



THE WIDER WORLD OF NON-STATE AND SUB-NATIONAL CLIMATE ACTION

December 10, 2015¹

Cities, states, regions, companies and investors are taking actions to address climate change. The scope of these actions is broad, covering hundreds of jurisdictions and encompassing a significant fraction of the global economy. Citizens, too, are mobilizing through signed petitions and climate marches. This ongoing action extends beyond what is captured in the Non-State Actor Zone for Climate Action (NAZCA), which records over 10,000 climate actions from nearly 5,000 actors.² An update of the broad support for climate action across a diverse range of actors follows below:

- Over 7,000 cities from more than 99 countries, with a combined population of 794 million (11 percent of the global population) and around 32 percent of global GDP.
- Sub-national states and regions with a population of 779 million (11 percent of the global population) in 20 countries, covering over a fifth of global land surface area (29.9 million square kilometers) and 20 percent (\$17.5 trillion USD) of global GDP.
- Close to 5,000 companies from over 88 countries representing over \$38 trillion USD in revenue.
- Nearly 500 investors with assets under management of more than \$25 trillion, one-third of total global assets.
- Over 1.55 million people who have marched for climate action between 2014 and 2015. More than 13 million people, drawn from every country in the world, have signed petitions.

¹ Angel Hsu, Yaping Cheng, Kaiyang Xu, Amy Weinfurter, Cameron Yick, Maria Ivanenko, Subhas Nair, Thomas Hale (Oxford), Brendan Guy (NRDC), and Carlin Rosengarten. Yale Data-Driven Environmental Solutions Group. 2015. www.tinyurl.com/yale-NAZCA+.

² See: Hsu et al. Yale University. (2015). State of Play: Contextualizing Non-State and Sub-national Actors' Climate Pledges Through NAZCA and the LPAA. Retrieved from: https://campuspress.yale.edu/datadriven/files/2015/11/Yale_NAZCAStateofPlayMemo_Dec4-27jlxg8.pdf.



1) CITIES

Over 7,000 cities, including the world's most vulnerable, from more than 99 countries with a combined population of 794 million (11 percent of the global population) and around 32 percent of global GDP.

- Population
 - 7,025 Cities: 794 million people (99 countries) (including 11 additional Chinese cities in the Alliance of Peak Pioneering Cities (APPC) not on NAZCA and 36 Chinese low-carbon cities)
- 97 cities out of the top 300 global cities by GDP PPP (Purchasing Power Parity) are engaged on NAZCA, with a total GDP PPP close to \$20 trillion in 2014. Scaling up to all 7,025 cities in 99 countries taking action, their estimated GDP is in the order of \$24.6 trillion USD or 32 percent of global GDP.
 - GDP of Global Top 300 Cities: \$43,735,769 million USD;
 - Population of Global Top 300 Cities: 1,411,518,304
 - Additional NAZCA (plus Covenant of Mayors) Cities' population: 793,673,658
 - Additional NAZCA (plus Covenant of Mayors) Cities' GDP: \$24,591,908 million USD

2) REGIONS

Sub-national states and regions with a population of 779 million (11 percent of the global population) in 20 countries covering over a fifth of global land surface area (29.9 million square kilometers) and 20 percent (\$17.5 trillion USD) of global GDP are taking actions to address climate change.

- Population
 - 116 Regions: 477 million people (20 countries) + 301.7 million people from 6 Chinese provinces in the APPC/Chinese low-carbon cities = 779 million people
- Land Area
 - 116 NAZCA Regions from 19 countries + 6 Chinese provinces in low-carbon pilot
 - 29 million square kilometers
 - 19 percent (29 million square kilometers) of global total land area
 - Methodology:
 - The assessment of regional impact considers the 116 NAZCA regions making individual commitments (it does not account for regional commitments made through collaborative commitments). Data from the



Organisation for Economic Co-operation and Development (OECD)³ was used to find regional area for as many regions as possible. Publically available data was used to fill in any data gaps.⁴

- The percentage of area represented was calculated by summing the regional land areas and dividing this by global total land area.⁵
- Any recognized instances of double counting were removed from the calculations (for instance, the regional area for Greater Vancouver was not included in these calculations because this region falls within the jurisdiction of British Columbia, another region on NAZCA).

- **GDP**

- 116 NAZCA Regions from 19 countries (cumulative GDP of \$12.5 trillion USD) + 6 Chinese provinces in low-carbon pilot
- Cumulative GDP of \$17.5 trillion USD
- 20 % of global GDP
- Methodology:
 - To calculate regional GDP, we researched publically available GDP data for the 116 NAZCA regions making individual commitments (this analysis does not account for regional commitments made through collaborative commitments). We sourced our GDP estimates from European Commission's Eurostat database,⁶ along with other sources of publically available data.⁷ The GDP estimates spanned the years 2006 - 2015, with the most recent estimate used wherever possible.
 - For GDP figures given in currencies other than United States dollars (USD), we used historical yearly average conversion rates to translate these numbers to units of USD.⁸

³ Organisation for Economic Co-operation and Development (OECD). Population density and regional area. Retrieved from: <http://stats.oecd.org/> (accessed 10 December, 2015).

⁴ Additional data sources include: country listings on Wikipedia, the East-West Center (Pant, R.J., and Dongol, D. (2009). The East-West Center. Kathmandu Valley Profile: Briefing Paper. Retrieved from: http://www.eastwestcenter.org/fileadmin/resources/seminars/Urbanization_Seminar/Kathmandu_Valley_Brief_for_EWC_KMC_Workshop_Feb_2009_.pdf), and the World Heritage Encyclopedia (Largest Metropolitan Areas in the Nordic Countries. Retrieved from: http://self.gutenberg.org/articles/largest_metropolitan_areas_in_the_nordic_countries).

⁵ United States Government, Central Intelligence Agency. Field listing: Area. Retrieved from: <https://www.cia.gov/library/publications/the-world-factbook/fields/2147.html> (accessed 10 December, 2015).

⁶ Eurostat database. European Commission. Retrieved from: <http://ec.europa.eu/eurostat/web/gdp-and-beyond/overview> (accessed 9 December, 2015).

⁷ Additional data sources include: country listings on Wikipedia, the 2014 Nepal Human Development Report (http://www.np.undp.org/content/nepal/en/home/library/human_development/human-development-report-2014/), the U.S. Census (<http://quickfacts.census.gov/qfd/states/12/12011.html>), Statistics Denmark (<http://www.statbank.dk/statbank5a/default.asp?w=1280>), and Knoema (<http://knoema.com/atlas/Sweden/J%C3%A4mtlands-l%C3%A4n/GDP-Millions-of-euro>).

⁸ Sources of conversion rates include OZF REX Foreign Exchange services (<http://www.ozforex.com.au/forex-tools/historical-rate-tools/yearly-average-rates>) and X-Rates (<http://www.x-rates.com/average/?from=EUR&to=USD&amount=1&year=2013>).



- The fraction of global GDP was calculated using the World Bank's estimate of 2014 global GDP.⁹
- Any recognized instances of double counting were removed from the calculations (for instance, the regional area for Greater Vancouver was not included in these calculations, because this region falls within the jurisdiction of British Columbia, another region on NAZCA).

3) COMPANIES

Nearly 5,000 companies (4,431) from over 88 countries representing over \$38 trillion USD in revenue.

- NAZCA includes climate action commitments from 2,449 companies, which make up 39 percent of the pledges on the site. The total revenue of almost half of these companies and investors (994 in total) is \$22.06 trillion - an amount equivalent to the United States and Japan's combined GDPs.¹⁰ Sixty-one percent of these 994 companies are listed as Forbes 2000 companies, totaling \$19.2 trillion USD in revenue. For the NAZCA data, see "State of Play: Contextualizing Non-state and Sub-national Actors Climate Pledges through NAZCA and the LPAA," Dec. 2, 2015.¹¹
- Additional data from the Carbon Disclosure Project was added to the above \$22.6 trillion USD revenue data:
 - Total Revenue Reported from Supply Chain Companies: Additional \$10.7 trillion in revenue from 1,798 additional companies not on NAZCA from 3,950 CDP companies.
 - 2,177 are public and 1,773 are private.
 - There are 103 We Mean Business companies not represented on NAZCA. They estimate total revenue of all 353 companies is > \$7.3 trillion USD¹². One-third of this revenue (\$2.43 trillion USD) was added to the total revenue of companies' participation.
 - The American Business Act on Climate Pledge (ABAC)¹³ has 81 companies operating in all 50 U.S. states, employing over 9 million people and representing more than \$3 trillion in annual revenue.
 - Total revenue of these 4,431 companies (NAZCA + new actors) adding the above \$10.7 trillion (CDP) + \$2.43 trillion (We Mean Business) + \$3 trillion (ABAC): \$38.19 trillion USD.

⁹ The World Bank, World Development Indicators Database. (2015). Gross Domestic Product. Retrieved from: <http://databank.worldbank.org/data/download/GDP.pdf>.

¹⁰ World Bank. (2014). National GDP data. Retrieved from: <http://databank.worldbank.org/data/download/GDP.pdf>.

¹¹ Hsu et al. Yale University. (2015). State of Play: Contextualizing Non-State and Sub-national Actors' Climate Pledges Through NAZCA and the LPAA. Retrieved from:

https://campuspress.yale.edu/datadriven/files/2015/11/Yale_NAZCAStateofPlayMemo_Dec4-27jxg8.pdf.

¹² We Mean Business. (2015). Retrieved from: <http://www.wemeanbusinesscoalition.org>.

¹³ White House. (2015). FACT SHEET: White House Launches American Business Act on Climate Pledge. Retrieved from: <https://www.whitehouse.gov/the-press-office/2015/07/27/fact-sheet-white-house-launches-american-business-act-climate-pledge>.



4) INVESTORS

Nearly 500 investors with total assets under management of more than \$25 trillion, one-third of global assets under management.

- Investor Platform for Climate Actions - \$25 trillion USD participating from over 400 investors. This amount represents one-third of global assets under management in 2015, which was \$74 trillion USD, according to BCG.¹⁴

5) CIVIL SOCIETY

Over 1.55 million million people who have marched for climate action between 2014 and 2015. In total, more than 13 million people have signed petitions from every country in the world.

- Marches:
 - At least 1,550,000 million people have participated in marches for climate action during 2014 and 2015
 - Montreal People's Climate March, 21 September 2014: over 5,000 participants
 - New York City Climate March, 21 September 2014:
 - 311,000 - 400,000 participants¹⁵ (400,000 figure used in calculations)
 - Another 270,000 participants in related events in the United States, outside of New York City.¹⁶
 - Australia's People's Climate March, 21 September 2014: 30,000 participants¹⁷
 - People's Climate March in London, 12 September, 2015: 40,000 participants¹⁸
 - Global Climate March, 29 November 2015: 785,000 participants in 2,300 events in 175 countries¹⁹

¹⁴ Boston Consulting Group (BCG). 2015. Global Asset Management 2015: Sparking Growth with Go-to-Market Excellence. Retrieved from:

<https://www.bcgperspectives.com/content/articles/financial-institutions-global-asset-management-2015-sparking-growth-through-go-to-market-strategy/?chapter=2>.

¹⁵ Data provided by 35 crowd spotters and analyzed by a mathematician from Carnegie Mellon University. Data estimated by 'calculating the average density of the march crowd over specific intervals, factoring in the surface area covered by the crowd and the speed and duration of the march'.

The New York Times. 22 September, 2014. Taking a call for climate change to the streets. Retrieved from:

<http://www.nytimes.com/2014/09/22/nyregion/new-york-city-climate-change-march.html>.

¹⁶ Reuters. New York climate march draws hundreds of thousands. 21 September, 2014. Retrieved from:

<http://www.reuters.com/article/usa-climatechange-march-idUSL1N0RM0QQ20140921#QQXp38JXw0uZc2ex.99>.

¹⁷ Lucas, C. 21 September, 2014. Melbourne rally for climate change action attracts 30,000 people. The Victoria Age. Retrieved from:

<http://www.theage.com.au/victoria/melbourne-rally-for-climate-change-action-attracts-30000-people-20140921-10jxwl.html>.

¹⁸ Jensen, F. 12 September, 2015. Tens of thousands attend Climate March in London. The Journal Recorder. Retrieved from: <http://journalrecorder.com/tens-of-thousands-attend-climate-march-in-london-2142/>.

¹⁹ NBC News. 29 November 2015. Global Climate March: Clashes in Paris as protesters rally ahead of COP21. Retrieved from: <http://www.nbcnews.com/news/world/global-climate-march-record-numbers-turn-out-climate-protests-n470836>.



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- Place de la Republique demonstration, 29 November 2015: 20,000 shoes replaced planned marches expected to draw over 500,000 participants (20,000 participants figure used in calculations)²⁰
- Petitions
 - At least 13 million signatories for climate action
 - Moment for Action: 13, 237, 063 signatories for climate action through climate-related campaigns²¹
- Social Media²²
 - Total mentions of COP21 in online conversation: 1,915,480
 - Total potential impressions of COP21 in online conversation: 23 billion
 - Twitter mentions of COP21: 1,768,222
 - Twitter potential impressions of COP21: 16 billion

²⁰ Avaaz.org. (2015). Climate Countdown to Paris. Retrieved from: http://www.avaaz.org/en/climate_countdown_to_paris/?rc=fb.

²¹ Momentum for Action. Retrieved from: <http://momentforaction.org/>.

²² Social media statistics compiled by Climate Nexus from 29 Nov - 8 Dec, 2015.