



Equity in Building Resilience in Adaptation Planning





Equity in Climate Adaptation Planning

RESILIENCE INDICATORS

What constitutes strengthening resilience through equitable adaptation planning? How do we assess the context comprehensively so that effective methods are designed? ***To be able to declare that community resilience has been achieved, we must develop systems that address the needs and provide protection for those most vulnerable and marginalized.***

What about the elderly woman who has a physical disability, has no private vehicle, lives in a flood plain, and has no homeowner's insurance? What infrastructure and other improvements are we implementing that will effectively strengthen her resilience to the next disaster? What about the African American child with asthma who lives next to a coal plant? What will we do to strengthen his resilience as he faces the next heat wave which concentrates pollution, activates his asthma, and jeopardizes his life? How do we make sure he has access for emergency health needs while working on the political context that allows 68% of African Americans to be situated near these facilities?

As a conversation-starter for deepening work around incorporating intersectionality in equitable adaptation planning, below is a sample list of indicators/measures of vulnerability and resilience in terms of infrastructure, community/population characteristics, systems, policies, programs/services, protocols, and governance/decision making. This is not an inclusive list. Because these are examples, the indicators ***span the impacts of climate change including shifts in agricultural yields, sea level rise, and extreme weather.***

Some indicators of pre-existing vulnerabilities/risk factors cannot be changed (ex. age, gender, race, pre-existing health conditions, etc.) However, ***it is critical that these characteristics be taken into account in planning as each may be indicative of the need for a different design, for adaptation planning, to accommodate differential pre-existing vulnerabilities.*** Some of the pre-existing vulnerabilities (income/wealth, employment, literacy, education, housing stock, insurance status, etc.) can and should be changed if we hope to achieve true resilience.

To optimize program design and evaluation, ***ideally, these factors should be cross-referenced because of intersectional relationships in systems, communities and individual lives.*** For example, during Hurricane Katrina, low income, African American women suffered the highest rates of injury and mortality. So looking at any of those indicators in isolation would be insufficient in assessing and addressing vulnerabilities. Similarly, it would be important to note if the vast majority of those who don't have uptake of a certain service are of a specific religion because it might signal a cultural norm that must be addressed in program design. Or, if a racial group is disproportionately exposed to toxic facilities, there may be a civil rights issue to be addressed through regulatory measures. ***Categories of these indicators must be catalogued at the smallest possible geographic level to address clusters of populations, issues, circumstances, etc.*** Also, as demonstrated by illustrative scenarios above, it is important to note that some of the vulnerability indicators are also process/outcome indicators and vice versa which highlights the interconnection and the critical need for cross referencing indicators due to the layered interplay of factors and dynamics.

Adaptation planning must also take into account short and long term resilience. Therefore, plans must encompass service availability, access, and uptake for disaster relief while also working toward levee reinforcement, coastal restoration, etc.

About the pre-existing vulnerabilities/assets indicators

There are social, cultural, economic, and political factors that combine to render populations and communities vulnerable to the myriad results of climate change. Multiple communities, populations, individuals face double or multi-jeopardy due to the layered dynamics/characteristics within which they exist. Vulnerabilities can be due to demographic factors and are affected through differential impact of sea level rise, shifts in agricultural yields, and extreme weather, as well as differential systemic and structural access and treatment in adaptation programming. At the same time having assets in place will protect individuals/families/communities from the impact of sea level rise, shifts in agricultural yields, and disasters.

PRE-EXISTING VULNERABILITIES/ASSETS

Demographics	Age
	Gender
	Race/ethnicity/indigeneity
	Income/wealth
	Employment
	Education
	Literacy
	Disability/ableism
	English as a Second Language
	Recent Immigrant
	Sexual Orientation
	Religion
	Undocumented persons
	Homeless persons
	Persons with criminal records
Housing Security	Quality of Housing stock (mobile homes, housing age, etc.)
	Homeowners
	Homeowners with homeowners insurance
	Renters
	Renters with renters' insurance
	Homes in flood plains
	Homes with flood-proofing
	Homeowners with flood clause in homeowners insurance
	Availability and access to vouchers for flood insurance assistance
	Number, location, and population of prisons
Domestic violence shelters	
Shelters for LGBTQ youth and adults	
Food Security	Households with grocery store within a XX mile radius of the home
	Farmers' markets/community markets per capita
	Households identified as food insecure
Mobility	Homes with vehicles
	Public transportation availability and access
	Evacuation routes
Health Status/System/Services	Individuals with health insurance coverage
	Persons with pre-existing health conditions
	Persons with substance abuse
	Mental health services

	Substance abuse services
	Domestic violence hotline
	Household distance to nearest hospital
	Doctors per capita
	Nurses per capita
Environmental Hazards	Air quality
	Homes within a 10 mile radius of a nuclear reactor/chemical plant or other hazardous facilities, including brownfields
	Proximity of schools to brownfields/toxic sites
	Adequate/Effective Sewage /Waste Management Systems
Emergency Services	Household knowledge level of disaster resources
	Households with disaster kits
	Household distance to nearest fire station
	Household distance to nearest EMT services, including ambulance
	Availability of hazmat certification programs
	Hazmat certified individuals
	Disaster plans in place—schools, businesses, churches, organizations, prisons, etc. (quality of plans)
	Pre-Disaster Mental Health Preparation for First Responders
Businesses/Jobs	Locally owned/community based businesses
	Minority owned businesses)
	Women owned businesses
	Businesses with flood proofing
	Businesses with insurance
	Employment Rate
	Wages
	Union Jobs
Public/Private Utilities	Telecommunications—availability and access (Phone/texting, Television/cable, Radio, broadband, etc.)
	Households with water shut-offs in the last 12 months
	Households reliant on well-water
	Households with electricity shut-offs in the last 12 months
Social Services	Social services-availability and access
	Services for undocumented persons—availability and access
Governance/Policies	Inclusive governance with appropriate representation in stakeholders given meaningful authority
	Extent to which decision makers match the demographics of the community make-up (somewhat subjective but measures should be identified like race, class, and gender minimally)
	Voting participation in the last presidential election
	Policy landscape—health codes, building codes, zoning codes, ordinances, etc. , labor policies (including local hire provisions)
Community Knowledge/Attitudes	Neighborhood cohesion-attitudes
	Knowledge of disaster services and protocols
	Knowledge of financial literacy
Culture	Identifies as having religious/cultural ties to land/water

About the Process/Outcome Indicators

Overarching *intended resilience outcomes that demonstrate successful adaptation to the shifts in agricultural yields, sea level rise, and extreme weather caused by climate change* include equitable preservation of:

- Life and health;
- Safety and wellbeing;
- Community and culture;
- Land, home, and property;
- Livelihoods and economic security;
- Core systems, services, and basic needs;
- Environmental quality; and
- Democratic systems of governance.

PROCESS/OUTCOME INDICATORS	
Infrastructure	Levees fortified (mapping/distribution)
	Coastal restoration projects (mapping/distribution)
	Storm water management projects (mapping/distribution)
	Flood control measures
	Solar and wind installations—community level, home, commercial/businesses (mapping/distribution)
Economic Development/Jobs	Jobs Lost-Temporarily
	Jobs Lost Permanently
	New, Local Jobs Created
	Businesses temporarily closed
	Businesses permanently closed
	Business owners returning/rebuilding on same site
	Local hires for infrastructure projects (storm water management, solar installations, waste management, etc.)
	Contracts for infrastructure projects (storm water management, solar installations, waste management, etc.)
	Contracts for infrastructure projects (storm water management, solar installations, waste management, etc.)awarded to WBEs
	Community Workers Agreements for new developments
Community Benefits Agreements for new development	
Food Security	Households identified as food insecure
	Community seed banks
	Local/Community Farms/Gardens
	Crops Lost/Farms Lost due to drought/flooding
Housing	Households temporarily displaced
	Households permanently displaced
	Homeowners displaced (temporarily)
	Homeowners displaced (permanently)
	Renters displaced (temporarily)
	Renters displaced (permanently)

	Homes flooded
	Homes damaged
	Homes destroyed
	Homes without basic necessities—running water, electricity (including length of time)
	Property values increased or reduced
	Residents returning/rebuilding on same site
Education	Schools temporarily closed
	Schools permanently closed
	Education (attendance, grades, graduation rates)
Health Care Services	Health care facilities
	Mental health services
Gender Responsive Emergency Management	Domestic violence incidence pre and post disaster
	Sexual violence incidence pre and post disaster
	Domestic violence shelters
	Domestic violence programs
	Inclusion of gender justice groups in planning
Emergency Management Services	Vulnerability/risk/ hazard assessment conducted
	Early Warning System reach/access
	Community Emergency Response Teams
	Effective implementation of disaster plans
	First responder organizations
	Information sharing and coordination mechanism for first responder and disaster relief organizations
	Disaster Recovery Center availability/capacity/access
	Emergency shelter availability/capacity/access
	Provisions for persons with disabilities
	Sheltering provisions for LGBTQQI persons
	Sufficient interpretation/language access to match populace
	Availability of mass evacuation resources/plans/mechanisms
	Feeding Centers
	Cooling Stations for heat waves
	Emergency child care services
	Availability of and access to emergency supplies (sand bags, masks, etc.)
	Animal rescue, care, and sheltering
	Uptake of services
Adaptation Specific Planning/Decision Making	Inclusive stakeholder engagement in climate adaptation/sustainable communities planning
	Inclusive stakeholder engagement in emergency management planning processes
	Inclusive stakeholder engagement in sea level rise response planning processes
	Inclusive stakeholder engagement in food security planning
	Equity based resource allocation
Politics/Policies/Democracy	Redistricting
	Voting records/rates
	Laws/ordinances to prevent gentrification (whatever those might be)

	Law/ordinance requiring Environmental Impact Studies for all redevelopment projects
	Law/ordinance requiring Community Impact Reports for all redevelopment projects
	Law/ordinance requiring Community Workforce Agreements for all redevelopment projects
Health/Wellness	Mortality incidence
	Morbidity incidence (including Injury/acute health challenge such as disaster injuries, asthma attacks, etc.)
	Persons with short term disabilities resulting from injuries; persons with long term disabilities resulting from injuries
	Reported mental health challenges
	Hate crimes incidence
	Elder abuse incidence
	Child abuse/trauma incidence
Culture	Reported culture shift as a result of disaster/displacement/ shifts in agricultural yields, etc. (need to identify metrics on this, but it is critical)

Summary/Recommendations:

As stated, the above is not intended to be an inclusive list. The purpose is to provide a guide to localities to enable them to integrate an equity lens as they seek to build resilience in designing adaptation plans. Too often research designs only consider one or two variables. But in order to effectively strengthen resilience, plans must consider intersecting vulnerabilities, and outcomes for adaptation planning must also be comprehensive. This set of indicators should be used to spark an in depth analysis at the local level of what are the factors that truly make the local residents vulnerable to the effects of climate change and what variables must be evaluated to declare success in implementing equity based adaptation planning. This tool should be used by researchers, city planners, local government, environmental and social justice advocates, social service agencies, emergency management agencies, and others. The resources below provide further information on broader sets of indices in areas such as gender, disaster, coastal resilience, etc.

RESOURCES:

- I. **Achieving Resilience in Coastal Communities: Resources and Recommendations**
<http://online.nwf.org/site/DocServer/ac-proof-aug.2014.pdf?docID=15501>
- II. **Building Indexes of Vulnerability: A Sensitivity Analysis of the Social Vulnerability Index**
<http://ehs.unu.edu/file/get/3596.pdf>
- III. **Disaster Resilience Measurements: Stocktaking of Ongoing Efforts in Developing Systems for Measuring Resilience**
http://www.preventionweb.net/files/37916_disasterresiliencemeasurementsundpt.pdf
- IV. **Gender Mainstreaming in Emergency Management**
http://www.gdonline.org/resources/Enarson_GenderMainstreamingCanada.pdf
- V. **Social Vulnerability to Climate Variability Hazards: A Review of the Literature**
http://adapt.oxfamamerica.org/resources/Literature_Review.pdf

QUESTIONS? CONTACT: Jacqui Patterson jpatterson@naacpnet.org