**A Blue New Deal**

**Chris Armstrong**

Coastal communities are at the front lines of the climate crisis. Yet they also have the potential to be at the forefront of the transition away from carbon. A transformative programme for a Green New Deal must include a Blue New Deal which benefits society and the planet.

In February 2019, Alexandria Ocasio-Cortez and Ed Markey proposed a Resolution to the US Congress calling for a radical ‘Green New Deal’. Later in the year, back in the UK, the idea would play a key role in Green Party’s election manifesto, while the Labour Party’s *It’s Time For Real Change* declared the need for a ‘Green Industrial Revolution’. Despite the inevitable differences of emphasis, these proposals share a common thread, in aiming to tackle climate change and runaway inequality simultaneously. A ‘green revolution’ could generate millions of new, well-paid jobs, especially within communities left behind by recent economic shifts.[[1]](#endnote-1) Given that a green transition is necessary, why not use it to empower people in marginalised communities?

Proposals for a Green New Deal are important and inspiring. But they may also possess their own blind spots. Their focus has largely been on reforms to land-based sectors of the economy. But they have had very little to say about the ocean, or about coastal communities. This neglect must be urgently corrected. The ocean is crucial to the global climate system, and to our post-carbon future. It contains fifty times as much carbon as the atmosphere, and the ocean industries of the future have the potential to safely sequester still more.[[2]](#endnote-2) On the other hand, people living on the coast are on the very frontline of climate-related challenges. Coastal communities are already among the most deprived, with many of their inhabitants suffering the consequences of deindustrialisation.[[3]](#endnote-3) Sea level rise and dangerous weather patterns threaten to make a bad situation still worse.

As a result, any adequate Green New Deal must contain a significant ocean-oriented component. There are signs that our leaders are becoming more alert to this need. In September 2019, Elizabeth Warren agreed that a ‘Blue New Deal’ would be an indispensable element of a successful green revolution.[[4]](#endnote-4) Such a revolution must focus clearly upon the specific deprivations faced by people living in coastal communities. And it must recognise the potential of the ocean industries of the future to tackle climate change. As yet, however, the precise role ocean-facing communities could play is not well understood. My goal is to explore in more detail what a ‘Blue New Deal’ – conceived of as an indispensable element of a broader Green New Deal – might look like. First, I will sketch the core ideas of a Green New Deal. I will then suggest some key priorities for a Blue New Deal focused on coastal communities. Finally, I will shift focus from the local to the global. A satisfactory response to the climate crisis will require concerted global action. What might be some key steps towards a truly global Blue New Deal?

**Understanding the Green New Deal**

The House Resolution on the Green New Deal envisaged a ten-year national mobilisation aimed at securing a major reduction in carbon emissions by 2030, and promoting the resilience of both the environment and local communities. It aimed to kill two birds with one stone: greening our economies at the same time as regenerating impoverished communities. The shifting tides of our economies have brought new opportunities to many. But the fact that new jobs are available elsewhere is little consolation to people rooted in communities which have been ‘left behind’. Even those with jobs have faced decades of wage stagnation.[[5]](#endnote-5) The financial crisis, meanwhile, has exacerbated existing inequalities in income, wealth, and economic opportunity between majority-white populations and people of colour. The burden of the austerity policies which followed the crisis has fallen disproportionately on women, and especially women of colour.[[6]](#endnote-6)

The transition to a low- or zero-carbon economy, by contrast, will create many winners. Who they are will be determined, in part, by the nature of state policy. Defenders of a Green New Deal often draw a parallel with the massive fiscal stimulus engendered by Roosevelt’s New Deal of the 1930s. But their proposals differ from that earlier New Deal in two important respects. First, the large infrastructure projects of the original New Deal eventually came to be associated with considerable environmental damage. The Green New Deal, by contrast, aims to defend the environment and protect biodiversity. Second, the original New Deal was narrowly focused on promoting economic growth, whereas advocates of the Green New Deal focus much more explicitly on questions of social justice. Specifically, they demand that the Green version ensures a broad sharing of the benefits arising from this new mobilisation of resources. A successful Green New Deal has the potential to counteract systemic injustices, creating millions of new jobs skewed towards deprived areas and communities.

Success will demand sensitivity to the nature of the challenges faced by marginalised communities. When a community experiences deindustrialisation, it will typically be faced with major economic losses, including shortages of jobs and local investment. But it will usually incur significant non-financial losses too. People who lose their jobs may experience losses to their self-esteem, to their social networks, and to their physical health.[[7]](#endnote-7) As a result, we should explore policies which would place the economic destinies of members of marginalised communities in their own hands once more, allowing them to make decisions about their future economic life. This demands a focus on empowerment and agency, and on mitigation and adaption policies which are dynamic and forward-looking.

**From Green to Blue**

There are three reasons why the ocean will be at the centre of any successful Green New Deal.

The first and most obvious is that coastal communities are among the most deprived. Many have suffered enormously from the dwindling of tourist, fishing and boatbuilding businesses. In the United Kingdom, coastal communities have higher proportions of low-wage, low-skill, seasonal and part-time employment than the rest of the country.[[8]](#endnote-8) They include higher-than-average numbers of people with long-term health issues that limit their daily activities, and disproportionately high numbers claiming sickness and disability benefits.[[9]](#endnote-9) They have also been among the hardest-hit by austerity. Nine of the ten cities most severely affected by public-sector job losses in the UK are coastal, whereas only one of the ten least affected cities is.[[10]](#endnote-10)

Second, coastal communities will be among the hardest-hit by climate change. Because they are often relatively poor, their capacity to adapt to the coming changes may be limited. In the US, this was vividly illustrated in the years following Hurricane Katrina. Sea level rises will bring about greater coastal erosion, greater vulnerability to storm surges, and a much higher risk of rivers and estuaries flooding. In each case, it will hit hardest those communities which can least afford to adapt.[[11]](#endnote-11) In the UK, coastal communities which are already reeling from the economic shifts of recent decades will be hit hard by rising tides. Over 2.6 million properties are now at risk from river and coastal flooding in the UK.[[12]](#endnote-12) But austerity measures have reduced the ability of coastal communities to respond effectively to this risk.[[13]](#endnote-13)

Climate change will have many other impacts on coastal communities. Because fish are highly sensitive to water temperature as well as to oxygen concentrations, ocean warming is currently causing a major pole-ward shift of fish populations.[[14]](#endnote-14) The short-term consequences may at times be positive, as rarely-seen fish arrive in local waters. But the long-term outlook is much less certain. If acidification leads to a collapse in the plankton populations on which many marine food webs depend, fish populations could be hit very hard. This, and a legacy of historic overfishing, means that the future for many fishing communities looks bleak.

Third, however, it is important to recognise that coastal communities possess massive potential when it comes to powering the shift towards a carbon-neutral economy. Renewable energy will come to be drawn increasingly from the sea. Offshore wind turbines benefit from faster, and more consistent, winds.[[15]](#endnote-15) Wave power possesses enormous potential too. In the UK, the wind and wave power that is practically accessible exceeds our current electricity demand six-fold.[[16]](#endnote-16) The most enormous energy sources in the ocean, however, are as yet untapped. Great ocean currents continually traverse our planet, conveying massive quantities of heat energy. If we could find a cost-effective way of tapping into these temperature gradients, they could provide 10,000 times more energy than wind and wave power combined.[[17]](#endnote-17)

Restoring coastal habitats also possesses massive promise as both a mitigation and an adaptation strategy. Huge amounts of wetland have been lost in recent decades, as a result of reclamation, urbanisation and the construction of ports and coastal defences. In Europe, fully half of our salt marshes have now been destroyed.[[18]](#endnote-18) When wetlands are lost, enormous amounts of carbon can leak back into the atmosphere. Their loss can also substantially increase vulnerability to storms. In the US, coastal habitats are key to protecting communities on the Eastern seaboard and the Gulf of Mexico, while their loss could double the proportion of coastline highly exposed to storms and sea level rise.[[19]](#endnote-19) But wetland regeneration is an enormous climate opportunity. Wetlands can lock away five times as much carbon as an equivalent area of forest.[[20]](#endnote-20) Saltmarshes in particular are superb at sequestering carbon. They take in carbon dioxide directly from the atmosphere, and the sulphates present in salt marshes actively suppress the production of methane – a feature that is not seen in most other forms of vegetation.[[21]](#endnote-21)

For all of these reasons, ocean-facing projects should be at the centre of any plan for a Green New Deal. In practice, advocates of such a Deal can face some difficult choices. What if some of the most deprived areas in fact bear little promise when it comes to developing green infrastructure? What if some of the most cost-effective green technologies turn out to support relatively few jobs, or are best located close to existing industrial hubs? These questions suggest that we will sometimes face a trade-off between rapid decarbonisation and widely spreading the benefits of infrastructural investment. But in coastal regions the case for significant investment appears much easier to make. These communities are, on average, more impoverished than other areas; they are also going to be among the hardest-hit by the effects of climate change. But at the same time they possess significant potential to assist the transition away from carbon. Investing in coastal areas can deliver wins for both environment and society.

**Priorities for a Blue New Deal**

At the national level, a successful Blue New Deal will create new opportunities capable of supporting local communities well into the future. Investment should aim to increase the resilience and flexibility of coastal communities, leaving them better able to withstand the changes that ocean warming, acidification and sea level rise are likely to bring. One promising idea is that of Coastal Community Funds, which would see local communities managing their own start-up funds and reinvesting any profits in new local enterprises. In its emphasis on leveraging funding for local, community-defined projects, the House Resolution on a Green New Deal recalls the idea of Community Wealth Building, which focuses on the potential of worker cooperatives, community land trusts and community-controlled financial institutions in restoring the social and economic health of deprived areas.[[22]](#endnote-22) The approach aims to develop under-utilised local resources, and to promote local, broad-based ownership as a means of spurring wider socioeconomic regeneration. Advocates of Community Wealth Building have not yet identified its potential in helping to regenerate coastal areas. But there is plenty of evidence that new and sustainable coastal industries can act as seedbeds for broader community regeneration.

One major priority should be the protection and restoration of coastal habitats. Wetlands possess massive potential as a defence against storm surges. They can provide far more effective storm protection than sea walls, which are considerably more expensive. In the US, it has been estimated that every dollar spent on wetland restoration can save ten dollars in storm damage, far outperforming other methods of coastal defence.[[23]](#endnote-23) Improved coastal protection will be vital in protecting people from sea level rise. In many places – such as Texas – coastal habitats currently protect disproportionately high numbers of poor families.[[24]](#endnote-24) Protected coastal habitats can also support sustainable ocean industries. In Louisiana, an oyster reef restoration project is expected to significantly reduce the force of waves at the shore, to create many new jobs, and to bring $8.4 million to the local economy.[[25]](#endnote-25) In New York City, the restoration of oyster and wetland habitats has been identified as a fruitful strategy in protecting against sea and storm damage. In some places, wetland restoration may also reap dividends in stimulating local tourism – as well as securing tremendously biodiverse habitats.

A second priority area could be seaweed farming. Seaweed aquaculture is widely practised in Asia, but has not yet made a major impact in Europe or North America. Although it is best suited to calm waters, one advantage of seaweed aquaculture is that it does not involve large start-up costs. It also possesses major environmental benefits. On one estimate, a network of seaweed farms covering just 5 per cent of American coastal waters could sequester as much carbon as that emitted by 30 million cars.[[26]](#endnote-26) Seaweed can also be an effective replacement for fossil fuels, in its capacity as a biofuel. In stark contrast to some land-based biofuel sources, seaweed aquaculture does not increase competition for arable land, does not require herbicide or pesticide use, and supports a high level of biodiversity.[[27]](#endnote-27) Seaweed can also help reduce greenhouse gas emissions in its role as a foodstuff. Cows fed seaweed supplements emit dramatically smaller quantities of methane, reducing the climate impact of beef farming considerably.[[28]](#endnote-28) Finally, coastal vegetation plays an important role in securing coastal communities against the effects of rising sea levels. Seaweed aquaculture in Norway, for instance, has been shown to reduce wave heights by up to 60 per cent, offering valuable protection against coastal erosion.[[29]](#endnote-29)

Third, shellfish aquaculture possesses promise as a potentially low-carbon industry. Oysters, mussels and clams (all of them bivalves) remove carbon from the ocean while growing, and this carbon is locked away in their shells for many years.[[30]](#endnote-30) Although bivalve production does have a carbon footprint, it is tiny compared to that of any farmed meat. And bivalves do not need to be fed at all, and do not contribute to the problem of over-fishing, whereas eating salmon and prawns actually increases demands on wild fish, because wild fish are caught and ground up to provide their fodder. They can also play an important role in regenerating coastal ecosystems, through their role in filtering seawater, stabilising sediments and controlling algal blooms.

A fourth priority area should be the greening of ports. As international trade has intensified, new ports have sprouted around the world, and existing ports have grown – which is one factor behind the loss of wetlands worldwide. Ports are often associated with major declines in air quality, and hence with elevated rates of cardiovascular disease, respiratory problems and other health issues.[[31]](#endnote-31) Can we find ways of reducing ports’ environmental impact, while still driving sustainable growth in local communities? The ‘Green Port’ approach aims to make ports more sustainable, at the same time as making their regeneration work as an economic driver for local communities.[[32]](#endnote-32) Several Japanese ports have already reinvented themselves as recycling hubs. Major ports in the Netherlands are now making an important contribution to the ‘circular economy’, by moving into recycling and green energy production, using waste products to generate biofuels, and tapping offshore wind energy.[[33]](#endnote-33) These projects could create many new jobs. They could also bring major health benefits to locals – who are often poor, and, at least in the US, disproportionately likely to be people of colour. The implementation of a Clean Air Action Plan in the Los Angeles/Long Beach area, for example, has secured dramatic reductions in childhood asthma and adult cancer rates.[[34]](#endnote-34) If the Green Ports scheme was rolled out more widely, ports could transform themselves from hotspots of pollution and high emissions into key sites for the green transition, bringing significant economic, health and environmental benefits to local economies.

**From local to global**

To date, plans for Green New Deals have mainly operated at the national level. They have received most attention within wealthy industrial or post-industrial economies, which possess the financial might to roll out large-scale investment in green industries. But to help us tackle our shared climate crisis, the Green New Deal must be global in ambition. This will involve wealthy countries helping to fund green growth in developing countries too.[[35]](#endnote-35) A safe climate for all means that green technologies must be realistically accessible to people struggling to escape from poverty wherever they happen to live. That will mean giving them cheap, or subsidised, access to cutting-edge technologies, and helping them to bear the costs of vital conservation projects.

The argument can be made in either of two ways. Morally, it would be unjust for the global community to place the burden of climate mitigation on the shoulders of those who can least afford to bear it, and who are already struggling to develop their way out of severe poverty. Pragmatically, requiring poor countries to finance their own green transitions likely means that those transitions will be seriously delayed. Given that shifting away from our business-as-usual climate path has never been more urgent, refusing to help people in the developing world make their own green transitions would be foolish. For both reasons, we must find ways of assisting people in developing countries in making crucial steps on their own individual green transitions.

**The ocean and climate stabilisation**

This will require that people in the developing world can secure finance for vital transitions within the ocean economy. A crucial first step is to recognise that ocean ecosystems provide vital public goods, locking away vast amounts of carbon and protecting communities from the impacts of climate change. Take mangrove swamps, for instance. Mangroves are hugely effective at sequestering carbon – they absorb it fifty times faster than land-based forests, and can store two to four times as much per acre.[[36]](#endnote-36) Mangroves are also hugely important breeding grounds for fish, and can provide very effective shore stabilisation and coastal protection. For all of these reasons, mangroves ought to be prime candidates for global conservation efforts. Nevertheless, the world is losing its mangroves at a rate of one to two per cent annually – a faster rate of loss than the rainforests – and only 6 per cent of mangroves currently possess protected status.[[37]](#endnote-37)

How can we help turn back this tide of destruction? Simply telling people in developing countries that they must protect vital resources like mangroves is not going to be enough. After all, they will ask, if protecting them is in everyone’s interests, why is it that *they* have to make the sacrifices? Why must they give up important development opportunities so that the global climate is stabilised – while those in the West continue to enjoy the proceeds of their own acts of environmental destruction? If protection is in the interests of the wealthy countries too, they must put their money where their mouth is and share in its costs, wherever in the world it happens. This means channelling funds to countries which make observable progress in protecting important ecosystems like mangrove swamps. That will help them, in turn, to open up alternative, less destructive development paths.

That, of course, is roughly what the United Nations’ REDD+ scheme aims to do. REDD+ provides payments to local communities when forests are protected from destruction. But the scheme is widely – and rightly – controversial. Too often the rewards have been captured by elites, while locals have been shut out of their traditional homelands lest their activities impinge on the forests’ carbon credentials. There is much work to do in ensuring that local communities are fully involved in efforts to protect forests, and genuinely benefit from the funds which the REDD+ programme unlocks. But that does not mean that we should wash our hands of the underlying idea. The task we face is too urgent for that. Channelling funds to communities which engage in vital conservation efforts is important both morally and pragmatically, if our climate is to be stabilised any time soon. In the immediate future, this means arguing for the inclusion of mangroves within the REDD+ scheme, while working to reform that system. In some places mangroves have been covered by REDD+ funding, but only when trees are at least four metres in height. This excludes many ‘scrub’ mangroves, which are exceptional at locking away carbon. Another problem is that REDD+ only rewards store within the first 30 centimetres of soil. Since mangroves typically sequester carbon far more deeply than that, this means that the incredible contribution they can make to climate mitigation is not recognised.[[38]](#endnote-38) These rules ought to be changed so that mangroves’ contribution to climate stability attracts a proportionate degree of funding. Even those sceptical of REDD+ ought to recognise the need to free up new sources of funding for local conservation efforts. If we want mangroves to be protected, then conservation needs to benefit local communities too. Without *some* scheme which allows funds to track the important contribution they make to climate stabilisation, the rapid loss of mangroves is much less likely to be arrested.

Other coastal ecosystems can also make a major contribution to climate stabilisation. Seagrass beds and tidal flats can store enormous quantities of carbon, as well as providing important habitats for sea turtles and manatees. Global seaweed aquaculture could potentially capture two and a half million tons of carbon dioxide every year.[[39]](#endnote-39) While some forms of seaweed have a short life – and hence release carbon back into the ocean relatively quickly – others have a much longer ‘turnaround time’ and sequester carbon for many years.[[40]](#endnote-40) Acknowledging the contribution seaweed industries can make – and steering investment in their direction – could help make a crucial contribution to decarbonisation.

Some worthwhile goals of climate policy are more surprising. Whales absorb huge quantities of carbon, through their diet of krill and other small marine animals. The body of the average great whale locks away 33 tons of carbon, which it would take 1,375 trees a year to absorb from the atmosphere.[[41]](#endnote-41) When whales die, they fall to the deep ocean floor and this carbon is locked away for centuries. Even more importantly, whales act as key conduits for the nutrient cycle, taking iron and nitrogen from the depths and releasing them in surface waters, spurring the growth of phytoplankton wherever they travel.[[42]](#endnote-42) Though most of us have never heard of it, phytoplankton sequesters far more carbon annually than all of the world’s rainforests. An increase in phytoplankton activity of a mere one per cent would capture as much carbon annually as 2 billion new trees.[[43]](#endnote-43) Efforts to allow whale populations to recover from the catastrophe of commercial whaling could therefore generate massive beneficial effects for our climate. Protecting these amazing animals is in our interests as well as theirs.

In all of these cases, existing forms of conservation funding may be inadequate to the scale of the task we face. If so, we may need to be more creative. A proposed Ocean Sustainability Bank, for example, could unlock a further stream of funding for those who seek to monitor, and protect, ocean ecosystems.[[44]](#endnote-44) Developing countries often face tragic choices between conserving biodiversity and growing their economies. Success in stabilising our climate will involve finding ways of making conservation work for those countries, in recognition of the vital global role that biodiversity can play in our arresting the warming of our blue planet.

**Reflections**

The increased attention which has been paid to the potential of a Green New Deal is enormously welcome. But a Green New Deal which neglects the challenges faced by ocean-facing communities – and the contributions which sustainable ocean industries could make to climate stabilisation – will be an impoverished one. Though it covers seven-tenths of our planet, the ocean has often been out of sight and out of mind within our political discussions. That needs to change, fast. The future health of our planet – and, more narrowly, our plans for sustainable, post-carbon societies – depends upon a healthy and vibrant ocean. Both at a national and a global level, the ocean should be at the heart of planning for a new deal for our environment.

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