguistic and cultural preservation); *see also* Umer Zaman et al., *Linking Regenerative Travel and Residents' Support for Tourism Development in Kauai Island (Hawaii): Moderating-Mediating Effects of Travel-Shaming and Foreign Tourist Attractiveness*, 62 J. TRAVEL RSCH. 782, 782–88 (2022) (describing the traditional practice of directing infrastructure development to tourism rather than Indigenous communities and exploring a possible reframing of the tourism industry as a vehicle for improving infrastructure for Indigenous communities).

78. Molokai faces persistent electricity challenges, including high energy costs and reliance on an outdated, centralized power system. *See* Lauren Teruya, *Molokai Has An Electricity Problem. This Co-Op Wants To Change That,* HONOLULU CIV. BEAT (Sep. 22, 2021), https://www.civilbeat.org/2021/09/molokai-has-an-electricity-problem-this-co-op-wants-to-change-that/ [https://perma.cc/YA39-AVWP] (describing the lack of access to affordable electricity in Moloka'i, a predominantly Indigenous Hawaiian community on Maui and the local co-op Hoahu Energy's efforts to provide electricity to the community).

79. Up until November 2024, Molokai residents faced significant challenges with internet access due to terminations by Sandwich Isles Communications, leaving many without connectivity. The Department of Hawaiian Home Lands (DHHL) has since secured an $89 million grant to enhance broadband infrastructure. *See* Megan Moseley, *Molokai residents talk internet, broadband service*, THE MAUI NEWS (Nov. 14, 2024), https://www.mauinews.com/news/local-news/2024/11/molokai-residents-talk-internet-broadband-service [https://perma.cc/W2U5-4464].

80. Due to the cessation of multiple airlines during the COVID-19 pandemic, residents of Molokai and Lanai now rely solely on Mokulele Airlines for essential medical travel, but recent services disruptions have led to missed healthcare appointments and growing concerns about access to necessary medical care. *See* Brittany Lyte, *With One Airline Left, Molokai and Lanai Residents Struggle to Access Medical Care*, HONOLULU CIV. BEAT (May 7, 2023), https://www.civilbeat.org/2023/05/with-one-airline-left-molokai-and-lanai-residents-struggle-to-access-medical-care [https://perma.cc/5QNU-L6P5].

81. The U.S. Army Corps of Engineers has been involved in projects to address coastal erosion at Waikiki Beach, a critical asset for the state's tourism economy. *See, e.g.*, Press Release, Office of U.S. Representative Ed Case, U.S. House Approves Case Measure To Pursue Federal Project To Assist In Preserving Waikiki Beach (Jun. 8, 2022), https://case.house.gov/news/documentsingle.aspx?DocumentID=888 [https://perma.cc/CX3C-DK29] (describing congressional authorization of U.S.

utilities, and public services that cater to visitors and the economic priorities of the state.[82] Therefore, in Hawaii, the NRI's overemphasis on property value may yield high-risk scores for resort areas, where substantial investments in infrastructure and utilities already exist to serve the tourism industry. Conversely, rural or Indigenous areas may register as less critical on the NRI scale, effectively sidelining them in mitigation planning.

The FEMA case study on Hawaii[83] provides valuable insight into the comparison of flood control and disaster preparedness funding between high-tourism locales like Waikiki and the more rural or Indigenous areas across the state. At the center of this disparity is the availability of Urban Area Security Initiative (UASI) funds, from which only the City and County of Honolulu received grants between fiscal year 2009 and 2019.[84] Here, UASI funds have financed advanced infrastructure projects, including helicopter-mounted thermal imaging systems for real-time flood assessments, the deployment of modular vehicle barriers for managing urban flooding, and significant upgrades to Honolulu's Emergency Operations Center (EOC).[85]

By contrast, rural counties like Kauai Valley and Waimanalo must rely only on smaller scale projects funded by State Homeland Security Program (SHSP) grants and Emergency Management Performance Grants (EMPG), both of which are more modest in grant size and subject to unpredictable fluctuations.[86] Due to inadequate infrastructure investment, rural Indigenous communities heavily depend on community self-reliance programs like Community Emergency Response Teams (CERTs), which serve as first responders in isolated regions where emergency services are limited.[87] That is,

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Army Corps of Engineers feasibility studies and federal infrastructure projects to preserve Waikīkī Beach because of its central role in Hawaii's tourism economy).

82. *Id.*

83. FEMA, GRANT EFFECTIVENESS CASE STUDY: HAWAII (2020) [hereinafter GRANT EFFECTIVENESS STUDY].

84. *Id.* at 5.

85. *Id.* at 12–14.

86. SHSP funding levels have fluctuated significantly over the years. For example, Hawaii received $43.73 million in SHSP funds between FY 2009 to FY 2019, averaging $4.3 million annually and distributed across all counties. EMPG funding is more stable but highly limited, ranging from $3 million to $3.6 million annually over 11 years.

87. For example, CERTs teams in Hawaii County dedicated over 5,000 hours to essential tasks such as conducting damage assessments, providing door-to-door notifications, assisting residents with evacuations, and maintaining real-

this funding imbalance perpetuates stark differences in emergency response and recovery capacity. Indigenous communities in remote regions—despite facing similar or even greater risks—must make do with narrower revenue streams and fewer specialized tools and experts.

The Ala Wai Flood Risk Management Project in Honolulu serves as another illustration of how the existing CBA framework shapes flood-control priorities. [88] The project's Engineering Documentation Report (EDR) identifies the economic importance of Waikiki as a key justification for the project.[89] This indicates that Army Corp of Engineers' initial scope of the project primarily accounts for property values and business losses in Waikiki, rather than assessing the cultural and social costs to communities outside this zone.

The Ala Wai Canal project's "major flood risk management feature in the system" is specifically designed to protect heavily urbanized commercial areas where hotels, luxury condominiums and tourist attractions are located.[90] Moreover, upstream areas, where less affluent Indigenous communities reside, are excluded from direct benefits. For example, whereas the original feasibility study proposed six detention basins in upstream areas (Makiki, Manoa, and Palolo Valleys), these features were later removed due to cost concerns despite their potential benefits for upstream communities.[91] In doing so, the final modifications effectively prioritized enhanced conveyance

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time GIS maps, which were used for situational awareness and public information purposes. *See* GRANT EFFECTIVENESS STUDY, *supra* note 83, at 12.

88. U.S. ARMY CORPS OF ENGINEERS HONOLULU DISTRICT, ALA WAI FLOOD RISK MANAGEMENT STUDY, https://www.poh.usace.army.mil/Missions/Civil-Works/Civil-Works-Projects/Ala-Wai-Flood-Risk-Management-Project [https://perma.cc/7FAZ-38PE] (last visited Jan. 11, 2025).

89. U.S. ARMY CORPS OF ENGINEERS HONOLULU DISTRICT, ALA WAI FLOOD RISK MANAGEMENT PROJECT HONOLULU: HAWAII ENGINEERING DOCUMENTATION REPORT, at Section ES-2 (2020) (stating that the primary goal is to "reduce the risk of loss of life and long-term economic damages to the public and private sectors within the 19 square miles of the Ala Wai Watershed") [hereinafter ALA WAI PROJECT].

90. *Id.* at Section 6.4.2.; *see also* ALA WAI FLOOD RISK MANAGEMENT PROJECT ENGINEERING DOCUMENTATION REPORT PROJECT MAP (Jul. 16, 2020), https://www.poh.usace.army.mil/Portals/10/docs/Ala%20Wai%20FRM/Ala%20Wai%20EDR%20Project%20Map.jpg?ver=BHZ6zYaget-8BQysK9cvtw%3d%3d [https://perma.cc/V4JG-RCBL] (depicting the Ala Wai Canal as the central flood-risk-management feature designed to protect surrounding dense commercial and urban development, including the Waikīkī resort corridor).

91. ALA WAI PROJECT, *supra* note 89, at section ES-3, 6.1–6.3.

systems within urbanized areas near Waikiki rather than upstream flood detention measures.[92] This shift reflects a focus on protecting economic assets at the base of the watershed rather than addressing flood risks in upstream residential areas.

2. Who Can Apply?

Although FEMA's grant programs are technically open to all qualified applicants, their design often creates undue difficulty for economically disadvantaged community applicants. One of the major hurdles is the complexity of the application process. Federal flood-mitigation grants typically involve extensive paperwork, detailed engineering or environmental analyses, and a host of technical requirements.[93] Preparing a competitive grant application is time-consuming and costly, which often requires hiring consultants to navigate FEMA's stringent requirements.[94] Consequently, FEMA funds disproportionately go to places that can afford to conduct research, pay the local matching shares, and hire consultants to fill out the complex application forms.[95]

Research further suggests that individuals with lower levels of formal education or limited political engagement may simply lack the "know-how" to navigate these intricate forms and procedures, deterring them from applying in the first place.[96] When language

92. *Id.* at section 6.4.

93. Eric Simms, The Relationship Between Flood Mitigation Assistance Grants and Economic Resilience at the County Level 37 (Apr. 12, 2016) (M.P.P. thesis, Graduate School of Arts and Sciences of Georgetown University) (on file with the *Columbia Human Rights Law Review*) (detailing the various components of flood mitigation projects, which often require extensive feasibility and engineering studies, technical assistance, and administrative management).

94. Jenna Tyler et al., *Is Flood Mitigation Funding Distributed Equitably? Evidence from Coastal States in the Southeastern United States*, 16 J. FLOOD RISK MGMT 1, 7–9, 8 tbl. 2 (2023) (finding that the complexity of the federal grant process creates significant barriers for lower-capacity communities, who often lack the staff and technical resources required to successfully compete for funding).

95. Thomas Frank, *FEMA Climate Grants Pose Challenge for Poor Communities*, E&E NEWS BY POLITICO, CLIMATE WIRE (Jun. 1, 2021), https://www.eenews.net/articles/fema-climate-grants-pose-challenge-for-poor-communities/ [https://perma.cc/38UA-4KMX].

96. Kathleen Tierney, *Social Inequality, Hazards, and Disasters, in* ON RISK AND DISASTER: LESSONS FROM HURRICANE KATRINA 109, 113–4 (Ronald J. Daniels et al. eds., 2006) [https://perma.cc/EDN6-KPMD]; *see also* Tyler, *supra* note 94, at 9 ("Another explanation could be that socially vulnerable communities are unaware of these grants and funding sources, meaning they are less likely to

barriers or minimal digital access compound the problem,[97] the result is a funding system that inadvertently funnels money to communities with greater administrative capacity. In the context of Hawaii, this dynamic is particularly problematic for Indigenous communities, many of which are in rural areas and face uneven access to high-speed internet or stable electricity services, further constraining their ability to secure crucial financial aid.[98]

A second obstacle stems from the local cost-share requirement, which typically requires that state or local applicants provide up to twenty-five percent of the total project cost.[99] Thus, wealthier jurisdictions—particularly heavy-tourist areas that can levy more substantial taxes—are better positioned to meet this contribution, while counties with fewer fiscal resources and populations may struggle to shoulder their share, thereby missing out on FEMA funds. Although FEMA offers higher federal costs for "small impoverished communities,"[100] many of these communities may remain unaware of such provisions or still lack the institutional capacity to follow through with the necessary applications. In sum, the very communities most at risk from flood events—those with fragile infrastructures, lower incomes, or predominantly marginalized populations—risk being overlooked because they cannot readily fulfill FEMA's administrative and financial prerequisites.

Taken together, these factors highlight an inherent inequity in federal flood-mitigation funding. These do not just reflect bureaucratic hurdles but actively shape which communities receive

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apply for these grants and when they do apply their lack of familiarity makes their grant applications weaker and less likely to be awarded").

97. Tyler, *supra* note 94, at 2 ("Additionally, lower income communities are less likely to apply and receive disaster aid due to onerous applications processes as well as language and financial barriers").

98. Winter, *supra* note 77.

99. FEMA requires state and local applicants to contribute a share of the total project cost. *See* FEMA, HAZARD MITIGATION ASSISTANCE GUIDANCE: HAZARD MITIGATION GRANT PROGRAM, PRE-DISASTER MITIGATION PROGRAM, AND FLOOD MITIGATION ASSISTANCE PROGRAM 26 (2015), [https://perma.cc/T77F-NCV5] ("In general, HMA funds may be used to pay up to 75 percent of the eligible activity costs. The remaining 25 percent of eligible activity costs are derived from non-Federal sources").

100. The federal government's share of costs increases to 90% for "small impoverished communities," which are defined as "a community of 3,000 or fewer individuals that is economically disadvantaged, as determined by the State in which the community is located and based on criteria established by the President." This means qualified communities need to cover only 10% of the costs instead of 25%. *See* 42 U.S.C. § 5133(a), (h)(2).

life-saving resources and which are left to fend with inadequate protection. If this dynamic is not addressed, it will continue to reinforce existing disparities, directing the bulk of federal aid to better-resourced jurisdictions while leaving behind the very populations who often face the gravest dangers in a flood event.

C. Values Unrecognized

Flood events in Hawaii threaten far more than just physical infrastructure. In particular, Native Hawaiian communities face the potential loss of intangible cultural values that lie at the heart of communal identity, spirituality, and sustainability. Metrics such as NRI often overlook these dimensions, focusing primarily on measurable financial losses—like building damage or agricultural disruption—and neglecting the socio-cultural and spiritual attachments people have to their lands and waters.[101] Although the omission of cultural and intangible factors is not unique to Hawaii,[102] it is particularly urgent in an island context where cultural significance extends beyond historical monuments and is deeply interwoven with daily life and identity.

Admittedly, quantifying intangible losses poses significant methodological challenges, and thus many disaster-assessment tools, NRI included, default to assess in purely economic terms.[103] This approach might capture the monetary value of threatened buildings or farmland, yet it fails to measure the spiritual and communal practices undergirding Native Hawaiian life. For instance, the cultivation of taro (*kalo*) is more than an economic endeavor, but "is

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101. NRI assesses flood risk based on expected annual losses, which are calculated using monetary value of buildings, populations, and agriculture exposed to hazards. The approach does not discuss anything about cultural or spiritual damages that have no direct market value. *See* FEMA, NATIONAL RISK INDEX PRIMER 13–15, 28–29 (2020) [https://perma.cc/4CA5-G47V].

102. *See generally* Claudia De Lucia et al., *Tangible and Intangible Ex Post Assessment of Flood-Induced Damage to Cultural Heritage*, 24 NAT. HAZARDS EARTH SYST. SCI. 4317 (2024), https://nhess.copernicus.org/articles/24/4317/2024/nhess-24-4317-2024.pdf [https://perma.cc/CM65-NK4A] (highlighting how existing databases used for pre-disaster assessments fail to include all culturally significant assets in the context of Italy).

103. *Id.* at 4318 ("[I]t is often noted that quantitative disaster data concerning losses related to cultural heritage are either scarce or entirely unavailable. This underscores the persistent challenges in obtaining comprehensive information on the impact of disasters on cultural heritage.").

also the center of spiritualism, mythology, and social structure."[104] In fact, in Native Hawaiian cosmology, taro is considered an elder sibling of the Hawaiian people.[105] Thus, when flooding disrupts irrigation systems and lands used for taro cultivation, it endangers both food security and ceremonial rites, leading to a profound erosion of cultural identity. The same dynamic holds true for other traditional practices such as fishpond maintenance[106] and cultural gatherings near sacred sites, which do not fit neatly into a traditional CBA of property damage alone.

Recognizing the approach's inability to address broader social and cultural costs of flooding, the 2023 Hawaii Hazard Mitigation Plan (HMP) acknowledges risks to cultural resources.[107] However, it does not fully integrate them into risk assessments or mitigation strategies. The accounted cultural assets are limited to "archaeology sites, burial sensitivity areas, historic buildings, historic districts, historic objects, and historic structures."[108] In effect, a heiau (ancient temple) might be itemized as a cultural asset at risk, but the ceremonial practices, communal knowledge, and ancestral ties that give the site meaning beyond mere architecture remain unaccounted

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104. MANOA HERITAGE CENTER, PLANTS KALO (TARO), https://www.manoaheritagecenter.org/moolelo/polynesian-introduction-plants/kalo-taro [https://perma.cc/7UYM-X62M] (last visited Jan. 11, 2025) ("Besides being the staple food source, it is also the center of spiritualism, mythology, and social structure").

105. *Id.*

106. *See* Erica Gies, *The Hawaiians revising their islands' ancient aqua culture practices,* ONLY ONE (Aug. 7, 2020), https://only.one/read/ancient-aquaculture [https://perma.cc/G29Y-MHPR] (highlighting that ancient fishponds are vital for sustainable aquaculture but are highly vulnerable to sedimentation and structural damage from floods); *see also Restoring Ecosystems and Rejuvenating Native Hawaiian Traditions in Maui*, NOAA FISHERIES (Oct. 10, 2024), https://www.fisheries.noaa.gov/feature-story/restoring-ecosystems-and-rejuvenating-native-hawaiian-traditions-maui [https://perma.cc/FT4F-422G] (describing how disruptions to freshwater flows threaten Native Hawaiian food systems and ceremonial practices, including taro cultivation and traditional fishpond maintenance, which are central to cultural identity and community well-being).

107. STATE OF HAWAII, HAZARD MITIGATION PLAN 2023, at 4.1-2, https://dod.hawaii.gov/hiema/files/2025/10/2023_Hawaii_SHMP_Final_Approved_Adopted_508Compliant-102723.pdf [https://perma.cc/2RNX-T695] (defining risk "for the purposes of the 2023 HMP Update [as] the potential for damage or loss created by the interaction of hazards with assets such as people, buildings, infrastructure, and/or natural and cultural resources").

108. *Id.* at 4.1-19.

for.[109] Consequently, when flooding disrupts access to these sacred spaces or destroys irrigation for traditional taro fields, the traditional and communal dimensions of Native Hawaiian life—no less vital than the physical landmarks themselves—may go unprotected.

Even when cultural values are formally acknowledged, implementation gaps can hinder their protection. Although the Advisory Council on Historic Preservation (ACHP) recognizes the importance of addressing climate change impacts on sacred sites and historic properties meaningful to Indian (Native Americans) and Native Hawaiian Organizations (NHOs), federal agencies often lack the experience or awareness to weave these cultural considerations into flood risk planning.[110] For instance, Section 106 of the National Historic Preservation Act[111] requires federal agencies to consider cultural resources in project reviews, yet it seldom accounts for the unique vulnerabilities of sacred sites during climate-related emergencies.[112] As a result, well-intentioned policies can fail to translate into on-the-ground protections for Native Hawaiian values.

Ultimately, the inability of current metrics to account for these intangible dimensions underscores the need for more inclusive frameworks in flood-disaster assessment. Moving beyond standard cost-benefit calculations to incorporate cultural, spiritual, and social factors may better reflect the true scope of harm that floods inflict on communities with deep-rooted traditions and ties to the land. Without such an approach, any putative "success" in reducing monetary damage risks overlooking the very cultural element that makes these places and their inhabitants so uniquely vulnerable, and at the same time, so worthy of protection.

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109. A heiau is a Hawaiian temple or sacred place of worship that is used for prayer, making offerings, and sacrificing to gods, goddesses, and spirits. Heiau are still considered sacred by many of the inhabitants of Hawaii, and some are not open to the public. *See* MANOA HERITAGE CENTER, WHAT IS HEIAU?, https://www.manoaheritagecenter.org/moolelo/kuka%CA%BBo%CA%BBo-heiau/what-are-heiau/ [https://perma.cc/8DA9-XNJ9].

110. *See* ADVISORY COUNCIL ON HIST. PRES., CLIMATE IMPACTS TO INDIAN TRIBE AND NATIVE HAWAIIAN SACRED SITES AND HISTORIC PROPERTIES: PLAN FOR ACHP ACTIONS 1 (Jun. 28, 2022), https://www.achp.gov/sites/default/files/2022-06/ClimateImpactsIndianTribeNativeHawaiianSacredSitesHistoricPropertiesPlanforACHPActions20220629.pdf [https://perma.cc/ZL5M-QGS6] ("[M]any federal agencies lack appropriate experience and awareness to fully account for these places in relation to climate change.").

111. 36 C.F.R. § 800 (2024).

112. ADVISORY COUNCIL ON HIST. PRES., *supra* note 110, at 1.

D. Voices Not Heard

Another recurring criticism of Hawaii's flood control processes is the lack of meaningful consultation with local and Indigenous stakeholders. The Ala Wai Flood Control Management Project[113] offers a particularly illustrative example: while many residents voiced strong opposition to the Army Corps of Engineers' proposed plans,[114] their concerns were effectively disregarded. For example, Halau Ku Mana, a Native Hawaiian charter school situated along an Ala Wai tributary targeted for a detention basin, was never consulted during project development, even though the proposal, if enacted, would destroy over 1,000 feet of natural stream channel and fundamentally alter the valley's character.[115] Imai Winchester, a teacher at the charter school, recalled discovering surveyors on campus without any prior notification, which "sparked indignation."[116] Such remarks underscore the disconnect between project planners and the very community members who are most directly affected by the planned flood control measures.

Even by the Army Corps' project manager's own admission, communication efforts proved inadequate.[117] Early renderings of a proposed concrete flood wall along the Ala Wai Canal elicited a particularly negative reaction from residents who felt blindsided by both the aesthetic and environmental implications.[118] Although the Corps later engaged in public outreach through stakeholder focus groups and other forums, these efforts appear to have been limited in scope.[119] Moreover, the discussions were largely centered on technical

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113. ALA WAI PROJECT, *supra* note 89.

114. Timothy A. Schuler, *Why Some Hawaiians Are Fighting a Massive Flood-Control Project,* ROUTE FIFTY (Dec. 29, 2019), https://www.route-fifty.com/infrastructure/2019/12/hawaii-massive-flood-control-project/162133/ [https://perma.cc/N6BN-EZEK] (describing the concern of Kenneth Kaneshiro, the director of the Center for Conservation Research & Training at UH-Manoa and a cofounder of the Hawaii Exemplary State Foundation, that "[a] watershed is a living organism. If you're putting six detention dams throughout the watershed, you're disrupting the natural ecosystem.").

115. *Id.*

116. *Id.*

117. *Id*.

118. ALA WAI PROJECT, *supra* note 89, at Appendix D.

119. The public outreach was conducted between October 2019 and March 2020 through small, focus group meetings with identified stakeholders. This limited approach suggests that broader community engagement may not have been prioritized or fully inclusive, as it focused on specific groups rather than the general public. *See id.* at 3.

and logistical adjustments to the project features, such as easements for modifications near Woodlawn Bridge, emergency access for schools, and cleanup costs for detention basins.[120]

Critics argue that such selective consultation reflects a broader pattern of marginalizing Native Hawaiian voices in large-scale infrastructure projects, even when these projects stand to drastically reshape local ecosystems and cultural landscapes.[121] While certain legal frameworks, including NEPA and historic preservation laws require public input, they often default to minimal standards of notice and comment.[122] As a result, absent robust engagement with

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120. *Id.* at 3, Appendix D.

121. The issue of selective consultation is particularly evident in Thirty Meter Telescope project on Maunakea, in which Native Hawaiian groups have expressed concerns about inadequate consideration of their cultural and environmental priorities. These tensions highlight a disconnect between project proponents and Native communities, with critics pointing to a lack of free, prior, and informed consent as a recurring theme in such projects. *See generally* Sara Kahanamoku et al., A Native Hawaiian-led summary of the current impact of constructing the Thirty Meter Telescope on Maunakea (Jan. 3 2020) (unpublished manuscript) (on file with the *Columbia Human Rights Law Review*) (documenting Native Hawaiian-led and scholarly accounts of the Thirty Meter Telescope project that describe how large-scale development on Maunakea proceeded despite sustained cultural and environmental objections, reflecting a broader pattern in which Native Hawaiian voices were consulted selectively rather than meaningfully centered in decision-making); *see generally* Kathleen L. Kawelu, *In Their Own Voices: Contemporary Native Hawaiian and Archaeological Narratives about Hawaiian Archaeology*, 26 CONTEMPORARY PACIFIC 31, 52 (2014) (criticizing how true collaboration is often bypassed in favor of "only engaging in mandated consultations"); *see also* Julia Jacobo, *Native Hawaiians fighting to take control of Maui's water rights amid wildfire cleanup,* ABC NEWS (Dec. 8, 2023), https://abcnews.go.com/US/native-hawaiians-fighting-control-maui-water-rights-wildfire-cleanup/story?id=105356097 [https://perma.cc/RY4S-HDT4] (reporting on ongoing disputes over Native Hawaiian water rights during post-wildfire rebuilding in Maui, illustrating how development and recovery efforts continue to marginalize Native Hawaiian perspectives even as they reshape local ecosystems and cultural landscapes).

122. Agencies frequently use the Federal Register, agency websites and local newspapers to inform the public about NEPA-related actions. While these methods meet procedural requirements, they often fail to reach affected communities effectively, particularly marginalized populations. The commentators (including private citizens, corporations, environmental organizations, trade associations, federal agencies, and state agencies) remarked on the lack of meaningful public participation. *See generally* Final Guidance for Effective Use of Programmatic NEPA Reviews, 79 Fed. Reg. 76986 (Dec. 23, 2014) (noting that a diverse range of commenters, including private citizens, corporations, and organizations, urged the CEQ to better emphasize NEPA's role in ensuring meaningful public participation and suggested that agencies employ

community members, flood mitigation plans risk overlooking solutions that might be more sustainable, culturally respectful, and resilient in the face of Hawaii's evolving climate challenges.

III. LEGAL CHALLENGES TO FEMA'S COST-BENEFIT GUIDELINES

By reducing flood control decisions to property value metrics, the current CBA model effectively overlooks intangible cultural and communal values. Part III explores the international and domestic frameworks that challenge the economic-centered model. Specifically, it examines how the United Nations Declaration on the Rights of Indigenous Peoples and Hawaii's State Constitution impose ethical and legal obligations on government agencies to go beyond mere cost-effectiveness. These legal standards underscore a duty to protect intangible communal values and to ensure more equitable forms of fund distribution—obligations that, as this Part argues, conflict with the traditional CBA approach.

A. International Human Rights Law

FEMA's reliance on CBA for flood control measures centers on whether a project's anticipated economic advantages exceed its costs.[123] Although the federal government has introduced certain equity-oriented measures, these safeguards remain vulnerable to policy rollbacks and still fail to fully account for intangible cultural values. This approach fundamentally conflicts with the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), which prioritizes Indigenous people's autonomy and rights.

The UNDRIP, adopted by the U.N. General Assembly in 2007, sets forth a broad range of individual and collective rights held by Indigenous people regarding culture, identity, religion, language, health, education, and territory.[124] These basic rights under UNDRIP are considered as a "minimum standard" for Indigenous people's

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outreach measures beyond standard Federal Register notices to reach affected communities).

123. Pub. L. No. 100-107.

124. *See generally* G.A. Res. 61/295, United Nations Declaration on the Rights of Indigenous Peoples (Sep. 13, 2007) [hereinafter UNDRIP] (proclaiming a comprehensive framework of individual and collective rights and establishing minimum standards for the survival, dignity, and well-being of Indigenous peoples regarding their cultural, religious, educational, and territorial interests).

survival and well-being.[125] One of the most significant concepts codified in UNDRIP is the principle of Free, Prior, and Informed Consent (FPIC), which mandates that governments and other actors must obtain *informed* consent from Indigenous communities before proceeding with projects that may affect their lands, territories, or resources.[126]

The principle of FPIC extends beyond conventional consultation and procedural engagement. FPIC confers a substantive right upon Indigenous Peoples to shape or even veto initiatives that could affect their lands, territories, or resources. Under this framework, "free" denotes the absence of coercion or manipulation;[127] "prior" requires consent to be given before the specified activity is authorized or commenced;[128] "informed" demands accessible and understandable disclosure of relevant, timely, and culturally appropriate information;[129] and "consent" emphasizes a community's power to accept or reject a proposed undertaking.[130]

Such consent-based framework aligns with UN General Assembly's acknowledgement of FPIC as "a human rights norm grounded in the fundamental rights to *self-determination*."[131] Many scholars similarly have linked FPIC to broader principles of participatory rights and self-governance, highlighting its role in

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125. *Id.* at Art. 43.

126. *See id.* at Art. 32 (requiring States to consult and cooperate in good faith with Indigenous peoples to obtain their free and informed consent prior to the approval of any project affecting their lands or resources). The Office of the United Nations High Commissioner for Human Rights (OHCHR) requires States to consult and cooperate in good faith with the Indigenous Peoples concerned through their own representative institutions in order to obtain their free, prior and informed consent before adopting and implementing legislative or administrative measure that may affect them. *See* OHCHR, CONSULTATION AND FREE, PRIOR AND INFORMED CONSENT (FPIC) (2018) https://www.ohchr.org/en/indigenous-peoples/consultation-and-free-prior-and-informed-consent-fpic (explaining that consultation and participation are crucial components of a consent process that States must undertake before adopting legislative or administrative measures that affect Indigenous peoples).

127 . ACCOUNTABILITY FRAMEWORK, FREE, PRIOR, AND INFORMED CONSENT: OPERATIONAL GUIDANCE 2 (2020), https://accountability-framework.org/fileadmin/uploads/afi/Documents/Operational_Guidance/OG_FPIC-2020-5.pdf.

128. *Id.*

129. *Id.*

130. *Id.*

131. Human Rights Council, Free, prior, and informed consent: a human rights-based approach, at ¶ 3, U.N. Doc. A/HRC/39/62 (2018).

reshaping traditional power dynamics between Indigenous communities and external stakeholders.[132] Thus, FPIC should be regarded as the formal institutionalization of consent requirements. If FPIC were reduced to a mere consultation process where external parties retained ultimate decision-making authority, it would fall short of effectively affirming Indigenous sovereignty.

UNDRIP's references to lands and resources encompass not just a physical or economic asset but a cornerstone of Indigenous spirituality.[133] This argument is well-supported by the language of UNDRIP itself. For example, the preamble of UNDRIP recognizes that control over land is necessary to preserve Indigenous institutions, cultures, traditions, and aspirations in accordance with their worldview.[134] Article 25 directly affirms that Indigenous peoples hold a distinctive spiritual relationship with their lands and waters.[135] Furthermore, Chairperson Victoria Tauli-Corpuz has supported this position and underscored that "land, territories and related resource rights are of fundamental importance to Indigenous peoples since they constitute the basis of their economic livelihood and are the sources of their spiritual, cultural and social identity."[136]

FPIC applies whenever a government or private project risks undermining Indigenous cultural or spiritual identity. That is, if a proposed flood-control initiative in Hawaii involves altering a river integral to taro cultivation or threatens sites essential to spiritual

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132. JEREMIE GILBERT, INDIGENOUS PEOPLE'S LAND RIGHTS UNDER INTER NATIONAL LAW: FROM VICTIMS TO ACTORS 216–219 (2006) (explaining that FPIC is a transformative principle that shifts the balance of power toward recognizing Indigenous People's rights to self-determination and control over their territories, underscoring that FPIC is integral to participatory governance); *see also* Carla F. Fredericks, *Operationalizing Free, Prior, and Informed Consent*, 80 ALB. L. REV. 429, 442, 447 (2016–2017) (arguing that self-determination is achieved by Indigenous communities establishing their own FPIC protocols and "consent regimes" to take control of business interactions and reshape traditional power dynamics).

133. *See generally* UNDRIP, *supra* note 124.

134. *Id.* at Preamble ("[C]ontrol by indigenous peoples over developments affecting them and their lands, territories and resources will enable them to maintain and strengthen their institutions, cultures and traditions, and to promote their development in accordance with their aspirations and needs.").

135. *Id.* at Art. 25 ("[M]aintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters, and coastal seas and other resources.").

136. Victoria Tauli-Corpuz (Chairperson of the United Nations Permanent Forum on Indigenous Issues), *Address to the Opening of Fifth Session of the United Nations Permanent Forum on Indigenous Issues* (May 14, 2007).

ceremonies, FPIC requires the affected Indigenous community be provided with clear, timely, and culturally accessible information in addition to their express approval.

Because it is a declaration rather than a treaty, UNDRIP is not formally binding on the United States under domestic law. However, a number of commentators have observed that non-binding, or "soft law," [137] instruments can still influence domestic legal frameworks by clarifying how existing international norms apply or by guiding judicial and administrative interpretation of Indigenous rights. [138] Therefore, it would be short-sighted to dismiss the discussion of UNDRIP solely on the grounds of its soft-law status, given its expanding influence on legal frameworks worldwide.

B. Hawaii State Constitution

The Hawaii State Constitution adds a distinct layer of legal constraints to FEMA's CBA measures, particularly due to its robust provisions emphasizing environmental protection, cultural preservation, and equity. A central pillar of Hawaii's State Constitution is the public trust doctrine [139] which offers a broader scope than its common law counterparts by incorporating a wide

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137. Soft law, by contrast to hard law which is legally binding, refers to rules and instruments that do not have legally binding force. Soft law is not a formal source of law in its own right—unlike the provisions listed in Article 38 of the International Court of Justice Statute. *See* Shea Esterling, *Looking Forward Looking Back: Customary International Law, Human Rights and Indigenous Peoples*, 28 INT'L J. ON MINORITY GRP RTS. 280, 292 (2021).

138. Felipe Gomez Isa, *The Role of Soft Law in the Progressive Development of Indigenous People's Rights*, *in* TRACING THE ROLES OF SOFT LAW IN HUMAN RIGHTS 185–212 (Lagoutte et al. eds., 2017); *see also* CENTRE FOR INT'L GOVERNANCE INNOVATION, UNDRIP IMPLEMENTATION BRAIDING INT'L, DOMESTIC AND INDIGENOUS LAWS SPECIAL REPORT 32 (2017) (recommending several ways that international soft law vindicating the rights of indigenous people can serve as the basis of legislation for a country seeking to preserve and benefit its indigenous communities); *see generally* Mauro Barelli, *The Role of Soft Law in the International Legal System: The Case of the United Nations Declaration on the Rights of Indigenous Peoples*, 58 INT'L COMPAR. L. Q. 957 (2009) (examining the practical benefits of using soft law in advancing Indigenous People's rights).

139. Public trust doctrine is a legal principle establishing that certain natural and cultural resources are preserved for public use—here, natural resources held in trust. The public is considered the owner of the resources, and the government protects and maintains these resources for the public use. LEGAL INFO. INST., https://www.law.cornell.edu/wex/public_trust_doctrine [https://perma.cc/8SLS-7YHZ] (last updated May 2022).

array of natural and cultural resources.[140] Under Article XI, Section 1, the State is mandated to "conserve and protect Hawaii's natural beauty and *all* natural resources" for the benefit of present and future generations.[141] The inclusion of broad and subjective terms such as "beauty" and "all" suggests that the statute was intended to establish comprehensive environmental protections.

Hawaii's public trust doctrine has been reaffirmed and expanded through a series of judicial decisions to include surface and groundwater,[142] conservation land,[143] and air.[144] Notably, in a recent case, *Navahine F. v. Hawaii Department of Transportation (HDOT),* the Hawaii Circuit court denied HDOT's motion to dismiss, ruling that the plaintiffs had valid claims under the public trust doctrine to address climate change.[145] In doing so, the court effectively expanded the application of the public trust doctrine into climate litigation, and reiterated the state's duty to address climate change as part of its obligation under the public trust doctrine.[146]

The broad interpretation suggests that the term "resources" in Article XI, Section 1 of the Hawaii State Constitution may reasonably include cultural and spiritual values of Indigenous communities. In fact, Hawaii State Supreme Court has recognized that Native Hawaiian rights are protected by the public trust

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140. *See id.* ("The doctrine is most frequently used in the context of water bodies.").

141. HAW. CONST. art. XI, § 1 (emphasis added).

142. *In re* Water Use Permit Applications, 9 P.3d 409 (Haw., 2000).

143. Mauna Kea Anaina Hou v. Bd. of Land and Nat. Res., 363 P.3d 224 (Haw. 2015).

144. Morgan v. Plan. Dep't, 86 P.3d 982, 993, n.12 (Haw., 2004) (clarifying that Hawaii's public trust doctrine extends beyond water resources to include land, air, and other natural resources protected under Article XI, Section 1 of the Hawaiian Constitution).

145. Filed in June 2022 by a group of 13 youth plaintiffs, the lawsuit alleged that HDOT violated their constitutional rights by maintaining and expanding a transportation system heavily reliant on fossil fuels, contributing significantly to greenhouse gas emissions and exacerbating climate change. In June 2024, the parties reached a settlement before trial, which enshrined actionable commitments from HDOT. Navahine F. v. Dep't of Transp., No. 1CCV-22-0000631 (order denying motion to dismiss).

146. *Id.* at para. 5. ("Plaintiffs allege nothing less than they stand to inherit a world with severe climate change and the resulting damage to our natural resources. . . . Destruction of environment is a concrete interest. Since Defendants essentially argue Hawaii law does not *require* them to take action *now*, it appears a declaratory judgment action will help resolve the parties' different view of what the Legislature and the Constitution require.").

doctrine under Hawaii Constitution Article XI, Section 1. [147] Furthermore, by holding that agencies must place the burden on applicants to prove that their proposed use will not interfere with Native Hawaiian rights or other public trust purposes, the Court also identified a presumption in favor of protecting Native Hawaiian rights when evaluating resource use applications.[148] In sum, FEMA's CBA methodology, which often emphasizes economic efficiency over intangible values, may conflict with Hawaii's broader goals to protect environmental and Indigenous rights.

Another key element of Hawaii's public trust doctrine is its anti-discrimination imperative. Courts have repeatedly held that resources must be managed in a manner that benefits all residents rather than a select few.[149] In its landmark case, *In re Waiahole Ditch Combined Contested Case*, the Hawaii Supreme Court strongly defended the equitable principle:

> The state water resources trust thus embodies a dual mandate of protection and maximum reasonable and beneficial use. Reasonable and beneficial use, however, does not preclude protection as a beneficial use. Nor does it encompass uses without any public benefit. The object is not maximum consumptive use, but rather the most equitable, reasonable, and beneficial allocation of state water resources, with full recognition that resource protection also constitutes 'use.'[150]

Applying these principles to FEMA's flood control policies reveals that CBA-driven metrics favor areas with higher property values. It may effectively allocate disproportionate resources to wealthier neighborhoods, leaving Indigenous communities who often

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147. *In re* Kukui (Molokai) Inc., 174 P.3d 320, 348 (Haw. 2007); *see also In re* Waiahole Ditch Combined Contested Case Hr'g, 9 P.3d 409, 445–49 (Haw. 2000) ("The public trust doctrine applies to all water resources without exception or distinction. . . . [R]eview of the early law of the kingdom reveals the specific objective of preserving the rights of native tenants during the transition to a western system of private property").

148. *Id.* at 348; *see also In re* Wai'ola o Moloka'I, Inc., 83 P.3d 664, 705 (2004) (holding that the agency "erroneously placed the burden" on Native Hawaiian intervenors "to establish that the [applicant's] proposed use would abridge or deny their traditional and customary gathering rights").

149. *See* Robinson v. Ariyoshi, 658 P.2d 287, 310 (Haw. 1982) (stating that "[t]he sovereign's reservation of the ownership of surface waters at the time of the Mahele served to impose a public trust upon those waters, that is, the public has a right to have the waters protected for its use").

150. *In re Waiahole*, 9 P.3d at 453–54.

reside in areas with lower property values but face significant cultural and environmental risks.

Although federal law governs much of FEMA's funding criteria, Hawaii's State Constitution can be a tool to impose a broader obligation on state agencies to protect traditional and customary rights of Indigenous communities.[151] The constitutional mandate of due diligence and the public trust doctrine compels states to actively account for cultural, spiritual, and ecological values during project planning.[152] In practice, this means that where flood-control measures risk harming Native Hawaiian practices or sacred sites, state officials cannot merely defer to FEMA's CBA scheme; rather, they must actively integrate public trust considerations—especially the protection of cultural, spiritual, and ecological values—into the planning and approval process.

IV. CONCLUSIONS

This Note has examined how CBA, the primary method for allocating flood-control funding, often falls short for incorporating cultural, spiritual, and communal dimensions of flooding. Focusing on Hawaii, it explored the disproportionate burdens faced by Native Hawaiian communities, who have special cultural and spiritual connection to their land and water yet receive fewer flood-mitigation resources under a purely economic rubric. It further highlighted tensions between the FEMA CBA guidelines and both international human rights laws and Hawaii's state constitution. Having traced how these legal and ethical frameworks challenge FEMA's emphasis on cost-effectiveness, this Note concludes by proposing a more inclusive approach that integrates intangible losses into flood-control decision-making.

The recommendation here is not to abandon CBA altogether. CBA remains valuable for prioritizing and budgeting large-scale infrastructure projects within limited funds.[153] The issue arises when

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151. *See* HAW. CONST. art. XIII, §7 ("The State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural, and religious purposes and possessed by ahupua'a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights").

152. *See In re* Waiahole, 9 P.3d at 141; *see also* Mauna Kea Anaina Hou, 363 P.3d at 414 (Pollack J., concurring).

153. *See generally* Ernest Whitman et al., *Cost-Benefit Analysis and Project Performance*, 1 J. PROJECT MGMT STUD. 1 (2023) (discussing that CBA helps

purely financial metrics overshadow cultural impacts—especially in Indigenous and low-income communities. Incorporating intangible values into CBA could direct resources toward holistic solutions that reflect the genuine on-the-ground needs of Hawaii's Indigenous peoples, rather than reducing flood-control to a question of where property values are the greatest.

An instructive example lies in the Saint Regis Mohawk Tribe's $8.4 million settlement with Alcoa and Reynolds, where polychlorinated biphenyls (PCBs) had contaminated tribal lands and waters.[154] In this case, the parties employed Natural Resource Damage Assessment (NRDA) to evaluate damage caused by pollution.[155] In doing so, the settlement report explicitly recognizes that the prima facie contamination "degrad[ed] natural resources used for [the tribe's] traditional cultural practices."[156] Rather than directly assigning a monetary value to intangible cultural and spiritual losses, the settlement focused on funding projects that would restore or compensate for these losses.[157] The $8.4 million was allocated for initiating cultural restoration programs, [158]

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allocate resources efficiently by identifying projects with highest net benefits, optimizing budget utilization and maximizing social welfare).

154. The $8.4 million settlement received by the Saint Regis Mohawk Tribe from Alcoa was part of a broader agreement addressing environmental damages caused by industrial pollution, particularly PCBs, in the St. Lawrence River region. Alcoa's operations, including illegal dumping of PCBs, caused significant environmental harm. PCBs are highly toxic and have long-term effects on water quality, soil, and biodiversity. ICT Staff, *Saint Regis to Receive Approximately $8.4 Million in Alcoa Settlement*, INDIAN COUNTRY TODAY (ICT) NEWS, https://ictnews.org/archive/saint-regis-to-receive-approximately-84-million-in-alcoa-settlement [https://perma.cc/KH3S-W8YG] (last updated Sep. 12, 2018).

155. NRDA is the legal process to determine the appropriate type and amount of restoration needed to offset impacts to fisheries, wildlife, habitats, and human uses impacted by oil spills, hazardous waste sites, and vessel groundings. The settlement was part of a broader NRDA process. The natural resource trustees "solicited restoration project ideas and developed a restoration plan to address injured natural and cultural resources" resulting from pollution in the St. Lawrence River area. *See* Press Release, U.S. Fish and Wildlife Service, Public, Environment to Benefit from $20.3 Million from Two Settlements for Natural Resource Damage in St. Lawrence River Area (Mar. 27, 2013), https://www.srmt-nsn.gov/news/public_environment_to_benefit_from_20.3_million_from_two_settlements_for_na [https://perma.cc/MPE7-LZQ6].

156. *Id.*

157. *Id.*

158. *Id.* These include language preservation efforts, youth programs, and workshops on traditional practices like seed sharing and basket-making. *See also Pollution settlement between St. Regis Mohawk Tribe and Alcoa, Reynolds and state to fund Akwesasne cultural projects*, NORTH COUNTRY NOW (Apr. 5, 2017)

environmental restoration,[159] and development of new boat launches to improve fishing and boating access to rivers.[160] By structuring an agreement around restorative funding for cultural assets, instead of trying to assign strict monetary values to these practices, the settlement showed how environmental remediation can be aligned with cultural restoration in tangible ways.

Not only did the settlement successfully recognize intangible values, but the valuation process in the Saint Regis Mohawk Tribe case also incorporated significant input from the affected Indigenous community, ensuring that their priorities shaped the allocation of funds. For example, the tribe, working closely with NRDA Trustee Council, engaged with broader community through public meetings, radio announcements, newspaper articles, and distribution of materials like a cultural impact DVD.[161] This approach ensured that funds were directed toward meaningful restoration efforts aligned with community-defined priorities.

Similarly, Hawaii's Indigenous communities, often located in lower-income and rural areas, risk being overlooked under conventional CBA formulas. These communities depend on land and natural resources not just for livelihood, but also for cultural continuity, from taro cultivation and fishing practices to sacred sites. When flood control favors high-value touristic areas, cultural practices and the ecological integrity of rural Indigenous regions can be disrupted.

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https://northcountrynow.com/stories/pollution-settlement-between-st-regis-mohawk-tribe-and-alcoa-reynolds-and-state-to-fund-akwesasne,40337 [https://perma.cc/A62W-RFPZ] (reporting on the particular environmental and cultural restoration projects that the natural resource damages settlement funds will be directed towards).

159. ICT Staff, *supra* note 154 ("More than $10 million . . . will be spent on a variety of ecological restoration projects, including restoration and/or enhancement of wetlands, streambanks, native grasslands, bird nesting and roosting habitat, fisheries and fish habitat and acquisition of unique habitat under threat of development").

160. *Id.* ("Nearly $2 million will be spent by Alcoa/Reynolds to develop and upgrade two boat launches on the Raquette River and construct three new launches on the Grass River to improve fishing and boating access to rivers in the Massena area").

161. U.S. FISH AND WILDLIFE SERVICES, NATURAL RESOURCE DAMAGES SETTLEMENT FOR THE ST. LAWRENCE ENVIRONMENT 26 (2013), https://www.fws.gov/sites/default/files/documents/508_St.%20Lawrence%20Envi.%20NRDA%20Presentation.pdf [https://perma.cc/B3QT-LT7Y] (detailing plans to allocate natural resource damages settlement funds towards particular environmental and cultural restoration in the St. Lawrence River area).

Going forward, policymakers must expand FEMA's CBA framework to explicitly include intangible cultural values. While these values are difficult to monetize, following the Saint Regis Mohawk example, this could include community-led restoration initiatives tailored to the cultural needs of flood-impacted regions.

Moreover, government agencies should actively uphold Indigenous rights of self-determination in line with the UNDRIP and Hawaii's constitutional imperatives. As climate change heightens the risk of flooding, redesigning CBA can lead to equitable and sustainable schemes integral to flood measures, rather than sidelined by purely economic metrics. Only through such reforms can the United States honor its domestic and international commitments and safeguard the holistic well-being of all communities, Native Hawaiians included.