

Policy Brief N° 4, February 2017

Disrupting urban risk traps: Routes for action

www.climasinriesgo.net



CLIMA SIN RIESGO

Disrupting urban 'risk traps': bridging finance and knowledge for climate resilient infrastructural planning in Lima

Authors: Adriana Allen, Juan Luis Arango, Teresa Belkow, Carlos Escalante, Marco Kamiya, Liliana Miranda, Silvia de los Ríos and Julia Wesely. The Bartlett Development Planning Unit (DPU), University College London (UCL)

CLIMA sin Riesgo is an action-research project developed by the Bartlett Development Planning Unit at University College London (DPU-UCL) in collaboration with CENCA, CIDAP and Foro Ciudades Para la Vida and supported by the Climate and Development Knowledge Network (CDKN). In this newsletter, we explore how to re-frame urban risk reduction through strategies like baseline monitoring, establishment of action-learning observatories and the co-design and co-financing of risk reduction responses proposed by those who are vulnerable to risk, in collaboration with other actors.

KEY FINDINGS AND POLICY RECOMMENDATIONS

- Scenario planning is a useful method to articulate climate change predictions and stimulate collective ways of thinking about plausible future trajectories in a strategic way in order to solve pressing issues. It is key to involve all actors that contribute to the urbanisation and development conversation from different perspectives, and to consider both current and future risks, such as those related to the anticipated impacts of climate change.
- To act towards the desired scenarios, pathways need to be substantiated and supported by longitudinal, accurate community-driven data management tools that help to understand how risk trajectories play out in specific localities. Tools like **ReMapRisk** can aid local dwellers as well as policy makers in identifying key trends and prioritising strategic interventions and investments to disrupt urban risk traps, as well as evaluating existing capacities that risk reduction measures can build upon.
- Upon identification of desirable future pathways, genuine and continuous participatory processes with actors ranging from local dwellers, service providers, policy makers, civil society organisations and academia are required to identify entry points for triggering transformative change, such as: rehabilitation and preservation of urban ecological infrastructure to mitigate climate variability; decentralised water and sanitation systems; enhanced and sustainable mobility; collective tenure security and land and housing rights; and risk prevention in historic centres to maintain them as 'centres for life and living'.
- Experiments with innovative, co-designed risk reduction measures, co-financed and implemented by local residents and supporting institutions, are important to create tangible results. Evaluating the risk-reduction impact of these initiatives can inform their potential for scaling up and transfer to other localities.
- Despite limited governmental and private resources, there is scope for developing resilient financing systems to improve the living conditions in the deteriorating city centre as well as the settlements on the periphery. Central to these financing systems is the ability to capture the existing financial, technical and organisational capacities of local dwellers, government institutions and civil society organisations from the local to international scale. A prerequisite for deploying collective co-financing mechanisms is legal and policy conditions that enable small-scale yet transformative investments.

HOW CAN URBAN 'RISK TRAPS' BE DISRUPTED?

Disrupting urban 'risk traps', or risk accumulation cycles, demands simultaneous action on various fronts and in scales. In doing so, it is not enough to mitigate the impacts of large-scale disasters. We also need to consider the accumulation of the extensive and everyday risks that underpin urbanisation across the Global South.

The online database *DesInventar* indicates that the major small-scale disasters affecting Lima between 1970 and 2011 manifested as fires, pollution, collapse of structures, floods and landslides (<http://www.desinventar.org/>). Over time the accumulated damages of these small-scale disasters affect a larger segment of impoverished women and men and deplete their resources.

Addressing extensive risk means tackling threats associated with low-severity but high-frequency localised hazards – a challenge that can only be met through concerted actions between local dwellers and external key stakeholders and a willingness to cooperate by mutually strengthening existing financial and technical capacities.

This document builds upon the findings presented in Policy Brief N°3: 'Capacities

and investments in the management of urban risk traps', and shares the collective learning experience achieved throughout the last phase of the **cLIMA sin Riesgo** project in order to bridge the diagnostic stage with concrete and strategic action pathways towards disrupting urban risk traps in metropolitan Lima.

INTRODUCTION

Decision-making and investments in disaster risk management (DRM) still focus primarily on the economic costs and damages of large-scale disasters, while financial considerations of everyday risks and small-scale events are largely ignored. This perpetuates the invisibility of risk accumulation cycles or urban 'risk traps' and increases low-income dwellers' vulnerability to environmental hazards (see Policy Brief N° 3).

Between 2006 and 2010, national annual economic losses due to climate-related disasters in Peru amounted to US\$ 73 million. An estimated 22,000 emergencies affected 6 million people, a number that could increase with more intense weather events in the future. To appraise the potential impacts of climate change in exacerbating urban risk traps, **cLIMA sin Riesgo** convened a series of multi-actor scenario workshops looking towards the year 2035. The outcomes of these workshops reaffirmed that climate variabilities of +/- 3 degrees Celsius will cause intense and sudden fluctuations in precipitation and temperature, that might exacerbate everyday risks and escalate their impacts in ways that neither local populations nor institutional agencies are well-prepared for.

As part of the action-research undertaken in the highly vulnerable areas of Barrios Altos (BA) - a residential and deteriorated neighbourhood in the east part of the Historic Centre of Lima - and José Carlos Mariátegui (JCM) - a settlement on the steep slopes of the periphery of the city - the last stage of **cLIMA sin Riesgo** aimed to respond to this challenge and bridge the diagnosis of the problem with concrete strategic action. This was supported by several activities undertaken in 2016, ranging

from a regional workshop and several public events in Lima, as well as a weeklong exhibition and bi-regional event during Habitat III in Quito. Building upon contributions from the local residents of BA and JCM, these activities provided opportunities to build proactive strategies for just and resilient urban development.

STRATEGIC ACTION ROUTES TO INTERRUPT URBAN RISK TRAPS

Despite current shortcomings in efforts to mitigate risk, the reproduction of risk in urbanisation is not inevitable and can be tackled by undertaking strategic action in the following areas:

Figures 1 and 2: Online images from a local newspaper, reporting the impacts of climate variability when sudden precipitation raised the watercourse of Río Huaycoloro, flooding several areas of Lima, from the periphery to the centre of the city. Source: *La República* online. Accessed 1 February 2017 at <http://larepublica.pe/impresasociedad/844631-rio-huaycoloro-se-desborda-inunda-sjl-y-llega-al-rimac>



Figure 3: Climate scenario workshop with residents of JCM. Photo: F. Espinoza 2016.



1. FORECASTING AND BACKCASTING URBAN DEVELOPMENT SCENARIOS BEYOND RISK TRAPS

The impact of climate variability on everyday risks and small-scale episodic disasters is often dismissed. Bringing projections of poverty, urban development and climate change together, enables an appreciation of how the continuous reproduction of urban risk traps might impair a sustainable future for the city and its residents.

To achieve realistic projections of urban futures, **cLIMA sin Riesgo** conducted a series of multi-actor scenario planning workshops. Forecasting allowed participants to explore a future based on the projection of current risk trends and to appreciate how and why risk traps will be exacerbated by changes in temperature and precipitation. This was also an essential exercise to estimate the increasing investments required to cope with repeated emergencies.

Backcasting enabled participants to approach the challenge from the opposite direction, imagining a desirable future outcome and working backwards to identify what interventions and investments are required to connect the future to the present.

2. SETTING UP ACTION-LEARNING PLATFORMS TO SUSTAIN DEBATE AND CONCERTED ACTION

The analysis of trends, projections and discussion of required interventions towards a desirable future needs to be repeated over time and with the gradual involvement of more stakeholders in order to secure the implementation of concerted actions across different sectors and actors. To support this, **cLIMA sin Riesgo** set up three action-learning platforms or observatories with local partner organisations: one focused on the periphery of the city and was hosted by Instituto de Desarrollo Urbano (CENCA); a second, based in the historic centre, was hosted by Centro de Investigación, Documentación y

Asesoría Poblacional (CIDAP); and the third, concerned with interventions across Metropolitan Lima, was hosted by Foro Ciudades para la Vida.

The observatories are part of the legacy of **cLIMA sin Riesgo** and aim to

take forward findings from the project, while widening debates and actions to turn around prevailing patterns of urban risk. Furthermore, the observatories aim to promote strategic, vigorous and concerted actions to disrupt urban risk traps.

Figure 4: Multi-stakeholder workshop, debating plausible future scenarios in BA. Photo: T. Belkow 2016.



Figure 5: The Smartphone App "Survey 123" allows citizens to register and load a wide range of small and medium scale disasters which can then be visualised on the **ReMapRisk** platform. Photo: F. Benitez, 2016.



Figure 6: **ReMapRisk** Lima, a virtual interactive platform that can be accessed from www.climasinriesgo.net



ReMapRisk es una herramienta que permite mapear y analizar riesgos cotidianos y episódicos. La herramienta está compuesta por dos partes principales:

1. Mapeo de desastres cotidianos y episódicos.
2. Análisis de riesgos, amenazas y vulnerabilidades relacionadas con desastres cotidianos y episódicos.

Para más detalles sobre cómo usar la herramienta ver la pestaña "Cómo usar ReMapRisk"

ReMapRisk ha sido desarrollada como parte del proyecto **cLIMA sin Riesgo**. Para mayor información sobre el proyecto visitar www.climasinriesgo.net

3. ADOPTING TOOLS THAT ENABLE THE PRODUCTION OF COMMUNITY-LED DATA TO SUPPORT INFORMED DECISIONS

To enable systematic documentation and monitoring, **cLIMA sin Riesgo** developed an online platform called **ReMapRisk**. The tool allows local dwellers to document and monitor how and where risk accumulation cycles materialise over time at various scales. Spatial and temporal data is collected through the use of the Smartphone App "Survey 123", feeding into an interactive online database that records specific hazards, who is affected, where, how and why. With the support of the observatories, local dwellers are able to report on small-scale risk and disaster events as they happen.

The tool also allows public enquiries into information stored on the online database and produces maps at different scales in response to each enquiry. **ReMapRisk** holds information on risk-decreasing state investments, which consider budgeting programmes associated with disaster risk reduction but also other programmes that might have an indirect impact on reduction of vulnerability to risk, such as citizen security and health programmes. The data helps to visualise the spatial distribution of risk mitigation investments, and can help in prioritising areas for future programmes and interventions as well as in evaluating their impact. In turn, this contributes to improving the design, allocation and evaluation of governmental investment programmes.

4. SUSTAINING EFFORTS TO FORGE CO-PRODUCED INTERVENTIONS

While there is a wide range of actions and investments devoted to risk mitigation (see Policy Brief N° 3), their impact is hampered by the lack of synergy between state agencies and the efforts deployed by those at risk.

Through the observatories, efforts are being made to widen a collaborative network of community organisations and public agencies. This involves the integration of official data into

Figure 7: The Expo-Fair was held in JCM to share the proposals submitted by local organisations in response to the cLIMA sin Riesgo Open Call with the general public, especially with residents from nearby settlements. Poster: **cLIMA sin Riesgo**.



Table 1: Institutional map of land, housing and services interventions in Lima. Source: M. Kamiya and J.L. Arango (2016) Resilient Housing Finance for Vulnerable Population: Cases of Lima, Peru – BA and JCM. Internal report produced for **cLIMA sin Riesgo**.

	Land	Housing	Public/ Shared Space
National actors	COFOPRI	SEDAPAL	
	Ministry of Housing	Ministry of Housing	Ministry of Housing
	SUNARP	Fondo Mi Vivienda	
	Farmer communities		
Municipal actors	SJL/Cercado municipalities	SJL/Cercado municipalities	SJL/Cercado municipalities
Private, collective or civil society actors	Land Traffickers	Commercial Banks	Family Associations/ Quinta
	Family Associations/ Quinta	Saving and Credit Cooperatives	
		ELDELNOR/ Luz del Sur	
		NGOs	

● Settling
 ● Housing Construction
 ● Housing Improvement
 ● Development of public/shared space
 ● Settlement Formalisation

ReMapRisk to sustain the systematic monitoring of investment flows and their impacts over time and to support the development of well-targeted interventions in the future. Other initiatives undertaken by the observatories include an Expo-Fair organised in JCM by CENCA and was a two day event that enabled local residents to learn about the innovative initiatives undertaken by local community organisations in order to prevent and reduce everyday risks; and a meeting organised by Foro Ciudades para la Vida with members of the National Congress to bring to their consideration the impact of urban risk traps and the need to re-orient public interventions.

5. DEVISING AFFORDABLE FUNDING MECHANISMS

A study conducted by **cLIMA sin Riesgo**, led by Marco Kamiya from UN-HABITAT Unit for Urban Economy, sought to identify financial mechanisms to tackle urban risk traps through affordable access to land, housing and services. As shown in Table 1, a considerable number of institutions are involved in housing and infrastructure provision in Lima and Peru with different legal roles and jurisdictions; thus, coordination across their interventions is key to ensure more efficient risk reduction.

The financing outlined in the aforementioned study addresses five key areas: land acquisition, land titling or other forms of tenure security, preparation of the terrain, building and/or maintenance of housing structures and access to basic services. The analysis was based on the physical conditions of the dwellings in Barrios Altos and JCM and with full consideration of the socio-economic restrictions faced by inhabitants. Often, low-income families are not eligible for loans to improve their dwellings. For example, the state programme MiVivienda of the Ministry of Housing provides loans to buy a plot of land, build or improve a home; but requires collateral funds under similar conditions to those requested by commercial banks. This presents a great obstacle for those households most vulnerable to risk,

as low-income dwellers are often unable to meet such requirements and rely instead on irregular and small investments made according to their limited saving capacity. Therefore, the co-financing routes identified in this study focus on the possibilities of collective improvements, made either at the quinta or settlement level (Agrupaciones Familiares – AF). This is because relying on collective resources reduces the risk of re-payment default and can help to significantly lower the interest rates applied.

Alternatives in the historic centre

In the historic centre of the city, public and private financing options tend to drive speculation and gentrification.

However, it is possible to construct a sustainable financing model for the local, low-income population with the following elements:

- 1. Establishing an autonomous and inter-institutional authority** with a clear mandate and the power to articulate the participation of legally recognised collective organisations of dwellers and tenants. UNESCO could facilitate international cooperation and play an advisory role to support this.
- 2. Implementing a pilot scheme to capture capital gains** in the local municipality to ensure residents' tenancy security and recovery of local heritage.

Figure 8: A residential quinta in Barrios Altos (a typical multi-family living arrangement in the area) that benefited from the municipal programme Mejorando Mi Quinta. Photo: T. Belkow 2015.



Figure 9: Neighbours working on local infrastructural improvements during a collective working day called *Faena* in JCM. Photo: CENCA 2015.



3. **Designing financing mechanisms for incremental improvements** with access to subsidies that are cross-financed through complementary and regulated private investments. These would promote regeneration of the area but also protect local residents' rights to remain.
4. **Supporting development of small-scale commercial activities**, which strengthen livelihoods and lead to an increase in incomes and saving capacity.
5. **Consolidating negotiation capacity and mechanisms based on solidarity**, like savings cooperatives and neighbourhood organisations, could with their collective investment capacity channel public and private investments.

Alternatives in the periphery

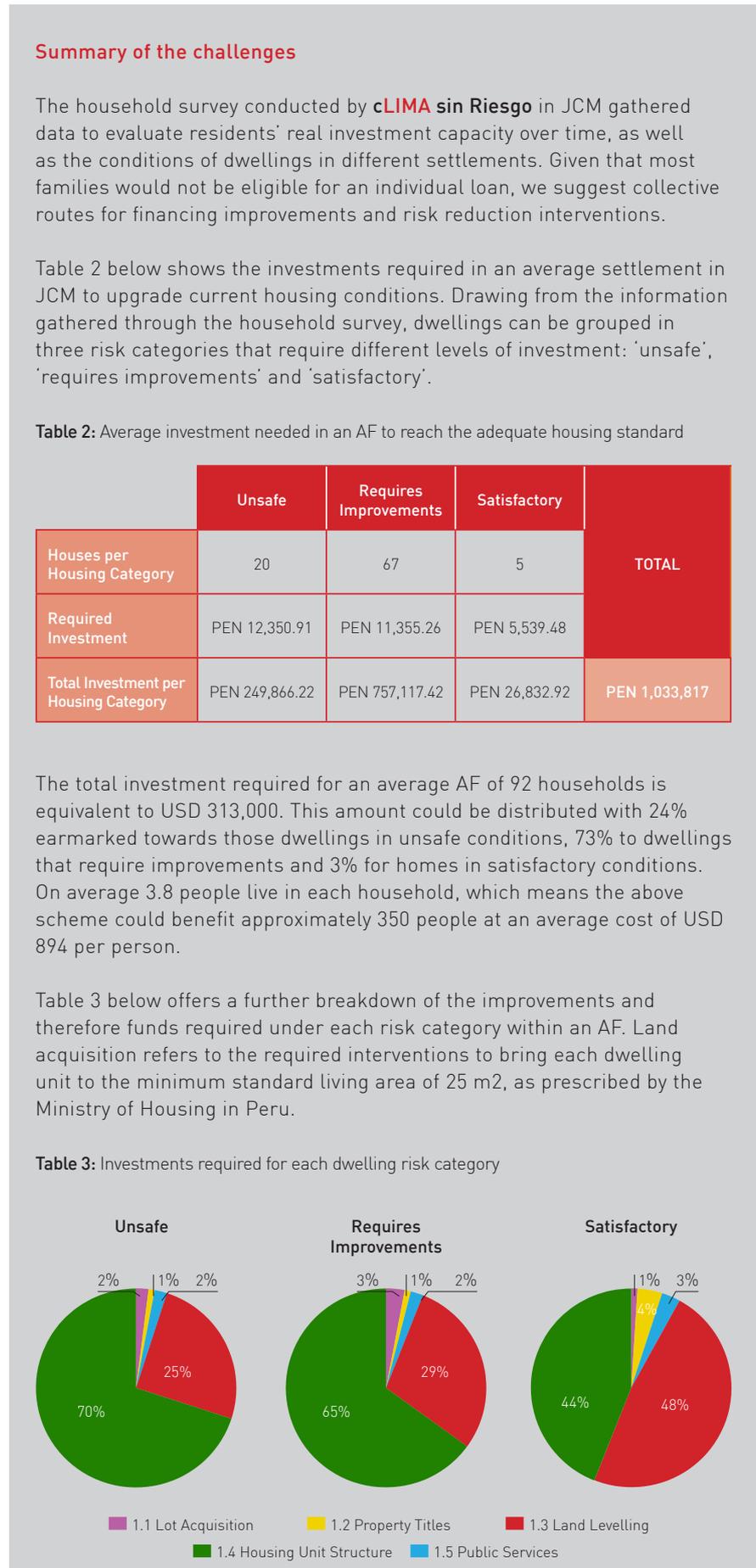
In the periphery of the city, it is possible to promote financial schemes that allow improvements in the local living conditions and for reducing and preventing risks through strengthening community organisations. If local community organisations are legally recognised, they could manage collective and individual financial resources through collective savings groups and credit cooperatives.

Similar initiatives have been successfully tested in other contexts, like the Philippines' Community Association for the Community Mortgage Programme, which enables access to credit that is paid back incrementally, within the savings capacity of the inhabitants. Cooperation with governmental technical teams would allow the use of these resources for gradual yet scalable improvements, thus bettering housing conditions and reducing risks.

Key steps towards affordable and sustainable co-funding mechanisms include:

1. **Strengthening the AFs to plan forward-looking risk-prevention and reduction interventions** at a wider scale than that of individual settlements.

Figure 10: Financial model for risk reduction in an AF in JCM. Source: M. Kamiya and J. L. Arango (2016)



2. Establishing safe housing construction standards and realistic appraisals of how much needs to be invested to respond to different levels of risk. Considering that the development of new dwellings in the upper part of the settlements affects existing dwellings, it is possible to calculate the total investment required over time to prevent the cascading impacts of further risks affecting different parts of the settlement. This also requires the dissemination of affordable but sound risk-prevention practices in the preparation of plots, construction of retaining walls and housing structures, and provisions to secure access to basic services.

3. Developing collective saving systems that enable local dwellers to leverage their resources to support the above steps and to raise sufficient funds to be bridged with those of external organisations.

Despite being a high-risk zone where settlements are built on slopes of up to a 30-degree inclination, it is possible to devise co-funding mechanisms to reduce and prevent risk and improve local living conditions. This could be done by combining the above steps with credit-based options at affordable interest rates, for instance through housing credit cooperatives. The role of the AF could be one of an accountable bridge between local dwellers, financial service providers and other relevant organisations such as the district municipality. Given that AFs are legally recognised, they can request loans to be gradually repaid by their members in order to implement incremental improvements at scale. Another feasible strategy is to establish a system of 'air rights' to enable the densification of the lower parts of the settlements and therefore prevent the occupation of risk-prone areas on the highest parts of the slopes, a strategy currently being explored by a local group in JCM with the support of **cLIMA sin Riesgo** (for more details see Newsletter N° 5).

A down payment subsidy mechanism to reduce monthly payments, making more families able to enter into the financial scheme, would work well in JCM. Another option would be to use

smaller loans to make incremental improvements, for instance to access basic services. These loans would also have a shorter repayment term. The smallest loans with the shortest term allow the financial institution to describe the financial behaviour of the borrowers more accurately, which is a potential future benefit for everyone in the AF if debt can be acquired under better conditions, based on precise information on repayment risk, hence reducing interest rates.

Financing models are some among many routes to disrupt urban risk traps and we hope that by having organised contests for creative solutions to reduce everyday risks in BA and JCM, the solutions point towards some of the activities that can evolve within these and other neighbourhoods to create lucrative opportunities for generating stable incomes in the medium to long term, while contributing to development without risk.

6. IDENTIFYING KEY STRATEGIC ENTRY POINTS TO DISRUPT URBAN RISK TRAPS

Whether undertaken by state agencies or by local communities and individual households, current risk-mitigation interventions often fail to address the root causes of risk accumulation.

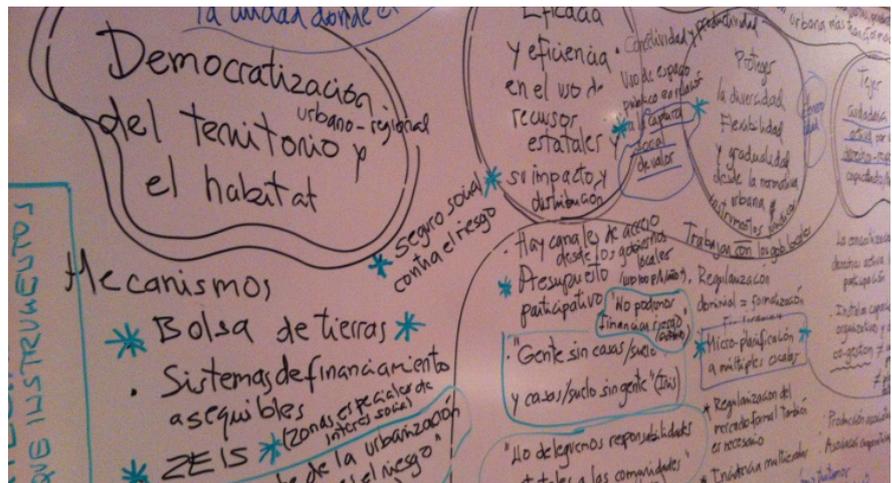
Doing so will require key strategic entry points to shift from risk coping and mitigation to risk reduction and prevention. To stimulate a fresh

outlook, **cLIMA sin Riesgo** held a regional workshop in Lima in July 2016, where local residents, academics, representatives of state agencies and civil society organisations exchanged experiences with experts from a number of cities in Latin America.

Key strategic entry points identified in this workshop are:

- **Ecological preservation of the periphery.** Confronting health risks and those related to a lack of food security and nutrition while giving an alternative use to the ever-expanding city border in order to halt land grabs and trafficking.
- **Decentralised water and sanitation systems.** Recent and/or expanding settlements are encouraged to experiment with alternative systems to inhibit contamination that impacts on health and other negative consequences due to a lack of access to the public water and sanitation networks.
- **Accessibility and sustainable mobility.** The slopes with a considerable inclination require special attention to reduce risks of rock falls and guarantee safe transitioning for pedestrians. For instance, an integrated system of retaining walls, stairs with platforms for resting and communal areas could form part of a master plan elaborated together with the local community.

Figure 11: Map of strategic action pathways identified during the regional workshop of **cLIMA sin Riesgo**. Photo: A. Allen, 2016.



- **Collective systems for secure tenancies, land and housing rights.** Encouraging building of multi-family social housing and devising a viable payment system is key to reduce the demand for land in high risk areas as they are both on the periphery and in large parts of the historic centre of Lima; it could also provide tenure and housing security.
- **Risk management in historic centres to maintain them as 'centres for life and living'.** In the historic city centre, actions on multiple fronts are required to confront the variety of risks related to tenancy. Furthermore, the historic centre lacks an effective system for solid household waste collection; there needs to be a value put on protecting its urban profile (the facades); and it urgently needs to modernise its basic infrastructure inside the quintas, which currently contribute to a risk of building collapse and by consequence lead to an expulsion of residents from the neighbourhood.

These entry points are underpinned by the need to seek housing and land tenure security beyond individual solutions, as well as innovative co-funding mechanisms capable of leveraging the capacity of ongoing efforts and investments to disrupt urban risk traps. An underlying condition for these is a favourable legal environment with an openness to receive new ideas and facilitate cooperation as well as improved circulation of institutional information, such as programmes and capacities on the ministerial level that can be used by local governments.

7. SETTING PRECEDENTS AND INNOVATIVE PERSPECTIVES IN THE DESIGN, IMPLEMENTATION AND EVALUATION OF CO-PRODUCED INTERVENTIONS

While devising strategic pathways is essential, equally important is to experiment with concrete innovative interventions aimed at tackling risk accumulation cycles.

The local communities of BA and JCM have shown their organisational capacity to take on the reduction of everyday risks in their built

environment through participation in the Public Call for Innovative Participatory Projects organised by **cLIMA sin Riesgo** in August 2016.

Twelve community-led proposals were submitted and six supported by the project. These included, among others, reducing young adults' vulnerability by developing recreation areas in BA; testing approaches to water

harvesting and waste water reuse for food production through a local school; and the design of a multi-family social housing programme leveraging the use of air rights in consolidated areas to reduce further encroachment in JCM.

While details about each proposal are shared in Newsletter N° 5, positive impacts achieved across all initiatives include:

Figures 12 and 13: Participants of the regional workshop and the public presentation of Dr Joan MacDonald, former president of the Latin American, African and Asian Social Housing Service 2003-2014- SELAVIP. Photos: **cLIMA sin Riesgo** Team, 2016.



Figure 14: The call for innovative projects to reduce risks began in August 2016. Source: CENCA 2016.



- The proposals have created and strengthened meeting spaces for various community, public and private actors, from the neighbourhood to the metropolitan scale, thereby fostering interactive action-learning processes to take on the challenges of accumulated, everyday and episodic risks.
- The active participation of universities and young professionals from different collective organisations allowed for strengthening synergies between the population and academia, as well as groups that want to drive local projects.
- The proposals are flagship examples, which reveal necessary means to achieve transformative change through community practice. In a city where exclusion and spatial injustice are combined and manifested in risk traps infringing on the rights of citizens, the call gave voice to affected people and allowed them to transmit their necessities to the authorities and design strategies for change.
- Working through small, local interventions enables use of the resources and capacities that are available among the participating residents. However, to replicate

these initiatives at a larger scale, norms are required which stimulate investments for the benefit of all. Hence, they need to ensure that the speculative real-estate market does not continue promoting land trafficking in JCM and the often-illicit evictions in the historic centre to make space for storage units and warehouses.

The projects offer fertile ground for considering how interventions can tackle risk traps and create synergy across different stakeholders' capacities to act.

Figure 15: Participatory processes were essential to understand the main everyday risks and the potential to implement the project of the neighbourhood organisation in the Quintas. Photo: B. Desmaison 2016.



Figure 16: Participatory work in one of the winning projects for innovative actions to reduce risks in BA, Jardín Primavera – Neighbourhood for the children. This photo and the cover photo: E. Cuadros 2017.

Figures 17 and 18: Stakeholders of the winning team present a model for intervention in JMC, which was proposed to the residents of the zone (left); settlement map (right). Photos: Workshop 4, FAU-PUCP; S. Lasso 2016.



CONCLUSIONS: HOW CAN WE CONTRIBUTE TO MORE TRANSFORMATIVE INTERVENTIONS TO DISRUPT URBAN RISK TRAPS?

In sum, shifting from coping with and mitigating disaster risk to the effective disruption of urban risk traps requires cooperation to instigate strategic actions, ranging from better and more systematic documentation and analysis of how risk accumulation cycles work, to the translation of co-produced knowledge into co-designed interventions.

The experience of **cLIMA sin Riesgo** confirms that participatory methods and innovative tools contribute to improving public concepts about everyday and climate related risks. Planning for inclusive actions lays out pathways of transformative scenarios for sustainable development. Experimenting with participatory projects through public calls for new thinking to reduce everyday risks, as well as implementing them through co-financing, means that cooperation between residents and professionals becomes an enabling factor. It should also attract the interest of local governments, which are keen to see projects with tangible results.

The ability to collaborate and innovate attracts further actors, who might enrich the proposals through their research capacities and creativity and could strengthen ongoing initiatives. Strategic and cross-cutting themes, like the provision of basic infrastructure or green and public spaces, tenancy security and access to technical assistance for self-built housing have to be integrated into risk management. Also, the exploration and visualisation of empirical information of small and medium-scale events as well as an effective system to maintain and systematically input new data in a participatory manner will help public entities to strategically and effectively invest in disaster risk management.

In October 2016, the lessons learnt throughout **cLIMA sin Riesgo** were shared at Habitat III in Quito, opening another layer of public learning on what driving change towards safe, inclusive and resilient cities might

mean in practice when tackling the reproduction of urban risk traps. A public exhibition – also accessible online as a virtual exhibition – acted as a catalyst for exchanges between Lima and other cities. A week of conferences and opportunities for cross-dissemination culminated in a bi-regional networking event co-organised with the project **Urban Africa Risk Knowledge** (Urban ARK), with participants including BA and JCM residents and our co-investigators in Lima, as well as representatives from organisations that work with creative mapping initiatives in South Africa, climate

variation adaptation initiatives in Kenya, a research centre for sustainable urban development in Sierra Leone and many more.

The legacy of **cLIMA sin Riesgo** is based in the multiple collective learning spaces it generated, as well as in the work of the observatories; the local capacities developed and forged alliances with professionals, municipalities, universities, civil society, experts and scientific institutions that actively use the spaces and processes as a work in progress towards alternative, just and risk-free urban development.

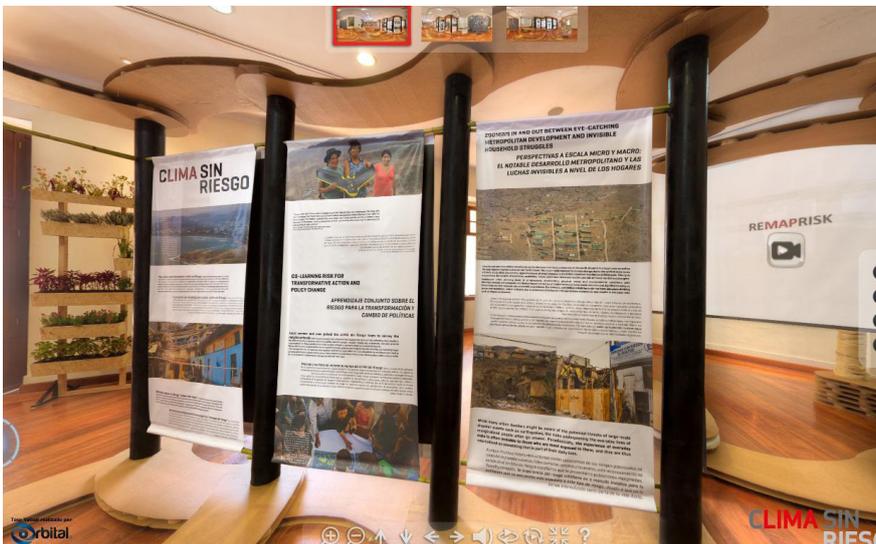
Figures 19 and 20: Expo-fair visitors receive information on the four winners of the 'Call for innovative proposals for the prevention and reduction of everyday risks' in JCM; above -Cuidando el Medio Ambiente – a local school initiative for urban agriculture and vermiculture; below - Baños Ecológicos Secos en Laderas – reducing contamination risks and the risks of illnesses in areas without a sewage system. Photo: CENCA 2017.



Figures 21 and 22: (above) The **CLIMA sin Riesgo** exhibition during the Habitat III summit summarises the project research findings in panels, maps and models, videos, online story maps and other materials; (below) Zamudio Guzman and Teofila Felipe, community leaders from JCM, explain about risk traps in the area where they live to exhibition visitors. Photo: T. Belkow 2016.



Figure 23: Our virtual exhibition includes methodologies and results of our work in Lima. You can access all content on our website www.climasinriesgo.net 'Virtual Exhibition 360°', and also explore the 'Online Story Maps' where the populations of BA and JCM talk about their experiences with everyday risks. Photo: **CLIMA sin Riesgo** 2017.



REFERENCES

Allen, A., L. Zilbert, J. Wesely, T. Belkow, V. Ferro, I. Langdown, R. Poblet, and A. Samanamú, (2016), *Policy Brief N° 3: Capacities and investments in the management of settlements and urban risk, CLIMA sin Riesgo*, London-Lima

Kamiya, M. and J. L. Arango, (2016), *Resilient Housing Finance for Vulnerable Population: Cases of Lima, Perú – Barrios Altos and José Carlos Mariátegui*, UN-HABITAT Urban Economy and Finance Branch, Nairobi.

ACKNOWLEDGEMENTS

We are grateful to all the institutional actors, civil society and neighbours of Barrios Altos and José Carlos Mariátegui, who have been part of this initiative.

For more information about **cLIMA sin Riesgo**, please visit our bilingual website at www.climasinriesgo.net and to receive regular updates about the project and to contribute to the debate please subscribe on the website.

CONTACT

In the UK:

Adriana Allen: a.allen@ucl.ac.uk
The Bartlett Development Planning Unit,
University College London,
34 Tavistock Square, London
WC1H 9EZ, UK

In Peru:

Teresa Belkow:
teresa.belkow@gmail.com;
Carlos Escalante Estrada
(c.escalante@cenca.org.pe) CENCA /
Observatory of the Periphery;
Silvia de los Ríos (silviasdlr@gmail.com) /
CIDAP / Observatory of the
Historic Centre;
Liliana Miranda (lmiranda@ciudad.org.pe)
Foro Ciudades para la Vida /
Metropolitan Observatory



This document is an output from a project commissioned through the Climate and Development Knowledge Network (CDKN). CDKN is a programme funded by the UK Department for International Development (DFID) and the Netherlands Directorate-General for International Cooperation (DGIS) for the benefit of developing countries. The views expressed and information contained are not necessarily those held or endorsed by DFID, DGIS or the entities managing the delivery of the Climate and Development Knowledge Network, which can accept no responsibility or liability for such views, completeness or accuracy of the information or for any reliance placed upon them.

Management of the delivery of CDKN is undertaken by PricewaterhouseCoopers LLP, and an alliance of organisations including Fundación Futuro Latinoamericano, LEAD Pakistan, the Overseas Development Institute, and SouthSouthNorth.