

Urban Sustainability in Germany... a look at policies and programs with a Toddler, Some Cheese and a Glass of Wine

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Introduction

Always curious about travel adventures and finding ways to make my life more hectic, the fun kind of hectic, I was eager to pursue the McCloy Fellowship on Global Trends, a three week research fellowship in Germany, looking at urban policies on sustainability. With an 18-month-old in tow, it seemed like the right time to learn not only about Germany’s urban policies on sustainability—looking at energy and sustainable food systems—but also to become fully schooled in Germany’s childcare system.

The intent of the McCloy Fellowship on Global Trends is to give Americans or Germans working in public policy the opportunity to explore their areas of interest further in either the Germany or the U.S., while building trans-Atlantic relationships, and the meetings and knowledge exchanges and meals I shared with Germans working in a number of sectors did truly foster those relationships. In addition, the relationships were taken to a deeper level by establishing a childcare infrastructure, learning to navigate the S- and U-bahns with a stroller, understanding a foreign playground etiquette, mistaking baby oil for shampoo; essentially establishing a mini-household in Germany.

I was enticed to explore Germany's work in energy and urban sustainability as it is becoming clear that energy use and food consumption are aspects of our daily life that will require more and more thoughtful consideration in order to meet the needs of the world's population in our rapidly urbanizing and changing world. Germany is becoming well-known for its energy efficient technologies¹, particularly for building energy efficiency. By learning about Germany's cutting edge work in energy efficiency and sustainable food production², and building trans-Atlantic relationships and dialogues surrounding these themes, I was able to gain an understanding as to how these policies and programs function in Germany, and I can see how some of these innovations may or may not work in New York City and other U.S. municipalities. As Berlin is seen globally as a leader in renewable energy production and in reducing emissions particularly from buildings, my research focused in large part on Berlin³--especially as the capital and the largest city, and as Hamburg is a waterfront city also vulnerable to rising sea levels--similar to New York--the other part of my research focused on Hamburg⁴. With similar targets to New York City, Berlin's goal of reducing carbon dioxide emissions 85% by 2050, and the efforts they are making through their Energy Saving Partnership to switch to renewable energy, the work they are doing is quite relevant to the work I am doing for the City of New York.

In the sections below is an exploration of the current state of affairs in Germany, as perceived through this research, and a comparison to the situation in New York City. Because such a major part of my experience in a place is related to food I also collected recipes from my German journey. A selection of these recipes is included at the end of the article.

Much of the information I write about was gleaned from interviews with people from various organizations in Germany, a list of meetings and contacts is also provided at the end of this paper. In addition I've found secondary sources to corroborate the conversations I had, and links to those sources are provided in the footnotes at the bottom of each page.

Childcare

In setting out to conduct a research trip, in addition to researching and setting up meetings with the key

¹ <http://www.encyclopedia-germany.info/ENEFF/Navigation/EN/Energyefficiency/energyefficiency.html>

² <http://foodtank.com/news/2014/05/ten-urban-agriculture-projects-from-europes-greenest-city-freiburg-germany>

³ http://ccap.org/assets/CCAP-Booklet_Germany_Berlin.pdf

⁴ <http://www.umweltbundesamt.de/en/topics/climate-energy/climate-change-adaptation/adaptation-tools/project-catalog/ufm-hh-urban-flood-management-in-hamburg-new>

players in the urban planning and policy, renewable energy and food worlds, I entered an inadvertent yet very interesting learning journey regarding the German childcare system.

Accustomed to spending more on daycare than I do on my rent in New York City, I was curious to see how the Germans handle childcare. There are a range of options, particularly, and often specifically in Berlin, similar to those available in the U.S. including “Kindertagesstätte” or *kita* for short, *tagesmutter* or “day mother”—a sort of home-daycare, and a babysitter option. According to an article written in 2013, a German family can expect to pay between 80 and 120 euros per month for day care.⁵ I pay approximately \$2000 a month for my daughter’s Manhattan day care, and this is a subsidized rate, the full rate is approximately \$2700 per month.

In addition to the affordable price of childcare, the German government in response to falling birth rates in the country gives families “kindergeld” or “child money”:

Taxpaying expatriate residents of Germany are, like Germans, entitled to Kindergeld if they have children. This is an allowance (also called a Child Benefit) from the German government to help defray some of the cost of raising children. It can run from €190 to €221 per child per month, and is usually made by a fund transfer into a German bank account.

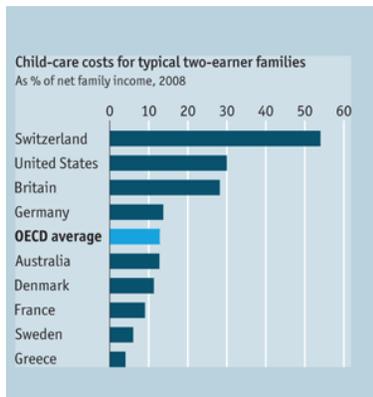
Just about any taxpayer living in Germany with children can get the Kindergeld, whether employed, self-employed or independent. You get it as a rule until the children turn 18, though it can continue until they are 25 if they are still in school or meet other requirements for an extension. Starting in January 2016 the benefit has been raised to €190 per month for each of the first two children, €196 for the third child and €221 for each subsequent one.⁶

Ultimately a colleague connected me to a German former colleague of mine who works in renewable energy, and has two young children, recommended his niece as an experienced babysitter. After a FaceTime interview and a reference check, I hired Munay, the niece, who had just graduated from high school, and paid her approximately eight euro per hour. Each day during our two week stay in Berlin, I brought my daughter to the babysitter’s house; she and my daughter hit it off. And they often spent time with Munay’s grandparents, to whom my daughter still refers as “Oma” and “Opa.”

Then for our time in Hamburg and Dresden, my sister joined us to take care of my daughter and to enjoy Germany with us.

⁵ <http://www.expatsbriefing.com/country/germany/living/family-life-and-childcare-for-expats-in-germany.html>

⁶ <http://www.howtogermany.com/pages/kindergeld.html>



Caption (photo on the right): My daughter playing at Oma and Opa's. (photo credit: Munay Quitzow)

While our child care experience was wonderful in the end and added positively to my overall experience in Germany, my inadvertent research into the costs of child care globally, highlighted such benefits as subsidized child care as a major different between the US and Germany. I am curious to further understand the potential long term societal impacts of supports like affordable child care that a government provides its families.

***Energiewende*—the Energy Transition: A look at Germany's Energy Transition, the country's success in Implementing Renewables and the possible effect of the Change in National Policy**

In setting out to understand urban policies in sustainability in Germany, it is important to look at energy and environmental philosophy at a national level, as that has direct bearing on the trends in urban sustainability, thus a look at the *Energiewende*.

The *Energiewende* or the "energy transition," describes Germany's efforts, with strong legislative support, to transition from fossil fuels and nuclear to renewable energy sources. And the *Energiewende* thus far has been remarkably successful, with an 800% increase in renewable energy generation in Germany since 1991⁸. *Energiewende* policy and philosophy is influenced by a number of factors: *fighting climate change, reducing energy imports, stimulating innovative technologies, reducing and eliminating the risks of nuclear power, energy security, and strengthening local economies and providing social justice.*⁹

⁷ OECD "Doing Better for Families" April 2011 <https://www.washingtonpost.com/blogs/she-the-people/wp/2014/06/23/global-view-how-u-s-policies-to-help-working-families-rank-in-the-world/>

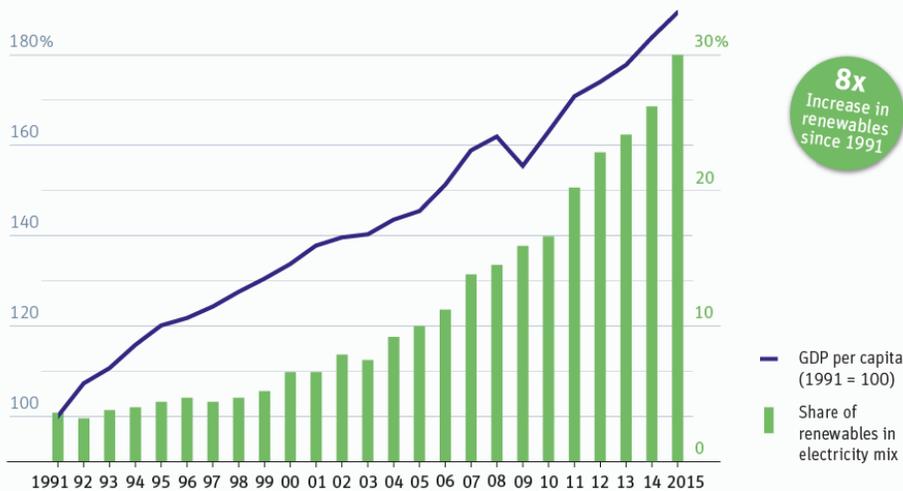
⁸ <http://energytransition.de/2014/12/infographs/>

⁹ <http://energytransition.de/>

Renewables do not hurt Germany's economy

Gross Domestic Product and share of renewables in power generation from 1991-2015

Source: BMWI, AG Energiebilanzen, Destatis



German Energy Transition

energytransition.de

CC BY SA

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A key element influencing Germany's perspective on energy is its long history of environmentalism and environmental stewardship. The philosophies motivating the *Energiewende* have roots in the oil crisis in the 1970s and Germany's ensuing environmental and antinuclear movement of the same decade, which was reinforced after the Fukushima disaster in Japan in 2011.

Germany has been incentivizing its citizens to produce renewable energy through solar panels and wind turbines through "feed-in tariffs" since the first Feed-In Act in 1991.¹¹ Feed-In Tariffs are payments governments make to citizens in exchange for the renewable energy the citizens produce and put back into the grid. And these tariffs were met with almost overwhelming renewable production—particularly with wind power in the north and solar in the south.

While Germany is strongly motivated to transition away from fossil-fuel based energy sources and into renewables, the country is even more strongly motivated to transition away from nuclear. As Germany is working to close nuclear power plants, they have transitioned back to some coal energy generation in the meantime. Germany is on track to be nuclear-free by 2022.¹²

Stabilizing the grid: Germany's new auction system

The overwhelming success of the production of renewables originated with Germany's original

¹⁰ <http://energytransition.de/2014/12/infographs/>

¹¹ <http://energytransition.de/2012/09/timeline-energiewende/>

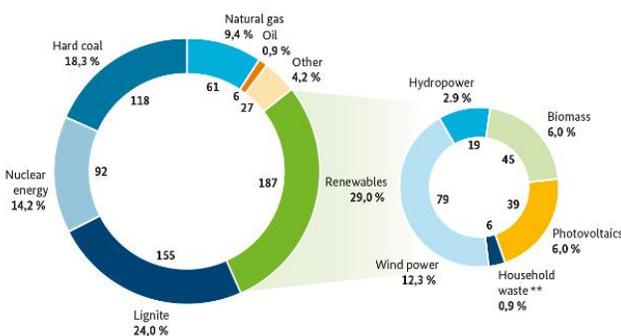
¹² <https://www.cleanenergywire.org/factsheets/history-behind-germanys-nuclear-phase-out>

Renewable Energy Sources Act from 1991, then 2000¹³ (then revised a few more times), and this success has resulted in some concern on the part of the Germany government about the stability of the electrical grid. There was a day in May 2016 when nearly all of Germany's power was supplied by solar and wind.¹⁴ While that May day was of particular note, there is often overproduction of renewables in some regions at some parts of the year—wind in the north and solar in the south. This over-production causes some political and logistical concerns, within Germany, and also the overproduction sometimes travels into the electrical grids of neighboring countries as well.

In 2014 a new Renewable Energy Act was passed, drastically changing the funding systems for renewable energy. Until the end of 2016, all generators of renewable energy were entitled to money from the German government for every kilowatt hour of energy that was fed-into the grid for a period of 20 years, this is known as the feed-in tariff system. The new system, a more market-driven auction system, so starting in 2017 the fees paid for renewable energy will be determined by bids, though the smallest producers—up to 1 megawatt of wind and 750 kilowatts of solar—will still receive feed-in tariffs, to incentivize individuals to continue to produce their own power. This action system is intended to stabilize the grid and become less expensive for the government—but is creating concerns as well, because it will likely favor big companies who can afford to bid low, it will likely endanger new off-shore wind production, as that is expensive to install, and possibly discourage local or community ownership of renewable energy projects¹⁵.

It is clear that not all groups in Germany are pleased with the switch from the feed-in tariff system to the auction system. While it seems that rationale behind the switch is that the first phase of renewable production in Germany was to really build up the production and this auction phase it to coordinate the production¹⁶. But every few years the government reviews and updates the Renewable Energy Act, so it is possible for the process to be revised should the auction system not produce the desired results.

Gross Electricity Production in Germany in 2015*



¹³ http://www.germanenergyblog.de/?page_id=283

¹⁴ <https://www.bloomberg.com/news/articles/2016-05-16/germany-just-got-almost-all-of-its-power-from-renewable-energy>

¹⁵ <http://energytransition.de/2012/10/1-vi-strengthening-local-economies-and-providing-social-justice/>

¹⁶ <http://energytransition.de/2016/06/u-why-is-germany-switching-from-feed-in-tariffs-to-auctions/>

* Preliminary figures, some estimated, ** Regenerative part; source: Working Group on Energy Balances, status: August 2016 (PDF: 81 KB)¹⁷

The Germany Federal Ministry of Economic Affairs and Energy (BMWi) practices what it preaches. Below are photos of solar panels on the roof of one of its buildings in Berlin. The office also has an electronic board (also shown below) in the lobby so employees and visitors can get a sense of how much energy the solar panels are producing.

These solar panels (photos below), and especially the information board reporting about them served as great inspiration for what I hope to implement in some of the facilities belonging to the NYC Department of Transportation.



Berlin: Sustainability and Energy Efficiency plans and possibilities

"Our country is, whether successful or not, a global model for the transition from a fossil or nuclear to an efficient-renewable economic strategy. But without the biggest city in Germany, such a change cannot credibly be achieved." –Prof. Dr Hans Joachim Schellnhuber, Director of the Potsdam Institute for Climate Impact Research (PIK)

¹⁷ <http://www.bmwi.de/EN/Topics/Energy/Renewable-Energy/renewable-energy-at-a-glance.html>

Berlin is both a city and a state in the German Federation, and the capital of the German Federation, so the city government, which is also the state government has significant power. This also affects its relationship with its hinterland and its history, as almost the entirety of Berlin is urban.



A view of Berlin

New Government Forming in Berlin

In September there were city/state elections in Berlin, as Berlin is both a city and a state—and though the coalition changed a bit, the Mayor Michael Muller of the Social Democrat Party (SPD) will remain Mayor. And while in other parts of Germany such as Mecklenburg-Western Pomerania, right wing populists have been gaining power and representation in governments... as also perhaps noted in the recent election in the United States...

As the Mayor will remain in power, many of Berlin's policies and goals, particularly in the realm of sustainability and energy efficiency will remain in place. Berlin has instituted the "Berlin Agenda 21", Berlin's Strategic and Sustainability Plan to do their part to make sure the earth continues to be a livable place.¹⁸ Berlin's goal is to be a model in carbon neutrality, and Berlin has partnered with the Potsdam Institute for Climate Impact Research (PIK) to do a feasibility study to get a sense of how close to climate neutral Berlin can be by 2050.¹⁹ There are a number of programs and projects through which sustainability, energy efficiency and greenhouse gas emission reduction are being carried out. While it is very hard for cities to generate 100% of their own energy due to the density of cities and the space

¹⁸ http://www.stadtentwicklung.berlin.de/agenda21/index_en.shtml

¹⁹ Conversation with Gesa Homann and <https://www.pik-potsdam.de/members/lass/climate-neutral-berlin-20150-a-feasibility-study>

intensiveness of wind and solar generation, Berlin has done well in meeting its energy reduction targets, and by 2010 met its 2020 goal of a 27% reduction from 1990 levels, as part of the Covenant of Mayors. Looking ahead, in order to meet future targets of energy efficiency and self-sufficiency, Berlin will need to depend on solar or wind generation from the region, and may also buy carbon certificates.²⁰

For Berlin, and for Germany as a country, the concept of Climate Change is a real and imminent threat. The main goal of both the city and the country is to keep global warming below the threshold of an increase of two degrees Celsius. To keep temperature rises below the two degree threshold, Berlin's goals are to reduce carbon dioxide emissions 85% from 1990 levels by 2050, which is similar to NYC's 80% by 2050. While meeting with various experts working in academic institutions and for the Berlin city government, a number of people expressed alarm and concern about the number and power of climate change deniers in the United States.

In efforts to meet these goals, Berlin is reviewing its legislation to strengthen energy efficiency and climate protection and putting in place a new law called "Gesetz zur Umsetzung der Energiewende und zur Forderung des Klimaschutzes in Berlin" which will "reflect the changing European and national energy-and climate-policy conditions as well as Berlin's particular circumstances and potentials."²¹ Berlin is committed to supporting the energy and climate change turnaround by guaranteeing "long term security and affordability of the energy supply."²²

To meet greenhouse gas and climate neutral Berlin goals, the city government works closely with government owned and private companies and institutions to reduce energy use and increase the use of renewable energy. In accordance with the Climate Conference in Paris in 2015, Germany and Berlin understand that 70% of greenhouse gases produced as a result of human activities come from cities, so they see Berlin has having the opportunity to play a big role in greenhouse gas emission reduction.²³

City Government Structure, Climate Change Mitigation and Energy Management

Berlin is divided into 12 boroughs or districts, and each district has responsibility for retrofitting or improving the energy efficiency of buildings within that district. Some districts have staff people assigned to the task of improving the energy efficiency of public buildings and others don't.

The slowness of procurements and government contracting seems to be a concern in cities on either side of the Atlantic. One of Berlin Green Party's approaches to make the energy efficient retrofitting contracting smoother involves working with a government owned company to have them work on the contracting and retrofits, while the City-State of Berlin pays the company the current electricity prices.

²⁰ Conversation with Gesa Homann

²¹ Climate-Neutral Berlin 2050 Results of a Feasibility Study page 5

²² Climate-Neutral Berlin 2050 Results of a Feasibility Study page 5

²³ Climate-Neutral Berlin 2050 Recommendations for a Berlin Energy and Climate Protection Programme (BEK) pg.

The company would make money because the government would continue to pay the current electric costs to the company even after the electric costs are reduced.²⁴

One of the main differences in terms of urban power use in Berlin and New York City is that Berlin buildings rarely use air conditioning, while almost every building in New York has either central air conditioning or window units. Building energy accounts for approximately 40% of global energy use²⁵, and in the U.S. air conditioning comprises about 6% of all energy use²⁶.

Berlin's history of destruction, division and isolation during and following the Second World War has impacted Berlin's goals of energy self-sufficiency. Though Berlin's energy supply is still mainly composed of fossil fuels, including natural gas, mineral oil, coal and lignite, there has long been a focus on cogeneration/combined heat and power (CHP) and district heating. The city government, national government and local enterprises and non-profits are very interested in using CHP—the simultaneous generation of electricity and heat is seen as an important option for the making Berlin's energy use more sustainable. PIK's recommendations are also to continue to use more solar and heat pumps as well.

Berlin and its Food Systems: A Comparative Study with New York City's Food Policy and Programs

As a New Yorker who is very focused on food—both the meals themselves and the politics and policies behind them—while visiting Berlin, I regularly asked myself, “Does New York have this?” and if not, why not. I also noticed some realms where Berlin may be able to be inspired by New York.

New York City and Berlin are both big sprawling, vibrant, diverse, dense metropolises. Berlin has a population of 3.5 million, while New York's is at 8.4 million. As Germany's political and cultural capital, with clear goals and innovative projects in greening and environmental sustainability, Berlin can serve as a great case study for policy makers in New York City, and vice versa.

Regional and Local Food

Before the fall of the Berlin wall, West Berlin was an island of a city surrounded by all sides by a communist country. These political and physical boundaries have had a lasting effect on the development of Berlin as a city, notably on its food supply.

New York City, the city itself is very dependent upon its region, particularly economically. In looking at the food systems in and around New York City and Berlin, I noticed some key differences, similarities, and realms in which each city could use the other as inspiration.

New York City's Farmers Market System, Greenmarket, is a prime example of the city and region's interconnectedness. Greenmarket's mission, “to promote regional agriculture by providing small family farms the opportunity to sell their locally grown products directly to consumers, and to ensure that all

²⁴ Conversation with Michael Schaeffer, Berlin Green Party

²⁵ <http://www.unep.org/sbci/AboutSBci/Background.asp>

²⁶ <http://www.energy.gov/energysaver/air-conditioning>

New Yorkers have access to the freshest, most nutritious locally grown food the region has to offer”²⁷ clearly illustrates the connection between the city and the region. The farmers markets are comprised of farmers from within a certain distance from NYC.

In visiting Berlin, I had expected to find what I thought of as a typical European regional farmers market system. So I was surprised to discover that this local market system has only recently begun to be resurrected, as the public farmers market systems had really last existed and thrived before the Second World War. Berlin was cut off from its regional food system for many years first through the division between east and west, and now some separation continues because Berlin and Brandenburg are different states. Berlin’s growing market culture is exemplified through markets like Markthalle Neun, an old market hall that has been reimagined as a general event space for quality food. During the day there are often local regional farmers selling their produce and on Thursday evenings there are international street food vendors.

The Markthalle is packed during its evening events, and I had the opportunity to meet and talk with Pamela Dorsch who works for Markethalle Neun and organizes some of their events. She explained to me that the market was developed through a community driven process in which local Berliners worked with developers to envision and carry out the development of the market hall. The surrounding neighborhood is lower income, and the prices of the food within the market hall are higher than average, but a discount supermarket is also located within the food hall which can better serve people with less money available to spend on food.



A children’s play space inside Markethalle Neun

In Berlin’s culture of change and growth, food culture plays a big role. There is a growing movement in Berlin to focus on further developing a regional and sustainable food system—and also a vibrant and international food system.

²⁷ <https://www.grownyc.org/greenmarket?gclid=C0nezeyiiNECFY1WDQodX2wLFA>

Berlin has a recently formed food policy council administrated by a woman named Chrissi Poehl, with whom I met. The Food Policy Council is working closely with the government of Berlin to focus on issues relating to regionally and sustainably produced food.

Other innovative programs like Food Assembly are popping up in Berlin. Food Assembly helps give Berliners access to locally grown fresh produce.²⁸ The program functions like an online supermarket/cooperative of a number of local farms combined on one website.²⁹

New York City has a strong connection to its region, with a growing investment in strengthening the city's connection to the regional food system, as a means of local economic and community development. Some of New York's innovative food access and regional food promoting programs include:

- A new food hub being developed in the South Bronx, to allow medium sized farmers to sell their produce wholesale through the Hunts Point Terminal Market. This is financed through a grant from the State of New York.
- Financial incentives for people receiving EBT (formerly known as food stamps) to use benefits in markets.
- Food boxes: like a community supported agriculture program, but without an upfront cost. People can purchase boxes or bags of local produce at reduced prices and pick them up at a location convenient to them.

The main driver in New York City's food policy programs, possibly even before regional economic development, is increasing healthy and fresh food access to people with less economic means. And as the price of food in Berlin, and in Germany is general relatively low, the food policy and practice focus seems to be more on promoting and improving sustainably and locally produced foods.

I noticed while exploring Berlin: food in restaurants and supermarkets—from the “discounters” like Lidl to the higher end organic grocery stores like Bio or Alnatura—is remarkably affordable. And my observation was validated by a number of people, including Marco Clausen at Prinzessengarten, and Bastian Schwital from Berlin Food Tours, who corroborated that affordable food is, in a sense, part of Berlin's food identity. Conversations and meals with people working in the food industry and on food policy continued to return to a focus on promoting sustainably and locally produced food, while reducing waste, and maintaining food affordability³⁰.

Food Waste Solutions at a Glance

Food waste is a major concern of the food policy council, and a concern as well of a number of other organizations, ranging from non-profit research organizations like Ecologic who is writing about food

²⁸ Based on conversation with Chrissi Poehl and Pamela Dorsch. NEEDS CITATION

²⁹ Foodassembly.de

³⁰ Conversations with Slow Food Germany, Ecologic, Prinzessengarten, Berlin Food Tours

waste to enterprises like food waste restaurants that serve finely prepared food that is still fresh, and tastes great, but is nearing or past its official expiration date. While in New York, Dan Barber of Blue Hill restaurant dedicated a month to serving expensive salvaged food that would have otherwise been thrown out, restaurants like Restloss Glücklich in Berlin offer a longer term more affordable and delicious dinner alternative.

Restloss Glücklich is actually a larger project of which the restaurant is just a part. The philosophy behind the project is finding value in food surplus. They want people to, “consume more consciously and recycle more of the food”³¹ they consume, both at home and in restaurants. The anti-food waste project gives cooking classes at their restaurant in Berlin-Neukölln. They work closely with supermarkets, wholesalers and farmers to get products—which predominantly include fruit, vegetables, and bread—that they can no longer sell because of their short shelf-life. For Restloos Glücklich, “Food surplus” does not mean that the food is already spoiled or “that the ‘best before’ date has passed. It is truly an unfortunate fact that a lot of food is discarded, because it simply takes away storage space, the shape is not right or just the packaging is damaged.”³² The staff at Restloss Glücklich is mostly volunteer, and the proceeds from the meals go to investing in educational and cooking projects to help people better understand how to reduce food waste.

The food in the restaurant was quite tasty—beet fritters, spaetzle, chocolate dessert—and affordable 25 or so Euro for a three course meal. At this meal, shared with a friend-of-a-friend raw food chef, was one of the few times I had some concerns about the fact that I had brought my daughter. She ran constantly through the restaurant and when I finally distracted her with some play dough she then smushed a bit of it into her nose. (It does smell good.) I found small pieces of blue play dough in her nose for days afterward, reminding me of my delicious meal!

International Food Scene

Growing along with Berlin’s sustainable, waste-free food scene and growing alongside its immigrant population is Berlin’s international food scene. There are Thai markets, Vietnamese markets, Armenian markets, Turkish, with each generation of immigrants, the restaurants and markets and enclaves that go along with that.

The international culinary scene built by generations of waves of immigrants is certainly a major pillar of New York’s food world, and increasingly seems to be true for Berlin.

In just 2016, Germany accepted one million refugees, in 2015-2016, and hundreds of thousands of them ended up in Berlin—many still temporarily housed in the old hangars at Templehof airport. While world politics and policies appear to be turning a more xenophobic and less welcoming corner, if we look at this superficially, the mark these latest refugees will leave on Berlin’s food scene still remains to be seen. And I at least am interested in returning to Berlin in the near future to taste it.

³¹ <http://restlos-gluecklich.berlin/whats-the-story>

³² <http://restlos-gluecklich.berlin/whats-the-story>

Cuxhaven: Economic Development and Revitalization through Off-Shore Wind

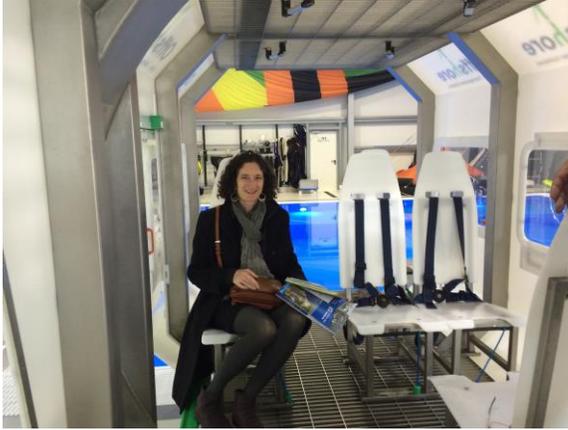
Cuxhaven is a seaside town with a beach that has received UNESCO designation, with a long economic history tied to the fishing industry. Migrants from other parts of Europe, particularly from Spain and Portugal moved to Cuxhaven to make a living in the fishing industry. The town began to suffer economically when stricter environmental regulations were enforced a quota in compliance with the terms of the International Law of the Sea, as now fishing is only permitted within 12 nautical miles of the coast, limiting the area that could be fished and the numbers of fish that could be caught. The advent of the law hurt Cuxhaven's economy which was heavily dependent on the fishing industry. In the 1960s, 14,000 people were working in Cuxhaven's fishing industry, now there are just 1400; steady employment, but just 10% of what it was. The leadership of the region struggled to figure out what could reinvigorate the economy.

The answer came through the Energiewende—the energy transition. Northern Germany is known for its wind energy production, and with the vast coastline, Cuxhaven's officials became interested in exploring the possibilities of off-shore wind energy production. Cuxhaven officials see this particularly as a way to help small and medium enterprises

Cuxhaven competed with 52 other municipalities in the area to attract Siemens offshore wind production plant, and won. Siemens is investing 250 million Euro in the area. In the coming year Siemens will begin construction on an offshore wind facility that will, the authorities hope, also engage with and support other local businesses. Siemens will produce the cells for the wind turbines onsite in Cuxhaven, and will install a seven or eight turbine mega offshore wind farm just off the coast of Cuxhaven. The blades for the turbines are the width of a plane's wingspan and are manufactured in the United Kingdom. One wind turbine will produce seven megawatts of energy. There are cables that connect the wind turbines to the electrical grid. The turbines are reached by helicopter.

There is some concern on the part of environmentalists that the wind turbines can disrupt the ocean floor, but the installation of a wind farm can also provide opportunities for ocean life. Oysters and other shell fish can grow on the wind turbines!³³

³³ Information from conversations with Ursula Hudson of Slow Food Germany, and the Cuxhaven Economic Development Department.



Small businesses around Cuxhaven are developing in response to Siemens locating there, including an offshore training center that helps workers learn how to reach the turbines by helicopter and make emergency landings in the water. Here is a photo of me at the training center in a mock helicopter.

As Cuxhaven attracts many tourists through its UNESCO designated beach—the beaches are protected physically as well, by dykes—the city is interested in combining the offshore wind production with tourism and education too. The municipality is planning an educational innovation/education/tourism center where people can come to learn about offshore wind in the region. There is debate about whether to locate the innovation center in the city center or closer to the Siemens site.

Cuxhaven’s economic development team is enthusiastic and hopeful about wind energy coming to Cuxhaven’s shore. It’s seen as an opportunity to bring change and galvanize local skills and competencies. I’d love to return to Cuxhaven—on a warm summer day—to see the wind turbines at work, to enjoy the famous beach, and to eat some more delicious seafood.

My conversations in Cuxhaven have inspired me to look more closely at the possibilities of renewable energy spurring economic development. I’m also particularly interested in learning more about GE’s offshore wind near Block Island.



Construction at the site of the Siemens wind turbine cell production facility.

Hamburg: Resiliency Planning, Regenerative Cities, and a Port

Hamburg, a port city of 1.73 million people, is Germany's second largest city. I chose to visit Hamburg to learn more about its famously successful ways of building neighborhoods that are resilient and environmentally sustainable. Wilhelmsburg and Hafencity are the two areas of note, able to withstand storm surges and flooding while also being energy efficient, employing passive building techniques, solar panels, and green roofs. Designated the 2011 European Green Capital by the European Commission, Hamburg has and continues to focus on improving its ecological footprint and quality of life for residents and visitors. The city itself is working hard to improve its air quality and encourage more cycling. It has a program to retrofit and improve public buildings through the Ministry of Urban Development and Housing.

A far wealthier city than Berlin—mainly because of its port and businesses—Hamburg is also a City State. The City of Hamburg's brochure's describe it as a, "Green, inclusive, growing city by the water."³⁴ Its combined focuses on growth and resiliency and sustainability make it a remarkable case study in waterfront urban development.

HafenCity

The area that is now HafenCity is vast, and once complete it will have expanded the size of Hamburg by 40%. Mostly city-owned land, Hamburg was able to finance this major urban development project by selling the land to developers and using the proceeds for public works and services, such as creating two new metro stations.

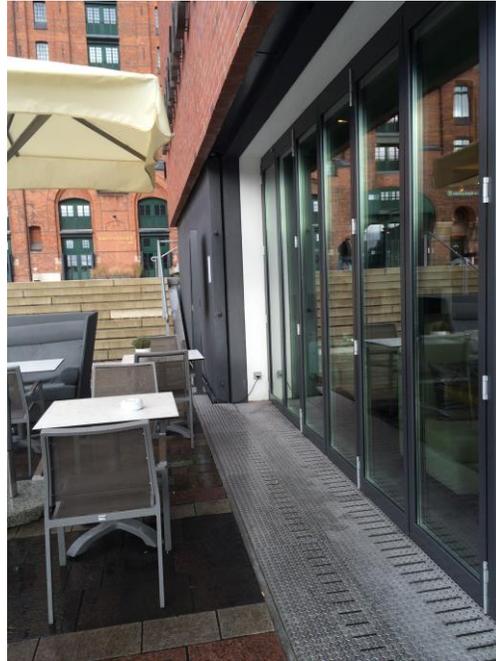
HafenCity development is remarkable because of its vastness, because of its requirements to always improve the sustainability and energy efficiency of its buildings, because of its commitment to mixed use and most relevantly its ability to design a neighborhood that can withstand storm surges, keeping businesses and most importantly people safe.

HafenCity comes complete with a university, HafenCity University, with a focus on interdisciplinary urban planning and development. As part of my real-life experience in HafenCity, in addition to having a polished tour and presentation, I had the opportunity to lecture at HafenCity University twice. From a knowledge sharing perspective, it was really helpful to me to learn about what areas of urban planning and development were most of interest to HafenCity undergraduate and Masters students, and helpful as well for me to be able to give the students real life examples of sustainable urban policies and work in other cities.

The opportunity to develop the vast area that is Hafen City in such a way that allows for the financing of services and infrastructure is quite rare and is hard to replicate in other urban centers, but the technology employed in making HafenCity resistant to storm surges is replicable. The gates and levels of outdoor seating areas that are not residential and are easily evacuated are quite remarkable, and have proven successful during actual storm surges.

Successful examples such as these are quite useful for working in and planning for a post-Hurricane Sandy New York City.

³⁴ Green, Inclusive, Growing City by the Water: Perspective on Urban Development in Hamburg



(left) Inside HafenCity University. (right) The steel gate at a café that can be deployed during a storm surge. It prevents water from entering the café.

Wilhelmsburg

Wilhelmsburg is a neighborhood of Hamburg that has seen vast changes over the last half century. The latest cutting edge, sustainable and resilient development was a showcase of the International Building Exhibition (IBA), begun in 2008, with building reaching completion in 2013. The neighborhood was heavily bombed during World War II and for many years cut off from the city by a series of tracks and roads and general urban disrepair, home to a lower income population. Wilhelmsburg was prone to flooding, as this area was not protected by the city's dykes, and a severe flood in 1962 resulted in the death of 315 people in Hamburg, with particularly devastating effects in Wilhelmsburg³⁵.

Committed to preventing this from happening again an entire new mixed use quarter was developed in this area, complete with a showcase city government building that is entirely passive, with a green roof (complete with beehives producing honey!), using geothermal heat and power, no air conditioning, and motion sensors. Other cutting edge and experimental buildings in the area include a house fitted with glass panels, intending to cultivate algae; a row of "soft houses" covered in rotating solar panels, and another building made entirely of wood³⁶. According to municipal employees who are working in the passive municipal building in Wilhelmsburg, the building works well aside from some dryness in the air.

³⁵ <http://www.environmentandsociety.org/arcadia/great-flood-1962-hamburg>

³⁶ <http://www.nudgesustainabilityhub.com/initiatives/2015/5/27/city-3-hamburg-nudge-circular-cities-tour-general-impressions-and-thoughts>



A view from the Wilhelmsburg Metro station of the mixed-use, mixed income sustainable and energy efficient neighborhood of Wilhelmsburg.

The Port

Hamburg's port is historic and a major economic generator for Hamburg and Germany—as Hamburg's port is Germany's largest. During the second half of the 19th century and the first half of the 20th, Hamburg was also the emigration center of Europe, with a large portion of Europe's immigrants heading to the New World leaving from Hamburg.

The age of Hamburg's port in some way is catching up to it. Boats are made bigger and bigger, and some boats are now too big to fit into the port. Hamburg has solved this issue in the past by dredging the port, digging the port to be deeper and bigger. This is remarkably damaging to the environment, but important for the economy, and is a major discussion now in Hamburg, as it seems that the port is due for another dredging in the near future. Some environmental NGOs are going to court to fight the dredging, as the dredging negatively affects oxygen levels in the water and makes the surrounding area more prone to flooding. While the next dredging will likely occur, the long-term future of Hamburg's port's ability to grow and expand is not entirely clear.

Lessons Learned, Conclusion and Recipes!

While Germany's policies on energy, particularly nationally, are very advanced, and the concept of Energiewende has really taken hold in the culture, I was happy to see that many of the urban sustainability policies in Germany are also being put in place in New York City. New York and Berlin both have similar goals and the cities have similar mindsets to meet carbon emission reduction targets. The cities and national government use similar outreach and communications tools create buy-in from the

citizens. On a national level however it seems much more difficult in the US, because the country is so much bigger, both geographically and in terms of population, to get everyone on board with one concept. The best approach may be replicate Germany's advanced energy policies and programs on more local levels, for example right here in New York City.

I had a truly wonderful, educational and inspiring experience in Germany; it was invigorating professionally and intellectually to meet so many motivating people, learn about so many great programs and innovations in energy efficiency and sustainability. It was also delightful and special to be able to share the experience with my daughter and observe her experience exploring a new place and culture. Many thanks to the American Council on Germany McCloy Fellowship for making this possible.

Exploring and enjoying a culture through food and drink is key for me in learning about and understanding a place. As part of my fellowship and studying Germany's sustainability policy and food systems, I collected recipes for meals and dishes I enjoyed along the way. The recipe is also included in German when possible.

Werner's Zucchini or Carrot Almond Muffins

Werner is the father of a friend of mine who lives in New York City. His family is originally from Dresden, but he's lived in Berlin since he was three years old. He was born in 1945, so has seen a unified and divided and reunified Berlin. He lived initially in Spandau in the west, and then since the 1980s near Templehof. Templehof is an old airport, the site of the Berlin Airlift, which has recently been turned into a park. My daughter and I stayed in the apartment above Werner's for the two weeks we were in Berlin. He keeps beehives in the backyard and kept us well supplied with delicious raw local honey, delicious carrot muffins, and good stories of Berlin's past and present.

3 eggs

.25 liters of oil (sunflower, rapeseed, or vegetable are ok, but not olive oil)

400 grams of sugar (or less)

a pinch of salt

1 teaspoon of vanilla

400 grams of flour (for whole grain use less sugar)

1 teaspoon of baking powder

100 grams of ground almonds or hazelnuts

500 grams of green zucchini, raw grated

1 tablespoon bitter almond oil

Preheat oven to 175 to 200 C or about 375 F. Mix all ingredients into a bowl. Grease a pan with whatever oil you are using and pour mixture into a baking form (muffins, cake, bunt pan) of your choice. Bake for about 40 minutes (less for muffins). Note: Carrots can be substituted for zucchini, and add raisins if you like them!

Zucchinikuchen

3 ganze Eier

0,25 ltr Öl (z.B. Sonnenblumenöl, vielleicht auch Rapsöl, kein Olivenöl)

400 g Zucker (kann auch weniger sein)

etwas Salz (die sog. Prise)

Pn Vanillezucker

400 g Mehl (bei Vollkornmehl weniger Zucker)

Pn Backpulver

100 g gemahlene Mandeln oder Haselnüsse

500 g grüne Zucchini, roh geraspelt

Fl. Bittermandelöl

Alles mischen, in eine Form (Kasten, Napfkuchen, ...) geben und ca. 1 Stunde bei 175 – 200° C backen. Statt Zucchini auch mal Mohrrüben probieren, wenn man's mag auch mit Rosinen.



Werner and Dalila

Leslie's Broccoli Soup

Leslie is the mother of Munay, my daughter's babysitter in Berlin. She also works on the energy transition and her brother works on renewable energy internationally. Their mother is American and married their father who is from Berlin. We had a lovely dinner at Leslie and Munay's house during which I learned about Berlin's cooperative housing, and ate some delicious broccoli soup. The recipe is as follow in Leslie's words: I started by frying some diced onions, then added chopped carrots and celery root and continued frying until all of the vegetables were glazy. Then I added water and diced potatoes and cooked until the potatoes were half-way done. Last, I added the broccoli and continued cooking until the broccoli was just right. In the meantime I added some vegetable broth, salt, sugar and pepper to taste.

3 tablespoons olive oil or butter

1 onion diced

2 carrots, chopped
1 celery root, chopped
2 cups water
3 cups vegetable broth
2 potatoes, diced
1 large head of broccoli, chopped
Salt, sugar and freshly ground pepper to taste

In a medium soup pan, heat the olive oil or butter. Add the onion, carrots and celery root and cook until glazy and slightly softened. Add water, vegetable broth and the potatoes and continue to cook until the potatoes are halfway done. Add the broccoli and cook until soft, but not mushy. Add salt, sugar and freshly ground pepper to taste. Puree using an immersion blender or a food processor and serve with toasted bread.



Dalila and Munay playing.

Guter Ziegenkaese Farm Cheesecake (Cheesecake from the “Good Goat Cheese Farm”)

As I teach classes about cheese and wine, and have a particular passion for cheese, I was very focused on visiting a cheese farm while in Germany. I read about the “Good Goat Cheese Farm” and contacted the farm months before my arrival. The farm is located in Brandenburg, about an hour outside central Berlin. The farmers started the farm just after the fall of the Berlin Wall. It is organic and the goats are treated with much love and respect. They farmers, and Sarah, not the owner of the farm, but a long time farm worker, showed us around and introduced us to a goat that no longer produces milk, but instead of slaughtering they kept as a pet. The goat cheese was amazingly fresh and flavorful, and though the cheese cake made from other cheese won’t be quite as scrumptiously delicious, it will be quite good. Some photos of our visit below as well.

Crust:

200 grams of flour
150 grams of sugar
150 grams of butter

Filling:

900 grams of ricotta

250 grams of FK (fresh goat cheese from the Good Goat Cheese farm, if not available, use the freshest and most natural goat cheese available)

50 grams of starch (optional)

125 grams of sugar

4 eggs

1 pinch of vanilla

Preheat the oven to 180 C or 350 F. For the crust, crumble the flour and sugar and cold butter together with your fingers and press into the bottom of a springform pan. Toast the crust in the oven for 5-10 minutes, until it starts to be slightly more golden.

For the filling: Using a hand mixer, combine the ricotta, fresh goat cheese, starch, sugar, eggs and vanilla in a large bowl. Mix until smooth.

Pour the filling mixture on top of the toasted crust. Bake for about 60 minutes at 180 degrees Celsius or about 350 Fahrenheit.





Top: Dalila and me at in the goat stable. Second from top: Goats playing in the stable. Third: Milking parlor. Bottom: Cheese for sale at the farm.

Hamburg and Cuxhaven Fried Codfish with Potato Salad and Remoulade

Hamburg, Cuxhaven and northern Germany in general is well known for its ports and seafood. My sister and I enjoyed fried fish with remoulade at a number of seaside restaurants during our week in Hamburg and Cuxhaven (my daughter would not eat fish, but instead enjoyed pasta and pizza every day). In Cuxhaven the fishing industry was a big part of the economy until the laws protecting fish limited the industry—which is what led the city to explore involvement in offshore wind production. The fresh fried fish with the tangy and creamy remoulade was a memorable and delicious highlight of our meals in the north. This recipe adapted from the one found on:

<http://www.chefkoch.de/rezepte/2524361395783494/Backfisch-mit-Kartoffelsalat-und-Remoulade.html>

For potato salad:

- 1 kg of potatoes, peeled for boiling
- 2 eggs
- 2 onions
- 2 tablespoons olive oil
- 4 tablespoons white wine
- 2 tbsp mustard
- 1 vegetable bouillon cube
- salt and pepper
- 1/2 bunch of chives

For remoulade:

- 2 hard-boiled eggs
- 2 stems of parsley
- 2 handles Dill
- 1 onion
- 2 Cornichons
- 150 g of mayonnaise
- salt and pepper

For the fish:

600 g cod

2 eggs

3 tbsp flour

6 tablespoon breadcrumbs

salt and pepper

6 tbsp. Butter, for frying

Some lettuce leaves and 2 lemons for garnishing

Working time: approx. 35 min. / Cooking / baking time: approx. 40 min. Resting time: approx. 1 hour /

Difficulty: normal / calories p. P .: about 710 kcal

1. For the potato salad, wash the potatoes, put in a pot, cover with water and boil for about 20 minutes (depending on the size) until they can easily be pierced with a fork. Allow them to cool.
2. Peel the onions, chop them and fry in hot oil in a frying pan. Add the vinegar, mustard, 200 ml water and bouillon. Bring to a boil. Season with salt and pepper.
3. Cut the potatoes into a bowl. Mix with the hot broth and let stand for at least 30 minutes.
4. Wash the chives, dry and chop them in small rolls. Stir into the potato mixture.
5. For the Remoulade: Peel and cool the two hard-boiled eggs.
6. Wash parsley and dill, shake dry and finely chop.
7. Peel and finely chop the onion. Dice boiled eggs and gherkins as small as possible. Combine with the mayonnaise, season with salt and pepper.
8. For the fish batter: beat two eggs in a deep plate. In a separate plate combine the flour and breadcrumbs.
9. Rinse the cod fish, pat dry, and cut into four even pieces. Season with salt and pepper.
10. Dip the fish in the egg mixture and then cover in flour and breadcrumbs.
11. Melt the butter in a pan and fry the fish until it is golden brown on both sides and cooked all the way through.
12. Place fish, potato salad and remoulade on plates. Garnish with lettuce and lemon.

1 kg Kartoffel(n), festkochende

2 Ei(er)

2 Zwiebel(n)

2 EL Öl

4 EL Weißweinessig

2 EL Senf

1 TL Gemüsebrühe, instant

Salz und Pfeffer

1/2 Bund Schnittlauch

Außerdem: (für die Remoulade)

2 Stiele Petersilie

2 Stiele Dill

1 Zwiebel(n)

2 Cornichons
150 g Mayonnaise, (Salatmayonnaise)
Salz und Pfeffer

Außerdem: (für den Backfisch)

600 g Kabeljaufilet(s)
2 Ei(er)
3 EL Mehl
6 EL Paniermehl
Salz und Pfeffer
6 EL Butterschmalz, zum Braten
einige Salat - Blätter und 2 Bio-Zitronen zum Garnieren

Arbeitszeit: ca. 35 Min. / Koch-/Backzeit: ca. 40 Min. Ruhezeit: ca. 1 Std. / Schwierigkeitsgrad: normal /
Kalorien p. P.: ca. 710 kcal

Für den Kartoffelsalat die Kartoffeln waschen und zugedeckt ca. 20 Min. (je nach Größe) kochen.

1. Kartoffeln abschrecken, schälen und auskühlen lassen.
2. Zwiebeln schälen, hacken und in heißem Öl in einer Pfanne andünsten. Essig, Senf, 200 ml Wasser und Brühe einrühren. Kurz aufkochen lassen. Mit Salz und Pfeffer würzen.
3. Die Kartoffeln in Scheiben schneiden, in eine Schüssel geben. Mit der heißen Brühe mischen und mindestens 30 Min. ziehen lassen.
4. Schnittlauch waschen, trocken schütteln und in Röllchen schneiden. Unter die Kartoffeln heben.
5. Für die Remoulade 2 Eier hart kochen, abschrecken, schälen und auskühlen lassen.
6. Petersilie und Dill waschen, trocken schütteln und fein hacken.
7. 1 Zwiebel schälen, sehr fein hacken. Gekochte Eier und Cornichons auch möglichst klein hacken. Alles zusammen mit der Mayonnaise verrühren, mit Salz und Pfeffer abschmecken.
8. Für den Backfisch 2 Eier in einem tiefen Teller verquirlen. Mehl und Paniermehl getrennt in tiefe Teller geben.
9. Fisch waschen, trocken tupfen, in 4 Stücke schneiden und mit Salz und Pfeffer würzen.
10. Nacheinander in Mehl, Ei und Paniermehl wenden.
11. Das Butterschmalz in einer Pfanne erhitzen und den Fisch von beiden Seiten goldbraun backen.
12. Backfisch, Kartoffelsalat und Remoulade auf Tellern anrichten. Mit Salat und Zitrone garnieren.



Hamburg's port

Restaurant Central Hamburg's Roasted Cauliflower and Curried Black Bean Puree (inspired by)

After lecturing at HafenCity University—a university focusing on urban planning and development—a group of Americans and Germans joined Professor Jorge Knieling at Restaurant Central in the St. George neighborhood. We talked about growing up in East Germany, and the lasting differences between the two parts of the current Germany and enjoyed a delicious and unusual combination of cauliflower and curried black beans.

For the cauliflower:

- 1 head of cauliflower
- 3-4 tablespoons olive oil
- 2 tablespoons pine nuts
- ¼ cup dried cherries or cranberries

For the beans:

- 2 table spoons olive oil
- 1 shallot, chopped
- 1-2 cloves of garlic, chopped
- 1 15 ounce can of black beans
- ½-1 teaspoon garam masala
- pinch of cumin
- pinch of red pepper flakes, to taste

1. For the cauliflower, preheat the oven to 400 degrees F. Chop the cauliflower so there are just small florets, lay them out on a baking pan (cookie sheet works well) and toss with olive oil. Using your hands, make sure most of the florets have a coating of olive oil.

2. Put the cauliflower in the oven for 15 or so minutes, then toss with the cranberries/cherries and pine nuts.
3. Return the mixture to the oven for another 5-10 minutes, until the cauliflower and the pine nuts are lightly toasted, and the cauliflower is soft.
4. For the beans: heat the olive oil in a sauce pan and sauté the onions and garlic until lightly browned.
5. Strain the beans and (get rid of the liquid) and add the beans to the pan. Stir and add the spices.
6. Cook the mixture together for about 10 minutes.
7. Puree using an immersion blender or a food processor.
8. To serve: Place 1-2 big spoonfuls of the black beans on a plate and put a big spoonful of the roasted cauliflower/pine nut/cranberry mixture on top.

Dresden Christmas Stollen

My sister, daughter and I visited Dresden for our last weekend in Germany. Here we wandered around the old/rebuilt old city, and the new city. We shopped and visited a historic and delicious Saxon winery. Dresden was preparing for Christmas and its famous traditional Christmas stollen had just reached the shops. We snacked on this as we took the train back to Berlin to catch our flights back to NYC. Here is a recipe adapted from the website The Fresh Loaf (<http://www.thefreshloaf.com/node/25407/dresden-christmas-stollen>)

Ingredients:

1000 g flour (all-purpose flour)
250 g cream
42 g fresh yeast (or 14 g dried yeast)
500 g butter
1 g ground mace
0.5 g ground cinnamon
0.5 g ground cardamom
zest of 1 lemon
150 g sugar
50 g candied lemon peel (you can make your own by soaking peel from two lemons in honey for several days)
150 g candied orange peel (you can make your own by soaking peel from four or five oranges in honey)
500 g raisins
100 g rum (optional, you can use Amaretto instead)
200 g ground almonds
+ extra butter (approx. 250 g)
+ extra fine sugar (approx. 100 g)
+ extra powdered sugar (at least 250 g)

0. Save the date

It's important not to start baking stollen too late. My personal experience with this recipe is that they need at least 4 weeks, ideally 6 weeks before you cut into them. Really! We always cut our first stollen on the first Advent Sunday, so I bake my first batch 10 weeks before Christmas. I bake my second and sometimes third batch about 5-6 weeks before Christmas, partly for us and partly as presents for friends.

0. Preferment

The stollen dough is very heavy and it will need a strong yeast activity to raise it. For this purpose, I like to preferment a portion of the flour. I take 300g of the flour, break in 21g yeast, and knead it with 250g cream. I leave it to ferment for 1 hour by room temperature, then for 12-24 hours in the fridge. You can also use sourdough in the preferment. I have successfully baked sourdough-only stollen, you just need to let them rise longer.

0. Soaking

Place the raisins in a large bowl. If you are using alcohol, pour it over the fruit. Add enough boiling water to cover the fruit. Leave to soak for at least 30 minutes, but best over night. It is important to soak the fruit even if you are not using alcohol, or else it will burn in the oven. Don't forget to drain the fruit well before you start making the dough to make it as dry as possible.

1. Dough

I sieve the flour onto a working surface (this definitely does not work in a bowl). Break in the remaining 21g of yeast (you can leave this out, just adjust the rising time). Rub the lemon zests into the sugar and mix the sugar into the flour, together with the mace, cinnamon, and cardamom. If you are wondering about the small amounts, the stollen is not supposed to taste very spicy. However, this is your stollen, so you can add any spices you like. Cut the preferment into small pieces and distribute it on the edges of your flour mound and do the same with the butter/lard. Now comes the kneading. Be warned, that you will need about 30 minutes to knead the dough. You can try it in your mixer, but make sure your mixer can take it. Better invest the time or coax a physically strong friend or relative into helping. Start by taking a few pieces of the preferment and the butter and kneading them together. As you do this, the dough-lump in your hands will turn sticky. Place it in the middle of your flour mound and knead it there, until so much flour has been incorporated that it's dry again. Now take some more preferment and butter and knead them in your lump. This will make it sticky again, so add flour. And so on and so on. At some point, the dough-lump may become difficult to handle. Feel free to cut and put aside about two thirds of it and continue kneading with the rest. You can put the pieces together in the end. Do not be tempted into adding more flour or any liquids. Trust me, just keep kneading, it will all be well in the end. As you work, the kitchen will be slowly filled with the smell of lemon zest and the spices - Christmas is on the way!

2. Fruits

You are tired, your fingers ache and you are a proud owner of a homogeneous dough lump that reminds

you of short-bread dough. Congratulations, let's add the fruit. Take your drained raisins and mix them with the ground almonds. This will help soak up the remaining liquid. Mix them with the candied orange and lemon peel and pour the whole lot on your working surface. You might have the urge to check the recipe now, because you think you have too much fruit. But it really can be incorporated into your dough-lump. First, cut the dough-lump into five pieces. Start by working the first piece into the fruit. As the fruit is wet, this will make it all turn into a strange paste. Keep adding piece by piece, until the whole lot is incorporated. Don't worry if you feel more like making mud pies. Place the whole mass into a bowl and clean your working surface with a dough scraper. Now evaluate the dough. Is it like a soft short-bread or cookie dough? Then you are done with it. If it's too wet and soft (probably it will be), dust the working surface with flour, turn the dough onto it and carefully work in a little more flour. Not too much, though, the dough should be just about manageable. You won't need to make anything fancy with it, so as long as it does not stick to the work surface or your hands like crazy, it's fine.

3. Divide, form, and rise

Divide the dough into 2-5 pieces. For us, I prefer to make two large stollen. This size apparently has a positive influence on the texture of the stollen later on. But you can make several smaller stollen, too, for example as gifts. Just don't forget to adjust the baking time. Form each stollen into a rough, high log. Just pat it into shape - no rolling, no stretching. Just a note here: the traditional Dresden stollen has no almond paste inside. With all the dried fruit and its sugar coat, I also think that it does not need it. But it's your stollen, so if you like, add it now. Put the formed stollen on a baking sheet with baking paper (make sure the stollen are far enough apart) and let it rise for about 2 hours (more, if you are using only sourdough or less yeast). The stollen will become a little puffy, nothing more. It will definitely not double.

4. Score and bake

There is a traditional way of forming a Dresden stollen. I use a different, simple way used for stollen from Thuringia (another region in Germany). It's easier and the stollen are less flat, so they are also moister. Basically, you just make a log and then you score it with a single cut all the way down the stollen's back. That's it. I score the stollen directly before putting it into the oven. I don't preheat the oven, just pop it in and bake it at 180°C for approx. 1-1.5 hours. Keep a watchful eye on the stollen. Cover it with aluminum foil if it has turned brown before its time and adjust the time according to the size of the stollen.

5. Coat

This is an optional step. Traditional stollen is heavily coated in sugar. If you want to coat the stollen, brush it with liquid butter (as much as the stollen can soak up) immediately after taking it out of the oven. Then sprinkle it heavily with fine castor sugar. The castor sugar will soak up any excess butter. Wait for the stollen to cool and sprinkle it with a very thick layer of powdered sugar. As I wrote, I skip this step. Firstly, I find the coated stollen too sweet and secondly it makes a mess when storing. Alternatively, it is also possible to store uncoated stollen and brush it with butter and coat it in sugar right before cutting into it.

6. Store

The stollen has to be stored for at least **four weeks** (I recommend six) before cutting into it. If you cut it earlier, you will be disappointed. Cutting it later is even better. Stollen store best in an old fashioned cool cellar, with high humidity. If you don't have such a cellar, you can store stollen outside in wooden

boxes provided that your climate is cool enough (that's what I do). Otherwise store the stollen in the coolest room of your house, but not in the fridge. Some people like to freeze the stollen, I don't think it's necessary and it has a negative impact on the texture. If you are storing stollen in a cellar or outside, simply wrap it in cotton cloth and put it in a wooden box, so that it can breathe. Otherwise wrap it well in a plastic or aluminum foil. The idea is that if you cannot provide an environment with high humidity, such as cellar or outside, you should prevent the stollen from drying out. That's it, now wait.

7. Eating

If you cut into a stollen two or three weeks after baking, you will be disappointed. It will taste fine, but the crumb will be far too dry. Don't give up and put the stollen away again and wait a little longer. The texture will change over time and after six weeks it will have a short-bread-like crumb and the taste will be a mixture of spices and fruits, all rolled into a buttery, sweet bliss.



Grapes growing on a steep incline of vines in Dresden. (left) My daughter and sister playing in the historic area of Dresden. (right)