

Measuring Urban Resilience



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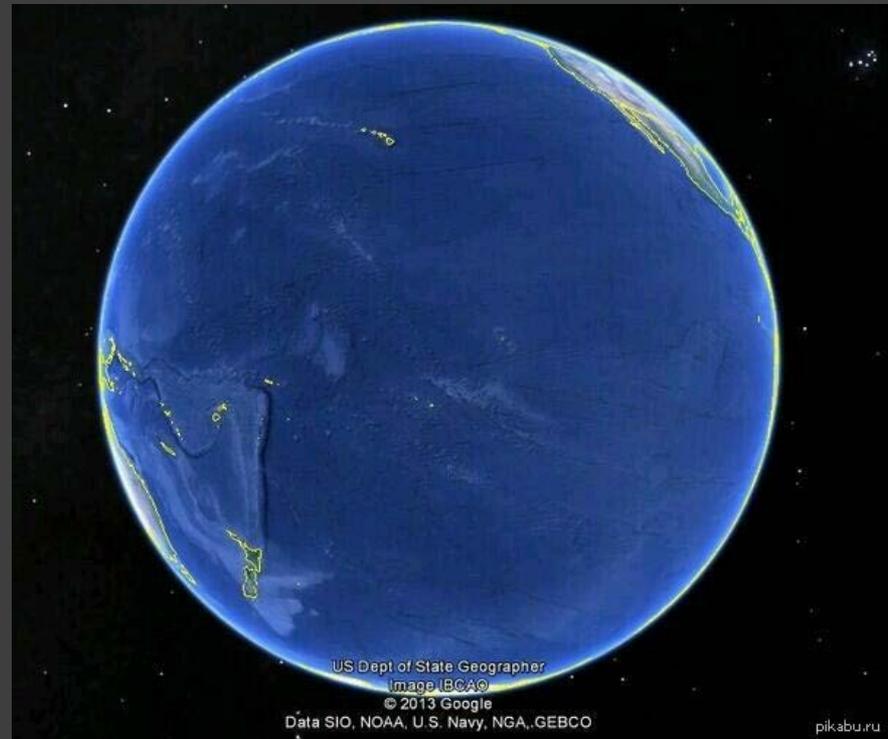
Measuring Urban Resilience

“There is no subject so old
that something new
cannot be said about it”.

F. Dostoyevsky

NOOSPHERE: 'sphere of reason', the postulated sphere or stage of evolutionary development dominated by consciousness, the mind, and interpersonal relationships, especially in regard to its influence on the biosphere and in relation to evolution. A model of conscious globalization (Paris, 1921).

'Noosphere '(Vernadsky, Le Roy, Pierre Teilhard de Chardin)



Russia

•“Dying nation”: 107 million by 2050

•Poverty
•1 in 8 below poverty line

•30 % of Russian children live in poverty, child mortality rate is double the EU rate, and infant mortality is 3.5 times higher in Russia.

•Impacts of financial crisis, sanctions” e.g. in the first quarter of 2014 22.9 million, 15.9 percent of the total 2.1 percentage points more than in the same period last year, according to Rosstat statistics.

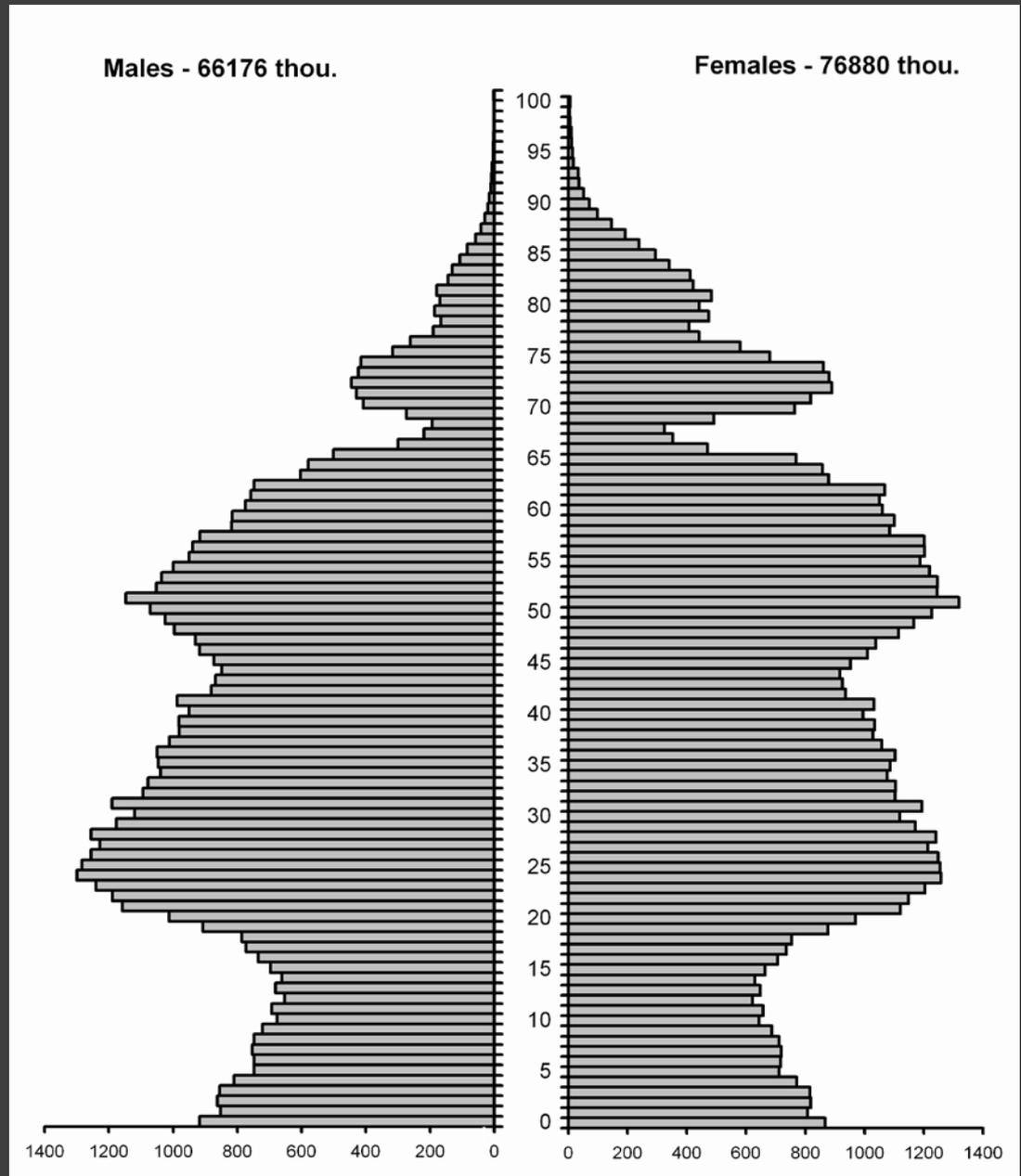
•8% percent of population sufferers from alcoholism

•16% inflation rate, 11% increase in nominal income (first quarter of 2014)

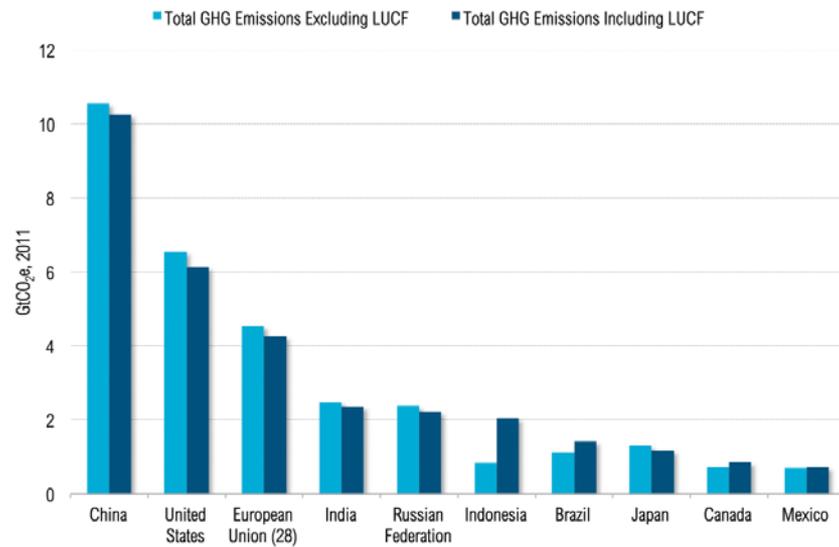
•Loss of faith in institutions (healthcare, education)

•in 2011, 51% of Russia's food was grown by dacha communities or peasant farmers (11%) leaving the rest (49%) of production to the large agricultural enterprises.

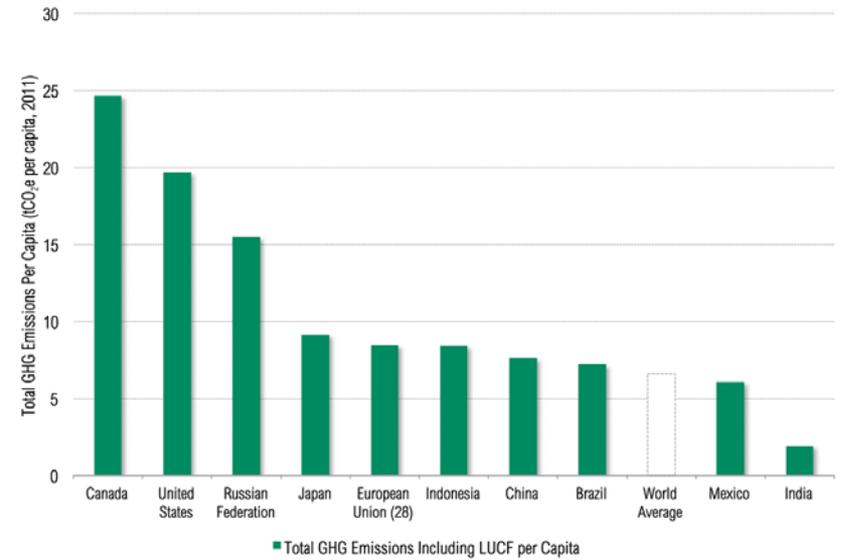
•88% of the adult population have attained at least upper secondary education and 54% have a tertiary qualification. Only three countries have a higher tertiary attainment rate among 25-34 year-olds than the Russian Federation (55%).



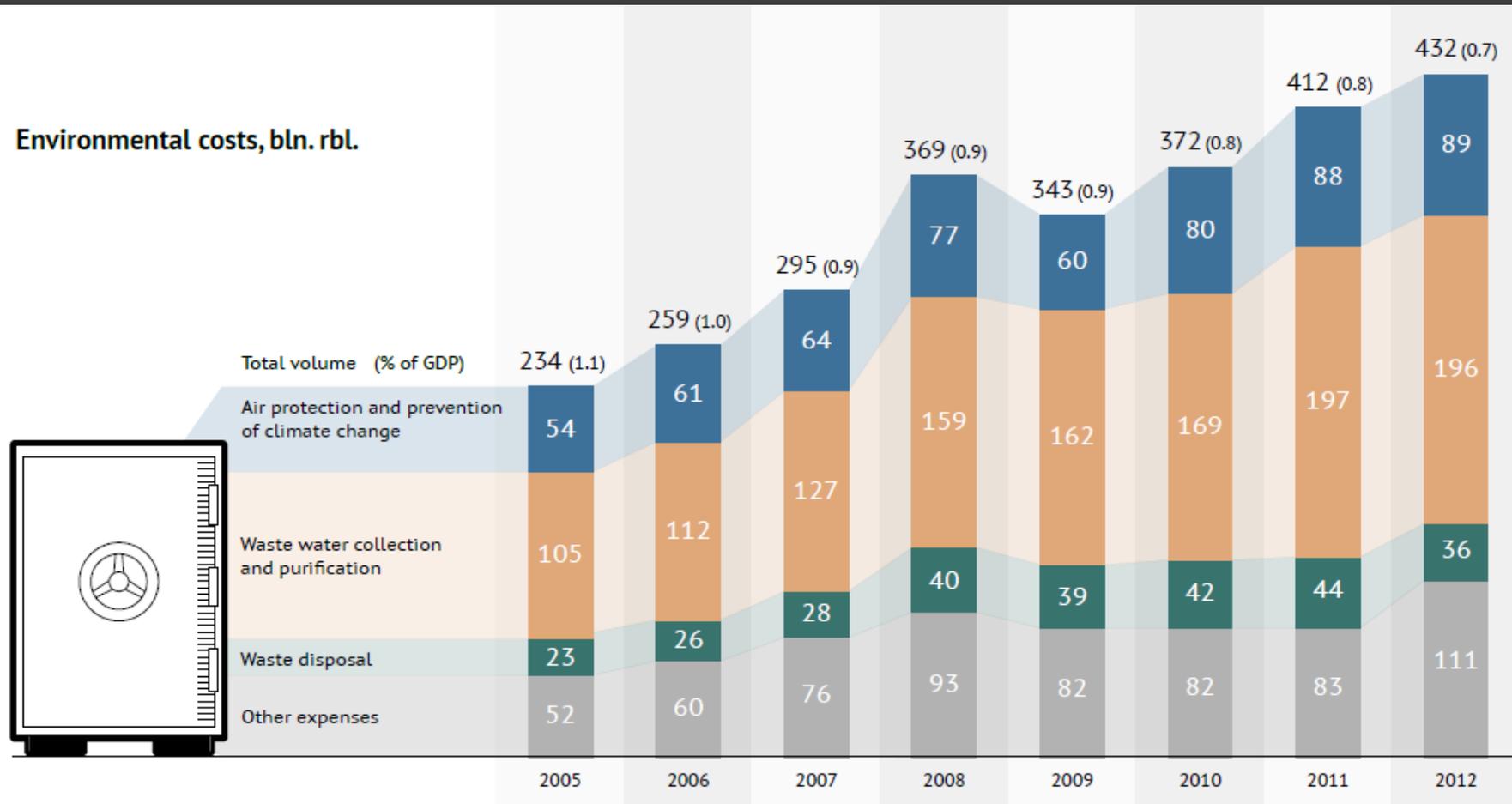
Top 10 Emitters



Per Capita Emissions for Top 10 Emitters



Environmental costs, bln. rbl.



Data from the Federal State Statistics Service (Rosstat),
Federal Water Resources Agency (Rosvodresursy) and Federal Supervisory Natural Resources Management Service (Rosprirodnadzor).

Policy context

- The 1996 Presidential decree (ukaz) 'Concerning the Concept of Russia's Transition to Sustainable Development' The final section of the decree provides an outline of what are seen as the necessary stages of this transition process and compares the attainment of sustainable development with the emergence of the noosphere (sphere of reason) as outlined by Vernadsky '**...when the spiritual values and understanding of humankind, existing in harmony with the environment, will become the principal criterion of national and individual wealth**' (Ukaz, 1996, p. 5). Establishment of the noosphere as a fundamental and qualitative shift in the nature of Russian society from one based on '**economic and material values**' to one founded on '**ecological and spiritual–moral values**'.
- Federal law 'On the General Principles of the Organization of Local Self-governance in the Russian Federation' (2006) meant to 'ensure the independent solution by the population of the issues of local importance, of possession, use and disposal of municipal property' with the consideration of historical and other local traditions. Citizens are entitled to participate in the decision-making process through referendum, voting and 'other forms of direct expression of the will of the people through elected and other institutions of local self-government'. [\[1\]](#)

[\[1\]](#) LSG is a form of organization of power in the Russian Federation: the people of Russia implement their power via state institutions (State power) as well as via institutions of municipal (local) self-governance (municipal power) (Article 3 Constitution of Russian Federation, 1993)

"Building Justice. Russia's Social Policy"

"Russia is a welfare state. We have a much higher level of social guarantees than other countries with similar productivity and per capita income levels. In recent years, more than a half of public expenditure has been going into the social sphere. Over the past four years, our social spending has grown by 50% in absolute numbers, or from 21% to 27% in relation to GDP. None of these social guarantees was shaken by the crisis of 2008-2009. In fact, the wages of public sector employees even grew during that period, together with pensions and other social benefits. But our people are definitely not satisfied with the current situation, and their dissatisfaction is well justified.

Social policy has several goals, several dimensions. It should support the weak, those who are objectively unable to make a living. It should provide upward social mobility, an equal "starting position" and promotion for each person based on their capabilities and gifts. The effectiveness of a social policy is determined by whether people think our society is just or not".



V.V Putin 2012

Putin's new "complex strategy": 154 million by 2050 vs.107 million

Fires

- 2010 record heat wave (the highest temperatures recorded in 130 years);
- devastating forest and peat fires, and smog in the Moscow and some other regions.
- an unprecedented damage to human health including over 54,000 additional deaths, and economic damage of 1.4% GDP.¹
- 10% grain price increase within Russia; export ban, rise in prices globally (e.g Pakistan saw a 16 per cent increase in the price of wheat, just as the government was reducing food price protections. As a result, according to the World Bank, Pakistan saw a 1.6 per cent increase in poverty over this period)



Floods

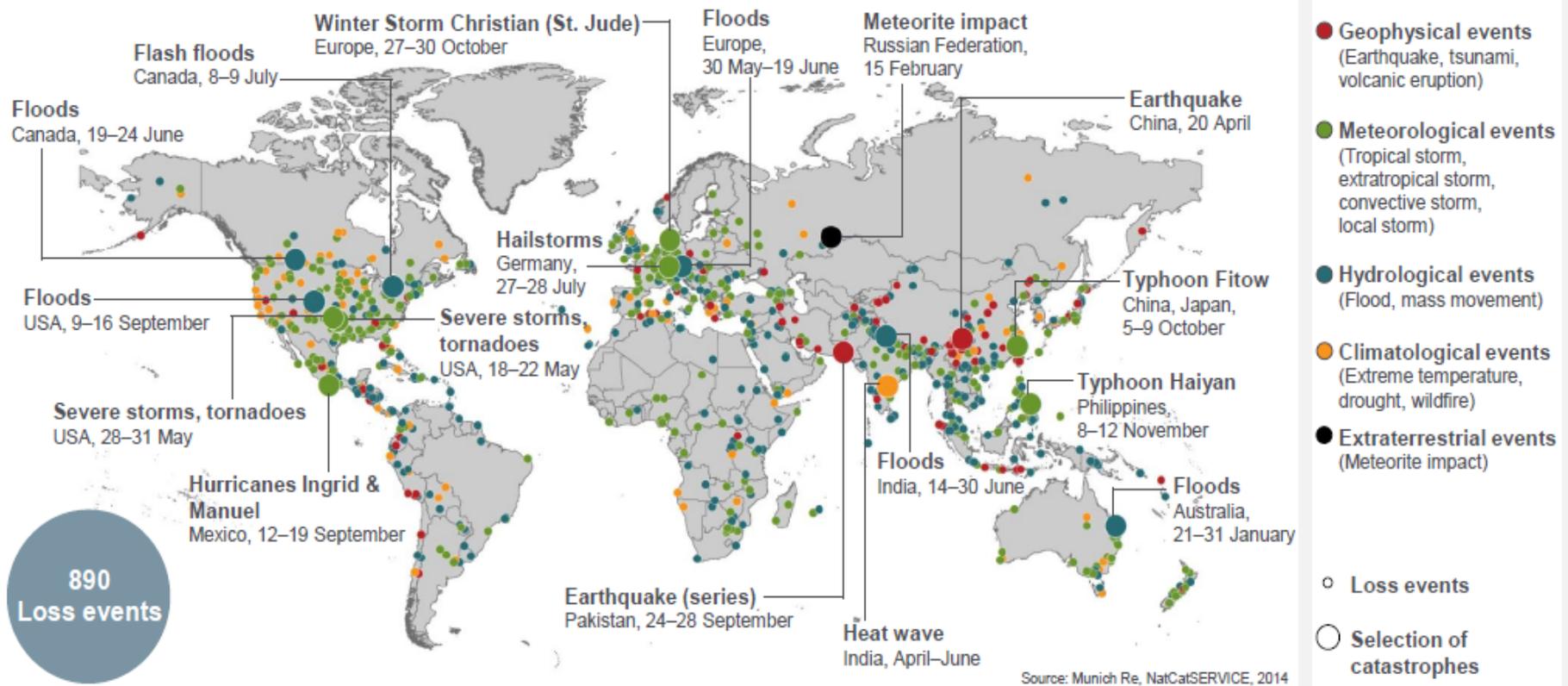
The 2012 Krasnodar Krai floods

- Near 200 people dead
- Five months of rain overnight
- 30,000 people affected
- Government failed to notify (people washed away sleeping).
- The Government promised 100,000 rubles compensation (about \$3,000) for destroyed houses, and 50,000 rubles (\$1,500) will be paid to the residents whose dwellings were damaged.



Resilient Institutions = Vulnerable Women?





Urban Vulnerability vs. Urban Resilience

- Scale of disasters: everyday disasters, the cumulative effect of small impact events (Hewitt, 1997; Sanderson, 2000; Pelling, 2003)
- Complex concentration of multiple hazards (Lavel, 1999; Bull-Kamanga et al, 2003; Satterthwaite et al, 2007)
- Asset portfolio: labour, human capital, housing, household relations and social capital (dependence on money in city economies; social fragmentation (Moser, 1998)
- Urban governance structures are composed of formal and informal institutions, which shape policy formulation and implementation (Ahrens and Rudolph, 2006) and, consequently, vulnerability.

Grassroots actors for resilience

- local knowledge of social norms and traditions, of environment, and of local needs and wants;
- mediating role in conveying information between local residents and other political actors;
- the capacity to enhance local social development through facilitation of meaningful involvement in local projects.

Pelling (2003)

Social Capital

‘the features of social life – networks, norms and trust – that enable participants to act together more effectively to pursue shared objectives’
(Putnam, 1996:56)

- Bonding, bridging, linking

Russia as an 'hourglass' society

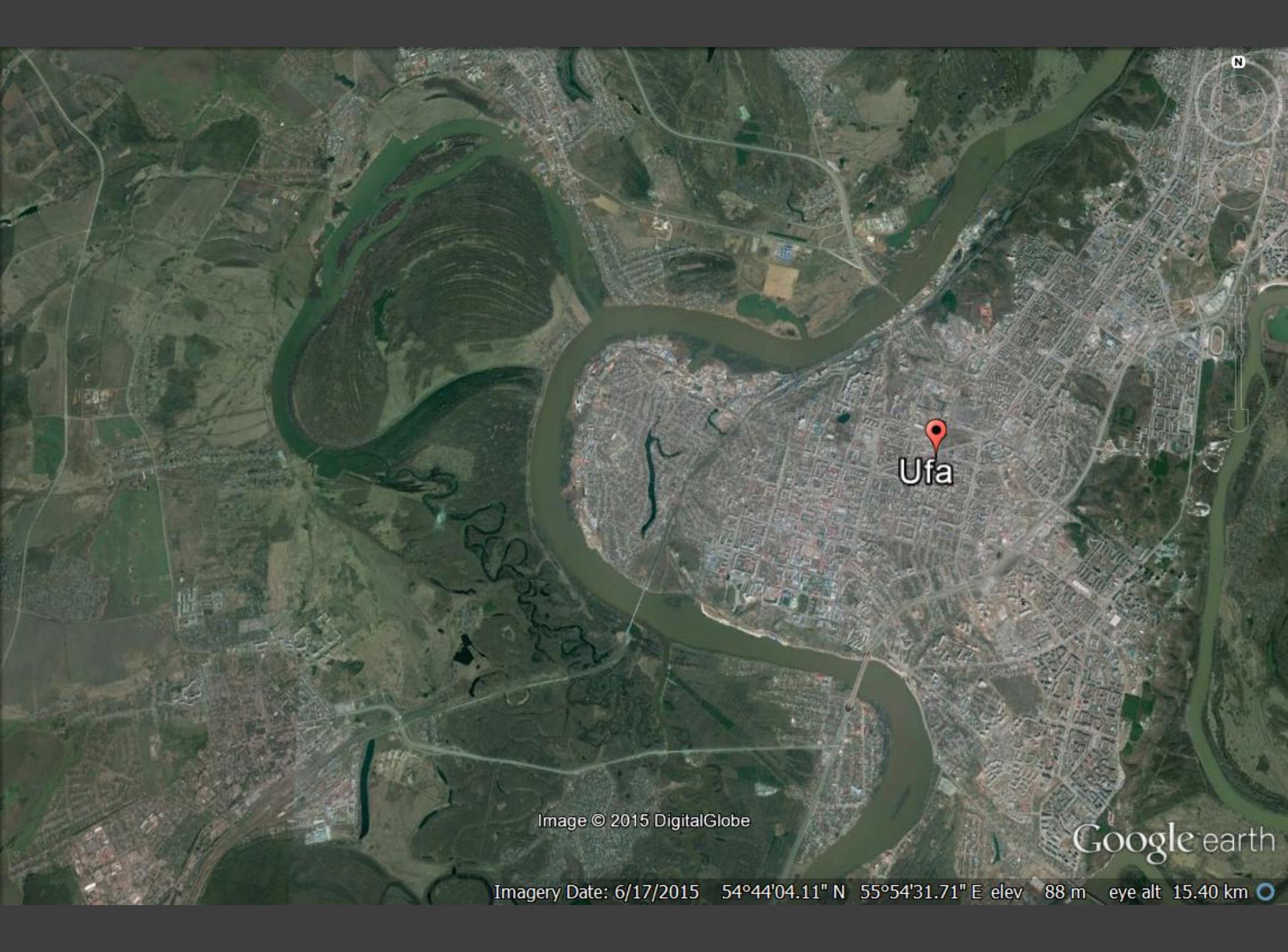
- Failure to bridge the gap between individual and the state where formal organizations and local social capital rarely overlap
- Soviet roots of urban governance community based institutions
- Pre-modern, modern and anti-modern networks

(Rose, 1995; Mishler and Rose, 1997)

Burning nations: Soviet vs. Russians



Fire dynamics in Republic of Bashkortostan, Russia (Yumagulova, 2004)



Ufa

Image © 2015 DigitalGlobe

Google earth

Imagery Date: 6/17/2015 54°44'04.11" N 55°54'31.71" E elev 88 m eye alt 15.40 km



Ufa

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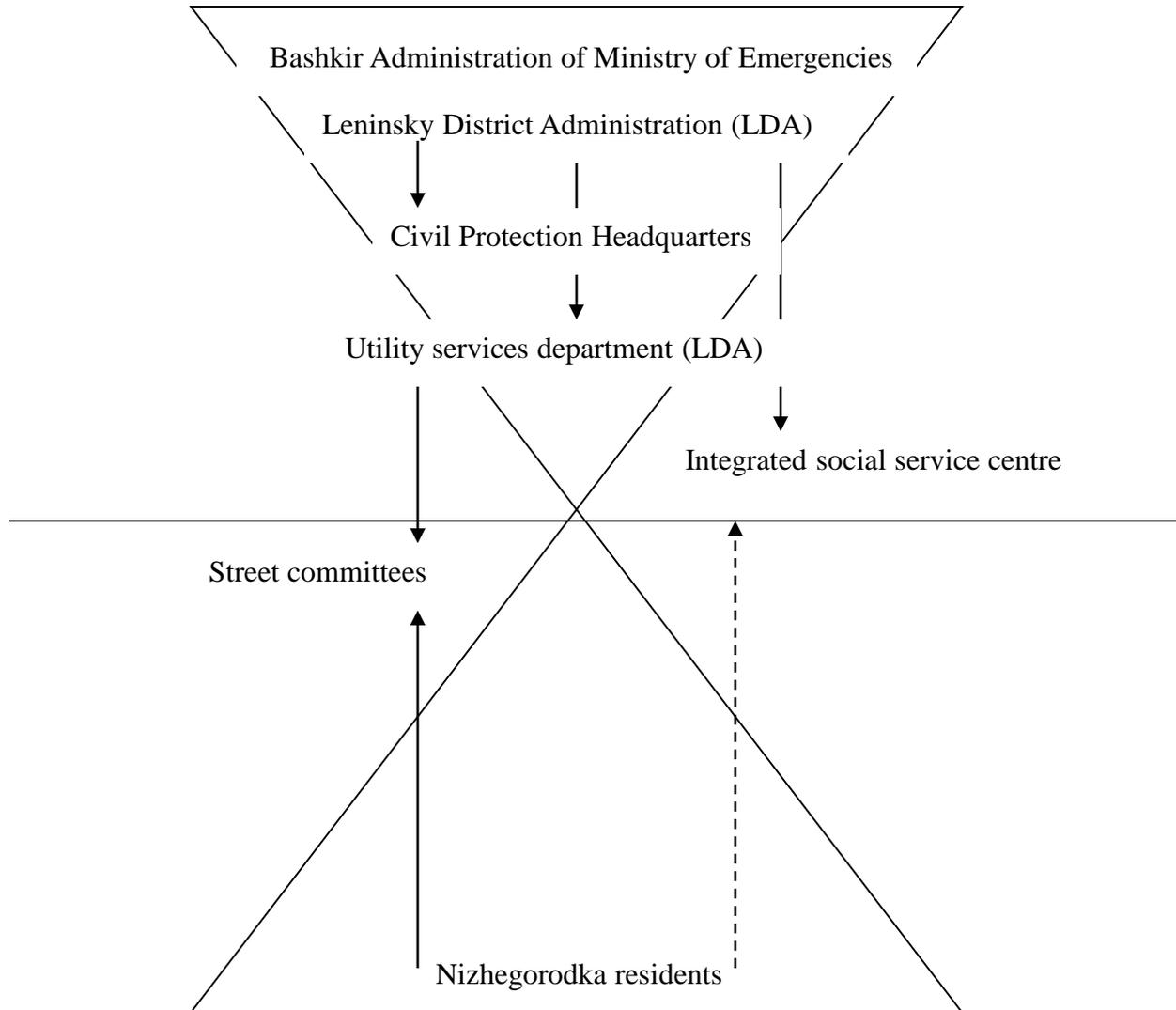
Rosa

- 51, single mom
- Cancer
- 2 living children
- 3 goats
- No water, belongings taken away by the clearance team during flood





Government: administrative and managerial elites



<u>Trusting that modern organizations work</u>	<u>Number of respondents, %</u>
<i>Public sector allocates by law</i>	
Will evacuate - police will help to protect house from burglary during the flood	0
Social security office will pay an entitlement if you claim	0
Local administration will pay the compensation for the flood	0
However, have applied for compensation	100
The water will be pumped out by the civil protection centre	0
State will provide transportation during the flood	0
<i>Market mechanisms</i>	
Purchase flood insurance	not available
Borrow a loan from the bank to invest in reducing vulnerability	not available
Buy a house in a different area	not available
<u>Seeking informal alternatives</u>	
<i>Respondent engages in non-monetized production</i>	
Grows food (when the conditions exist, depends on the flood season)	100
Relies on friends and relatives for borrowing money	100
Rely on the neighbours for transportation, buying groceries, waste disposal	82
Individual household risk reduction measures (Table 1)	100
Ready to contribute personal savings to build a dam but does not trust the Government in spending their money for the right cause (point brought up by the respondents independently)	24
<u>Personalizing</u>	
<i>Respondent begs or lobbies official controlling allocation</i>	
Keep demanding action at the local administration for the compensation to get paid	65
Beg officials to pump the water, raise the street, put the lamppost on the street, cut the trees (etc)	53
Delegate the HSC to represent the above needs of the community	38
<u>Engaging in anti-modern tactics</u>	
Use connections for getting any of the above done	32
Pay bribes (this also includes collective bribes)	5
Adopt a passive, socially excluded attitude	
Participation in street committees is pointless, they work only for their own benefit	70
Everything measures in money	60
We are forsaken part of the city	88

“we are ready to pay a collective bribe... but you have to know somebody to pay the bribe to” (The Head of one of the street committees).



Conclusions

2007

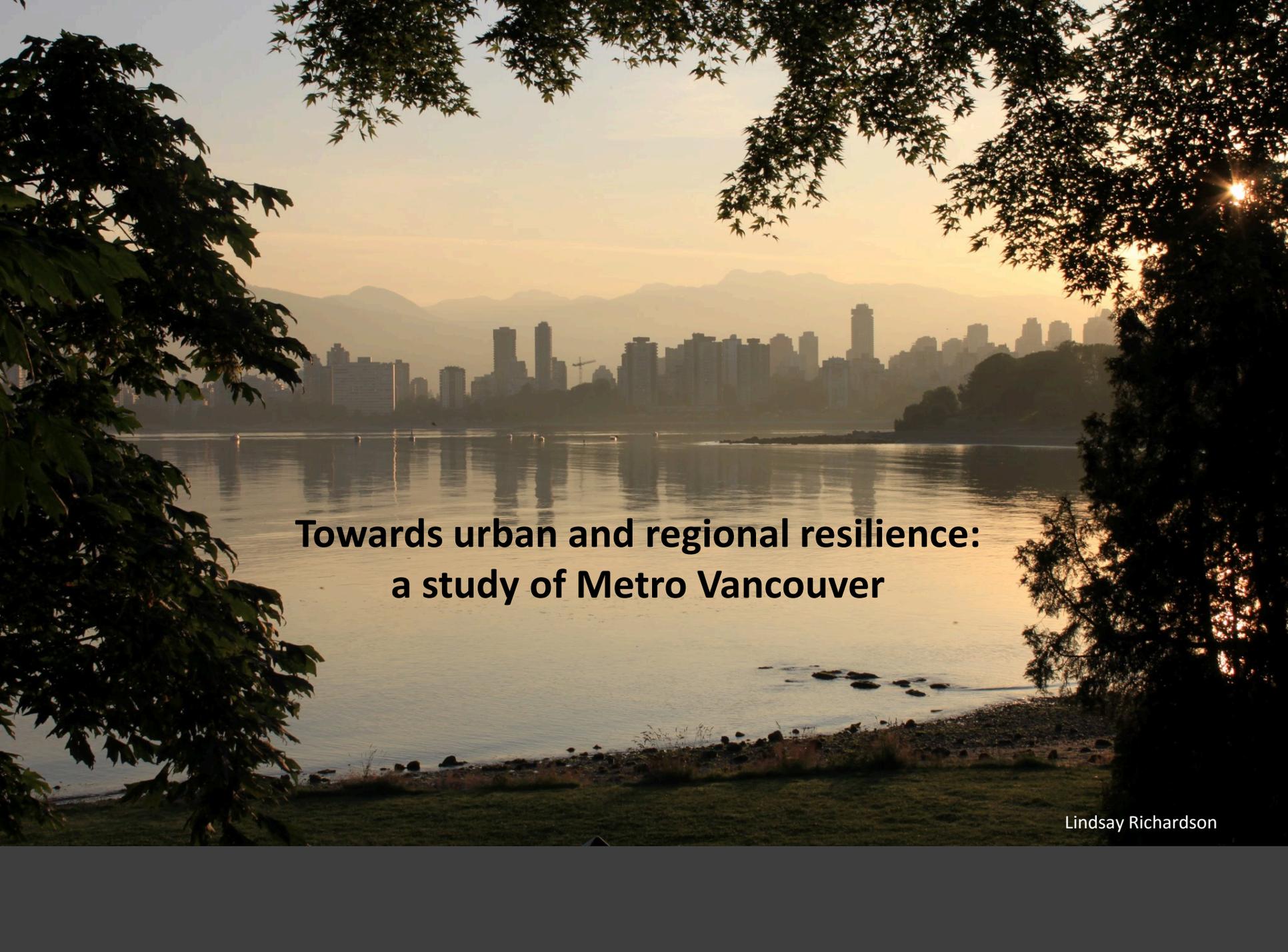
- Hourglass express itself even spatially
- Vulnerability as a function of economic poverty, social isolation and political marginalization was analyzed through the flow of information and resources between the state and society, which allowed identification of mediating institutions.
- The analysis shows how top-down and bottom-up mediating institutions that have stated aims of overcoming the hourglass and so increasing resilience among the most vulnerable members of a marginalized community stumble upon the blockages of institutional inertia, path-dependency and inconsistency in the legislative framework.
- Women leaders are trapped and supporting the system that continuously marginalizes them.

2014

- Flood hazard serves a protective function
- Further distancing between the marginalized and the state
- What is local?
 - Transnational capitalist colonialism: flood/natural hazards turning into chemical hazards
 - Anti-Muslim sentiments and implications for local improvements and leadership
 - ...

Questions and thoughts

- Of What to What? For Whom? How to measure in informal/marginalized communities that are not part of official statistics/data?
- Resilience is contextual. How do measurement methodologies reflect this contextual dimension? The politics of resilience, the role of corruption, the implications of regime changes, history?
- Resilience as a process rather outcome: how are procedural dimensions addressed in measurements?
- How does 'urban resilience' connect to 'regional resilience'?
- Quinlan et al 2015: "Measuring and monitoring a narrow set of indicators or reducing resilience to a single unit of measurement may block the deeper understanding of system dynamics needed to apply resilience thinking and inform management actions."
- Resilience assessment and measurement can be complementary.
- (i) the approach aligns with how resilience is being defined,
- (ii) the application suits the specific context and
- (iii) understanding of system dynamics is increased. Ongoing efforts to measure resilience would benefit from the integration of key
- principles that have been identified for building resilience."

A scenic view of a city skyline across a body of water at sunset. The sun is low on the right side, creating a warm, golden glow. The city skyline is silhouetted against the bright sky, with several tall buildings visible. The water in the foreground is calm, reflecting the city and the sky. The scene is framed by dark, leafy trees in the foreground, with some leaves visible in the top corners. The overall atmosphere is peaceful and serene.

**Towards urban and regional resilience:
a study of Metro Vancouver**

Lindsay Richardson

Urban Resilience in Practice



New Orleans: “Adapt to Thrive”



San Francisco: “Earthquakes, SLR + Housing/Inequality Crisis”



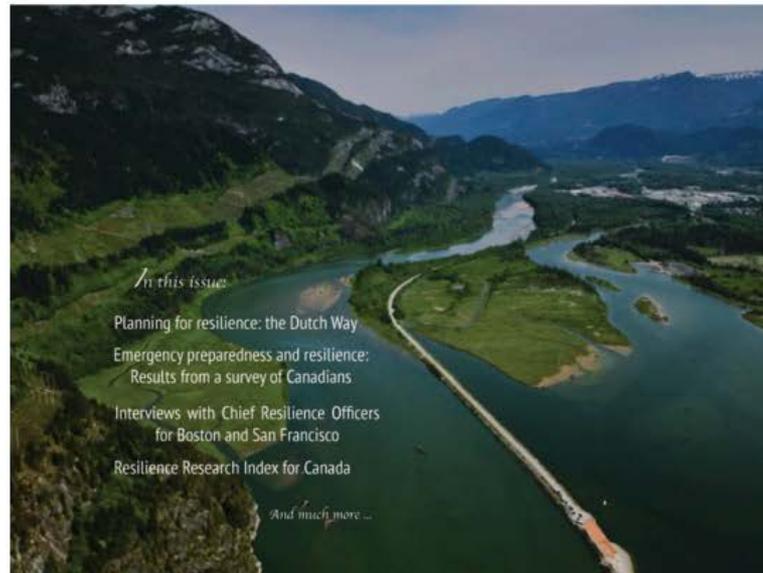
Boston: “Emergencies + Racism”

HAZNET

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Special issue : RESILIENCE



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Planning for resilience: the Dutch Way

Emergency preparedness and resilience:
Results from a survey of Canadians

Interviews with Chief Resilience Officers
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