

## **ADAPTING TO CLIMATE CHANGE: IT IS JUST BETTER PLANNING**

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### ***What is adaptation?***

Adapting, adaptation, adaptedness—all, according to Merriam-Webster's, mean change to better match present or future circumstances. Adaptation can mean adjusting to environmental conditions to *avoid negative* impacts or can mean to *embrace positive* consequences of change. By looking at present and likely future environmental conditions, we can see that the past is no longer a good guide for the future. The science tells us the climate is changing (e.g. temperatures and sea levels are rising and precipitation patterns are changing). As humans we know what it means to have our natural environment change and to be able to prepare for it through changes in our built environment: we know that the seasons will cause us to need a variety of clothes and housing because winter is colder and summer is warmer. Change, then, can and does affect us in both our natural environment and in our built or human environment. And knowledge around what is likely coming can help us to prepare effectively and become less vulnerable.

Adaptations we make to climatic change need to be aimed at making systems more resilient and healthy now and in the long run. Resilient, healthy systems can better withstand perturbations of all types than systems that are unbalanced or at the edge of their survival. Making a system more resilient can mean reducing pressures that are already stressing the system. It can mean fishing for new species that are becoming established in a new region and reducing pressure on a stressed species; providing greenways and migration routes for plants and animals that need to move to better match the environment that is best for them; or restoring natural floodways to allow the natural system to better protect the built environment. It can mean investing in long-term projects that reduce vulnerability (of people, infrastructure, or even investments) rather than increasing it. It can mean investing in educating the public to increase their awareness and availability of more environmentally friendly choices and options open to them.

### ***Adaptations are always regional and local***

Because climate change impacts are regionally and locally specific, so will the adaptations that are undertaken to address those impacts need to be regionally and locally specific. At present, the information that is generally available around climate change, the global climate model projections, tend to be on rather large geographical scales larger than the decisions that need to be made around adaptation. Until appropriately downscaled information is available to all regions and localities (the Adaptation Network is presently working with the Heinz Center on developing this expertise), it can be difficult to know what parts of the present climate are likely to change or continue in your region. As coastal managers, you may for example wonder if recently experienced flooding from sea level rise might become a more regular event. If you knew the relative rate of sea level rise in your area you could have a better understanding of what is likely coming your way in the future.

When making a decision to adapt to some future climatic condition, it is unwise to make that decision based on any extremely specific projected value (e.g. of temperature, precipitation, or sea-level rise) or future date. A more skillful approach is to look at the trends that the models are

suggesting along with the trends that are beginning to show themselves in your region and plan accordingly. Trends will continue for generations—even if mitigation is extremely successful.

For decision-making, *trends* are one important factor. Another is *vulnerability*. Mapping projected and observed trends against already identified vulnerabilities will give some indications of where to start thinking about developing adaptation options. Other approaches to developing adaptation action plans are scenario building, hazard planning, and *what ifs/how much* (would have to happen to see a particular negative impact or reach a threshold). There are many approaches to planning or choosing adaptive activities. All have their appropriate place in a planning repertoire.

### ***Who should consider adaptation activities?***

A variety of levels of decision-makers make adaptation decisions. Cities and towns may look at areas of present vulnerability—for example, where it always floods during heavy rains, and make changes to the drainage of particular locations because they have learned that the problem will likely increase or become more frequent. States or regions may look to changes in laws or regulations that could for example, make developing long-term plans and systems work differently (e.g. a reservoir, infrastructural planning that includes likely climate projections in their tolerances, etc.). Homeowners may, for example, decide to plant not the traditional horticultural choices but instead choose options that grow more readily in the new projected environment. We may work with other citizens in a town to develop neighborhood resiliency plans. State and National agencies may support adaptation by offering grants to develop local models aimed at supporting choices of local decision-makers.

Along with diverse levels of decision-makers, there is also a variety of time scales or timelines along which decisions can be made. If you are a farmer and plant annual crops you will be making decisions on an annual basis. If you are planning the development and implementation of a bridge or other long-lived infrastructure, e.g. a port, you will need to be planning on a much longer timeframe. It is important to recognize that the future will be different from the past and include those future differences in our planning and hazard mitigation efforts.

### ***Adaptation considerations***

When deciding to adapt to climate changes, we need to be cognizant of not choosing an adaptation just because it is easy now if in fact it could make the problem worse in the long run. It is important that short-term decisions be consistent with the longer-term perspective of adaptation demands, and with reducing societal vulnerability and building the resilience of natural systems. It would be a waste of money and time to make adaptations to immediate problems that do not translate into long-term solutions, or worse create new long-term problems.

A few other considerations that should be included in any adaptation planning process:

1. After you have decided on the need for an adaptive action, consider the costs (both economic and who is impacted). What are the costs, who should pay them, how should responsibility be shared, who can help? Are there groups missing from the discussion e.g. those likely impacted (vulnerable groups) or those who have expertise to assist in the

process (corporations)? Equity issues might need to be included in your calculations as well as the costs of doing nothing.

2. What might be some of the unintended or unexpected consequences from your adaptive action? Try to think outside of the box and anticipate and address any possible problems.
3. What is the relationship between adaptations that occur in different sectors? For example, an adaptation that requires a release of water from a reservoir to deal with reduced runoff from lack of rain to support a fishery could cause a water shortage for agriculture or human use.
4. Any adaptation action needs to consider the relationship between adaptation and mitigation. Is your adaptation making mitigation harder or easier to attain? An adaptation to heat stress could be to provide air conditioners to needy residents. That could be helpful to the health concerns of heatwaves but would lead to problems in the energy sector that is already stressed on hot days and make the overall problem worse by increasing emissions of greenhouse gases.

These considerations and others support a significant level of planning and feedback prior to and following implementation of any adaptive decisions. Feedback can include evaluating the present success of the adaptive action and future assessments to be certain that the action of choice continues to work as the future projections become the now environment. Adaptation is not really anything new, it is just better planning and using different information (future projections) in recognition that the future will be different than the past. All adaptive actions should try to fall into the *win-win-win* category: where there is a benefit now, a benefit in the future, and could still be a benefit whether the climate changes as projected or we are surprised.

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The Adaptation Network is a non-profit organization and a project of the Earth Island Institute. The overall goal is to promote adaptation in concert with mitigation to build resilience in this changing climate. The Adaptation network has four specific reasons for being: identify who is doing what in adaptation in the US. and amplify and strengthen their work by networking them with each other and sharing information on adaptation plans and implementation efforts with those who want and need it; support change in US policy on climate change to include fiscally responsible adaptation activities; counteract the widespread misperception that if one strongly feels we need adaptation, one is against the equally strong need for mitigation; and work in a personal one-on-one manner with those who want to work in adaptation. We never reinvent the wheel, where good work exists we tell others about it and where work is needed we focus our efforts there. We prepare occasional emails (every 3-4 months) to alert our members to what is new in adaptation. If you would like to be added to our list, please email us at [bethraps@earthlink.net](mailto:bethraps@earthlink.net).