



THE HUMAN IMPACT ON CLIMATE CHANGE: OPPORTUNITIES AND CHALLENGES

Policy Possibilities for Public Discussion

A Report of the Interactivity Foundation

Project Manager Dennis Boyer

Edited by Dennis Boyer, Jeff Prudhomme, and Adolf Gundersen

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The Human Impact on Climate Change: Opportunities and Challenges

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Edited by Dennis Boyer, Jeff Prudhomme, and Adolf Gundersen
Copy Chief: Chana Garcia Art Director: Calida Garcia Rawles

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A Way to Start Discussions, Not Settle Arguments

	TYPICAL POLICY REPORTS	IF CITIZEN DISCUSSION REPORTS
WHY	<ul style="list-style-type: none"> To make or influence immediate decisions 	<ul style="list-style-type: none"> To provide a starting point for exploratory discussions
WHAT	<ul style="list-style-type: none"> Analysis of a problem Recommendations for solutions 	<ul style="list-style-type: none"> Areas of concern Contrasting possibilities Possible outcomes
WHO	<ul style="list-style-type: none"> Experts and representatives of interest groups 	<ul style="list-style-type: none"> Expert-specialists and citizen-generalists
HOW	<ul style="list-style-type: none"> Public discussions Decisions made by compromise or consensus 	<ul style="list-style-type: none"> In “sanctuary” Freedom to speak openly Focusing on ideas, not personalities or participants’ interests Decisions made through convergence, while preserving contrasts

Contents



Statement of the Possibilities	6
Summary Table of the Possibilities	7
Talking About the Human Effects on Climate Change.....	8
Promote Climate Awareness (Possibility A).....	12
Change Consumer Habits (Possibility B)	16
Go for Results (Possibility C)	20
Heal the Planet (Possibility D)	26
Deal With a Different World (Possibility E)	30
Focus on the Developing World (Possibility F).....	34
Additional Resources.....	38

Statement of the Possibilities

Most areas of public policy inspire possibilities to consider in both the short- and long-term. With climate change, these immediate and future possibilities are perhaps even more useful in discussions considering there are opportunities to immediately impact awareness and action, as well as develop more complicated approaches to infrastructure and natural systems. The categories below, “Setting the Stage” and “Meeting the Continuing Climate Challenge,” are posed as useful ways to organize and sequence a discussion based on this report. This “structure” arises from the discussion flow of the project itself and is not meant to suggest any priorities or emphasis.

Setting the Stage

- A. Promote Climate Awareness**—Improve understanding of climate impact, climate science, and possible approaches.
- B. Change Consumer Habits**—Focus on human consumption as a source of carbon and greenhouse gas emissions.
- C. Go for Results**—Identify efficient and low-cost solutions that are available for short-term action.

Meeting the Continuing Climate Challenge

- D. Heal the Planet**—Plan and implement long-range recovery and rehabilitation of ecosystems.
- E. Deal With a Different World**—Adapt to changed conditions and plan for climate emergencies.
- F. Focus on the Developing World**—Assist developing nations in reducing climate impact activities and adopting clean technologies.

Summary Table of the Possibilities

Possibility	Concerns	Goals	Responses
Promote Climate Awareness (A)	<ul style="list-style-type: none"> Governance conversation off-track 	<ul style="list-style-type: none"> Improve understanding of impact and options 	<ul style="list-style-type: none"> Public education and information
Change Consumer Habits (B)	<ul style="list-style-type: none"> Human consumption as a source of emissions and other contributing factors 	<ul style="list-style-type: none"> Reduce “carbon footprint” and other climate impact factors 	<ul style="list-style-type: none"> Precautionary planning
Go for Results (C)	<ul style="list-style-type: none"> Sense of complexity may obscure available remedies 	<ul style="list-style-type: none"> Seize opportunities for short-term results at low costs 	<ul style="list-style-type: none"> Identify readily achievable solutions and act now
Heal the Planet (D)	<ul style="list-style-type: none"> Capacity of natural systems to buffer climate impacts impaired 	<ul style="list-style-type: none"> Recovery and rehabilitation of natural systems 	<ul style="list-style-type: none"> Stop and repair the damage and encourage innovative solutions
Deal With a Different World (E)	<ul style="list-style-type: none"> Consequences may increase in scope and intensity 	<ul style="list-style-type: none"> Develop capacity for adaptation and emergency response 	<ul style="list-style-type: none"> Precautionary planning
Focus on the Developing World (F)	<ul style="list-style-type: none"> Harmful practices and outmoded technologies are growing sources of emissions 	<ul style="list-style-type: none"> Help developing nations “skip over” impact-intense phases of economic development 	<ul style="list-style-type: none"> Installation of clean technologies as development aid



IS THE PLANET GETTING WARMER?

How is the climate changing? What role does human action play in global climate change? These are scientific questions that rely on empirical scientific research for their answers. They are topics for scientific discussion.

What public policy choices might we make about climate change? What, if anything, might society do about global climate change? These are public policy questions for democratic citizens to explore.

How might we shape public policy about a topic as hotly contested as the effects of human behavior on climate change? How might we engage in useful and open policy exploration when the underlying situation—whether global climate is changing and what role human action plays in those changes—is the subject of ongoing political debate?

One way forward, the path taken by this citizen discussion project, is to assume that there is value in public exploration of approaches to global climate change. There is value to anticipatory thinking. If we wait until there is universal agreement about the science of climate change, we would have effectively blocked any attempt to engage our collective imaginations in developing alternative public policy responses to climate change. The path taken by this report is to jump over the scientific discussion of climate change and engage in a creative policy discussion. Let's leave aside the work that scientists can do and leap into the work that citizens can do—developing a sense for the different choices we might make to deal with climate change.

This is the challenge and opportunity offered by this report, *The Human Impact on*

TALKING ABOUT THE HUMAN EFFECTS ON CLIMATE CHANGE

Climate Change. This project drew together 16 citizens of varied interests and vocations to explore and develop contrasting public policy approaches to global climate change. While none of the discussion participants were strict climate-change “deniers,” some were fairly skeptical about the effect of human activity on global climate change. One of the first challenges for the group was to find common language to discuss the area of concern. “Global warming” and “climate change” were found to be incomplete and “loaded” descriptions. Panelists were devoted to encouraging a safe discussion space and sought to avoid the unproductive aspects of debate around possible climate policy. Over the course of project discussions, panelists became comfortable with “human impacts on climate” as a working description of what could and should be discussed by the broader public.

What emerged from months of discussion was a precautionary sense that, while not all matters of human effects on climate change have been entirely settled, there is sufficient indication of dramatic environmental consequences to merit the development of policy responses. The discovery that many financial institutions, investors, risk managers, and military and national security planners are indeed building in human-climate-impact assumptions within their projections and plans made a strong impression on panelists.

There are those who are unconvinced that the climate is changing, that human activity has anything to do with those changes, or that dealing with climate is possible or affordable. On the other side of the equation,

there are those who feel that it is already too late to reverse the climate trends unleashed by human activity. Doing nothing at all is, of course, a possible approach. The panelists in this project preferred that the starting points of their conversation emphasize possibilities that provide opportunities for innovation, economic development, and prudent planning.

Now, it is your turn. These possibilities are not the final word. Rather, we hope they serve as conversation starters about the climate and what our different policy choices might be.







I. SETTING THE STAGE

A. Promote Climate Awareness

B. Change Consumer Habits

C. Go for Results

Basic Idea

What if the key to crafting public policy for climate change is scientifically informed policy making? This policy possibility supports efforts to improve our discussions and decision making about the human impacts on climate by enlarging our understanding of climate science, by developing helpful resources and information, and by funding the basic climate research that fills in gaps in our knowledge and provides credible starting points for planning and policy.

If democratic citizens are to make policy decisions about a scientific area of concern, such as climate change, then they need scientific literacy. Citizens and policy makers alike need an understanding of the probabilistic nature of scientific knowledge. They need an awareness of how scientific methods work, how climate models are designed, and how scientific evidence is used in developing policy and regulations.

Expanding scientific awareness could also include the media's responsibility in

covering climate issues in a way that makes it clear their reporting is science-based. The policy would encourage the development of science journalism and a more critically aware media culture. Self-serving information packaged by interest groups should be closely scrutinized. The current model of news reporting—that there are two sides of equal weight to every issue—must be challenged where the weight of the evidence tilts heavily in one direction or suggests multiple directions.

Climate information would be made available in user-friendly public databases. Forums for climate issue discussion would create opportunities for citizens to ask questions of experts and interact on possible approaches. Those in a position to relate relevant experiences and observations (farmers, commercial fishermen, forest managers, etc.) would have opportunities to tell their stories about the effects of a changing climate.



What the Policy Might Look Like

A mid-Atlantic state of 10 million residents undertakes an assessment of “climate impact awareness” and concludes that there is a substantial gap between the public’s understanding of likely future climate impacts and what planning and investment need to be considered. One dramatic example: the state’s main port and oil refinery complex is on land barely above sea level that will likely be threatened by rising ocean levels. Many aspects of the state’s fruit, vegetable, dairy, and lumber production will also be affected by climate changes. The state Climate Impact Awareness Council makes the following recommendations:

- ⊠ The state K-12 schools, technical schools, and higher education institutions are asked to develop specific climate awareness programming and plan for improving “scientific literacy.”
- ⊠ The state Department of Environment is asked to develop and maintain a database of studies and materials related to climate impacts; assist citizens in access and queries; and maintain a “climate fact-check” website that allows residents, media, and officials to evaluate competing claims concerning climate.
- ⊠ The state Department of Emergency Government is asked to assess and update plans relating to climate impacts, partner with neighboring states in regional assessments, and provide timely findings to state and local officials.
- ⊠ The state university research campus provides grants for further study of short- and long-term climate impacts and the system (including its extension service and adult education program) is asked to organize and conduct a statewide program of climate impact discussions.

Notes

Other Implementation Possibilities



The previous scenario flows from possible actions at a state level. In the United States, policy is made or impacted at other levels as well. This possibility could also play out in the following ways:

- ❑ Federal agencies (Department of Education, National Oceanic and Atmospheric Administration, and others) might broaden outreach and information that assists teachers, journalists, and others in improving the public conversation on climate.
- ❑ Local and regional bodies that handle mitigation and adaptation plans concerning water and land-use issues might improve efforts to network and exchange best practices.
- ❑ Nonprofits and professional organizations might lend their voices and resources to climate-awareness efforts in more informative ways and in widely available forums.

What Might Come of This?

Measuring the impact of greater awareness is no simple matter. One hopes that in a democracy greater access to reliable information improves governance outcomes and increases citizen acceptance of those outcomes. In practice, these positives are sometimes offset by the negatives of the inequity of politics. Panelists flagged the following possible consequences of this policy:

- ❑ More support for independent bodies capable of assessing climate impacts and recommend actions
- ❑ Significant political pushback, and as a result gridlock, from organizations with interests that align with our current energy and manufacturing processes
- ❑ A gradual shift of governance conversation to routine problem-solving and regulation of component factors in climate impacts

Local Dimensions—Ways That This Possibility May Play Out in Our Community

Basic Idea

What if consumers had better information about how their choices affect climate change? If we knew more about these climate impacts, could we nudge consumers toward making choices that are beneficial to the climate? While Possibility A focuses on the overall trend of climate impacts, this possibility focuses on the actions of consumers, both individually and collectively, to promote choices that reduce carbon emissions, preserve healthy habitats and environments, and support the efforts of businesses actively working on climate impact solutions.

The approaches to promoting changing consumer habits would include the full range of behavioral incentives and disincentives, regulatory measures, and shaping the market itself. The objective is to create a mindfulness of how our choices and values correlate to how we live and how much we consume. This possibility moves moral and ethical choices to the fore and supports a system of “reminders” about the consequences of our choices.

This policy possibility acknowledges the difficulty that we have with wrapping our brains around abstract global issues. For example, we have trouble deliberating about the long-term consequences of our choices. Our habits are often the result of a preference for immediate gratification. Individuals seldom deal as well with slowly developing problems as they do with emergencies. Individuals often avoid complex issues and frequently dismiss evidence that requires changing their perspectives.



Individuals also often have great difficulty visualizing a different future. We are reluctant to admit the global impacts of our insatiable consumption. These tendencies could be changed through the dissemination of information that would help nations understand their carbon footprint by providing incentives to create new habits of climate-friendly choices.

Understanding how we think must shape the way we deal with climate impacts. We tend to respond well to issues that place us “all in the same boat.” We relish tackling problems that pose technological challenges requiring innovation, or that give us a sense of “mission.” We like competition. We fancy ourselves savvy consumers and devour information about what is “cutting-edge.” And we increasingly appreciate the gift of good health. Understanding these “better angels of our nature” can help us frame the climate impact challenge in ways that shift habits.

What the Policy Might Look Like

The mayor of a growing community in the southwest United States has been convinced that local action is a way to meet the climate impact challenge. He has signed on to a “sustainable cities initiative” in partnership with other mayors and city managers of other medium to large cities. Formation of a “citizens’ climate action group” as part of a municipal climate action plan is one of the steps in the initiative. The municipal plan addresses community-wide issues such as the conversion of city buses and trucks to natural gas users and taking advantage of the area’s abundant sunshine to power municipal buildings. The citizen’s climate action group is meant to complement those government responses by developing programs for individual and household participation. They come up with the following suggestions:

- ❑ Set a goal of becoming a “carbon neutral” city by a target date and establish a campaign that invites citizen participation, awards exemplary activity, and promotes competition in finding ways to reduce consumption.
- ❑ Residents are provided with carbon footprint information about a wide range of consumer choices and public service options, allowing easy identification of the “clean, cleaner, and cleanest” choices.
- ❑ Consumers are encouraged to participate in “buy local” efforts, direct consumer-producer relationships (community-supported agriculture and other “share” arrangements), and shifts to walking, bicycling, and mass transit.
- ❑ City would endorse broader efforts to certify “climate safe” products, develop best climate practices, and work with other municipalities on citizen action that involves the public in mitigation and adaptation planning.
- ❑ City incentives and disincentives are fully employed to encourage reduction of climate impacts: economic development funds only available for “clean” projects, tax breaks for alternative energy installation, default settings (“smart meters”) in municipal utility systems that reduce consumption, and local product bans and fees on items that burden the waste stream and are connected to climate impacts.

Notes

Other Implementation Possibilities



Changing consumer habits has many local and person-to-person dimensions as envisioned in the above scenario. Still, the effort to change hearts and minds can be shaped by other forces, including the following:

- ❑ State utility regulatory agencies might adopt rules that encourage more conservation of energy and water through rate-setting and system upgrade standards.
- ❑ State and federal transportation planning might take on a “trip reduction” focus that de-emphasizes highway system expansion as the main approach to congestion and capacity issues.
- ❑ Large organizations, including corporations and nonprofits, might act more responsibly as “large-scale consumers” and gain the backing of their shareholders or members to make purchasing and activity choices that reduce climate impacts.

What Might Come of This?

Calling upon individual citizens to sacrifice for the common good has not been a winning strategy in the United States since World War II. This possibility cannot rely on a sudden change of heart or a gradual transition to “voluntary simplicity.” It looks more toward the type of local leadership and leadership by example that challenges current thinking about sufficiency (what is enough?). It would encourage individual mindfulness about citizens’ role in solving the climate challenge and provide them with small, doable steps. Project discussions identified some possible implications of this policy:

- ⊠ Awareness that climate challenge involves opportunities to reorient our economy and infrastructure in ways that will benefit consumers in the 21st century (“smart grid” power, energy-saving devices, elimination of unnecessary travel through web-conferencing, etc.).
- ⊠ More recognition that individual choice matters, that it can shape the market, and that like-minded individuals, organizations, and communities can transcend the gridlock of higher levels of government and the obstruction of special interests resistant to change.
- ⊠ Competition among businesses to produce clean products and services once the demand is clearly established and an increasing level of regulatory compliance once corporations are convinced that consumers are paying attention and making decisions based on responsible corporate behavior.
- ⊠ Shrinkage in some sectors of the economy that cannot easily undertake “clean conversion” and extensive “re-tooling” in other sectors.

Local Dimensions—Ways This Possibility May Play Out in Our Community

Basic Idea

Success breeds success. A discussion of human impacts on climate soon uncovers actions and technologies that are available now or could be implemented in the short term given the proper support. Possibility A looks to improve our understanding of impacts and options for dealing with them. Possibility B looks to consumers to be active in reducing the carbon footprint. This possibility looks to set the stage for dealing with the climate challenge by seizing opportunities for short-term results and cost efficiencies. Success with these actions can pave the way for future success in addressing climate change.

This policy approach is aware that it is difficult to persuade citizens, businesses, and governments to make major changes and invest resources when both the “pay back” and the outcomes can only be realized in the distant future. We function in a democratic market economy that is pressured by election cycles and quarterly balance sheets. This possibility acknowledges these pressures and seeks to build momentum for further success by identifying and acting on “shovel ready” projects, improved performance technologies, and readily available efficiencies. This policy also recognizes that we need to put public resources into supporting these efforts where the private pay-off initially is so unclear.



This approach would focus on identifying what can be done now or in the near future to address climate change. The lack of movement on results-oriented action is often due to the absence of incentives, out-of-date building codes and industrial standards, and plain old inertia. By focusing on ready-at-hand actions to address climate change, we may find that seemingly novel approaches are already at work in many places as the result of government policy or entrepreneurial initiative.

This policy possibility also looks to our past success in dealing with global environmental challenges. International action—under U.S. leadership—was accomplished with issues such as acid rain and restrictions on fluorocarbon emissions.

What the Policy Might Look Like

A U.S. senator asks a group of scientists and technology specialists to serve as an advisory committee to help her develop a climate action plan. Her charge to the group: “Be practical and imaginative, don’t get bogged down in details, and help me figure out what sort of things should be looked at for quick action and could attract broad support.” The group meets 10 times, receives staff support, broadly discusses the senator’s charge, and issues the following suggestions for her bill draft:

- ❏ Break down climate impact sources into understandable subsets of policy that deal with individual carbon sources, individual greenhouse gases, particular industries and activities, and other readily understandable environmental issues. This approach—known as “disaggregation”—helps target and prioritize what can be done now versus longer-term challenges.
- ❏ Identify the most straightforward and achievable climate impact solutions and plan for implementation. Learn from the successes of others.
- ❏ Identify working technology models, both in the United States and abroad, that can be geared up and replicated quickly, and embed them in regulatory standards.
- ❏ Move government and business to “full-cost accounting” and align tax policy and research and development spending with the goals of immediate results and cost efficiencies. This requires recognition of the hidden social and environmental costs of degrading common resources and the budgetary needs of programs of remediation, mitigation, and adaptation.

Notes

Other Implementation Possibilities



If one accepts that the climate impact challenge has aspects that demand urgent action, it follows that not all the eggs should be placed in the federal government's basket. In an age of global communication and social entrepreneurship the following approaches could be considered:

- ❑ Non-governmental organizations (NGOs) might take over the international climate initiative effort and focus on direct appeals to citizens of the various nations to pluck the low-hanging fruit.
- ❑ Climate impact activists might take better advantage of the Web and social media to spread information about the subsets of climate impact actions that are “shovel ready” and work around reluctant government actors and obstructionist special interests.
- ❑ Social entrepreneurs and environmentally responsible corporations might look for ways to reward or endow successful climate action.
- ❑ Non-traditional partnerships that transcend governmental unit borders and open up more public/private cooperation might be encouraged.





II. MEETING THE CONTINUED CLIMATE CHALLENGE

D. Heal the Planet

E. Deal With a Different World

F. Focus on the Developing World

Basic Idea

What if global climate change is such a planet-sized problem that it requires nothing short of a planet-sized response? Ecosystem preservation and biological diversity face many challenges that this policy would address through rehabilitation and recovery approaches that support ecosystems and withstand climate impacts. As human activity has destabilized the climate on a global scale, this policy would support large-scale efforts to repair the damage.

This policy approach would include the reorganization of our economy around sustainability principles and reliance on low-impact technologies to prevent further harm. It would involve remedial action to restore habitats and their capacity to sustain thriving populations of native species. It would recognize the longer time frames involved with these undertakings and include provisions for continuity and follow-through with programs and goals. While the possibility accounts for all life on Earth, it clearly recognizes the possibility of humans becoming an “endangered species” and our responsibility for the problems we have caused. At the same time, it is optimistic about our ability to problem solve and innovate.

Healing the planet would involve a rethinking of our “ownership” relationship with ecosystems and species and a shift to a “stewardship” relationship with nature that recognizes the inter-related aspects of air, water, food, and



sustained life on Earth. This stewardship concept would apply to climate impacts and would create legal and moral obligations to avoid damaging the survival of species.

Because climate can't be limited to one nation or region, this possibility would support a wide range of policy discussions and a wide range of multilateral policy actions in connection to climate impacts. These discussions could span from international accords to assure fundamental protections of ecosystem rights to limits on human populations to massively scaled public works that rehabilitate and restore ecosystems. The resulting policies would rely both on established technologies and innovations to deal with climate impacts on ecosystems and species.

What the Policy Might Look Like

A coalition of environmental groups, socially responsible businesses, and local governments is launching an informational campaign called Planet Medicine. The campaign would put forth a vision of environmental restoration that would address climate impacts as a carrying capacity issue for life on Earth. The coalition's advisory committee is charged with looking at the related questions and possible approaches, from the future big picture to short-term remedy. They retain contrasting ideas, scales of implementation, and combinations of citizen-government-market approaches to make the point that solutions come in many forms.

The committee carefully explores what could be done in this area, answers the many questions that arise, and develops preliminary directions for policy. They address the carrying capacity and climate impact connection as "caring for the lungs and kidneys of the planet" and look at the damage to natural systems as impaired function. Here is their initial summary of possible policy actions:

- ⇒ Recovery programs for forests and grasslands and reclamation of deserts.
- ⇒ Rehabilitation of watersheds, estuaries, and reefs and restoration of balance between ocean systems and the atmosphere.
- ⇒ Regulation of agriculture, construction, energy, transportation, and urban planning that avoid damage to natural systems.
- ⇒ Protection and preservation of reserves and habitats that support biodiversity and the ability to recover from climate impacts.
- ⇒ Intensive research of the human population aspects of climate impacts and the limits to carrying capacity in light of human population growth.
- ⇒ Development of new approaches to "human rights in common resources," including a possible international legal agreement empowering citizens to act against degradation of natural systems.

Other Implementation Possibilities



Some might feel that existing institutions are inadequate or compromised in their ability to tackle climate on the scale envisioned by this possibility. The other ways to arrive at something like this possibility might include:

- ⇒ A gradual growth of climate alliances between like-minded nations might grow and incorporate more members.
- ⇒ Existing trade agreements and treaties might be amended to take these issues into account.
- ⇒ An entirely new international entity and structure might be needed to set priorities, make determinations, and adjudicate disagreements about possible actions.

What Might Come of This?

This possibility includes a combination of possible policy actions that are big-scale yet achievable. Some citizens might feel uncomfortable discussing reproduction and population limits within a discussion of climate impacts. Others may have reservations about the concepts of community rights to air, water, and ecosystems, considering them threats to private property. Project discussions raised the following as possible consequences of this policy:

- ⇒ Development of an extensive business sector devoted to reclamation, rehabilitation, and restoration that could employ significant numbers of citizens and spur other economic activity.
- ⇒ Consideration of other species and ecosystems as “legal persons” with rights (much like the United States Supreme Court has decided that corporations are “people” under some laws).
- ⇒ Increase in the number and intensity of “not-in-my-backyard” conflicts and eminent domain fights over “public takings” of property as more restrictions are placed on land use and other economic activity.

Local Dimensions—Ways This Possibility May Play Out in Our Community

Basic Idea



What if climate impacts are so far beyond the tipping point that there's nothing we can do to fix them? The primary focus of this policy possibility is to make adaptations and adjustments to climate impacts during a time when changes are underway and cannot be halted. Planning and program development in the public and private sectors must account for a range of scenarios for adjusting to changes we are unlikely to reverse in the short-term—if ever. We may have reached and exceeded a number of tipping points, especially in more fragile regions that never supported large population centers before the availability of modern technology (electricity, air conditioning, large-scale diversion of water, etc). Now we simply need to adapt to the new normal.

This possibility does not negate the value of approaches under Possibility D (Heal the Planet). It simply says that those restorative

methods may be too late in some areas, take too long in others, and distract us from making immediate adaptations that are needed to preserve society and the economy in some recognizable form.

Dealing with a different world involves preparing for changes in circumstances and building confidence in our capacity to anticipate and account for those changes. It accounts for both modest adjustments, back-up systems, and large-scale post-disaster relief.

Planning and program development for adaptation and adjustment would be geared toward area-specific circumstances and would need to involve local populations. It would account for human survival needs and preservation of the culture, infrastructure, and public health and safety. It would provide for continued governance and services even in extreme conditions.

What the Policy Might Look Like

A plains state has been unable to come up with a policy or plans related to climate adaptations despite its very vulnerable positioning in a region of intensified drought cycles. Area agriculture increasingly relies on crop irrigation and deep well supply of large livestock operations. Fights over water are older than the state itself and powerful interests resist any changes that would disturb the status quo. Several neighboring “upstream” states withdraw water from a regionally vital river, further complicating back-up plans. The main aquifer underlying the region is also being drawn down at an alarming rate. The mayor of a major urban center appoints several working groups of city department heads, local business people, health care providers, and neighborhood activists and asks them to come up with some proposals for dealing with climate impacts that are already occurring and those that loom on the horizon. After quite a bit of discussion they suggest the following:

- ⇒ Partner with other communities in the region that understand the problem and are interested in collaborating in adaptation strategies that draw upon the talents and resources in local businesses and universities.
 - ⇒ Partner with, and learn from, similar global communities that have successfully dealt with the same environmental challenges.
 - ⇒ Implement plans for immediate adaptations that “stop digging the hole,” including a freeze on development that strains existing infrastructure, implementation of building codes and land use planning consistent with future sustainability, water conservation measures, and upgrades in infrastructure that contribute to efficiencies.
 - ⇒ Develop long-range plans for emergencies that account for public safety and health, temporary shelter and “cooling” facilities, and possible temporary relocation or long-term resettlement.
 - ⇒ Take inventory of, and account for, the resources related to the cultural heritage and biological diversity of the region and develop plans for preservation and protection of those resources.
 - ⇒ Expand cities’ existing “urban farming,” farmers’ market, and community garden systems through use of wastewater and abandoned urban spaces.
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Other Implementation Possibilities



While there is some evidence that climate adaptation strategies are developing locally as envisioned in the above scenario, there is still plenty of room for support for adjustments coming from other sources. Some of those might include:

- ⇒ Recognition of these adaptation plans by the appropriate state and federal emergency planning and natural resources agencies that might provide greater levels of coordination.
- ⇒ Recognition of corporate responsibility initiatives that might encourage adaptation awareness and participation on the part of businesses.
- ⇒ Civil society organizations and networks might take on greater roles in adaptation preparations and emergency responses.

What Might Come of This?

It will likely take many measures, great and small, to adapt to climate impacts. This will be especially true in locations where it probably was not wise to develop major population centers in the first place. If impacts intensify and environmental conditions become more extreme, even more drastic adaptations may become necessary. Discussions suggested some unpleasant choices and moral dilemmas that may challenge us:

- ⇒ The creation of survival habitats and zones with limited capacity, forcing decisions on “winners and losers.”
- ⇒ Acceptance of higher mortality rates and decreased longevity as public health programs shift emphasis to survival medicine for those who can contribute to society’s basic needs.
- ⇒ The need to take strong measures against those who defy rationing rules, loot, or hoard.
- ⇒ Deal with migrants or roving bands that would tax limited community resources.

Local Dimensions—Ways This Possibility Might Play Out in Our Area

Basic Idea

What if the most important thing for addressing climate change is preserving the capacity of undeveloped ecosystems to stabilize the climate? This could mean focusing our efforts on developing nations, many of which are actively pursuing the industrialization path that has contributed to climate impacts through carbon-based fuels and related emissions. Even in some relatively undeveloped nations there are emissions-intense traditional fuel usages and agricultural practices that contribute to climate impacts. The emissions contributions of these nations continues to mount as populations grow and as wood burning, logging, farming, and grazing reach unsustainable levels. If we can help these nations leapfrog over such emissions-intense development, we'll all be better off.

Focusing on the developing world could make a significant contribution to mitigating climate impacts and reducing emissions. The thinking here is that it is more feasible and cost-effective to help such nations adopt appropriate technologies now to avoid emissions control and retrofitting later.

This policy approach would encourage low-cost or free sharing of next generation low-polluting technologies and other best practices. We would be providing a leg-up to developing nations rather than trying to hold back their aspirations or imposing western models. The possibility is intended as a good faith effort on the part of the United States. It also needs to be seen as a generous extension of financing, technology, and technical assistance that



places the emphasis on locally appropriate, sustainable practices, not enrichment of contractors and suppliers in the developed world.

The United States' developmental aid policy should prioritize such an approach and work through its developed-nation partners and international bodies to make the policy effective. The United States should also take the lead in coordinating experienced businesses and nonprofit organizations in assessing what will likely work in particular places and mobilizing the resources for effective implementation of promising strategies.

What the Policy Might Look Like

The Community of Faith in Action (COFIA) is an ecumenical aid group with experience in a number of tropical nations. The group has established an advisory team to help address the climate impacts for a nation that is suffering the loss of its rainforest and other environmental degradation. Team members include a cabinet minister from that nation’s environmental department, a consulting economist, a public health advisor, and a variety of specialists from education, agriculture, and forestry. The team is looking at local impacts and the role of these forests as the “lungs of the planet.” It surveys the economic, cultural, and environmental situation and finds intensive use of wood for cooking and backyard manufacturing, a central role for women in the gathering of wood and hauling of water, frequent brush and forest fires, spreading deforestation, excessive run-off and erosion, drying up of wells, and growing dependence on the diesel fuel. The team comes up with an initial focus on the following:

- ⇒ Obtain the licensing rights to fabricate compact solar ovens to replace wood-stoves and wood-fired bake ovens; provide start-up assistance for manufacturing plants and hire and train workforce.
- ⇒ Collaborate with “Trees for Tomorrow” on an ambitious reforestation program to stabilize hillsides and to provide quality sustainable lumber yield.
- ⇒ Tackle fire vulnerability through a joint program of public health (on high incidence of respiratory disease) and public safety (fire prevention and frequent loss of homes and other structures).
- ⇒ Communicate about these programs directly with women village elders and involve them in the basic planning, initial pilot efforts, and ongoing program operations.
- ⇒ Send an assessment team of engineers and energy specialists to develop alternatives to increasing diesel fuel usage.

Other Implementation Possibilities



Many experiences with developmental and humanitarian aid suggest that the above scenario has merit as a way to tap the experience of aid workers in close contact with local populations. This does not mean that there is not a role for larger institutions under this possibility. Some supplementary approaches might include:

- ⇒ Traditional international relief organizations might study the results of localized programs to evaluate effectiveness, disseminate worthwhile lessons and practices, and coordinate programs where such assistance is welcome and helpful.
- ⇒ Developed nations might redirect their own aid efforts to programs of proven effectiveness.
- ⇒ Climate-friendly financing—both at the level of large public projects and individual micro-financing for start-ups—might become national policy for developed nations and the standard operating procedure for developmental banks.

Climate Impact Resources

Project panelists consulted many resources during their exploration and development. While none of the resources led directly to any particular possibility in this report, many were helpful in informing the early questions that prompted project discussions and the later consideration of implementations and consequences of contrasting possibilities. Below are a number that seemed particularly helpful in report development:

Books

Dauncy, Guy, *The Climate Challenge: 101 Solutions to Global Warming—Getting Serious About the Challenge*, New Society Publishers, 2009

Emmanuel, Kerry A., *What We Know About Climate Change*, Boston Review Books, 2007

Articles

Clark, Duncan, “What is Climate Change Adaptation,” *The Guardian*, March 27, 2012

Websites

Climate Central—An independent organization of scientists and journalists surveying and reporting on key climate findings

www.climatecentral.org

Climate Impact Group—An interdisciplinary research group working to increase community and ecosystem resilience to changes in climate (based at the University of Washington).

www.cses.washington.edu/cig/

Environmental Protection Agency—Federal agency providing informational resources on societal and ecosystem impacts by region and by economic sector.

www.epa.gov/climatechange/impacts-adaptation/

Other Publications of the Interactivity Foundation

Discussion Report

The Future of Higher Education (2012)
America's Democratic Promise (2011)*
Democratic Nation Building (2011)
Food: What Might Be For Dinner? (2011)*
The Future of Energy (2011)
The Future of K-12 Education (2011)*
Future Possibilities for Civil Rights Policy (2011)*
Helping Out: Humanitarian Policy for Global Security (2011)*
Health Care: The Case of Depression (3rd edition, 2010)
How Will We All Retire? (2010)
Privacy & Privacy Rights (2nd edition, 2010)
The Future of Regulation (2009)
Property (2009)
Rewarding Work (2007)
Science (2007)
Anticipating Human Genetic Technology (2006)

Other Discussion Reports

Julius "Jay" Stern: A Biography (2010)
Contrasting Possibilities & the IF Discussion Process (2nd edition, 2009)
Facilitation Guidebook for Small Group Citizen Discussions (2nd edition, 2009)
Support Materials for the IF Discussion Process (2009)
Teaching Tips (2009)
Guidebook for Student-Centered Classroom Discussions (2008)
Public Discussion as the Exploration & Development
of Contrasting Conceptual Possibilities (2006)
Facilitation Guidebook (2005)

* Reports are available in Spanish

In pursuit of its mission to encourage and enhance the discussion of — and engagement with — broad public policy ideas (or “possibilities”), the Interactivity Foundation continues to conduct new discussion projects and develop new Discussion Reports from those projects. It is also continually revising its prior reports and developing new discussion guidebooks and other materials. The above list of publications was accurate as of the print date. For an up-to-date listing, visit the IF website at www.interactivityfoundation.org. Interactivity Foundation provides copies of its reports both online and printed without charge and encourages others to use, share, redistribute, and modify the reports within the terms of the creative commons license found on the inside front cover.

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Project Manager Dennis Boyer

Edited by Dennis Boyer, Jeff Prudhomme, and Adolf Gundersen

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