



Beyond Recovery

Moving the Gulf Coast Toward a Sustainable Future

Kate Gordon, Jeffrey Buchanan, and Phillip Singerman
with Jorge Madrid and Sarah Busch

February 2011

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Preface

A different path is possible

In this report, the Center for American Progress and Oxfam America honor the people of the Gulf Coast, whose contributions play a critical role in making the U.S. economy the strongest in the world. By risking their lives and health on oil rigs and in refineries, generations of Gulf families have helped to power America. They are among our nation's heroes, helping make the United States a world power.

But all these gains are not without cost. The region and its people are sadly familiar with the heartbreaks and devastation of a region awash in oil and gas. The fossil-fuel industries that enriched our nation also impoverished many of the people of the region, wreaking havoc on the ecology and beauty of the land. Some of the damage may be irreparable.

One thing is certain: We cannot continue with the destructive status quo. The economic model for the Gulf region must be examined through a new lens. The region needs a new path forward.

The concerns expressed here are not new or breakthrough. The people of the Gulf know their surrounding environment has been taking a beating. You hear it from the people who call the wetlands their backyard—who see football field-sized portions of land erode away every year. You hear it from the Native American Bayou tribes, who find their cultural land and way of life pushed to near extinction. You hear it from the generations of fishermen who watch the ocean's "dead zone" grow because of increased waste runoff, shrinking the area of safe places to catch their livelihood. It doesn't have to be this way.

Building off Oxfam America's work with organizations across the Gulf since Hurricane Katrina and the experience of groups such as Bayou Grace Community Services, Bayou Interfaith Shared Community Organizing, TRAC, Zion Travelers Cooperative Center, the STEPS Coalition, Alliance Institute, Waterkeeper

Alliance, Gulf Restoration Network, and the grantees and advisors of the Gulf Coast Fund, this report presents a set of strategies that can help strengthen both the ecology and the economy of the region. Furthermore, throughout all phases of the recommendations contained in this report, we strive to ensure the voice and interests of the people of the Gulf Coast will be truly represented going forward.

For this reason we have taken great care to be explicit in our call for community participation.

Change takes time, and this is no time to overpromise and underachieve. Many in the Gulf region have heard these kinds of promises and proposals before from previous local and federal elected officials, only to be let down with lots of talk and not much action. This time will be different.

This time we have support from champions within the Obama administration who are committed to leadership—champions such as Environmental Protection Agency Administrator Lisa Jackson, who has been personally engaged in the region her entire life, and Navy Secretary Ray Mabus, whose report to the Obama administration constitutes the building block for our recommendations. The Gulf region also boasts an enduring force of local and regional organizations, nonprofit groups, faith communities, advocacy organizations, and determined residents, all of whom are committed to restoring and renewing the beauty of their home.

The recommendations in this paper will help create new wealth, revived industry, and greater coastal health. The report recognizes the Gulf’s traditional industries have been a key part of our nation’s past but more importantly it makes a strong case for a renewed vision for the region’s future. The nation owes a great debt to the people of the Gulf Coast. Today, we have the opportunity to begin to make good on some of it.

*– Van Jones, Senior Fellow at the Center for American Progress
and best-selling author of The Green Collar Economy*

Introduction and summary

The Deepwater Horizon oil catastrophe beginning in April 2010 was a wake-up call to our nation, highlighting the Gulf Coast region's dependence on the oil-and-gas sector, and the country's dependence on offshore oil. Like the 2005 Hurricanes Katrina and Rita, the spill also highlighted the region's vulnerability to disaster—as well as the incredible resilience of its residents as they fought to recover from yet another setback.

The federal government took notice. At the request of President Barack Obama, Navy Secretary Ray Mabus developed a plan for the long-term restoration and recovery of this region. His report provided critical steps, including a call for congressional action to use penalties from the Deepwater Horizon disaster to fund a regional coastal restoration and recovery plan.

This report seeks to build upon the solid foundation provided by the Mabus report by recommending the creation of a regional ecosystem restoration plan to help coastal communities recover their past strength and potentially provide the building blocks for a new, more diversified economic growth strategy. The report includes specific recommendations to the administration, Congress, and Gulf state governors to build off existing institutions, policies, and funding mechanisms—and to create some new ones—to engage coastal community in addressing the region's long-term ecological resiliency and economic diversification needs.

This report begins with an overview of the region's economic and ecological history, focusing on the three middle Gulf states of Alabama, Louisiana, and Mississippi. While all five Gulf states were hit by the BP oil disaster, these three were closest in proximity to the Deepwater Horizon explosion and also face extraordinarily high levels of poverty.¹ They are also home to a high percentage of African Americans and non-English-speaking Vietnamese and South Asians. While social factors such as poverty, race, and ethnicity do not determine who will be hit by a disaster, they do determine a population's ability to respond and recover.

These three states are strongly dependent on their proximity to the ocean, which brings both risks and rewards for coastal communities. All three states boast strong offshore drilling, seafood, fishing, and tourism industries, each of which suffered significant losses from the oil disaster.

These states are also dependent on their inland ecosystems, in particular their wetlands, which provide invaluable natural infrastructure to mitigate storms, improve water quality, attract tourism, and provide critical habitat for commercially and recreationally important species vital to coastal livelihoods.² These wetlands are under constant threat: The Gulf region suffers the most coastal land loss of any region in the United States. In Louisiana alone, a wetland the size of a football field disappears into the ocean every half hour.³ The state is unique in that it holds 40 percent of the wetlands on the continental United States but experiences about 80 percent of all wetland losses.⁴ Without a proactive plan to save and restore these wetlands, by 2050 one-third of coastal Louisiana will have vanished into the Gulf of Mexico.⁵

Ecosystems outside Louisiana, especially in the Gulf region's barrier islands, bays, rivers, and estuaries, are also threatened. The Mississippi Sound, Mobile Bay, Apalachicola River basin, and the Matagorda Bay are each threatened by coastal development and the loss of natural habitat. Environmental losses and increased risks from rising sea level, land subsidence, and hurricane damage could cost the Gulf Coast states a total of \$350 billion in losses by 2030.⁶

Addressing these challenges with a regional plan for ecosystem restoration can directly create tens of thousands of jobs. The design, construction, operation, and monitoring of large-scale coastal and marine restoration projects bear the potential for sustaining job creation and increasing ecosystem services vital to supporting existing coastal livelihoods such as fishing, tourism, and shipping. Analysis indicates each \$1 million in investment in wetland restoration can create 29 new jobs.⁷

Such investments in wetlands and coastal restoration can create nearly six times as many jobs as investing in oil and gas. These jobs span a range of skills and occupations, many of which are familiar skills to the region's oil-and-gas, shipping, and fishing industries. As companies hire thousands of dredge operators, civil engineers, biologists, landscape architects, nursery workers, boat captains and builders, and monitors, Gulf Coast residents will have a tremendous opportunity to access new livelihood opportunities.

Gulf Coast decision makers can capture even more value from restoration activities by supporting the expansion of firms and occupations associated with them. Strategies to commercialize innovation and produce technology from research in local universities and federal laboratories can help foster a regional innovation cluster in marine and coastal science and restoration industries and occupations. The Gulf Coast is already home to more than 330 research laboratories, organizations, and programs working on coastal and marine sciences, and more than 25 distinct federal programs supporting Gulf Coast recovery and restoration.⁸ Numerous university research consortiums, federal-state restoration plans, and other collaborations, such as the five-state Gulf of Mexico alliance, exist across the region—providing a natural infrastructure to convene world-class innovation.⁹

The Gulf Coast also is home to a number of federal facilities and U.S. Department of Defense suppliers and commands, including the Stennis and Michoud Space Centers, all of which could provide distinct capabilities, including technical and physical infrastructure to assist in developing a coastal restoration cluster.

Finally, this region has an opportunity to begin looking at a longer-term economic development strategy that does not depend so heavily on oil, gas, and other natural resource extraction. In particular, the region is home to strong solar and biomass resources that could provide the initial seeds for a transformation to a cleaner energy economy.

In response to these regional challenges, assets, and opportunities, and in full recognition of the critical work already done by Secretary Mabus and the Obama administration to move forward with a strong ecosystem recovery effort in the Gulf states, we recommend Congress, the administration, and the Gulf Coast states take the following actions.

Direct 80 percent of any fines administered through the Clean Water Act from the Deepwater Horizon disaster toward a Gulf Coast Recovery Fund

To manage the fund, Congress should establish a Gulf Coast Recovery Council, a partnership of relevant federal agencies and the five Gulf state governors, to develop a plan for regional ecosystem restoration and supporting economic development. Such an effort should harness the practices of the Appalachian Regional Commission by working to create a “bottom-up” development process, one that

builds the capacity of local institutions to identify local assets and fosters stakeholder involvement in project decisions by creating multicounty development and planning bodies, Coastal Restoration and Resiliency Districts.

Ensure economic and environmental recovery are not separated

The work of the new council should be based upon core principles of promoting projects that achieve both greater ecosystem resiliency and more sustainable, inclusive economic growth. Coastal restoration work can create new jobs as well as new business models, technological innovation, and access to new markets to accelerate growth opportunities. The Gulf state governors and federal agencies should develop a multiyear strategic plan to build coastal restoration efforts into a long-term economic development plan, working with Coastal Restoration and Resiliency Districts, and incorporating any existing state-federal restoration plans in the process. Once the planning process is completed, coastal districts and other local actors may propose specified projects for funding by the council.

Create an independent Community Stakeholder Advisory Committee

This new committee could provide direct advice and oversight of the Gulf Coast Recovery Council at the very highest level. A committee of affected citizens with critical local knowledge of coastal life could help inform the council in areas such as appropriate public engagement; ensuring project selection, evaluation, and implementation reflects coastal community values and areas of local concern; and ensuring project selection and strategic planning reflect any unrepresented social, economic, and cultural costs and benefits of proposed projects.

Create Centers of Innovation for Coastal Restoration and Resiliency

These new centers would position the region to be competitive in a growing global restoration and water management marketplace. A number of economic development agencies across the region, as well as the Gulf Coast's traditional economic sectors, have already begun to embrace coastal and marine sciences as an economic opportunity. To accomplish this goal, we recommend that the legislation creating the Gulf Coast Recovery Fund set aside approximately 3 percent of the

fund, totaling \$500 million over the next 10 years, toward developing the Gulf region as an innovation hub for coastal and marine restoration and science. The funding should be used to take on the following tasks:

- **Identify projects utilizing public-private partnerships**, including incubators, technology transfer programs, seed funds, and entrepreneurial training, which can begin to spark new partnerships to bring innovative products and services out of the laboratory and into communities and the international marketplace.
- **Launch a “race to the top” competition**, leveraging existing dollars to create the linkages between existing and extensive research-and-development activities to an intentional and inclusive economic development strategy.
- **Assess capacity of existing research institutions**, including public, academic, and private-sector and federal laboratories and facilities.
- **Examine federal agency grant solicitations for strategic opportunities**, directing existing funds to the Gulf region and requiring grants to include partnerships with the private sector and community nonprofits to commercialize innovations and create new economic opportunities.
- **Include provisions to allow preferences for local firms and workers in contracting**, thus connecting recovery and restoration work in the legislation.
- **Create opportunity for dislocated and disadvantaged workers and entrepreneurs**, requiring grants to include plans for partnerships with community-based organizations.
- **Work with local businesses to identify existing firms capable of doing restoration work along with barriers to entering new markets**, especially for disadvantaged businesses, including women- and minority-owned firms.
- **Build a restoration workforce**, putting 30 percent of development funds—equal to about \$125 million—toward investments in workforce training and support needed to restore and protect the coastal ecosystem, including public-private partnerships, community college programs, apprenticeships, workforce intermediaries, and Service Corps.

- **Reduce risk by identifying and transferring new technologies and best practices** for disaster mitigation to Gulf Coast contractors, businesses, and existing homeowners, particularly those with low incomes.

Finally, we include some recommendations to get this region started on the important process of moving beyond oil-and-gas dependence toward a more diversified economy, in particular one focused on clean energy technology development and deployment. The Gulf Coast region boasts many assets that support this kind of long-term transformation but it will not happen without strong policy support. Alabama, Louisiana, and Mississippi have each taken steps to build up their renewable energy and efficiency sectors but the three states are behind the rest of the country. We recommend that each of these states:

- Pass statewide building codes requiring new and substantially renovated buildings to meet strong energy efficiency standards.
- Pass a renewable energy standard that takes into account the state's specific energy resources.
- Pass electricity grid interconnection and net metering standards, permitting and siting laws to encourage individuals and communities to adopt innovative renewable energy solutions.

A different path is possible

The Gulf Coast is a vibrant and productive part of the American economy. In this report, we build on the conversation started by Secretary Mabus about how to leverage the region's many assets, including its large network of strong community institutions, to create a more sustainable future. We're confident that when you finish reading our research and recommendations you will understand why this is the smart and fair way to help the Gulf region help itself rebuild and restructure its economy effectively and efficiently to contribute to American economic growth and prosperity in the 21st century.

Understanding the Gulf Coast region

The Gulf Coast of the United States has experienced particularly harsh economic conditions over the past decade. The region suffered dramatically during the Great Recession of 2007–2009. The construction and manufacturing sectors in particular experienced sharp declines and massive job losses.¹⁰ Further, natural and human-caused disasters ravaged the region, most notably in 2005 with Hurricanes Katrina and Rita, and then in 2010 when the Deepwater Horizon rig released nearly 5 million barrels of oil into the ocean off Louisiana, which spread slowly but inexorably along the Mississippi, Alabama, Florida, and Texas coastlines.

These events delivered death and destruction; destroyed coastal areas, homes, and businesses; and significantly disrupted the region's coastal economy. These conditions caused oftentimes overwhelming hardship to the lives, livelihood, and culture of many of the residents of this area.

Our report focuses specifically on the three middle Gulf states of Louisiana, Alabama, and Mississippi. While we recognize that Texas and Florida have also been affected by the issues discussed here, we focus on the three middle states because taken together they make up a region that is one of the most vulnerable in the nation. Some pockets of these states do maintain vibrant local economies but the region as a whole is plagued by high unemployment and poverty rates, low incomes, fragile ecosystems, and relatively undiversified economies. These are also the states we visited in the post-oil spill trip that led us to write this report. (see sidebar)

We devote the first part of this report to a snapshot of the region's demographic and economic characteristics. While social factors do not determine who will be hit by disasters such as those experienced by residents of the Gulf, they do determine communities' ability to prepare, respond, and recover when disaster does strike. The Social Vulnerability Index, highlighted in the Oxfam America report "Exposed," shows poverty to be the number one factor in determining a community's vulnerability to a disaster.¹¹ Additional factors, such as race, ethnicity, gender, and special-needs residents, also contribute to a community's ability to deal with natural and manmade hazards.

Methodology

Sources for our research and recommendations

After the Deepwater Horizon rig exploded, Oxfam America and the Center for American Progress sent a team of experts to examine the consequences of the catastrophe and listen to the concerns of Gulf Coast communities. In a series of meetings across Alabama, Louisiana, and Mississippi, the three states in closest proximity to the explosion, the team interviewed leaders of nonprofit organizations including business owners, fishermen, conservationists, indigenous, and minority communities. We heard a number of recurring themes:

- Distrust of federal, state, and local policymakers
- A need to involve nonprofit groups in decision making to ensure more inclusive investments in economic recovery and growth
- Acknowledgement that oil and gas will continue to be important to the region
- Understanding that the region needs to begin developing more sustainable and diverse economic activities
- Fears of the consequences of the spill on the continuation of livelihoods in industries such as fishing

The greatest interest among Gulf community leaders was in the opportunity for federal policy to invest in coastal ecosystem restoration to help protect communities, particularly those in Louisiana facing enormous land loss, and to restore the health of the Gulf Coast. Questions frequently arose about what kind of models worked in other parts of the country to ensure community participation in federal decision-making processes.

We developed the concept for this report based on the direction of those interviews and a review of reports and planning strategies from local economic development organizations such as the Louisiana Economic Development Agency, GNO Inc., the Mississippi Gulf Coast Alliance for Economic Development, and the South Alabama Regional Planning Commission. We also spoke to private-sector groups such as the Coast Builders Coalition and utilized the initial jobs impact research by the Environmental Defense Fund, the Nature Conservancy, and the Army Corps of Engineers.

All of these studies confirm the immediate opportunity for investments in coastal restoration, and in economic diversification strategies in areas such as clean energy technology, to create new job opportunities in coastal communities. Oxfam and CAP, with assistance from Phillip Singerman, former U.S. assistant secretary of commerce for economic development, then began a survey of best practices and models for regional economic diversification, technology-based economic development, major public works projects, and disaster recovery. We combined these experiences with the recommendations from “America’s Gulf Coast,” the report by Navy Secretary Ray Mabus, as well as the assessments from the Obama administration’s Economic Solutions Team to forge a comprehensive set of recommendations for federal and state action for long-term, inclusive economic and ecological recovery across the region.

The region’s residents

Collectively, more than 12 million people live in Mississippi, Louisiana, and Alabama, with the coastal areas most heavily populated. About half the residents of Louisiana live in coastal parishes.¹² Poverty levels are extraordinarily high in these states. Mississippi’s poverty rate stands at 21 percent, almost twice the national average.¹³ Mississippi also has the highest seasonally adjusted unemployment level of the three states; as of November 2010, Mississippi had 9.9 percent unemployment, with Alabama at 9.0 percent and Louisiana at 8.2 percent.¹⁴

All three states are in the bottom fifth of the U.S. Census ranking of state average incomes, with median household incomes less than \$43,000 in each case.¹⁵ The region's overall education levels, a strong indicator of earning potential, are also lower than the U.S. national average.¹⁶ Finally, according to the American Human Development Index, which tracks various human development indicators including health, education, and quality of life, all three states rank in the bottom five of the nation.¹⁷

Mississippi, Louisiana, and Alabama are diverse states. African Americans account for about 30 percent of the region's population and Hispanics another 4 percent. The region is home to Native American Bayou tribes who have strong cultural and economic ties to the land. While the region has a relatively small Asian population—not more than 1.5 percent of the population of any of the three states—it is home to a large group of largely non-English-speaking Vietnamese fishermen and shrimpers, about 20,000 in all, who along with Vietnamese-American workers in related jobs such as seafood processing and oyster shucking hold 30 percent to 50 percent of all seafood industry-related jobs in this region.¹⁸ In each of the states, African Americans make more than one-third less than their white counterparts based on median income, among the greatest such disparities in the nation.¹⁹

The region's industries are linked and vulnerable

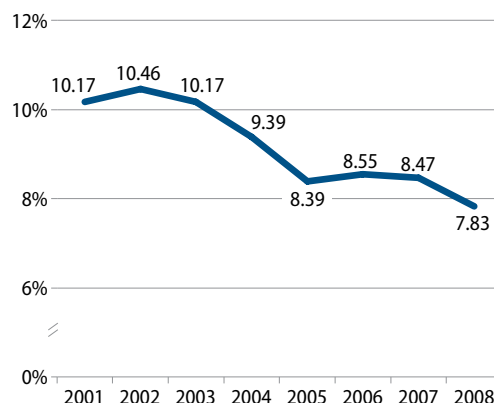
Proximity to the Gulf Coast is what makes this region vulnerable to environmental disasters but it is also what makes the regional economy tick. All three states boast strong dependence on the ocean, as evidenced by the robust offshore drilling, seafood, fishing, and tourism industries. It is difficult to precisely pinpoint employment numbers for each of these industries, as many individuals hold jobs in both the oil and gas and the commercial fishing sectors depending on the season, but the figures below emphasize the centrality of these industries to the region's overall economy and culture.

Oil and gas

The fossil-fuel industry is historically strong in the Gulf region, employing generations of Gulf Coast families and providing the

FIGURE 1
Gulf Coast oil production

Percent of total U.S. oil supply from Gulf of Mexico



Source: Energy Information Agency.

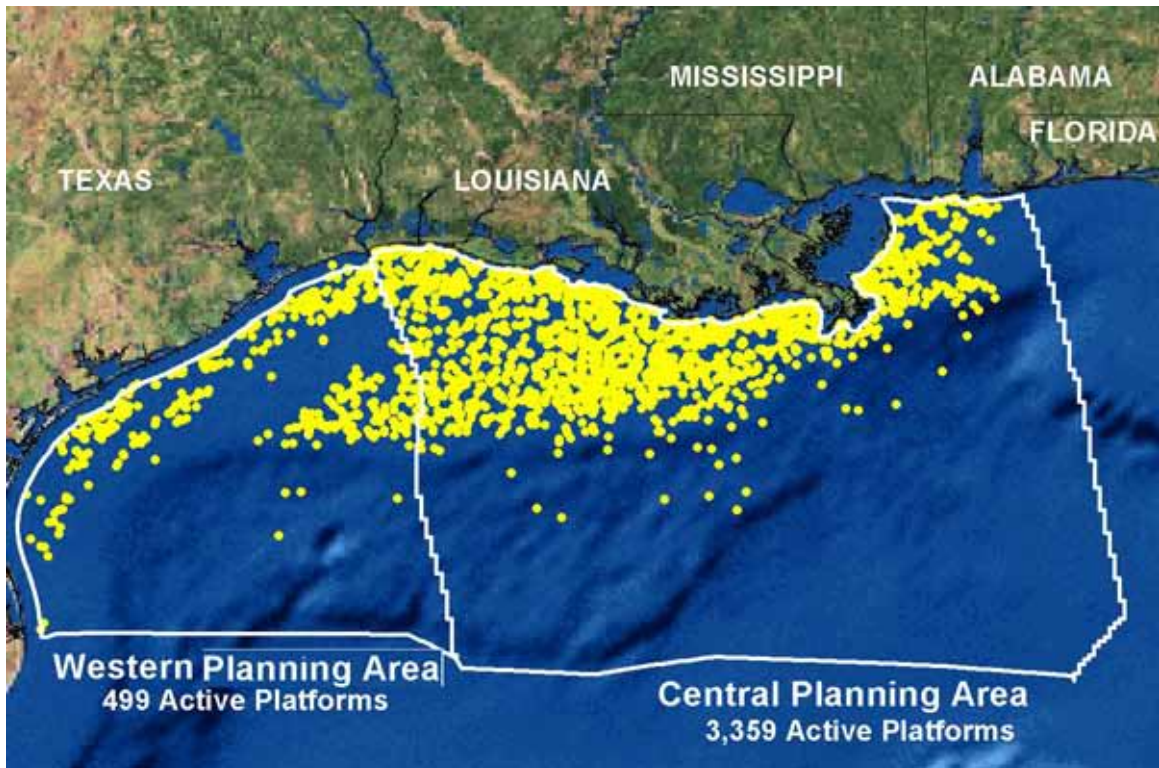
nation with an important energy source. But despite this strong presence, the actual value of the industry may be overstated.

While the Gulf region accounts for one-third of total domestic oil production, the United States still imports more than 70 percent of the oil we consume each year.²⁰ Therefore the Gulf region actually accounts for just 10 percent of the nation's overall oil supply.²¹ This number has remained relatively steady for the past 20 years, hovering between 6 and 10 percent (excluding exports), but has steadily declined in recent years. (see Figure 1)

Fully 80 percent of the total oil extraction in the Gulf of Mexico comes from deep-water oil rigs.²² There are currently 3,359 active oil and gas platforms off Louisiana, Mississippi, and Alabama's shores.²³ (see map)

Deep water dependence

Active oil-and-gas platforms in the Gulf of Mexico



Source: Oil and gas map of the northern Gulf of Mexico, National Oceanic and Atmospheric Administration, 2010.²⁴

TABLE 1
Gulf Coast oil snapshot

Amount and value of oil production in Alabama, Mississippi, and Louisiana

	Alabama	Mississippi	Louisiana
Crude oil produced in 2008 (barrels) ²⁶	7.5 million	23 million	79 million
2009 crude purchase price per barrel ²⁷	\$55.25	\$58.29	\$59.18
2008 value (USD) ²⁸	\$414 million	\$1.3 billion	\$4.7 billion
Distributed revenue deepwater offshore (2008) ²⁹	\$15.8 million	\$1.6 million	\$49.5 million
Revenue as a percent of the gross state product	0.000009 percent	0.000002 percent	0.00002 percent

Source: Energy Information Agency.

The domestic oil industry is clearly very dependent on the Gulf states, yet the revenue these states realize from the industry, particularly from deepwater offshore drilling, pales in comparison to the overall value of the crude generated. Similarly, oil-and-gas royalties currently account for only a very small percentage of each state's gross state product (the total amount of goods and services produced in the state), though this percentage will likely increase after 2017 when one-third of royalties from new wells will be funneled directly to Alabama, Mississippi, Louisiana, and Texas rather than going entirely into federal coffers.²⁵ (see Table 1)

Similarly, total employment in the oil-and-gas industry accounts for only a modest percent of the total civilian labor force in Alabama and Mississippi. In Louisiana, in contrast, the industry employs nearly a sixth of the state's entire workforce.³⁰ Louisiana's reliance on the industry may bring its own dangers, however, as the state is particularly vulnerable to any event that disrupts the oil market, such as a major oil spill or hurricane. (see Table 2)

TABLE 2
Jobs tied directly to oil and gas

Number and percent of workers employed by the oil-and-gas industry, directly and indirectly

	Alabama	Mississippi	Louisiana
Employment in the oil and gas Industry (2007) ³¹	94,732	83,820	330,053
Percent of state total (2007) ³²	3.7 percent	5.5 percent	13.4 percent

Source: PricewaterhouseCoopers, prepared for American Petroleum Institute, 2009.³³

Seafood and ocean resources

Commercial fishing is a \$2.4 billion industry in the Gulf of Mexico. The industry employs generations of Gulf families on both land and sea.³⁴ The Gulf of Mexico produces more than 1.3 billion pounds of seafood each year, with a dockside value of \$661 million.³⁵ A large amount of the harvested seafood is exported to areas around the country.

The state of Louisiana is the most dependent on seafood production, accounting for 30 percent of the U.S. seafood harvest each year.³⁶ While the employment in this industry accounts for a relatively small percent of total state employment (see Table 3), these are jobs that will be increased and strengthened with comprehensive coastal recovery programs such as those recommended in this report.

While commercial fishing may be thriving, the industry is also in a state of severe threat from human interference. Rising ocean temperatures due to climate change are causing massive coral bleaching, which can lead to a significant loss of marine life habitat.³⁹ Stress is also added to marine organisms through changing chemical balances in the ocean as an increase in carbonic acid, caused by high concentrations of CO₂ in the atmosphere, leads to a decrease in carbonate, the chemical necessary for shell formation and limestone growth in coral reefs.⁴⁰

Another threat comes from the agricultural discharge from the Mississippi basin, which dumps high levels of phosphates and nitrates into the mouth of the Mississippi, creating large algal blooms and oxygen-deficient zones unsuitable for marine life. And finally, the increasing amount of imported seafood puts constant pressure on local commercial fishing operations, even as consumers worry that imported seafood has higher toxin levels—and less regulation—than seafood from the Gulf.⁴¹

TABLE 3
Ocean livelihoods

The value of fishing and number of employees in the industry in Alabama, Mississippi, and Louisiana

	Alabama	Mississippi	Louisiana
Ocean resource value*	\$404,847,400	\$576,930,200	\$321,646,300
Jobs ³⁷	9,750	8,575	43,711
Percent of total state employment	0.48 percent	0.71 percent	2.21 percent

* Includes value of fishing, fish hatcheries and aquaculture, seafood markets, and seafood processing.
Source: Natural Resource Defense Council.

Then there are the consequences of the BP oil catastrophe of 2010. Last summer, the Deepwater Horizon oil rig released 4.9 million barrels of oil into the Gulf waters and beaches. Eleven men lost their lives and tens of thousands in the fish and shrimp industries immediately lost their livelihood, with fears that the long-term impact of the spill could threaten an entire way of life for those who make their living from the sea. In the spill's immediate aftermath, the National Oceanic and Atmospheric Administration had to close about 80,000 square miles of the Gulf to fishing, mostly along the Louisiana coastline—the region's prime fishing area—just as fishing season started.

A recent study by GNO Inc. estimates that between 2011 and 2013, gross losses in Louisiana from fishing revenues will total between \$285 million and \$428 million. In human terms, lost revenues will mean job losses of between 2,700 and 4,000 workers, and lost employee earnings of between \$68 million and \$103 million.⁴² Some of these losses may be softened in the short term as fishermen receive economic damage claims from BP p.l.c., or pick up cleanup contract work through BP's Vessels of Opportunity program. But in the long term, the losses are significant.

Moreover, though some fishing vessels were enlisted for cleanup efforts by BP, the process was plagued with uncertainty and inconsistency, as many fishermen were promised cleanup contracts that never arrived, and of those who did receive contracts, many never received adequate safety training.⁴³ Likewise, reported cases of racial discrimination and language barriers kept many fishermen among the Native American Bayou tribes, Vietnamese Americans, and African Americans from receiving a bulk of the federal contracts.⁴⁴

Tourism

The Gulf of Mexico draws tourists from all over the country. While not all tourism in the area is ocean-related, most is focused on activities such as recreational fishing and hunting, bird watching, and wildlife photography. Each state's employment in tourism-related fields is around 7 percent to 8 percent but the coastal regions of the states are far more reliant on these industries. For instance, 22 percent of private-sector jobs on the coast of Mississippi are in the hospitality industry. (see Table 4)

TABLE 4
Tourist draw

The importance of the tourism industry to Alabama, Mississippi, and Louisiana

	Alabama ⁵⁰	Mississippi ⁵¹	Louisiana ⁵²	Total
2009 travel and tourism spending	\$9.3 billion	\$5.6 billion	\$8.3 billion	\$23.2 billion
2009 travel and tourism employment	162,474	78,240 direct jobs	142,000	382,714
2009 tourism employment as percentage of total state employment ⁴⁹	7.37 percent	8.55 percent	6.69 percent	

Sources: Alabama Tourism Department; Mississippi Development Authority/Tourism Division; University of New Orleans.

Alas, the Deepwater Horizon oil disaster devastated this industry. Restaurant and hotel revenues in the region dropped considerably. In Gulf Shores, Alabama, for example, travel-booking rates fell by 65 percent.⁴⁵ Overall tourism and consumer spending in the Gulf states' coastal economies fell by 40 percent in June 2010.⁴⁶ In some areas, cancellation rates for hotels and recreational outings reached as high as 70 percent to 90 percent during the summer after the spill.⁴⁷

In total, lost revenue from decreased tourism rates is estimated to amount to more than \$4 billion along the Gulf Coast over the next three years in Mississippi, Alabama, and Louisiana, according to a study by Oxford Economics.⁴⁸ This kind of impact would be particularly devastating to coastal economy in Mississippi, which counts on coastal jobs for more than one-fifth of total private-sector employment.⁴⁹

Other prominent industries

Of course the region is home to other industries as well, including a strong forestry-and-logging sector, which also supports a number of pulp-and-paper mills, and an auto manufacturing sector that has grown over the past few decades. Shipping and boat building also rank prominently. Construction also is a traditionally strong industry in this region but the sector has suffered here (as across the nation) due to the collapse of the U.S. housing market and the Great Recession.

We used a tool called a location quotient analysis, which provides the ratio between particular economies (in this case the economies of Alabama, Mississippi, and Louisiana) and a larger reference economy (the United States as a whole), in order to determine the relative competitiveness of a number of key sectors in the Gulf region. A number above 1.0 indicates the state has relative strength in a par-

ticular industry compared to the nation as a whole; a number below 1.0 indicates relative weakness. Our analysis indicates 20 strong industry sectors in these states, many in resource extraction and related industries such as manufacturing and transportation. (see Table 5)

TABLE 5

Top industries by location quotient analysis

The ratio between the economies of Alabama, Mississippi, and Louisiana in relation to the U.S. economy

A number above 1.0 indicates the state has relative strength in a particular industry compared to the nation as a whole; a number below 1.0 indicates relative weakness

Sector	Alabama	Mississippi	Louisiana
Natural resources and mining	0.8	1.33	2.31
Construction	1.13	1.1	1.56
Manufacturing	1.53	1.52	0.86
Trade, transportation, and utilities	1.07	1.1	1.07
Leisure and hospitality	0.96	1.18	1.07
NAICS 11 Agriculture, forestry, fishing and hunting	0.76	1.44	0.58
NAICS 21 Mining, quarrying, and oil and gas extraction	0.88	1.13	5.4
NAICS 22 Utilities	1.75	1.76	1.2
NAICS 23 Construction	1.13	1.1	1.56
NAICS 31-33 Manufacturing	1.53	1.52	0.86
NAICS 44-45 Retail trade	1.13	1.17	1.08
NAICS 48-49 Transportation and warehousing	0.89	1.19	1.18
NAICS 72 Accommodation and food services	1	1.24	1.07
NAICS 321 Wood product manufacturing	2.65	3.48	1.21
NAICS 322 Paper manufacturing	2.31	1.38	1.28
NAICS 113 Forestry and logging	5.68	7.05	3.72
NAICS 114 Fishing, hunting and trapping	0.6	0.93	1.83
NAICS 211 Oil and gas extraction	0.34	0.78	3.95
NAICS 212 Mining, except oil and gas	2.15	0.48	0.44
NAICS 213 Support activities for mining	0.24	1.84	10

Source: Bureau of Labor Statistics.

The Gulf Coast regional economy clearly has strong ties to the health of the ocean and its delicate ecosystem. Yet this balance is exposed to elevated levels of risk and shock by the pervasiveness of the fossil-fuel extraction industries. While it may be unreasonable to assume all offshore drilling activities can be immediately halted in the interest of protecting the coast, there are alternatives that will both protect the ecology and enhance the economy.

The region must begin to look beyond its traditional economic base toward new and diverse industries that can take it into the 21st century. Without such diversification, the region leaves itself more vulnerable to economic and environmental shock. In the next section we'll examine the natural resources available in these three states that could constitute new sources of businesses and jobs for the region—resources that also are under dire threat today.

Coastal ecosystems

Just as the Gulf Coast region is heavily dependent on its coastal areas for its economic health, so is the region strongly affected by the continual erosion of these coastal areas. These two issues are not unrelated: Much of the economic activity that occurs in the Gulf, especially in the oil-and-gas industry, is either directly causing or accelerating damage to wetlands, barrier islands, and marine habitat.

Moreover, natural and human-caused disasters such as Hurricane Katrina and the Deepwater Horizon oil spill have adversely impacted the area's coastal ecology. With these factors in mind, let's explore the wetlands ecosystem in more detail.

Coastal ecosystem benefits and services

Coastal ecosystems, including the wetlands and barrier islands of the Gulf of Mexico region, perform services that are nearly impossible to replicate. Gulf habitats sustain a variety of wildlife, soak up floodwater during seasonal storms, and filter the polluted water that comes down the Mississippi River from northern U.S. states.

The wetlands along the Gulf Coast of Louisiana and parts of the Mississippi are part of the Mississippi River Delta ecosystem, a 3.4-million-acre stretch of swamp, marsh, forest, and barrier islands that is home to 2 million people and habitat for millions of species.⁵⁴ This ecologically vibrant area is created by the discharge of the Mississippi River into the Gulf of Mexico and holds 60 percent of the coastal wetlands in the lower 48 states.⁵⁵ The Mississippi River Delta is uniquely defined as one of the largest and most productive deltas in the world. The delta provides critical habitat for the Gulf's seafood species, is the center of oil-and-gas industry in Louisiana and the Gulf Outer Continental Shelf, and hosts national trade waterways.⁵⁶

The ecosystems of the Mississippi River Delta provide \$12 billion to \$47 billion in benefits every year, according to an analysis by Earth Economics.⁵⁷ This value is expressed both in the services that wetlands provide to support ecosystems and

in their role as natural infrastructure that can mitigate storm impacts and attract tourism.⁵⁸ Wetlands also have inherent value as a natural habitat and are valued in many cultures in the region.

The Gulf Coast's ecosystems support seafood industries which generate \$2.8 billion per year in revenue for the Gulf.⁵⁹ For example, the wetlands surrounding 15 seafood processing plants in Louisiana filtered their polluted water, saving these seafood businesses \$6,000 to \$10,000 for each acre of wetland preserved.⁶⁰ Wetlands and barrier islands provide habitat for 75 percent of migratory birds and for more than one-third of the United States' threatened and endangered species. They also serve as a nursery for the Gulf's commercial fish and shellfish.⁶¹ Louisiana's ecosystems support 71 percent of commercial fishing landings in the Gulf region, including Florida and Texas.⁶² Recreational activities on wetlands—hunting, fishing, bird watching, boating, and nature photography—bring revenue to the region. The Gulf of Mexico accounted for more than 40 percent of all U.S. marine recreational fishing catches in 2006.⁶³

Viewed from the air, a section of the Chandeleur Islands ravaged by Hurricane Katrina appears sculpted by wind and water, off Bay St. Louis, Mississippi. With rapid wetland loss along the Gulf Coast, the United States loses 3.2 million tons of CO₂ sequestration every year.



Wetlands are the original form of flood protection. One acre of wetland can hold up to 1 million gallons of water during a flood and 3.4 miles of wetlands can reduce a storm surge by one foot, protecting people and towns and significantly reducing disaster risk.⁶⁴ The capacity that wetlands have to absorb floodwater is invaluable, saving homes, businesses, and lives in the Gulf. Flood protection from wetlands alone accounts for \$23.2 billion in storm-risk reduction.⁶⁵

Wetlands filter hazardous manmade pollutants, including pesticides, fertilizers, and metals, from the Mississippi River waters before they reach the ocean. This service is crucial for human and ecosystem health, and while wetlands perform this valuable service free of charge, the construction of a comparable treatment plant would cost between \$35,000 and \$150,000 per acre.⁶⁶

Mississippi River Delta's wetlands filter agricultural runoff that has floated down river from states as far north as Minnesota. Gulf Coast wetlands filter water from 41 percent of the United States, and parts of Canada.⁶⁷ Filtered water reduces shoreline erosion and promotes ecosystem health, which provides habitat for commercial seafood species. In contrast, unfiltered water creates nutrient-heavy "dead zones" in coastal regions, where marine life cannot thrive.⁶⁸

Wetlands are also the largest global soil carbon reservoir, comprising only 4 percent of the Earth's land area, but storing almost 33 percent of the world's soil organic matter.⁶⁹ Wetlands are anaerobic (low to zero oxygen) environments and therefore are good carbon-storage sites. Carbon is stored in wetland trees and other plants as well as in plant litter, peat, soil, and sediment, which can be built up over thousands of years. When wetlands are drained or exposed to oxygen from development or natural events like storms, they release large amounts of carbon dioxide (CO₂) into the atmosphere.

With rapid wetland loss along the Gulf Coast, the United States loses 3.2 million tons of CO₂ sequestration every year, the equivalent of putting an additional 600,000 automobiles on the road each year.⁷⁰

The scope of loss

The Gulf region suffers the most coastal land loss of any region in the United States. Wetland losses in the Gulf of Mexico are nearly 25 times higher than in Atlantic areas of the United States.⁷¹ In Louisiana alone, a wetland the size of a

football field disappears into the ocean every half hour.⁷² Despite the great economic and ecological value of the Mississippi River Delta as the support system for the region's industries, the Delta has lost more than 1.2 million acres of its landmass in the past 80 years.⁷³

Louisiana is most under threat. The state is unique in that it holds 40 percent of the wetlands in the continental United States but experiences about 80 percent of all wetland losses.⁷⁴ Natural disasters can permanently eliminate these natural buffer zones; for instance Hurricane Katrina and Rita destroyed more than 200 square miles of Louisiana's wetlands.⁷⁵ By 2050 one-third of coastal Louisiana will have vanished into the Gulf of Mexico from two main sources: construction of the Mississippi River's levee system and development by the oil-and-gas industry.⁷⁶

The U.S. Army Corps of Engineers has constructed levees up and down the Mississippi River, impairing the ability of the river to carry and distribute sediment into the Mississippi Delta and build land in southern Louisiana. At the same time, the oil-and-gas industry has dredged thousands of miles of canals and pipelines to carry its products to market.⁷⁷ In Louisiana, thousands of acres of wetland loss can be directly attributed to oil-and-gas operations, causing vegetation loss, inhibited freshwater flow, and irreversible erosion.⁷⁸ These activities have also contributed to subsidence—meaning that land, particularly in Southern Louisiana, is actually sinking—which compounds land loss.

The U.S. Census Bureau estimates that about half of Louisiana's 4.5 million people live in coastal parishes.⁷⁹ With wetlands acting as the primary buffer between coastal residents and harsh flooding conditions, their future security is largely dependent on the health of this ecosystem.

While Louisiana faces distinct challenges, ecosystems across the Gulf, especially its bays, rivers, and estuaries, are also threatened. The Nature Conservancy has identified these key areas of concern:

- Across the Mississippi Sound, the conversion of marshes, savannahs, and coastal forests to commercial and residential use has resulted in habitat loss and degradation, reducing marsh areas, damaging oyster reefs and seagrass habitats, and exposing Gulf Coast residents to increasing risk from tropical weather.
- Over the last decades, Mobile Bay has seen significant loss of marsh, seagrass, and oyster reef habitats through dredge-and-fill activities, sea walls and jetties, erosion, storm events and other causes.

- Florida's Apalachicola River basin's water quality issues have impaired its biodiversity and productive oyster reefs, which supply approximately 10 percent of the nation's entire oyster harvest each year.⁸⁰
- The marshes, coastal prairies, and islands of the Matagorda and San Antonio Bays are threatened by polluted water, overfishing, and loss of natural habitat, including marshes, oyster reefs, and seagrass.

These losses to wetland and critical habitat will result in an estimated annual loss to commercial fisheries of nearly \$550 million by 2050. For recreational fisheries, the total loss will be close to \$200 million a year.⁸¹ Wetlands erosion along the Gulf Coast also limits the number of days these wetlands are able to store floodwater, from 60 days to just 12 days.⁸² Environmental degradation leaves the Gulf Coast region increasingly vulnerable. Economic losses along the coasts of Louisiana, Texas, Mississippi, and Alabama caused by a rising sea level, land subsidence, and hurricane damage could total \$350 billion by 2030, according to America's Wetland Foundation.⁸³ Likewise, data from past hurricanes indicate the loss of every one-mile strip of wetlands along the coast results in an estimated \$5.7 million average annual increase in property damage.⁸⁴

A viable solution: Ecosystem restoration

The vulnerability of the economy and ecology in the Gulf region is both a challenge and an opportunity. Building off the body of work of organizations that have long called for action in the Gulf, including the Coalition to Restore Coastal Louisiana, the Environmental Defense Fund, the Nature Conservancy, the Gulf Restoration Network, the National Wildlife Federation, America's Wetland Foundation, and the Waterkeeper Alliance, we strongly recommend the creation and implementation of a regional wetlands restoration plan to help this region recover its past strength and potentially build a foundation for a new future economic development strategy.

The following section will explore the potential to create and sustain thousands of new jobs, spur technological innovation and commercialization of exportable goods, and grow industries in a regional economy that is in a seemingly constant state of shock. Further, the economic potential of such investments greatly outpaces the current extraction-based economy dollar for dollar.

The vulnerability of both the economy and ecology in the Gulf region is both a challenge and an opportunity.

TABLE 6
Restoring the Gulf Coast

Three stages of development and the jobs and estimated wages in each stage

I. Preparation of the basin (dredging, filling) for restoration	
Job activity	Median hourly wage ⁸⁴
Material moving crew	\$10.60
Dredge operation managers	\$18.01
Heavy equipment operators	\$19.12
Engineers	\$37.04
Pipelayers	\$16.02
Welders	\$16.71
GIS professionals	\$26.05
II. Planting of trees and marsh grass	
Job activity	Median hourly wage ⁸⁵
Biologists, hydrologists	\$31.98, \$35.42
Gardeners	\$8.91
Project managers	\$19.47
Nursery bed workers	\$8.91
Landscape architects	\$29.12
III. Protection of the restored acreage through operations and management post-completion	
Job activity	Median hourly wage ⁸⁶
Forestry workers	\$12.03
Engineer managers	\$56.25

Note: This phase would also require monitoring and legal assistance to ensure compliance with labor and environmental standards, as well as significant scientific analysis—further diversifying the job-creation potential of wetlands investment.

Source: Bureau of Labor Statistics.

Specifically, our analysis shows investing in wetlands and coastal restoration creates nearly six times as many jobs as investments in oil and gas. While other proposals have included similar plans for the region, this paper will focus particular attention to the need for meaningful community engagement in all stages of economic planning and implementation.

Jobs growth

Much of the literature examining large-scale coastal restoration projects notes the strong potential for rapid and sustained job creation, ranging from low-skill occupations such as conservation work to more high-skilled engineering and project-management opportunities.

While every restoration project utilizes different technologies, according to analysis by the Environmental Defense Fund, wetlands work can often be broken into stages including: preparation of the basin, planting of trees and marsh grass, and protection of the restored acreage. All three of these stages include key job activities paying solid wages. (see Table 6)

These jobs span a range of skills and occupations, making coastal restoration an attractive option for workers coming from a similarly diverse range of oil- and gas-related jobs. In particular, workers with specific skills such as heavy equipment operation, welding, and pipefitting would likely be able to transition over to similar jobs in the restoration industry.

More job-creation bang for the buck

Most studies have focused on job-creation potential of specific projects, rather than a comprehensive estimate of large-scale restoration covering the entire coastal region. Yet it is reasonable to assess that scaling up projects would yield proportional job expansion.

One analysis from the Environmental Defense Fund focuses on the restoration of the Central Wetlands Unit, a 30,000-acre expanse of degraded marsh straddling Orleans and St. Bernard Parishes. The study estimates that each \$1 million in investment can create 29 new jobs.⁸⁸

Similarly, a study by the U.S. Army Corps of Engineers estimates that a \$2 billion investment in Louisiana's "Coast 2050" project would yield about 28 jobs per \$1 million spent, including both direct jobs and jobs in related industries.

As a point of comparison, the Political Economy Research Institute at the University of Massachusetts, Amherst, estimates that \$1 million in spending in the oil-and-gas sector creates just 5.18 jobs.⁸⁹ Thus, investing in wetlands and coastal restoration creates nearly six times as many jobs as investments in oil and gas.

The case for action

The Gulf's wetlands perform valuable services particular to the region's needs but human activity has caused massive portions of crucial ecosystem to disappear every day at shockingly high rates. Coastal wetland restoration can bring ecological and economic stability to the region's wildlife, people, and industries. Without increased wetland preservation and reconstruction, the wetlands will disappear and so will the benefits they perform for the health and safety of humans.

But this will not be enough to ensure the residents of the Gulf Coast will be able to find the diversity of jobs needed to shift the region's reliance on oil and gas, fishing, and tourism. More needs to be done to create new sources of jobs growth and economic opportunity. To this we now turn.

The case for economic diversification

The three middle Gulf Coast states have economies that are strongly dependent on natural resource extraction. All three states are highly competitive in industry sectors related to oil and gas (mining, extraction, transportation, and pipeline construction). Our location quotient analysis further shows that Mississippi and Alabama are particularly strong in the forestry and logging sector. (see Table 5)

Yet the oil-and-gas industry returns relatively little actual value to these states. Oil-and-gas revenues barely make a dent in these states' gross state products and actual jobs in the industry make up only a small number of overall jobs in Mississippi and Alabama. Louisiana, the clear exception, relies heavily on oil-and-gas jobs. What this industry does return to the Gulf region is a huge amount of vulnerability and risk: through coastal erosion, oil spills, and general economic volatility.

It is time for a new economic strategy for the Gulf Coast, one that focuses both on recovering what has been lost, and also on a long-term project of building a sustainable future. A sustainable strategy for the Gulf Coast would involve turning the region's liabilities, in particular its eroding coastline, into assets, by working to build a globally competitive, cutting-edge set of industries around coastal restoration and water-management techniques. In the long term, it would ideally involve diversifying the region's economy into the industries of the future, such as clean energy technology, and away from the extractive, risky industries of the past.

This transformation will not be an easy lift nor will it happen overnight. Some observers in Washington were frustrated when the Deepwater Horizon oil disaster failed to turn into a selling point for clean energy legislation. Why, they wondered, wouldn't this region see the clear benefit of building a new clean energy economy, with all the jobs that go along with that kind of investment?

The answer is that right now, today, the region is not a clean-tech hub. It is an oil-and-gas hub, and the jobs of tomorrow seem distant and uncertain. But with a

strategic vision and a recognition that turning toward a new economic future will not erase the current strengths of the region but rather will build on them, these states can indeed become part of a more sustainable and less vulnerable future.

In the next section we make specific recommendations about how the federal government can begin to work with Gulf Coast states and communities to start addressing some of these issues of economic development and diversification and how Congress can support such an effort. Before launching into specifics, however, we take a moment to talk about the broader theory behind economic diversification.

Dangers of overdependence

There are strong arguments for diversifying the economy of this region even without consideration of the overall risks and environmental impacts of the oil-and-gas industry. There is a huge body of research, most of it focused on other countries, showing that regions that are too dependent on natural resources for their economic growth tend to have less outside investment, more corruption, more income inequality, less education, and less financial security than those with more diversified economies.⁹⁰ As Oxfam scholars noted in a 2009 report:

*For countries rich in minerals and hydrocarbons, natural resources should provide an essential source of financing for development. However, in many cases, exploitation of such resources is linked to poverty, inequality, poor public services, and stunted economic growth.*⁹¹

In areas where it is relatively easy to extract wealth from the ground or water, there is less incentive to design more far-reaching economic policies and to build up strong financial and social institutions. Perhaps for this reason, many resource-rich countries are actually more dependent on foreign aid to support these institutions than those with fewer natural resources.⁹²

As we have seen, the mid-Gulf region suffers from many of these characteristics, with lower-than-average income and education levels, and with higher income inequality than other U.S. states. Though the region is not a country and thus does not receive foreign aid, it does bring in a disproportionate amount of federal aid to help shore up education and social service institutions.⁹³

Overdependence on extractive industries can also make a region particularly vulnerable to specific events outside the region's control, for instance oil price spikes and natural and manmade disasters.⁹⁴ This is clearly the case in the Gulf region, where the BP oil disaster and the resulting moratorium on drilling brought the region to its knees for several months in 2010.

To combat these problems, resource-dependent regions such as the Gulf Coast can and should do three things:

- Increase the value coming to the state from the primary industry or industries.
- Capitalize on their specialization in particular industries to broaden the range of activities and occupations within that industry, essentially taking a “cluster-based” approach to development.
- Diversify the regional economy to include a broader range of industries.

Let's examine each of these economic development strategies in turn.

Increasing the value from primary industries

Regions that are overdependent on natural resource extraction generally suffer from a lack of strong economic development, but there are exceptions to this rule—countries that rely on extraction but do so in a way that brings a large-enough share of the value of that industry back into the country's coffers so these revenues can be used to build up the country's education system and other important social institutions.

A great example is Norway, one of the world's largest oil exporters. Norway suffers from some of the problems of other oil-rich countries in that its non-oil exports, particularly its manufacturing exports, have declined considerably since the discovery of North Sea oil in the 1960s. It has also seen some decline in outside investments. But the country's social institutions, such as its education and health system, are impressive, and it has built up substantial assets rather than relying on foreign aid. It has also become a global innovation hub for new technologies aimed at making offshore oil drilling safer and more efficient, as we will discuss later in this section.

How has Norway accomplished this when so many other oil-dependent nations are riddled with corruption and debt? It's simple: By law, the country holds title

to all its oil resources, and thus the oil wealth belongs to the government. Norway derives revenues from domestic and foreign oil companies through exploration and production licenses, taxes, and fees, as well as through state-owned developers. Because the state has a direct financial interest in its oil-and-gas fields, it receives a defined percentage of revenues from production. As a result, in 2000, the oil sector accounted for nearly 25 percent of Norway's GNP.⁹⁵ Compare this to the Gulf states, where even in oil-rich Louisiana less than one-hundredth of 1 percent of GSP comes from oil-and-gas revenues.

Norway puts these revenues directly into a petroleum fund, which invests the money and uses the proceeds to pay for important national programs such as retirement support, health insurance, and education. The fund also invests directly in domestic industries through the Ministry of Trade and Industry, but the majority of revenues are used to guard against instability in the oil market.⁹⁶ The fund can be tapped to help even out Norway's federal budget in a year of low oil prices, for instance.⁹⁷ This allows the country much greater flexibility in its economic policy if petroleum reserves decline in a particular year, and in fact is intended to help the population prepare for the inevitable long-term decline in oil revenues.⁹⁸ A critical feature of the fund is that it sits in the Bank of Norway rather than in the central government, which insulates it somewhat from political pressures. This prudent fiscal model has helped Norway to weather the global financial crisis—as of April 2010, the country had only a 3.7 percent unemployment rate.⁹⁹

This social welfare-oriented business model would probably not work in the United States but it does shine a light on the extremely small percent of oil-and-gas revenues and royalties that accrue to the Gulf Coast, our nation's most productive oil production zone. Unlike Norway and in fact most other parts of the world, oil-and-gas development in the Gulf of Mexico does not result in significant direct royalties to the coastal region.

Despite absorbing all the risks and impacts of the industry, currently Gulf states receive less than 1 percent of the roughly \$5.7 billion a year in offshore development revenues from federal waters, second only to income taxes in its contribution to the U.S. Treasury. In 2017, the states will begin splitting 37.5 percent of royalties from leases granted after 2006, but even then they are receiving a smaller percentage than other states receive for oil and gas development inshore on federal land.

However, the region will soon see an influx of funds resulting from the Deepwater Horizon spill, including natural resource damages and other fines levied on BP

and the other companies responsible for the Deepwater Horizon spill. These funds can provide a new financing stream for important Gulf Coast programs such as coastal restoration. In this report, we argue these funds must be set aside in an independent but accountable entity that is not controlled by government actors alone. Just as in Norway, moving these funds into an independent entity with a focus on shoring up the region's core institutions will be a critical factor in keeping the region's overall economy strong.

Building regional clusters

The Gulf Coast must begin to reap more value from its core industries, in particular oil and gas, by capturing a greater share of revenues and moving those funds into a more independent, accountable institution. But the region's decision makers must also begin to think strategically about ways to capture value from existing industries by expanding the types of firms and occupations associated with them.

This kind of economic activity is sometimes called “specialization” in that it focuses in on a particular sector for development and is often an important stage of economic development between natural resource dependence and greater diversification into a range of nonextractive industries.¹⁰⁰ But it is also a kind of diversification within industries, away from simple extraction and transportation occupations and into a much broader (and generally higher-paid) range of jobs including research, development, and advanced technology production.

The cornerstone of this strategy is the concept of taking technology developed in universities and federal laboratories, and working to commercialize and produce this technology within a particular region. The strategy depends on public-private partnerships with leading industries in the region, along with small- and medium-sized companies, government, workforce and economic development organizations, and community stakeholders. Together, these stakeholders can institute policies and programs that promote innovation-driven economic growth.

The strategy is most often known as “cluster development” because of its focus on building up a “cluster” of related firms and institutions within a particular region. This is a deliberate departure from the 50-year tradition of industrial recruitment—states competing with one another to lure firms with tax incentives, nonunion labor, and free land—toward one emphasizing “growing your own” or “economic gardening.”

The cornerstone of this strategy is the concept of taking technology developed in universities and federal laboratories, and working to commercialize and produce it within a particular region.

President Obama's administration has wholeheartedly adopted this approach through its focus on "Regional Innovation Clusters." The policy brings together three different concepts:

- A regional approach based on actual industry and economic strengths, rather than one based on political and jurisdictional lines
- Science and technology as drivers of innovation
- A focus on developing industry "clusters" that connect research institutions, manufacturing facilities, funders, and workforce and economic development officials in a way that leverages each institution's strengths and creates an overall competitive advantage for the region

Energy regional innovation clusters

A model for cluster development along the Gulf Coast

An example of the federal government supporting the creation of a Center of Excellence in an issue of national significance is the Department of Energy's Regional Innovation Cluster, or E-RIC, solicitation for energy efficient buildings. This silo-breaking federal solicitation involved four funding sources: the Department of Energy; the Department of Commerce's Economic Development Administration and its Manufacturing Extension Partnership program run by the National Institute of Standards and Technology; and the Small Business Administration, along with three other agencies that supported the program through existing initiatives. The E-RIC program aligned the science-driven mission of the Energy Department with the economic development and business development roles of the supporting agencies, creating an overall value of \$129 million over five years. The Department of Labor and Department of Education also collaborated to fund nonprofits and workforce agencies to recruit, train, place, and support workers, especially disadvantaged and dislocated workers, in connection with these new centers.

The winning proposal was the "Greater Philadelphia Innovation Cluster for Energy Efficient Buildings," a regional coalition of universities and private companies with a locus of activity at the Philadelphia

Naval Business Center. Formerly known as the Philadelphia Naval Shipyard, which was closed in the mid-1990s, the naval base still contains the Naval Surface Warfare Center Ship Systems Engineering Station and over the past decade has become home to hundreds of companies, small and large. International companies, seeking to enter the U.S. energy efficiency market, have now established locations at the Naval Business Center.

Over the past five years, local economic development organizations, led by Pennsylvania's nationally recognized Ben Franklin Technology Partners Program, perfected the relationships and successfully competed for federal research-and-development and training programs, linking hitherto disparate resources into an "energy cluster." A key element in the strategy was bringing Penn State University, located four hours from Philadelphia, into the community and project as a key partner.

Federal cluster initiatives, as demonstrated by the Philadelphia example, seek to provide a small amount of federal funding to leverage existing regional scientific and technical capabilities, and ultimately to drive economic development goals. This approach is particularly appropriate for the Gulf Coast, whose restoration is a national priority.

Similarly, the Mabus report acknowledges the importance of regional clusters as economic drivers and notes the Economic Development Administration's funding of the State Science and Technology Institute's "Regional Innovation Acceleration Network" and the Small Business Administration's funding of a Center for Innovative Geospatial Solutions in Mississippi and Louisiana. Indeed, the administration's first cross-department cluster development program was in the energy arena, offering a model for the Gulf Coast region. (see box)

A coastal restoration cluster

The Gulf Coast has several strong industries on which it could build up an innovation cluster. We believe that top among these is the set of industries and occupations that make up the field of coastal restoration. Though often seen as a liability, the fact that the coast needs so much physical and ecological restoration can actually work as an asset for this region—one that can potentially add more value and more jobs to the area.

It is very possible that new funds will soon be targeted at coastal restoration projects in all five Gulf states. This presents a golden opportunity to leverage those funds toward building a coastal restoration cluster, one that could potentially make this region globally competitive in restoration activities. The unique history and geography in the region suggest that a coastal restoration cluster could be effective in advancing knowledge, expertise, and possible commercialization of best technologies and practices related to spill response and restoration.

Further, the research already taking place in the region's universities suggest a natural synergy and intellectual infrastructure to convene world-class innovation in these areas akin to what the Netherlands has done in its expansive wetlands. (see box)

Coastal restoration is a well-researched area along the Gulf of Mexico. The region has received particular attention as a center for disaster response, especially in the wake of Hurricane Katrina and the Deepwater Horizon disaster. Building upon decades of research and collaboration, universities and colleges in the region generally work together on research projects informally in an effort to find the best techniques for permanent coastal repair and conservation without waiting for outside funding. One example of a more formal coalition is the Coastal Restoration and Enhancement through Science and Technology, or CREST, a consortium of

Coastal restoration cluster

Learning from the Dutch

One model for achieving a coastal restoration cluster has been developed in the Netherlands, a country that experiences similar geographic and ecological challenges as the Gulf Coast. The Netherlands has 20 percent of its land area and 21 percent of its population located in coastal areas below sea level, an environment that could otherwise be dangerously prone to flooding.

The Dutch have famously held back the waters of the North Sea for centuries. Less well-known is that they have developed a strong commitment to advancing their research and commercialization of water technologies by developing a “knowledge infrastructure” comprised of prominent government and private research centers, technological and educational institutes, and several universities. These institutes

carry out a broad range of basic and applied research in fields directly and indirectly related to water, from hydraulic engineering to integrated water management.¹⁰¹

One successful example of commercialized innovation from the Dutch is Nereda Technology, a cost-effective and compact wastewater treatment method that uses a unique aerobic granular sludge as a biological method of purifying water.¹⁰² Another such technology is called Sharon/Anammox, a sustainable technology to remove nitrogen from wastewater.¹⁰³ The Dutch have seen their commitment to innovation in water technology pay off as the country exports in water technology reached €6.5 billion (about \$8.6 billion) in 2008.¹⁰⁴

Louisiana universities that focuses on coastal restoration development. Another is the Northern Gulf Institute, founded in 2006 and led by Mississippi State University, and comprised of five academic institutions in Louisiana, Mississippi, Alabama, and Florida.

The Gulf is also home to more than 330 research laboratories, organizations, and programs working on coastal and marine sciences.¹⁰⁵ One congressional proposal identified 25 distinct federal programs that were supporting Gulf Coast recovery and restoration.¹⁰⁶ Federal programs have directed funds toward these programs: The Fiscal Year 2011 House and Senate appropriation bills for the National Oceanic and Atmospheric Administration contained more than a dozen Gulf Coast earmarks totaling nearly \$26 million for institutions such as the Dauphin Island Sea Lab, Florida’s Southern Shrimp Alliance, Mississippi’s Northern Gulf Institute, and Louisiana’s Coastal Restoration, Engineering, Science and Technology Program.

The Gulf states also recognize the importance of their coastal and wetlands resources, initiating their own efforts in collaboration with federal restoration agencies. Even before the Deepwater Horizon disaster, planning and projects were underway for:

- Alabama's Forever Wild Program
- Florida's Coastal Wildlife Conservation Initiative and Beaches Habitat Conservation Plan
- Louisiana's State Comprehensive Master Plan for a Sustainable Coast
- Mississippi's Coastal Improvement Program
- Texas Coastal Erosion Protection Planning

The governors of the five Gulf states also came together to form the Gulf of Mexico Alliance to collectively execute a Governors' Action Plan addressing Gulf-wide issues such as water quality, habitat restoration, ecosystem assessment, nutrient impacts, and coastal community resilience.

The federal government has been a stimulator and partner in many of these efforts. In 2009, President Obama established the Louisiana-Mississippi Gulf Coast Ecosystem Restoration Working Group to coordinate federal actions among various agencies. The working group's "Roadmap for Restoring Ecosystem Resiliency and Sustainability," published in March 2010 before the Deepwater Horizon oil spill, summarized the federal actions and commitments to restore and protect Gulf Coast ecosystems, and presaged many of the themes later presented in the Mabus report.

Then there's the Environmental Protection Agency's Gulf of Mexico Programs and National Estuary Programs in Mobile Bay, Barataria-Terrebonne, Charlotte Harbor, and Apalachicola; and NOAA's Coastal and Estuarine Land Conservation Program. Even before the president created the Gulf Coast Restoration Task Force, the federal government and the states formally collaborated through various mechanisms. The Sea Grant Program across the five Gulf states (including Florida and Texas) represents a proven model where federal and state resources come together for coordinated research and development and where, through its extension program, commercializing research is at the core of its mission.

Several of these existing programs go beyond research and development. For instance, the Economic Development Administration supports a national network of University Technical Assistance Centers including Auburn University in Alabama, the University of Florida, Louisiana Tech University, University of New Orleans, Mississippi State University, Lamar University in Texas, Texas A&M, Corpus Christi, and the West Texas Entrepreneurial Alliance, all of which could be utilized in a Gulf recovery cluster strategy. And in fall 2010, a coalition of universities and economic development districts, led by the University of Arkansas,



U.S. Army Corps of Engineers workers secure a giant piling that will be used to construct the storm surge barrier in Lake Borgne just east of New Orleans. The fact that the coast needs so much physical and ecological restoration can actually work as an asset for this region—one that can potentially add more value and more jobs to the area.

Little Rock, proposed development of a macroeconomic model of the region, focusing on the impact of the oil spill. Participants included the University of New Orleans, Lamar University, and economic development districts in Louisiana, Mississippi, Alabama, and Florida.

Utilizing federal research facilities

In addition to its university research and technical assistance base, the Gulf Coast is home to a number of distinctive federal facilities and commands and private shipyards, which have mission capabilities that can assist in the development of a coastal restoration cluster and have technical and physical infrastructure that can support public-private and federal-local activities. One is NASA's John C. Stennis Space Center in Hancock County, Mississippi, a unique federal city that is home to more than 30 federal, state, academic, and private organizations, and numerous technology-based companies, which collectively employ more than 5,000 individuals.¹⁰⁷ Resident federal agencies include NASA, the Department of Defense, the Department of Commerce, the Environmental Protection Agency, the Department of Energy, and the Department of the Interior.¹⁰⁸

The Stennis Space Center is the largest rocket-testing complex in the country and attracts numerous private companies interested in opportunities at its facilities.¹⁰⁹ Leveraging the space center's resources, industry leaders such as Lockheed Martin, Boeing, and Pratt & Whitney Rocketdyne have operations on site, while Selex Galileo also has significant operations in Hancock County.¹¹⁰ In addition, British automotive and aeronautics company Rolls-Royce has an outdoor engine-testing complex at the space center.¹¹¹

Another federal center is located on an 832-acre site in eastern New Orleans—NASA's Michoud Assembly Facility, which is one of the New Orleans region's major economic drivers. The facility hosts the onsite operations of federal entities including the U.S. Coast Guard and the U.S. Department of Agriculture as well as private companies such as Lockheed Martin and wind turbine manufacturer Blade Dynamics. Because of its tooling facilities and integrated capabilities, including information technology networks, power, and port/harbor facilities, Michoud is able to manufacture a range of structures at one location. This makes it an attractive facility for both government and private projects. In addition, the facility is the home of the National Center for Advanced Manufacturing, a partnership of government, academia, and industry focused on the needs of aerospace and commercial markets, including modeling and simulation.

Moreover, the Naval Meteorology and Oceanography Command, the Naval Oceanographic Office, the Naval Research Laboratory, and NOAA's National Data Buoy Center along the Gulf Coast represent the largest concentration of oceanographic research capability in the nation, if not the world—the building block of an innovation-based cluster. The U.S. Navy also has operational capabilities with an interest in coastal science, including the Naval Surface Warfare Center in Panama City, Florida.

Other federal research facilities include the U.S. Army Corps of Engineers' Waterways Experiment Station in Vicksburg, MS; USGS's National Wetlands Research Center (Lafayette, LA) and Center for Coastal and Regional Marine Studies (St. Petersburg, FL); NOAA's Southeast Fisheries Science Center (with laboratories in all the Gulf states save Alabama); USDA's National Sedimentation Laboratory (Oxford, MS) and National Soil Dynamics Laboratory (Auburn, AL); and EPA's Gulf Ecology Laboratory (Gulf Breeze, FL).

There are already existing models of how these various academic, federal, and private-sector resources could be linked together. The five-state Gulf of Mexico Alliance, with participation from 13 federal agencies including NOAA, NASA, the Department of Defense, the Environmental Protection Agency, and the National Science Foundation, has begun positive collaboration and information sharing. With the launch of the Gulf of Mexico Alliance-administered Gulf Research Institute addressing regional science needs, new economic opportunities may exist. NASA Applied Science Program's Gulf of Mexico Initiative is already using NASA-generated science research, remote sensing, and other technical capabilities to help companies develop applications related to coastal recovery.

An acknowledged regional competitive advantage

Both the scale of the region's problems and the number of research institutions exploring them represent an opportunity for the Gulf region to develop an innovation cluster around coastal restoration technologies, a fact not lost on economic developers at the federal, state, and local level.

For instance, the White House's National Incident Command Economic Solutions Team recently completed a survey of Gulf state economic assets and challenges in the wake of the Deepwater Horizon spill, which highlighted the potential of coastal restoration industries as an economic driver for this region. In August 2010, the Economic Solutions Team, working in partnership with the nonprofit International Economic Development Council, deployed 21 teams of economic recovery specialists to meet with local elected officials, businesses, academics, and nonprofits across the Gulf region to provide technical assistance and analysis in planning economic diversification and recovery strategies. These assessment teams reported that state officials in Louisiana have "identified coastal protection and water management as one of the best opportunities for Louisiana to grow a new industry," and in particular noted the potential to turn this into an export industry that would create new economic value for the region.

The market for these exports is expanding every year. Louisiana Economic Development, the state's economic development agency, estimates that \$3 billion to \$4 billion per year over the next 20 years will be spent for coastal restoration in the state, creating a projected 45,000 jobs. Likewise, the state of Mississippi estimates \$20 billion in spending on coastal restoration and protection activities between 2006 and 2056 connected to Gulf of Mexico Energy Security Act funds.

Both estimates were made prior to the 2010 Deepwater Horizon spill. The Natural Resource Damage Assessment process and legislation redirecting Clean Water Act fines would significantly amplify these numbers and the scope for any recovery plan—and the size of the potential market for goods and services related to coastal restoration efforts.

Moreover, not just the Gulf Coast but coastal communities across the United States and the globe will need significant future investments in coastal protection because of increasing risks from flooding and deadlier hurricanes and tsunamis. According to the global reinsurance company Swiss Re, by 2030, the world will spend anywhere from \$35 billion to \$135 billion a year on coastal flood defense, flood-resistant buildings, and other adaptations.

A number of other economic development agencies in coastal Alabama, Louisiana, Mississippi, and Florida have already begun to embrace coastal and marine sciences as an economic opportunity, among them:

- GNO Inc., a development agency in New Orleans and its surrounding parishes, launched the Green N.O. initiative in 2009 to help attract new investment, new businesses, and new jobs to the region in fields of coastal restoration, water management, and hazard mitigation.
- The South Central Planning & Development Commission of St. Mary's, Lafourche, and Terrebonne parishes in Louisiana identified cooperating with state agencies and universities to position the region as a laboratory, training center, and “possible Center of Excellence for state-of-the-art coastal restoration technologies” as a priority in its 2010 Comprehensive Economic Development Strategy.
- The Mississippi Gulf Coast Alliance for Economic Development, representing the economic development agencies across the Mississippi Gulf Coast, has prioritized marine sciences as one of its six focus industries for recruitment and business development.¹¹²
- The South Alabama Regional Planning Commission notes that the area's marine science industry has significant potential to take advantage of the international marine and environmental technology markets in its Comprehensive Economic Development Strategy.¹¹³

- EDA recently awarded the University of South Florida’s business development wing, USF CONNECT, and the Mote Aquaculture Research Park with a grant to help launch a business innovation facility in Sarasota to help commercialize the laboratories’ water management and marine science work.

The region’s traditional economic sectors, such as oil and gas, also see a strong value in restoration and the potential for regional economic growth in the future. The America’s Energy Coast initiative of the America’s Wetland Foundation, a program sponsored by the oil-and-gas industry, acknowledged coastal restoration as a priority in its September 2010 report, “Secure Gulf Project,” and recognized that “[b]uilding capacity in coastal sciences and engineering in Gulf states, through higher education and workforce development, incorporating skill sets needed in implementation of coastal restoration and protection projects all hold promise for the region.”¹¹⁴

In our recommendations section, we talk more specifically about how a well-crafted Gulf Coast recovery plan can leverage these assets to anchor a coastal restoration cluster.

Diversifying the Gulf Coast economy

In the near term, the three middle Gulf states can make great strides in reaping more benefit from their primary industries, especially oil and gas, but can also begin to think about building regional innovation clusters around existing institutions and regional assets. But the region must also begin to take a long-term view toward diversifying its economy away from natural resource extraction and/or restoration, and toward a more balanced set of industries and occupations. Diversification is key to any region’s long-term economic health, and in this case to its ecological health as well.

The current infusion of funds into this region, combined with the potential for an effective inclusive governance to plan and implement projects, makes this a critical moment to begin to look beyond recovery and toward long-term economic diversification. As this paper demonstrates, it is dangerous for any region to become too dependent on extractive industries. But diversifying is not simple, nor is it speedy. It takes years to build up new businesses and sometimes decades to help those businesses integrate with other institutions such as government and community-based organizations to form a stronghold.

Silicon Valley did not happen overnight. Neither did Michigan's electric-battery sector or Georgia's emerging bioscience cluster. Each of these success stories came from regions taking a hard look at where they were already competitive and building off that competitive edge to create something bigger than one company or one project.

This approach of intentionally building upon a region's existing competitive advantages is far superior to an economic development approach often taken by state and local governments: random business attraction. Too often, states hear that a particular company is thinking of moving its facilities away from its current location, and so they enter a bidding war over property tax exemptions, tax incremental financing, free land or facilities—the list goes on—with other states. Unfortunately, the random business attraction strategy too often ends with an empty facility, once the manufacturing plant goes overseas or to a state with an even more attractive tax package, and the first state is left with no tax revenues, no jobs, and no long-term economic improvement.

Far better is the more intentional approach of cataloguing a state or region's assets and working to leverage those by building up existing businesses, forging ties between those businesses and other institutions such as universities and community groups, and attracting new companies to bring into those emerging clusters. Business attraction does work but only if it is part of a larger strategy that actually starts with where a region is, rather than with where it thinks it wants to be.

Just as it is important to assess and leverage regional assets when building out an industry cluster from an existing set of industries, so is it important when looking beyond existing industries toward economic diversification. As a first step toward this long-term strategy, the region must assess its strengths and use these as the foundation of any sustainable economic growth plan.

The mid-Gulf states have plenty of competitive advantages, among them a host of natural resources, a need for restoration, and a number of strong research universities and facilities. Alabama in particular also boasts a strong manufacturing sector, with a focus on auto manufacturing and food processing. And all three states have good access to ports. In fact, Louisiana's and Alabama's ports are among the busiest in the United States, especially as shipping costs become more competitive with ground transportation costs.¹¹⁵ These ports are primarily doing import business but they should also be seen as a strong competitive advantage for a region beginning to build up new export industries.

The mid-Gulf
states have plenty
of competitive
advantages.

In addition, the Gulf Coast is home to one of the nation's largest concentrations of shipbuilding capacity. Northrop Grumman Shipbuilding alone employs more than 15,000 skilled employees across Mississippi and Louisiana.

Many of the region's advantages could be used to support almost any industry development. But based on our conversations with residents in all three states after the Deepwater Horizon spill, there appears to be a strong desire for the region to become a leader in clean energy development. Just after the oil spill, Oxfam and CAP sent several experts down to the region to talk to residents and community-based organizations about the region's response to the disaster, and about the potential for diversifying away from volatile oil and gas as the area's prime economic driver. We found a definite loyalty to the oil industry—not surprising given this industry provides concrete jobs to area residents today—but also a strong feeling that the area must branch out into new technologies, both to move the region away from its own dependence on oil and to create jobs in new and emerging clean-tech sectors.

“Change from an oil-based economy won't come quickly or easily to the people here,” explains Colette Pichon Battle, a native of Slidell, Louisiana, and president of Moving Forward Gulf Coast, a community organization that seeks to foster equitable redevelopment in the region. “But the inescapable fact is that what's happened in the past can't continue in the indefinite future. Everybody knows that, but we need help deciding for ourselves how to get to where we're headed.”

Luckily, this is an area that boasts some of the natural advantages necessary to support strong renewable energy development. Alabama, Louisiana, and Mississippi all have higher solar radiation levels than the national average. The Gulf of Mexico has good potential for offshore wind, though extreme weather conditions are a concern. Biomass resources are readily available in this area, as is evidenced by the strong forest and paper industry presence there. Mississippi was ranked by *Forbes* magazine as one of the top five states for biomass, an industry aggressively promoted by the Mississippi Development Agency.¹¹⁶ Louisiana recently announced plans to build the nation's largest biodiesel production facility.¹¹⁷ And the South already uses a large amount of conventional hydropower.¹¹⁸

Turning these assets into anchors for a long-term clean energy economic development strategy will take time; it will also take intentional policies and programs focused on building up a local market for these technologies. We make some specific recommendations for how these states might begin to move into the clean energy future at the end of the next section.

Recommendations

Two months after the Deepwater Horizon oil spill, in June 2010, President Obama tasked Secretary of the Navy Ray Mabus, the former governor of Mississippi, with delivering a plan for the long-term Gulf Coast recovery. Secretary Mabus's report to the president, "America's Gulf Coast," provided a bold statement of critical steps needed to put the Gulf Coast on a pathway to economic and ecological recovery. The report included a number of requests for congressional action and in particular called for Congress to use penalties under the Clean Water Act levied against the responsible companies from the BP oil disaster to fund a regional recovery plan.

In this section, we briefly describe the Mabus proposal and use it as a foundation for a broader set of recommendations to help put the Gulf state region onto a path to immediate recovery but also long-term diversification and resilience.

The Mabus plan: A solid foundation for a regional recovery strategy

In his plan, Secretary Mabus proposed federal legislation to establish a federal-state partnership, the Gulf Coast Recovery Council, tasked with developing a plan for environmental, economic, and public health recovery. The council would include a host of federal agencies, including the Departments of Agriculture, Commerce, Interior, Justice, and Transportation, along with the Environmental Protection Agency, U.S. Army Civil Works/Corps of Engineers, the Council on Environmental Quality, the Office of Science and Technology Policy, the Domestic Policy Council, and the Office of Management and Budget.

In addition, Alabama, Florida, Louisiana, Mississippi, and Texas would each have one representative, nominated by each state's governor. The president would name a chair and the states would select a vice chair.

Most important, the plan called for a significant percentage of Clean Water Act penalties and fines against BP and other companies responsible for the oil disaster

to be directed toward Gulf Coast ecosystem restoration. The report embraced the theory that restoration can help preserve the region's economic base and make it more resilient to future disasters, such as hurricanes and a rising sea level. While by law the Natural Resource Damages Assessment and Economic Damage payments from BP and other companies must restore the Gulf Coast environment and economy to their status as of the day of the spill, Secretary Mabus also urged the use of penalties to address complementary but pre-existing environmental weaknesses that are undermining the Gulf's long-term resiliency.

In addition to this comprehensive look at Gulf Coast recovery, Secretary Mabus called for an economic plan to leverage ecosystem restoration investments, along with other public- and private-sector investments, to optimize their economic impact. In particular, his report called for a long-term plan to target the needs of vulnerable communities and the underemployed, begin to identify Gulf Coast regional clusters of economic activity, and explore economic diversification strategies, including finding opportunities in increasing export potential, developing a 21st century workforce, and promoting a clean energy economy.

To this end, the report applauded the president's decision to create Economic Solutions Teams within the National Incident Command structure. The teams conducted economic assessments of 21 Gulf Coast counties and parishes to better identify the current assets and challenges in these regions post-oil spill. These assessments were coordinated by the nonprofit International Economic Development Council and offer valuable insights into the existing capacity of the regions to take on new economic challenges.

The council's existence depends on congressional action, and Congress has not yet acted on the secretary's recommendations. In the meantime, President Obama has exercised his executive power to establish a Gulf Coast Ecosystem Restoration Task Force, chaired by Lisa Jackson, administrator of the Environmental Protection Agency, and composed of a similar set of agencies as the proposed council. The task force was urged to work with existing federal and state entities to ensure that relevant scientific and technical knowledge underpins restoration planning and decision making, and that research, monitoring, and assessment efforts are coordinated. The task force will presumably be subsumed by the Recovery Council once the latter is established by legislation.

The Mabus report, and concurrent administration action, goes a long way toward articulating a coherent strategy for short- and long-term recovery, resiliency, and

diversification along the Gulf Coast. But as a new Congress gears up to potentially pass Gulf restoration legislation, a specific set of recommendations is timely.

In this section of the report, we focus on recommendations to expand on the Mabius framework and offer a more comprehensive set of actions toward creating a partnership of federal, state, local, private, and nonprofit sector stakeholders for restoration and recovery. We recommend that:

- Congress should pass legislation directing Clean Water Act funds to a Gulf Coast Recovery Fund, which would be used to finance a Gulf Coast Recovery Council made up of federal and state policymakers.
- The Gulf Coast Recovery Council should include a governance structure that reflects the lessons learned from past regional economic development efforts, specifically the Economic Development Administration and the Appalachian Regional Commission, and focuses on proven strategies to promote “bottom-up” regional economic development in the Gulf.
- Congress’s proposal should create a Community Stakeholder Advisory Committee to directly advise the Gulf Coast Recovery Council to ensure the Council’s decisions reflect the cultural values of coastal communities.
- The council should prioritize economic development and specifically set aside funds to develop Centers of Innovation for Coastal Restoration and Resiliency as part of its Gulf Coast recovery plan.
- The council and the individual states should begin to identify opportunities for long-term economic diversification, specifically into clean energy industries, through state policy reform.

This is the ideal moment to launch a strategic recovery and growth plan for the Gulf region. At a time when most states are facing huge state budget shortfalls with no real prospect for federal funding to launch new initiatives, the Gulf Coast could find itself in a relatively strong financial position. A combination of legal actions and budget-neutral legislative action, the fines and penalties that will certainly be levied against BP and the other parties responsible for the Deepwater Horizon disaster, along with a number of existing funding sources present the possibility to coordinate billions of dollars in investment towards the Gulf Coast. These funding sources include an array of federal programs authorized by various federal statutes. (see table)

TABLE 7
Federal sources of funding for the Gulf region

Type of funding	Amount by 2022
Clean Water Act	\$4.3 billion to \$16.9 billion**
Natural Resource Damage Assessment	To be determined*
Gulf of Mexico Energy Security Act	\$3.1 billion***
Coastal Impact Assistance Program	\$598 million
Criminal fines	More than \$45 billion****
Total	More than \$8 billion–\$69.8 billion

*Data is still being gathered, but it will likely be billions if not tens of billions of dollars.

**If the responsible parties are proven negligent and grossly negligent respectively and Congress acts to move 80 percent of these funds.

***According to MMS.

****Based on use of Alternative Fines Act and Oxford Economics impacts project.

(See Appendix for a fuller description of each fund.)

Combined, the potential fines and penalties from the oil disaster could, with proper legal and legislative outcomes, amount to a multibillion-dollar regional funding source that could substantially address the region’s coastal vulnerability while creating vast new economic opportunities.¹¹⁹ If Congress passes legislation to redirect Clean Water Act fines against BP and other companies toward building more resilient coastal communities and ecosystems, it could generate a fund of as much as \$21 billion. If the federal and state trustee agencies of the National Resource Damage Assessment claims reach a settlement with the responsible parties from the Deepwater Horizon, it would likely generate billions more in funds. All of this could create a significant revenue stream that would then prime the pump for the dedicated annual funding stream from offshore oil revenue sharing set to ramp up in 2017.

Gulf state leaders faced with budget shortfalls may be tempted to use these funds for projects that do not directly address the health of ecosystems and those who depend on the Gulf waters for their livelihood. For instance, some local government officials have already called on the Obama administration to deliver Clean Water Act funds directly to the states for discretionary use to help close budget shortfalls or to build new interchanges, convention centers, and other infrastructure that would not directly improve the sustainability of the coastal environment.

We strongly urge that Congress specify that existing resources are targeted toward a coastal recovery strategy instead. Further, we argue that any funds targeted at coastal restoration should also include a set-aside to start building a long-term

economic diversification plan, focused initially on building up an industry cluster around coastal restoration and resiliency.

Altogether, restoration funds could mean tens of billions of dollars in investments as well as a long-term resilience and economic diversification plan. In the remainder of this report, we detail our recommendations for building on the Mabus plan to ensure a more sustainable future for this region, first taking a moment to learn from successful economic development efforts in the past.

Learning from the past

Economic Development Administration and Appalachian Regional Commission

Secretary Mabus's proposed Gulf Coast Recovery Council lays out an outline of shared federal-local cooperation but questions still remain about the scope and practices of this new governing body. The experience of long-established federal initiatives to assist economically distressed or vulnerable regions provide important lessons for the Obama administration and Congress to consider.

Formally established in 1965, the federal Economic Development Administration provides grants for planning, public infrastructure, technical assistance, and capacity-building activities to local governments and nonprofit organizations in eligible areas. Funding eligibility was originally defined by high unemployment and low income but over time other categories were added including plant closures, military base realignment, and natural disasters.

EDA works with a network of 350 multicounty Economic Development Districts to develop Comprehensive Economic Development Strategies that serve as the framework for their funding decisions. Project funding then flows directly from the federal government to local communities. Independent studies of EDA's performance have documented its ability to leverage private-sector funding and create jobs in distressed communities.¹²⁰

The Appalachian Regional Commission represents an example of a successful federal-state-local decision-making process in operation in a specific multistate Appalachian Mountain region. ARC is charged with the task of diversifying the economy of the Appalachian Mountain region, historically dependent on extractive industries such as coal mining. ARC membership is composed of the

governors of the 13 states that contain counties eligible for ARC assistance. The commission prepares an overall strategic plan every few years and governors then propose their own specific plans within that framework. Any project proposed to the ARC for funding must be in line with both the relevant governor's plan and the overall commission's strategic plan. At the local level, the ARC's multicounty Local Development Districts (the equivalent to EDA's Economic Development Districts) receive planning assistance from the commission to develop and carry out these specific projects.

ARC is notable in that it attempts to include both short- and long-term development interests. Besides funding specific innovative projects designed to build firms and create jobs in the short term, the commission focuses some of its resources on long-term regional infrastructure funds, designed to connect economic development projects with isolated local communities, existing workforce systems, and disperse economic assets. The mix of measurable short- and long-term impacts and inclusive governance has sustained the organization, despite a narrow geographic base, for more than 45 years. ARC's counties between its founding and 1991 grew 49 percentage points faster in earnings and 69 percentage points faster in income than local counties with similar characteristics while growing 6 percentage points faster in population.¹²¹

The model's success is further demonstrated by its replication with similar bodies including the eight-state Delta Regional Authority.

In reauthorizing ARC and EDA in 1998, Congress acknowledged regional development districts as a key factor in building capacity and connecting communities to key federal and private resources, calling them "an integral element of successful economic development." A recent independent evaluation of the districts found them to play a highly effective role in spurring regional development and economic diversification based on their ability to "build coalitions, creating a common understanding of the challenges facing the community struggling to improve its economic conditions, and developing and implementing a wide range of projects ... toward that improvement."

These evaluations, however, also reveal some challenges. Some districts failed to focus their strategies on alleviating poverty and lacked adequate representation in their planning committees, with government officials and business representatives being overrepresented and "community stakeholders, women, minorities, and social service groups being underrepresented."¹²² In some areas, the district offices

are woefully understaffed and underfunded, and unable to perform effectively as a result. This problem will only worsen if the current Republican Study Committee, made up of 176 members of the House Republican Caucus, gets its way. In a recent report, the committee recommends cutting about \$300 million from the EDA budget, in effect eliminating the agency.¹²³

Despite these challenges, the EDA and ARC models provide some useful experience as the federal government and coastal communities consider establishing a flexible yet sustainable regional planning and implementation organization that reflects diverse needs and provides long-term, broad-based public support.

Building on the lessons of megaprojects

A national effort to restore coastal and marine ecosystems across the Gulf of Mexico could become one of our nation's largest public works projects, so it is also important to take in some lessons—good and bad—from several other large-scale restoration and development projects, such as Boston's "Big Dig" and the U.S. Army Corps of Engineers' response to Hurricane Katrina.

The Central Artery/Tunnel Project, or the Big Dig, rerouted Interstate 93 under downtown Boston at a cost of more than \$14.6 billion. It was one of the most spectacular engineering feats in U.S. history. It will also go down in history for its enormous cost overruns and many missed deadlines. Much of the slowdown and cost increase came as a result of underestimating the social and economic consequences of the project and failing to engage stakeholders early in the process.¹²⁴

The redesign of the Zakim Bridge after intense criticism from community and business leaders, for instance, forced Massachusetts to launch a massive public-engagement process. By failing to engage community and business stakeholders in the process ahead of time, the Big Dig coordinators ended up incurring huge costs and production delays.

The U.S. Army Corps of Engineers is a major player in the Gulf Coast. The agency not only designed and built southern Louisiana's flood protection system but also plays a leading role in coastal restoration projects and postdisaster debris removal activities. In the initial aftermath of Hurricane Katrina, the Army Corps came under fire not only for the design and construction flaws in its levee system, which ultimately contributed to the flooding of New Orleans, but also for its failure

A national effort to restore coastal and marine ecosystems across the Gulf of Mexico could become one of our nation's largest public works projects.

to adequately utilize local, small, and disadvantaged businesses in the recovery efforts. Battered Gulf Coast businesses were pushed aside by politically connected out-of-state firms who often used multiple levels of subcontractors until those actually doing the work received just pennies on the dollar. Minority firms faced particular difficulties in receiving contracting opportunities.

Soon members of Congress urged the George W. Bush administration to utilize provisions in the Stafford Act to reform procurement and give local businesses better opportunities in obtaining disaster contracts. As the Corps began its \$14.6 billion strengthening of New Orleans's flood protection system, a project they labeled "Task Force Hope," they made local resourcing and industry input a priority. New efforts to increase business outreach and peer review processes stand as significant improvements.

The Army Corps also began using best value contracting, a process that takes into active consideration things like small-business subcontracting plans, safety, training apprenticeship, and community benefits. They developed a partnership with the Greater New Orleans Construction Task Force, a coalition of union and non-union contractors, labor organizations, trade associations, and training providers to streamline construction bidding. The task force, an effort borne out of stakeholder meetings initiated by Donald Powell, President George W. Bush's federal coordinator for Gulf Coast recovery, was developed to expedite construction projects and better position local businesses for contracts. By April 2010, 70 percent of the Task Force's \$6.8 billion in contracts had gone to Louisiana companies.¹²⁵

These past experiences highlight the challenges and opportunities facing a comprehensive Gulf Coast restoration initiative and provide important lessons that should be used to build important governance structures and community engagement processes onto the framework laid out in the Mabus report.

After the spill: The importance of formal stakeholder engagement

These examples from across the country highlight the fact that a new regional recovery model must recognize the value and the legitimacy community stakeholders and local businesses provide in coastal communities, where distrust in all levels of government continues to be an issue. These stakeholders must be formally involved in the governance and the implementation of any Gulf Coast recovery strategy.

The Obama administration continues to reiterate the importance of a recovery plan based on the vision of local communities, tribes, fishermen, businesses, and conservationists. Despite numerous town halls and other outreach, however, Gulf Coast community leaders report difficulties in reaching appropriate decision makers. Many express a strong concern that public engagement does not adequately translate into policymaking.

The pervasive distrust of state officials in this region only adds to the problem. After witnessing state-governed federal recovery funds fail to reach the communities hardest hit by Hurricanes Katrina and Rita, coastal residents made clear in numerous public meetings that state participation alone is not sufficient to represent the needs of coastal communities in any future coastal recovery process. These residents and business leaders often articulate the need for a formal and independent community stakeholder body to be included in recovery decision making.

A number of Gulf Coast residents are inspired by the experience of Alaskans who in the aftermath of the Exxon Valdez spill formed two well-respected citizen participation vehicles—the Regional Citizens Advisory Council, geared toward making oil and gas transportation safer and oil spill response better, and a Public Advisory Committee to advise the Exxon Valdez Oil Spill Trustee Council in governing the region’s natural resource damage settlement. They see this way of ensuring community involvement as central to the needs of their region, too.

They’re right. Finding ways to formally involve community-based organizations and local businesses from the outset is critical to not only fostering inclusive policies but to ensuring the political future of such policies. Focusing on implementing such partnerships can thwart lengthy and costly legal and public relations battles by integrating public input on the front end, rather than after decisions have already been made, and create new economic opportunity for businesses and workers helping to build community wealth.

In the next section, we build on the Mabus plan framework by recommending a specific governance structure for the Gulf Coast Recovery Council, one that includes important lessons from past federal, regional, and state economic development efforts and prioritizes community and business stakeholder involvement.

How to create and fund the Gulf Coast Recovery Council

Redirect 80 percent of Clean Water Act fines to form a Gulf Coast Recovery Fund

Congress should move quickly to pass legislation to put fines from the Clean Water Act toward a comprehensive restoration plan for the five Gulf Coast states: Alabama, Florida, Louisiana, Mississippi, and Texas. In addition to funding restoration projects, a small percentage of funds should be used to build out the collaborations and institutions necessary for long-term economic and workforce development in this region. This legislation should specify that funding must flow through a collaboration of federal and state agencies through our proposed Gulf Coast Recovery Council.

Utilize Development Districts to foster bottom-up development

Congress should establish a Gulf Coast Recovery Council, a partnership of relevant federal agencies and the five Gulf state governors, all of which would be tasked with developing a Gulf Coast Recovery Plan and governing the Gulf Coast Recovery Fund. Such an effort should harness the best practices of the EDA, and more specifically the ARC, into its mission and mandate.

In particular, the council should work to create a “bottom-up” development process, building the capacity of local institutions to identify local assets, build coalitions, and tackle local challenges by creating local Coastal Restoration and Resiliency Districts. The council could work with the 10 existing Development Districts, many of which are already actively involved in regional coastal planning and development strategies, to serve as local building blocks to create these entities.

To ensure inclusiveness, the council should require as a condition of designation that the Coastal Restoration and Resiliency Districts include a broad range of stakeholders in their project-planning processes. In addition to the locally elected members of the district board, these stakeholders might include local private-sector leaders in restoration-related industries, academics, community development and faith-based organizations working with socially vulnerable communities, conservationists, and fishermen.

Develop joint federal-local strategic planning to address long-term economic and ecological sustainability

Economic and environmental recovery must not be separated. The work of the new council at the federal level, and the districts at the local level, should be based upon core principles of promoting projects that achieve both greater coastal community and ecosystem resiliency and more sustainable, inclusive economic growth. Coastal restoration work stands as an important, immediate economic opportunity for the council. It should focus on supporting productive new business models, building inclusive opportunities, fostering technological innovation, and accessing new markets to accelerate growth opportunities. Projects should be prioritized to:

- Build coastal community resiliency, particularly for socially vulnerable communities, through targeted disaster mitigation and more general protection and support for the natural resources and ecosystems that are the backbone of the economic and cultural well-being of the region.
- Include clear, measurable, and achievable ecological and economic outcomes that will facilitate public accountability.
- Include an evaluation and review process intended to draw out both positive and negative effects on communities, cultural ways of life, resources, and services.
- Demonstrate due diligence with respect to scientific, economic, and technical evaluation of design, design alternatives, and implementation.
- Demonstrate support from the state and local coastal resiliency and development district, and ideally support throughout the Gulf Coast region.

Additional priority should be given to projects that include interagency or public-private-community partnerships, explicitly connect disadvantaged workers from training programs to environmental projects, and take additional steps to provide opportunities to local disadvantaged women- and minority-owned businesses.

The above framework should be incorporated into a multiyear strategic plan prepared and adopted by the federal agencies and governors engaged on the Gulf Coast Recovery Council. Governors participating on the council should then take these priorities into account when preparing their own state-level strategic plans for council approval, similar to the process used by the ARC but enhanced in that in the case of the Gulf Coast Recovery Council, multiple affected federal agencies will be engaged.

Priority should be given to projects that include interagency or public-private-community partnerships.

The state plans should incorporate any existing recommendations developed out of past partnerships between the states and federal government. Once the strategic planning process is completed, coastal districts and other local actors may propose specified projects for funding by the council. Combined with our next recommendation for a Community Stakeholder Advisory Committee, this process will give all levels of government and stakeholders meaningful input into the planning process.

Create a Community Stakeholder Advisory Committee to give a voice to culturally important communities

We recommend the creation of an independent advisory body, the Community Stakeholder Committee, to provide direct advice and oversight of the Gulf Coast Recovery Council at the very highest level. This committee would allow affected citizens with critical local knowledge of coastal life to inform the choices before the council, similar to the role Alaska citizens played on the Public Advisory Committee. Their primary missions would be to:

- Work with the new council to design culturally appropriate public engagement and education.
- Ensure project selection, evaluation, and implementation reflects coastal community values.
- Identify areas of local concern and potential unrepresented social, economic, and cultural costs and benefits of proposed projects for further examination by the council.

Representatives of the committee would participate in the proceedings of the council and hold public hearings in partnership with the council and local Coastal Districts, as well as providing independent recommendations early in the project development cycle. The council would be obligated to respond in writing to recommendations from the committee explaining how and why it acted upon these recommendations.

Optimally the new committee would be given an independent operating budget, taken out of the Gulf Coast Recovery Fund, for a small support staff and independent technical consultants to provide necessary scientific analysis. Such a group could include local commercial, charter, and recreational fishermen; non-

profit, community development, and faith-based groups representing socially vulnerable and indigenous communities; coastal and marine conservationists and researchers; and tourism industry and small business representatives from the five Gulf states. Worker rights organizations, including unions, could also have a place at the table.

Essential to the group's success would be its ability to credibly represent the community and maintain its independence. A selection process whereby committee members could be chosen by their peers could help achieve this goal. The chair of the Gulf Coast Recovery Council could host meetings with stakeholders across the Gulf states allowing attendees to nominate their own representatives, and ultimately hold their representatives accountable. Such a process could help community leaders learn technical details of environmental decision making and aid experts and decision makers understand community values and sensitive areas of local concern.

The previous recommendations focus on the governance structure and makeup of the council. We turn now to our recommendations for this body's substantive work.

Prioritize sustainable, inclusive economic development

Navy Secretary Mabus's report included a number of good ideas on economic development without fully explaining how precisely the council he recommended might engage in making these kinds of long-term strategy decisions. We recommend that inclusive and sustainable economic development must become a central and priority component of the new council's coastal restoration plan. Simply "cleaning up" the Gulf after the Deepwater Horizon oil spill and reimbursing individuals and companies for economic damages suffered will result in the region going back to where it was before the disaster—an underdeveloped region dependent upon extractive industries.

Moving beyond this "disaster recovery" model will require investments in reinventing this region's economy and, just as the proposed plan does for the ecosystem, promoting a more diversified and resilient economic growth path. Central to this goal will be leveraging the assets and experience of the Gulf Coast communities in coastal and marine engineering, science, and construction to establish Centers of Innovation for Coastal Restoration and Resiliency.

We recommend
creating the Gulf
Coast Recovery
Fund and Gulf
Coast Recovery
Council to develop
the Gulf region
as a globally
competitive
innovation hub.

The Mabus report adopted as one of its principles for economic recovery that “regions should use the opportunity presented by the recovery effort to address longstanding economic and environmental challenges.” Although the total amount of funding for Gulf Coast restoration activities is uncertain as of January 2011, over the next decade significant resources will be invested in coastal restoration activities, even beyond the billions of dollars of Deepwater Horizon-related funds already described. While the region has a large number of research facilities and projects, what is missing in most of these efforts is any explicit linkage of the existing and extensive research and development already underway among the region’s universities and federal facilities to an intentional and inclusive economic development strategy—one that leverages the enormous investment anticipated in the Gulf region over the next 20 years and creates new opportunity for those most in need.

To accomplish this goal, we recommend that the legislation creating the Gulf Coast Recovery Fund and accompanying Gulf Coast Recovery Council set aside approximately 3 percent of Clean Water Act fines, totaling \$500 million over the next 10 years, toward developing the Gulf region as a globally competitive innovation hub for coastal restoration industries and activities. The funding should leverage existing dollars, perhaps by launching a “race to the top” competition similar to the Energy Regional Innovation Cluster approach described on page 32, to create the linkages missing from current regional efforts.

Projects utilizing public-private partnerships, incubators, technology transfer programs, seed funds, and entrepreneurial training and business development support can begin to help bring innovative products and services out of the laboratory and into communities and the international marketplace. This can be an opportunity to spark new collaborations between small businesses, universities, nonprofits, and federal facilities to promote regional job growth.

Along with providing direct grants to leverage regional partnership activities, the funds set aside for regional cluster development would be used to provide data and technical assistance to the region as a whole. In particular, we recommend that funds be used to:

- Conduct a detailed, in-depth assessment of regional economic assets.
- Help connect local firms and workers to restoration opportunities.

- Begin to prepare tomorrow's restoration workforce.
- Develop mechanisms to ensure equity and community prosperity.
- Reduce risk through disaster mitigation.

Let's explore each of these recommendations in turn.

Conduct an assessment of regional assets

A first step will be to develop a comprehensive regional asset assessment. Existing public, academic, and private-sector research and federal laboratories and facilities, which may be looking for a new mission, can play a key role in driving development and innovation. As described in the previous section of this report, the region already includes many institutions that are working on aspects of a coastal restoration strategy; the council can direct funds to help organize these efforts into a more comprehensive strategy.

Leverage existing federal funds. As part of its assessment, the Gulf Coast Recovery Council should require federal agencies sitting on its board to comb all appropriate upcoming federal grant solicitations in search of strategic opportunities to direct existing agency funds to the Gulf region. For instance, agencies such as the National Science Foundation, NOAA, EPA, and the Department of Energy could require that all solicitations for research-and-development proposals include plans for partnering with private-sector and community nonprofit entities to commercialize innovations and create new economic opportunities. The new council could then work with the local Development Districts and the Community Stakeholder Advisory Committee to ensure these types of partnerships are included on any Gulf Coast research proposals.

Similarly, the Department of Labor could move to prioritize funding for job-training programs in the Gulf region, including community colleges and apprenticeship programs, in upcoming proposals, prioritizing those linked to research-and-development partnerships and targeting socially vulnerable and dislocated workers, analogous to what the department did for communities impacted by the closing of automotive manufacturing facilities.

Tap existing suppliers and investors. Any assessment of Gulf Coast region assets would have to include an analysis of the existing businesses that might make up the supply chain for a Gulf Coast restoration cluster. For instance, the region is

home to a number of growing private-sector firms that work in coastal restoration. Already one business association along the coast has sprung up—the Coast Builders Coalition. The coalition is composed of leading engineering and construction firms engaged in coastal restoration and protection located in Louisiana or with satellite offices in the region, including Weeks Marine, Inc.; Royal Engineering and Consultants, LLC; Odebrecht; and Shaw Infrastructure and Environment Group; coming together to discuss best practices for comprehensive restoration and protection and support coastal restoration policy.

In a recent survey of engineering and construction firms operating in Louisiana, the Coast Builders Coalition found that 80 percent of companies surveyed said their coastal business in Louisiana has grown in the last five years. They also found that 80 percent of companies surveyed have increased their personnel because of this added work, further proof of restoration potential to help Gulf Coast firms create jobs. Interestingly, a majority of these firms thought expanding business and economic development assistance to the industry could help them grow even further.

The region is also home to a number of industries tied to servicing and supplying the shipping and oil-and-gas industries, from machine shops and boat builders to dredging and civil engineers, all of which could become involved in restoration efforts but may not yet have their businesses and expanded services to benefit from the restoration economy. We recommend that the new council, working with local partners, makes a significant effort to identify and reach out to existing firms in the region to identify those companies capable of doing project design, construction, and monitoring, as well as to map the existing hurdles these companies face in entering the coastal restoration marketplace.

Special effort should be made to connect disadvantaged businesses, including women- and minority-owned firms, in the region to these opportunities. Disadvantaged businesses tend to hire disproportionately from disadvantaged groups, reaping further benefits for socially vulnerable communities.

At the same time, it is critical that the new council begins to identify potential investors in these coastal restoration industries. Firms in a range of industries, including oil and gas, insurance, the utility sector, conservation, and fishing, have a significant financial interest in restoring habitat and natural flood protection. They all could be potential partners both in funding new projects and in facilitating new, related economic development ventures connecting to existing or future projects.

While in its development stages, the council could identify venture capital and investment firms with an interest in coastal protection and water management, particularly those looking to utilize the carbon-capture-and-storage capabilities of wetland conservation for carbon trading markets along with the more advanced wetland mitigation market. This effort could bring additional private-sector opportunities to the table and opportunities for connecting restoration and development.

Connect local firms and workers to restoration opportunities

Benefits of publicly funded projects can be realized not only through the direct economic impact of the initial investment but also by policies to help build stronger restoration supply chains for regionally sourcing component parts, subcontracts, skilled labor, and advanced technology.

As much as possible within its authority, the new Gulf Coast Recovery Council should work to connect local firms and workers to restoration projects in the region. This can be accomplished in several ways, including breaking large contracting jobs into smaller pieces to give small and disadvantaged firms the chance to compete for new opportunities. Congress also should act on Secretary Mabus's recommendation to include provisions similar to what exists in the Stafford Act in proposed restoration legislation to allow greater flexibility to prioritize organizations, firms, and individuals residing in areas affected by the spill for federal contracts related to recovery efforts.

Hiring practices can be another tool to ensure that public investments produce lasting public benefits and broadly shared prosperity. The Appalachian Regional Commission, for example, was given the legal authority by Congress to require Appalachian workers be given preference for contracts on projects it funds. Similarly, during the Deepwater Horizon oil spill, the federal government worked out a deal that all BP contractors would similarly work through regional employment systems to staff work crews. These are good models for the new council to embrace.

Additional efforts should be made to identify challenges faced by disadvantaged businesses and to identify solutions for traditional barriers like access to insurance and bonding, through considering risk management and insurance programs such as owner-controlled insurance programs to level the playing field and possibly also lower project costs. The experiences of the Greater New Orleans Construction Task Force, which brought construction industry representatives

from multiple union and nonunion associations together to tackle Hurricane Katrina recovery issues, can help guide these efforts.¹²⁶

Finally, all contractors should be encouraged to provide decent wages; access to health benefits for workers; and access to union- or employer-based training, including occupational health and safety; and to develop plans to connect with prospective low-income, minority, and underemployed workers. In addition, any council-funded program should require participating companies to have a record of compliance with federal laws, including labor and environmental standards, occupational health and safety standards, antidiscrimination, and antiharassment regulations, to ensure that competition for public funds is based on providing improved value rather than simply driving down prices by pushing costs onto the public at large.

Begin to prepare tomorrow's restoration workforce

In the short term, the Gulf Coast Recovery Council can play a strong role in connecting existing local firms and workers to restoration activities. But in the long term, there is important work to be done to better prepare the region's residents to develop the skills and opportunities necessary to become a part of this workforce in the first place. Coastal restoration will directly create tens of thousands of jobs at a time when Gulf Coast-working families are searching for ways to recover from the Deepwater Horizon disaster.

Eventually, increased productivity from new business models, technological innovation, and new markets could create still more jobs and growth. This will spark significant new needs for skilled workers and workforce development. It also provides an opportunity to assist underemployed workers impacted by the Deepwater Horizon oil disaster, low-income workers, and vulnerable individuals who may have lacked access to postsecondary skill training in the past to find new opportunities towards decent wage work.

We recommend that the council set aside 30 percent of its targeted sustainable economic development fund—equal to about \$125 million—toward investments in the types of technical training and workforce development needed to restore, protect, and maintain the coastal ecosystem. The Gulf Coast Workforce Development Initiative, a public-private partnership aimed at training local workers to secure jobs in rebuilding after the 2005 hurricane season, serves as a working local model for such an effort.¹²⁷

The jobs of a restoration economy are likely to be in many of the same occupations or to use similar skills as do current jobs in the Gulf Coast economy. Ship building and operation, heavy equipment operation, welding, pipefitting, environmental remediation, dredge operation, maritime services, and forestry services are all familiar occupations in this region. Training existing workers for these new recovery occupations may be simply a matter of providing short-term certification courses at community colleges or through union- or employer-based apprenticeship programs.

Building on these types of existing workforce development programs can help expand the training pipeline to rapidly meet the demand for skilled workers. In addition, grassroots nonprofits serve as workforce intermediaries to provide culturally sensitive and appropriate “soft skills” training, in areas such as English-as-a-second-language programs and job readiness, to help workers from vulnerable populations succeed in more sector-specific training programs.

Indeed, the Service Corps model, mixing classroom learning and on-the-job training for young workers from at-risk communities, could be another important way to develop the restoration workforce. This model is already in place at several local organizations including the Louisiana Green Corps, which provides environmental conservation and restoration training to unemployed, underemployed, and court-involved youth from the New Orleans area.

Develop mechanisms to ensure equity and community prosperity

It is vital that funded networks, partnerships, and development efforts connect opportunity down to those communities in the greatest need of development gains. The new council should require all submitted project proposals to include plans to create opportunity for low-income, minority, women, and low-English-proficiency communities through partnerships and standalone grants with community-based organizations.

Funds should be available for helping nonprofit community development corporations work with universities to provide technology, business development, and incubation services to small businesses in industries focused on the restoration of the supply chain, and to provide training opportunities to socially vulnerable communities, preferably in connection with existing restoration projects. Working with nonprofits with trusted relationships in making new livelihood opportunities accessible to vulnerable populations, including those with low

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English proficiency and experience in training and business development, can help ensure all communities benefit from the restoration economy.

Reduce risk through disaster mitigation

While coastal restoration builds resiliency of communities to natural hazards, it is not the only necessary investment to prevent increasing future risks for businesses and communities. One important area not addressed under Navy Secretary Mabus's plan, and in need of further exploration, is the hardening and elevating of homes and businesses in high-risk areas to withstand future disasters.

The National Institute of Building Sciences' Multihazard Mitigation Council found for every \$1 invested by the Federal Emergency Management Agency in mitigations such as home elevations and retrofitting roofs, \$4 would be saved on disaster recovery, helping leverage additional private dollars institutionalizing mitigation activities. Reinsurer Swiss Re estimates the Gulf Coast will require a \$41 billion investment to strengthen homes and businesses in the next 20 years to adequately prevent future devastation.

This is why some portion of funding designated for sustainable economic development planning should be utilized to identify and transfer new technologies and best practices for mitigation to Gulf Coast contractors and businesses. The Gulf Coast Recovery Council should work with the states and Development Districts to identify needs and best practices in public policy, especially in financing, to help protect new businesses and existing homeowners, particularly those with low incomes, reduce their risks from hurricane-force winds and flooding.

Investing in long-term economic diversity in the Gulf Coast region

The vast majority of our recommendations focus on an immediate problem—the need to begin now to reverse decades of damage done to the Gulf Coast ecology, especially its wetlands, in a way that begins to build this region into a center for innovation on coastal restoration. But we also believe there is a need to look further into the future and to begin a process of moving this region away from its dependence on the extractive industries that have led to many of its environmental and economic problems, and toward a new set of strategies for sustainable economic growth.

The Gulf Coast region boasts many natural and manmade assets that can help anchor a new economic growth strategy focused on moving toward clean energy technology development and deployment. Many of the region's residents would like to see this area become more of a clean energy powerhouse, which would help diversify the economy at the same time that it would literally move the region away from fossil fuel dependence. The Mabus report also identified building a clean energy sector as one way this region might be able to strengthen its economy.

Such a transformation cannot happen without strong policy support. The three mid-Gulf states have already taken some positive policy steps toward building up their clean energy sectors. There are three major sets of policies states can use to foster a clean energy economy:

- Policies to build up market demand
- Policies to provide or move financing
- Policies to build infrastructure¹²⁸

Alabama, Louisiana, and Mississippi have all taken steps in at least one of these areas to build up their renewable energy and efficiency sectors.¹²⁹ For instance, all three have adopted state building codes to encourage the use of more efficient energy.

Unfortunately, none of these states actually requires the codes be adopted by local governments; instead, the codes must be individually adopted by each municipality. Still, building codes do encourage energy efficiency and thus help to create a market for energy-efficient products and services. Each of these states also has at least some kind of tax credit or rebate for customers investing in more efficient or renewable energy systems as well, which can help provide critical help in financing these purchases.

We recommend all three states pass mandatory, statewide building codes that require new and substantially renovated buildings to meet strong energy efficiency and disaster mitigation standards, and that these codes be updated annually to ensure compliance with the most recent standards.

On the renewable energy front, this region is behind the rest of the country. While 29 other states and the District of Columbia have passed mandatory renewable energy standards that require a certain percent of the state's power to come from renewable sources, most states in the Southeast have yet to enact such policy, including Louisiana, Mississippi, and Alabama. In the absence of a

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federal clean or renewable energy standard, state standards are one of the best ways to truly drive a market for renewable energy solutions—and to drive the resulting research, development, production, and deployment of these solutions, all of which can create jobs.

We recommend each of these states pass a clean or renewable energy standard that takes into account the state's specific energy resources. In Mississippi and Alabama, such a standard would have to account for the fact that including biomass in its definition might drive up costs for the pulp-and-paper sector, which runs most of its operations using biomass energy. One way to resolve this problem would be to reward these companies for their previous efforts in switching from fossil fuels to bio-based power, perhaps by giving them credits they could then sell to regional utilities trying to meet the renewable energy standard's goals.

None of these three states has invested in the policies that can help facilitate renewable energy entering the traditional energy market. Unlike many of their Southeast neighbors, these three states have not passed electricity grid interconnection standards or permitting and siting laws to make it easier to build solar or wind farms. We recommend the states implement these types of policies immediately to open up the market for smaller, individual-, or community-owned renewable energy installations. We also recommend that Alabama and Mississippi implement net metering standards, which allow individuals and companies that install small renewable energy systems, such as solar panels, to sell any excess power they produce back into the grid. This would achieve a similar goal of opening up the electricity market to smaller consumers.

Altogether, these three states have a ways to go to create a positive policy environment in which renewable or efficient energy industries can thrive. But public support for clean energy development, along with some strong natural resources, can provide a solid foundation to start exploring a more robust clean energy strategy.

Conclusion

The mid-Gulf Coast states of Alabama, Mississippi, and Louisiana boast many core strengths that could easily anchor a new economic development strategy for the future. With the influx of funding sure to flow to the region as a result of the Deepwater Horizon spill, there is an immediate opportunity to develop a comprehensive strategy for coastal recovery that includes strong community and business engagement, and a focus on using recovery efforts to anchor a more robust coastal restoration sector. The states can also begin work now to create a policy environment to help move the region toward a more diverse set of industries, in particular in the clean energy sector, over the long term.

Today, these states are overly dependent on natural resource extraction and are suffering the economic and ecological effects this overdependence creates in all similar regions and countries across the world. It is time for a new strategy and this region has the people and institutions that can make such a strategy work. We believe the recommendations outlined in this report provide the blueprint to do so.

Appendix: Federal sources of funding for the Gulf Coast region

Clean Water Act funding

The Clean Water Act places a fine from \$1,100 to as much as \$4,300 per barrel of oil spilled if the responsible party is found guilty of gross negligence.¹³⁰ Attorney General Eric Holder on December 14, 2010, filed a suit against BP and its partners on the Deepwater Horizon alleging they failed to take necessary precautions in securing the rig and use the safest drilling technology.¹³¹ These charges are in line with the findings of the president's Oil Spill Commission, which reported multiple errors at different levels of BP and its contractors' operations. A finding of gross negligence or willful misconduct could result in \$21.1 billion in Clean Water Act fines, versus \$5.4 billion for negligence.

Absent congressional action, these funds will be placed in the Oil Spill Liability Trust Fund, which pays to clean up spills where the responsible company either cannot be found or cannot cover expenses. The Oil Pollution Act and these Clean Water Act provisions were not originally intended to address a spill anywhere near the size of the Deepwater Horizon disaster. For this reason, we recommend that Congress pass legislation redirecting a substantial portion of these fines to a Gulf Coast Recovery Fund, providing the primary vehicle for the Gulf Coast Recovery Council to implement recommendations for long-term recovery and growth.

Natural Resource Damage Assessment funding

The Oil Pollution Act of 1990 requires oil spillers to pay “natural resource damages” in order to compensate for damages and loss of public access to natural resources.¹³² Funds can be used to restore oyster reefs and fish nurseries, rebuild coastal marshes, and more. Unfortunately the Natural Resource Damage Assessment process involves a lengthy period of research and legal action, often spanning years, if not decades.

Total damages from the Deepwater Horizon oil spill are currently unknown but many believe they will be in the billions of dollars. For comparison's sake, the

Exxon Valdez oil spill in Alaska in 1989 resulted in a \$1 billion settlement for penalties for natural resource damages (almost \$2 billion in today's dollars) for a spill between 6 and 18 times smaller in volume than the Deepwater Horizon disaster. According to Louisiana officials, state and federal trustees are near agreement on a joint request to BP for a down payment for restoration projects.¹³³

Alternative Fines Act criminal fines

According to former Justice Department Environmental and Natural Resources Division Chief David Uhlmann, BP, Halliburton and Transocean will likely face criminal charges for their roles in the oil spill.¹³⁴ Under the Alternative Fines Act, a criminal prosecution would pose the threat of a criminal fine equal to twice the financial losses caused by the offense. Based on projection of lost revenues from tourism alone, estimated by Oxford Economics to be \$22.7 billion over three years, fines could reach more than \$45 billion.

Gulf of Mexico Energy Security Act funding

The Gulf of Mexico Energy Security Act was enacted in 2005 to provide revenue sharing for four Gulf oil- and gas-producing states—Alabama, Louisiana, Mississippi, and Texas—and their coastal political subdivisions on 8.3 million acres of oil-and-gas leases. Come fiscal year 2017 and beyond, the four states and subdivisions will share 37.5 percent of revenues from all Gulf leases issued after December 20, 2006.

This new source of funding will result in millions of dollars in revenues for these four Gulf states annually, totaling an estimated \$3.1 billion and growing to \$59.6 billion by 2067.¹³⁵ These funds must be used for coastal restoration and flood protection infrastructure to address impacts of offshore oil-and-gas production.

Coastal Impact Assistance Program funding

The Coastal Impact Assistance Program was created by Congress in 2005 to give \$250 million for each of the fiscal years 2007 through 2010 to oil- and gas-producing states and coastal political subdivisions for ecosystem restoration, and to help mitigate the impacts of oil-and-gas production on the Outer Continental Shelf. Secretary Mabus's report detailed that the Interior Department was intent on releasing up to \$598 million in delayed funding from this program in the coming months.¹³⁶

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Acknowledgements

This report was truly a group effort. In particular, we would like to acknowledge outside reviewers Brian McGowan, Guy Land, Jeff Finkle, and Robin Barnes, though we also want to emphasize that all factual errors and final conclusions are strictly our own. We would like to give a special thanks to the advisors and grantees of the Gulf Coast Fund for their assistance in organizing the trip that launched this project. Additionally we would like to thank colleagues who contributed to this report, including Rachel Hayes, Ajulo Othow, Minor Sinclair, and Irit Tamir from Oxfam; Bracken Hendricks, Steve Kest, Sam Fulwood, Erica Williams, Susan Lyon, and Emily Bischof from CAP. Finally we would like to thank the many citizens and organizations of the Gulf Coast, whose insights gave rise to this report in the first place, and whose innovation and resilience against incredible odds are a continual inspiration.

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