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Mainstreaming Climate Resilience into local planning frameworks: the case of Barcelona's innovative Climate Plan.

Massimiliano Granceri*

Introduction

Climate Change, CC henceforth, is one of the main challenges affecting cities' present and future. The last years have been momentous in the setting of a global agenda tackling CC through the outcomes of the 3rd International Conference on Financing for Development, the UN Sustainable Development Summit, the UN-Habitat III conference as well as the 2015's COP21, better known as the Paris Agreement Conference, which gave an emphasis to CC Adaptation (CCA). Different international organisations (e.g. UN-Habitat), alliances (e.g.C40), foundations (e.g. R100C's Rockefeller foundation) have been investing in the last decade to build networks and guiding schemes encouraging and supporting cities' CCA and Climate Resilience mainstreaming. Resilience notion is still a buzzword that has gained increasing prominence within the literature on cities and CC in the last two decades (Meerow, Newell, & Stults, 2016). Frequently used terms such as 'climate resilient', 'climate-proofing', the 'resilient city' or 'urban resilience' emphasise the idea that cities, urban systems, and urban constituencies need to be able to quickly bounce back – or even bounce forward – from climate-related shocks and stresses (Leichenko, 2011).

This paper spotlights the case of Barcelona municipality's new Climate Plan, whose innovativeness lies on the approach used to co-produce it and on the comprehensiveness adopted for tackling the climate issue – both CCA and CC Mitigation (CCM) were included jointly with two other objectives, i.e. Climate Justice and Citizen Action Enhancement. The focus was placed on the internal exchange among bureaus and municipal departments, and the citizens' participation through the official municipal online platform that provided an outcome of 112 official proposals.

Mainstreaming Climate Resilience into Urban Planning

Even though CC, with its medium to long-term uncertainties, challenges conventional urban planning, the majority of cities continue to employ traditional planning approaches (e.g. dedicated sectorial plan) that often lack regarding operationalisation (Tiepolo, Ponte, & Cristofori, 2016; Wheeler, 2008). CCA, because of its cross-cutting, might be integrated (mainstreamed) into several existing policy sectors, e.g., urban planning, water management, social care, mobility, civil protection. Indeed, the process of mainstreaming, when focused on local levels, involves a cross-sectoral integration, both horizontal and vertical of policies and measures, into ongoing urban development planning processes and existing plans or programmes (Ayers, Huq, Wright, Faisal, & Hussain, 2014; Huq, Rahman, Konate, Sokona, & Reid, 2003; Klein et al., 2007; Runhaar, Wilk, Persson, Uittenbroek, & Wamsler, 2017). The mainstreaming process, when referred to CCA, can be considered either an alternative (Uittenbroek, Janssen-Jansen, & Runhaar, 2013) or a partial complement (Wamsler, 2014) to the conventional urban planning approach. Among the several benefits, it can help local governments in framing more dynamically CCA strategies and integrate them with other institutions' policies (Reid & Huq, 2014), creating synergies with other policy sectors' tasks, being resource-efficient, avoiding "silo" mentality and "turf wars"(Klein & Persson, 2009), dealing with the conformance/performance dualism (Therrien, 2010) and with the CCA/CCM dichotomy (Di Gregorio et al., 2017; Landauer, Juhola, & Söderholm, 2015). CCA and CCM have been often seen separately or in opposition by local governments' policy and decision-makers, and the majority of cities with a CC-oriented plan tackles them separately (Reckien et al., 2018). CCA and CCM plans are rarely integrated among each other, as well as with the other plans and strategies, e.g. Master plans, Land-use plans and Sectorial plans (Tiepolo, Pezzoli & Tarchiani, 2017; Tiepolo, Ponte & Cristofori, 2016; Wheeler, 2008). Both CCA and CCM are important in order to tackle CC, and the process of mainstreaming Climate resilience within existing local planning frameworks can theoretically help to make them both operative and integrated, avoiding conflicts, creating synergies among them and being aware of the trade-offs (Berry et al., 2015; Landauer, Juhola, & Klein, 2018).

Barcelona's Climate Plan

Barcelona is a coastal city with a population of 1.6 million inhabitants[1] distributed in an area of 102,2 km2. Capital city of the autonomous community of Catalonia and centre of its metropolitan region, namely Area Metropolitana de Barcelona (AMB), which embraces 36 municipalities and more than 3 million inhabitants[2], Barcelona is composed of ten municipal districts governed by the Ayuntamiento[3]. Barcelona city and surroundings have a warm temperate climate – typically Mediterranean: hot and humid summers, mild winters, and rainfalls are mainly in spring and fall. According to last IPCC's report (2014) and Catalonia's Meteorological Office[4], the Mediterranean zone, where Barcelona and Catalonia are located, will probably be one of the regions on earth that will undergo the most significant changes. The main risks forecasted for this region and which have started to be awarded in the last years, are i) the mean temperatures rise involving heatwaves and fires; ii) the change in the rainfall pattern involving floods, marine storms and droughts; iii) the sea level rise.

Since January 2018, Barcelona has a plan, namely Pla Clima, that tackles CC comprehensively, which was the output of a co-production process of seven months, from July 2017 to January 2018, with all the municipal sectors and more than 100 stakeholders involved. The risks and hazards that were taken into account in the Plan were analyzed with the support of the AMB, which already did the vulnerability and risk assessments of the whole Barcelona metropolitan area (AMB, 2015; Ayuntamiento de Barcelona, 2014). The main risks, which are directly climate-related, are:

- heatwaves and mean temperature rising
- droughts
- floods
- sea level rise (coastal stability).

In addition to these hazards, other six interlinked issues and risks were taken into account:

- air quality
- fires
- biodiversity
- urban heat islands
- energy flows
- critical infrastructures.

The Pla Clima is the first formal and official Barcelona's municipal act where CCA is defined, jointly with Resilience, as one of the four objectives – the others are CCM, Climate Justice and Active citizen participation – even though the CCA issue has been included in the local municipal planning framework since almost ten years (e.g. Green and Biodiversity Plan, Water security plan). Regarding CCM, Barcelona has already experience and plans since 2002 with the first attempt of CCM, namely Energy Improvement Plan (2002-2010) and recently with the second CCM plan that was approved in 2011 (Pla d'Energia, Canvi Climàtic i Qualitat de l'Aire 2011-2020).

The Climate Plan of Barcelona compiles the existing strategies and it plans a set of new actions in order to achieve the objectives signed in the 2016's Barcelona Climate Act, while responding to the commitment that the city had acquired with the signing of the Pact of mayors for energy and the climate (2017), adding new specific ones.

The Plan considers CC a threaten that will affect the citizens of Barcelona in several areas, e.g. health, economy, biodiversity, and it is partially framed under the Urban Resilience Strategy (2016), which is the umbrella programme led by the Resilience board at the Infrastructure office (Chelleri, 2018). The Urban Resilience strategy included CC and mentioned it as one of the three issues that the city has to tackle to be resilient – the other two are critical infrastructure and socio-economic care.

The Plan considers and integrates 33 existing plans, programmes, protocols and strategies, e.g. Urban mobility plan (2013-2018), Green Infrastructure programme (2017), Water pipes infrastructure plan (2006), Drought periods Protocol (2017), Heatwaves prevention and preparedness plan. The aim was to frame them all in synergy with the Plan's objectives for 2030, which are: 45% GHG emission per capita reduction (considering the year 2005), reducing the water consumption to 100litres/hab./day and 1m2/hab increase of green public space, eradicating energy poverty and enhancing climate-oriented citizens action through a fund of 1,2 million euro.

From July to September 2017 the municipality led the co-production planning phase supported by the official municipal website[5]. 92 actors participated in the three events – a mix of local organisations, citizens, associations, private companies – and 112 were the proposals uploaded in the online platform[6]. 100 proposals were accepted, and the Climate focus that received more attention by the citizens was CCM with 46 proposals. Moreover, CCA proposals were 24; Citizen Action Enhancement received 27 ideas and; Climate Justice got 15 proposals.

The success of this Plan lies on the follow-ups that were considered as a requisite for a climate resilience-oriented implementation. In fact, the 1,2 million euro fund was created for supporting local organizations in the Plan co-implementation, and every two years a set of maximum 20 projects led by local organizations will be selected accordingly to their climate-relatedness. This year has already started the first 2-year phase and most of the projects are related to tackle CC through CCA (7 out of 11).

Notes

* Inter-University Department of Regional and Urban Studies and Planning, Polytechnic University of Turin (PoliTo) and University of Turin (UniTo), massimiliano.granceri@polito.it

1. www.barcelona.cat
2. www.amb.cat



Figure 1– Barcelona city's view (Source: Google Earth Pro)

3. Barcelona City Council
4. www.meteo.cat
5. www.decidim.barcelona
6. https://www.decidim.barcelona/processes/placlima/f/109/?locale=es

References

Ayers, J., Huq, S., Wright, H., Faisal, A. M., & Hussain, S. T. (2014). Mainstreaming climate change adaptation into development in Bangladesh. Climate and Development, 6(4), 293–305. https://doi.org/10.1080/17565529.2014.977761

Berry, P. M., Brown, S., Chen, M., Kontogianni, A., Rowlands, O., Simpson, G., & Skourtos, M. (2015). Cross-sectoral interactions of adaptation and mitigation measures. Climatic Change, 128(3–4), 381–393. https://doi.org/10.1007/s10584-014-1214-0

Chelleri, L. (2018). Barcelona Experience in Resilience: An Integrated Governance Model for Operationalizing Urban Resilience (pp. 111–127). https://doi.org/10.1007/978-3-319-75798-8_6

Di Gregorio, M., Nurrochmat, D. R., Paavola, J., Sari, I. M., Fatorelli, L., Pramova, E., ... Kusumadewi, S. D. (2017). Climate policy integration in the land use sector: Mitigation, adaptation and sustainable development linkages. Environmental Science & Policy, 67, 35–43. https://doi.org/10.1016/J.ENVSCI.2016.11.004

Huq, S., Rahman, A., Konate, M., Sokona, Y., & Reid, H. (2003). Mainstreaming Adaptation to Climate Change in Least Developed Countries. IIED pubs. Retrieved from http://pubs.iied.org/pdfs/9219IIED.pdf

IPCC. (2014). Fifth Assessment Report - Impacts, Adaptation and Vulnerability. NY: Cambridge University Press. Retrieved from https://www.ipcc.ch/report/ar5/wg2/

Klein, R. J. T., Eriksen, S. E. H., Næss, L. O., Hammill, A., Tanner, T. M., Robledo, C., & O'Brien, K. L. (2007). Portfolio screening to support the mainstreaming of adaptation to climate change into development assistance. Climatic Change, 84(1), 23–44. https://doi.org/10.1007/s10584-007-9268-x

Klein, R. J. T., & Persson, A. (2009). Mainstreaming adaptation to climate change in official development assistance: Challenges to foreign policy integration. In P. G. Harris (Ed.), Climate Change and Foreign Policy. Case Studies from East to West (p. 180). London: Routledge.

Landauer, M., Juhola, S., & Klein, J. (2018). The role of scale in integrating climate change adaptation and mitigation in cities. Journal of Environmental Planning and Management, 1–25. https://doi.org/10.1080/09640568.2018.1430022

Landauer, M., Juhola, S., & Söderholm, M. (2015). Inter-relationships between adaptation and mitigation: a systematic literature review. Climatic Change, 131(4), 505–517. https://doi.org/10.1007/s10584-015-1395-1

Leichenko, R. (2011). Climate change and urban resilience. Current Opinion in Environmental Sustainability, 3(3), 164–168. https://doi.org/10.1016/j.cosust.2010.12.014

Meerow, S., Newell, J. P., & Stults, M. (2016). Defining urban resilience: A review. Landscape and Urban Planning, 147, 38–49. https://doi.org/10.1016/j.landurbplan.2015.11.011

Reckien, D., Salvia, M., Heidrich, O., Church, J. M., Pietrapertosa, F., De Gregorio-Hurtado, S., ... Dawson, R. (2018). How are cities planning to respond to climate change? Assessment of local climate plans from 885 cities in the EU-28. Journal of Cleaner Production. https://doi.org/10.1016/J.JCLEPRO.2018.03.220

Reid, H., & Huq, S. (2014). Mainstreaming community-based adaptation into national and local planning. Climate and Development, 6(4), 291–292. https://doi.org/10.1080/17565529.2014.973720

Runhaar, H., Wilk, B., Persson, Å., Uittenbroek, C., & Wamsler, C. (2017). Mainstreaming climate adaptation: taking stock about "what works" from empirical research worldwide. Regional Environmental Change, 1–10. https://doi.org/10.1007/s10113-017-1259-5

Therrien, M.-C. (2010). Strategies de Resilience et infrastructure essentielles. Telescope, 16(2), 154–171. Retrieved from http://www.telescope.enap.ca/Telescope/22/Index_des_numeros.enap

Tiepolo, M., Pezzoli, A., & Tarchiani, V. (2017). Renewing Local Planning to Face Climate Change in the Tropics. Springer Verlag.

Tiepolo, M., Ponte, E., & Cristofori, E. (2016). Planning to cope with tropical and subtropical climate change. De Gruyter Open.

Uittenbroek, C., Janssen-Jansen, L. B., & Runhaar, H. A. C. (2013). Mainstreaming climate adaptation into urban planning: overcoming barriers, seizing opportunities and evaluating the results in two {Dutch} case studies. Regional Environmental Change, 13(2), 399–411. https://doi.org/10.1007/s10113-012-0348-8

Wamsler, C. (2014). Cities, Disaster Risk and Adaptation. Routledge. Retrieved from https://www.routledge.com/Cities-Disaster-Risk-and-Adaptation/Wamsler/p/book/9780415591034

Wheeler, S. M. (2008). State and Municipal Climate Change Plans: The First Generation. Journal of the American Planning Association, 74(4), 481–496. https://doi.org/10.1080/01944360802377973

Economia circolare e mobilità sostenibile per un nuovo modello di area industriale.

Sara Pia Iacoviello*

Introduzione

Ci troviamo di fronte ad una forte crisi ambientale e l'intento dell'Europa e del resto del mondo è quello di frenare e impedire che le condizioni climatiche e dell'inquinamento peggiorino drasticamente portando danni irreversibili. Abbiamo bisogno di costruire una nuova società che si fondi sui principi di resilienza, di uso efficiente delle risorse e di tutela ambientale, una società orientata verso uno sviluppo sostenibile. Per sviluppo sostenibile si intende "uno sviluppo che soddisfi i bisogni del presente senza compromettere la capacità delle generazioni future di soddisfare i propri; una visione a lungo termine per la sostenibilità in cui la crescita economica, la coesione sociale e la protezione ambientale vadano di pari passo e siano di reciproco sostegno"(1). Nell'immaginario collettivo quando si parla di ripercussioni negative sull'ambiente, degrado e inquinamento, siamo abituati ad associare tali problematiche alle aree industriale identificandole come sinonimo di dannoso. Oggi però possiamo provare a donare un nuovo volto alle industrie tracciando un profilo ecocompatibile capace di ridurre lo sfruttamento eccessivo delle materie prime, di promuovere l'uso di risorse energetiche rinnovabili e ridurre l'emissione di sostanze inquinanti. Ai fini di una corretta gestione ambientale, si ritiene utile e interessante affrontare tale tema non più solo verso il singolo sito produttivo, ma guardare ad una scala territoriale più ampia prendendo in considerazione l'intera area o distretto industriale e i suoi rapporti col contesto urbano. Tramite un approccio così esteso è possibile mettere a sistema in maniera più efficiente la tutela dell'ambientale, le esigenze economiche delle imprese e i bisogni delle persone che vivono il luogo, sia essi lavoratori, abitanti o semplici fruitori. Per poter attribuire una nuova immagine alle aree industriali, bisogna partire da ciò che rappresenta uno dei punti cardine di queste aree, ovvero i trasporti. Essi sono fon-