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In the field of urban reconstruction, there is an urgent need to address pragmatic issues such as employment creation, design flow coordination, adaptation mechanisms, urban form control, prototyping design, and concept visualization, going beyond the geopolitical, societal, urban, and architectural debate that concerns the current post-war situations. The proposed strategy incorporates all these aspects, attempting to lay the foundations for a lasting peace.

Edited by Urbicide Task Force *Proactive Reconstruction*

Quaderni Iuav. Ricerche

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Contents

Andrea Fantin, Elisa Vendemini

Employment. Creating Job in Post-conflict Reconstruction

Beyond the post-war economic model, post-conflict reconstruction plays a crucial role in the economic restoration and social stability of war-affected regions. Violent conflicts leave local economies in devastation, characterized by elevated unemployment rates, fractured business networks, and extensive infrastructure destruction[1]. Conventional rebuilding paradigms often focus on macroeconomic initiatives, like massive infrastructure development financed through external lending. Although these initiatives strive to expedite physical reconstruction, they frequently withhold local populations from economic engagement, with most financial resources directed towards international firms and materials[2]. The end result is that a very small percentage – typically 10-15% at most – of the full investment is retained in the jeopardized geographical area, severely constraining the chances for local economic recovery[3]. This top-down approach focuses «on big-size intervention»[4], emphasising speed and efficiency, and prioritising large-scale infrastructure projects which primarily benefit large company and import-dependent supply chains.

In contrast, the Local Economic Development (LED) path to reconstruction offers a more sustainable and inclusive approach. Utilizing local labor, staggering small-scale industrial production, and harnessing regional resources contributes to long-term socioeconomic resilience[5]. This model builds on participatory planning, a bottom-up approach, where work and community needs are developed collaboratively by the

1 E. Date-Bah, *Jobs after War: A Critical Challenge in the Peace and Reconstruction Puzzle*, International Labour Office, Geneva 2003, p. 193.
2 Ivi, p. 243.
3 D. Olawuyi, *Local Content and Sustainable Development in Global Energy Markets*, Cambridge University Press, Cambridge 2021; S. Grima, O. Sirkeci, K. Elbeyoglu, *Global Street Economy and Micro Entrepreneurship*, Emerald Publishing Limited, Bingley 2020.
4 B. Albrecht, J. Galli, *Cities Under Pressure: A Design Strategy for Urban Reconstruction*, Architangle, Berlin 2023, p. 83.
5 E. Date-Bah, *Jobs after War: a Critical Challenge in the Peace and Reconstruction Puzzle*, cit., p. 193.

businesses, local governments, and civil society that needs the economy to be rebuilt while addressing the short- and long-term needs of affected communities[6]. LED not only hastens recovery; when reconstruction is focused on the benefit of local businesses and local workers, it builds up social capital and institutional trust[7].

The analysis examines the limitations of top-down reconstruction models and highlights the potential for bottom-up strategies led by local communities towards maximizing employment opportunities at the local level and achieving economic self-sufficiency. Hence, the analysis demonstrates the potential of bottom-up, participatory reconstruction to drive economic revitalization and promote long-term resilience. This not only shifts towards localized, inclusive economic strategies but also reduces dependence on foreign aid while fostering economic independence and social stability[8].

Reconstruction is not only a process of rebuilding infrastructure, but also an economic empowerment and long-term development strategy. Thus, identifying a holistic, locally driven reconstruction model – which is focused on job creation, economic diversification, and community participation – becomes crucial to sustainable recovery, solidifying a politically connected post-conflict society that is strengthened, resilient, and self-sustained economically.

Shortcomings of Conventional Reconstruction Approaches

Traditional post-conflict reconstruction models have been largely characterized by top-down approaches run by international agencies, foreign states and multinational corporations. These models prioritize speed and efficiency but often overlook the

6 Ivi, p. 197.
7 Ivi, p. 198.
8 World Bank, *Twenty-Seven Months - Intifada, Closures, and Palestinian Economic Crisis: An Assessment*, World Bank, May 2003; Y. A. Sayigh, *The Palestinian Economy under Occupation: Dependency and Pauperization*, «Journal of Palestine Studies», 15 (4), 1986, pp. 46-67.

question of long-term economic sustainability in conflict-affected areas. The overwhelming focus on large-scale infrastructure projects, which are almost always funded through international loans and grants, prioritizes rapid physical recovery while rendering local populations passive beneficiaries rather than active agents in their own recovery. Such an exclusionary dynamic leads them to economic stagnation, further reliance on foreign development aid, and entrenched social instability: «there has been a growing awareness that aid and relief interventions in the context of conflict have the potential to do great harm as well as good»[9].

A central flaw in the reconstruction from the top-down paradigm is the reliance on external contractors, imported materials, and foreign expertise. Though foreign aid can speed up reconstruction efforts, few of its economic dividends ever filter down to the local population. Other, these big infrastructure projects will be awarded to foreign corporations, bringing in a combination of labor and resources – leaving little for local business users and workers to have any input in, or gain out of, the process. This limits the development of local industries, resulting in increased unemployment and a narrowly confined self-sustainable economy. Statistics show that during many post-war reconstruction efforts, a small percentage of the monetary resources – typically under 15% – actually stays within the affected area. Most of the fund is swallowed by foreign contractors, imported materials, and international logistics[10]. This capital flight deprives an economy of funds needed for long-term rejuvenation, entrenching patterns of poverty and reliance.

In addition, the nature of major construction projects is often one of inflexible schedules leading to inefficiencies in progress and timetable. Bureaucratic bottlenecks linked to international financing, planning and coordination often delay the reconstruction, leaving war-ravaged communities without

9 S. Barakat, *After the Conflict: Reconstruction and Development in the Aftermath of War*, I. B. Tauris, London 2010, p. 8.
10 D. Olawuyi, *Local Content and Sustainable Development in Global Energy Markets*, cit.; S. Grima, O. Sirkeci, K. Elbeyoglu, *Global Street Economy and Micro Entrepreneurship*, cit.

vital infrastructure and services for considerable long periods. The frequent subdivision of these projects leads to their fragmentation and the establishment of hierarchies that delay the processes of reconstruction, as decisions are made by distant leaders with little understanding of the needs of the most affected communities.

Post-conflict economies often suffer from human capital flight, as educated workers leave violence in search of stability. This mass exodus undermines the technical knowledge and institutional capacity necessary for reconstruction[11]. Conventional reconstruction approaches, rather than training up vulnerable local workers with this knowledge through targeted capacity-building initiatives to address this deficit, tends to replace them with direct labour from international or national experts where local knowledge is subjugated to a support role rather than being a force for real recovery. Such outsourcing of knowledge and labor maintains economic marginalization, stymying self-reliance in communities ravaged by war.

Top-down reconstruction approaches also fail to build with informal economies, which become vital survival strategies in post-conflict environments. Formal economic structures are frequently destroyed during and after conflicts, as a governance collapse decreases the reliability of supply chains, necessitating communities to find alternative economic mechanisms (e.g., bartering, local trade, self-organized networks, etc.) to meet daily needs[12]. These trades, while informal in nature, contribute to the circulation of goods and services in local economies, even with the collapse of formal market environments, demonstrating a resilience in local economic systems during times of crisis. But despite their significance, informal economies are often neglected in formal reconstruction plans that tend to favor large-scale interventions over locally driven economic recovery. The result is that informal trade is too often dismissed or repressed through

11 E. Date-Bah, *Jobs after War: A Critical Challenge in the Peace and Reconstruction Puzzle*, cit., pp. 268-270.

12 D. Lewis, G. Kebede, A. Brown, P. Mackie, *Surviving, Managing, Thriving: The Informal Economy in Post-Conflict Cities*, UN-Habitat 2019, pp. 7-8.

reconstruction efforts instead of being incorporated into formal development strategies, failing to take advantage of opportunities to utilize existing social and economic structures.

The overwhelming dependence on large-scale, foreign-led interventions creates long-term economic distortions as financial resources are redirected toward externally spurred initiatives that suppress local entrepreneurship and block innovation moulding war-affected territories, from forming domestically driven economic frameworks. This model compounds external dependency, as national governments become ever more dependent on foreign aid, capital and know-how, and fail to create self-sustaining economic systems.

Historically, local economies thrived based on integrated production networks in addition to the workers, the industries, and the regional markets, all working collaterally. When reconstruction efforts ultimately fail to adequately restore these linkages, post-war economies become highly susceptible to external shocks, paralyzed by the absence of the structural foundations for sustainable patterns of growth and enduring economic resilience.

A Bottom-Up Model for Sustainable Reconstruction

In light of the above, post-conflict reconstruction efforts must necessarily shift from a traditional top-down approach to a more inclusive, community-led, bottom-up strategy. The bottom-up approach empowers local actors and decentralized decision-making, which in turn leads to resilience, cultural identity, place attachment, and most importantly, faster economic recovery, ultimately contributing to stability.

A bottom-up strategy promotes and aims to manage a process rather than a project. An iterative and adaptive process that sees the need for an undefined end result as its strength, allowing flexibility for continuous, creative and unpredictable change, rather than the pursuit of rigidly planned outcomes. Local communities are not just beneficiaries but active co-creators, able to shape their urban context through self-activation and direct participation in decision-making

processes. This approach further incorporates the cultural, social and economic aspects beyond just spatial planning to align reconstruction with local needs and aspirations.

By managing incremental interventions, it is possible to overcome bureaucratic inefficiencies and imbalances in the distribution of resources, and to create social and economic stability. Indeed, bureaucratic inefficiency is the problem faced by large-scale projects, which require extensive planning, coordination and approval processes that can lead to significant delays. These problems are compounded by the fragmented and uneven nature of development according to the top down approach where large investment companies are involved, they tend to concentrate in capital cities or economically strategic areas, leaving rural and peripheral regions largely neglected.

The imbalance in resource allocation further widens socio-economic discrepancies, leading to internal migration or expatriation, wherein citizens seek opportunities elsewhere, leaving behind a gaping void in undeveloped locations. On the other hand, the arrival of these displaced groups places significant pressure on the social and economic fabric of urban centres, contributing to a cycle of unrest and impoverishment.

Consequently, a fundamental shift in financial instruments is necessary to facilitate an upsurge reconstruction strategy.

> Reconstruction and institutional rehabilitation mark the transition from an emergency to a development situation, geared to the emergence and strengthening of a democratic order and a market economy. Microfinance, as a system of self-reliant local financial institutions can play a crucial role in the transition from relief to reconstruction and sustainable development[13].

13 M. Hudon, H. D. Seibel, *Microfinance in Post-disaster and Post-conflict Situations: Turning Victims into Shareholders, Working Paper, 8,* Universität zu Köln, Arbeitsstelle für Entwicklungsländerforschung (AEF), Köln 2007, p. 6.

This allows for the recovery of local workers who rebuild their houses and businesses but also provides with a bottom-up support for smaller industries who produce materials and services necessary for reconstruction. By ensuring that financial resources circulate within the local economy, this approach promotes self-sufficiency, reduces dependence on external actors and generates sustainable economic benefits[14]. This type of microfinance benefits all those alternative mechanisms of the informal economy that emerge to ensure the survival of the population in times of conflict, when formal economic structures collapse and supply networks break down. In these conditions, people resort to bartering, sharing and local trade, creating decentralised exchange networks that ensure the circulation of goods and services despite the collapse of formal economic channels[15]. Since this informal economic sector does not strictly respond to crisis conditions but rather tends to expand and grow in the post-conflict phase, it would be a good point of departure to regenerate those business activities to make them more sustainable and create the base for future development and job creation[16]. Whereas post-conflict reconstructive efforts are faced with the task of harnessing the strengths of the informal economy and gradually building it into the formal sector with fair wages, legal protection and sustainable economic growth. These include micro-credit programmes, vocational training and simplified business registration procedures will help ease the transition from informal to formal employment, which will help to build a more stable and resilient economy in the long term.

> It has repeatedly been argued that the role of development is not to develop things but to develop people, aiming at the advancement of the whole human being: spiritually,

14 S. W. Johnson, *Post-Conflict Reconstruction, Microfinance and Democratic Engagement*, «Peace Economics, Peace Science and Public Policy», 24 (3), 2018, pp. 1-12; P. De Greiff, *The Handbook of Reparations*, Oxford University Press, New York 2006.

15 D. Lewis, G. Kebede, A. Brown, P. Mackie, *Surviving, Managing, Thriving: The Informal Economy in Post-Conflict Cities*, cit., pp. 7-8.

16 *Ibidem.*

morally and materially. Given this breadth of definition, and the fact that wars not only destroy existing human and material assets, but also preclude new investments and the development of a society's skills, capacities and resources, it is apparent that there exists a strong relationship between reconstruction and development[17].

However, years of destruction and conflict make it difficult to recruit and retain workers, especially skilled professionals. Furthermore, long-term instability undermines education systems and obstructs the training of a new generation of workers. This is where targeted investment in skills development and vocational training must play its role[18]. «Reconstruction Laboratory»[19] helps share technology and practical knowledge, while enabling local workers to master new skills key to implementation. These efforts can be a forceful engine of growth over the long-term by engaging local communities in the reconstruction process. International organisations and private sector actors, such as foreign firms, can contribute to rebuilding professional expertise and practices by transferring knowledge and technical expertise directly to local people. «Throughout the whole recovery process, sustainability is pursued in many ways. First, capacity building is an integral part»[20]. Beyond the immediate goals of relief and reconstruction, a bottom-up approach offers the opportunity to redefine development paradigms once reconstruction is complete. By prioritising local decision-making and self-reliance, communities take an active role in shaping their own futures, helping to strengthen local governance structures and thus greater stability and peace.

17 S. Barakat, *After the Conflict: Reconstruction and Development in the Aftermath of War*, cit., p. 259.

18 E. Date-Bah, *Jobs after War: a Critical Challenge in the Peace and Reconstruction Puzzle*, cit.

19 B. Albrecht, J. Galli, *Cities Under Pressure: A Design Strategy for Urban Reconstruction*, cit., p. 105.

20 ICCROM, ICOMOS, *Analysis of Case Studies in Recovery and Reconstruction,* Case Studies Vol. 2, ICOMOS-ICCROM, 2020, p. 28.

Reconstruction of Gaza, Towards Sustainability and Economic Growth

After one and a half years of conflict, from 7 October 2023, most Palestinians in Gaza are living in poverty.

By the end of the third quarter of 2023, unemployment in Gaza was 45.1 per cent. The International Labour Organization (ILO) estimated that 61 per cent of employment has been lost compared to pre-conflict levels, equating to 182,000 jobs. By December 2023, unemployment reached 79.3 per cent[21].

To address this humanitarian and economic disaster, we need a strategy that focuses not only on immediate relief but also on laying the groundwork for long-term sustainability, resilience, and self-sufficiency.

Our vision for reconstruction is firmly rooted in sustainability and addresses all aspects of the reconstruction process. This includes sustainable urban and architectural planning, social and economic sustainability. Economic sustainability depends on a strategic approach to urban development, where new economic zones, be they industrial, commercial or agricultural, are developed in a financially sustainable manner. The priority must be to create as many local employment opportunities as possible, enabling Gaza to build a self-sustaining economy and reduce its dependence on external aid. Given Gaza's fragile environment, urban planning in Gaza must carefully consider natural components such as building orientation, prevailing winds, shading and natural lighting to optimize energy efficiency.

21 United Nations Conference on Trade and Development, *Preliminary Assessment of the Economic Impact of the Destruction in Gaza and Prospects for Economic Recovery*, 2024, p. 6, available online (www.unctad.org/publication/preliminary-assessment-economic-impact-destruction-gaza-and-prospects-economic-recovery#anchor_download); United Nations Development Programme, *New UN Report: Impacts of War Have Set Back Development in Gaza by as Much as 69 years*, October 2022, available online (www.undp.org/press-releases/new-un-report-impacts-war-have-set-back-development-gaza-much-69-years).

Social sustainability, by contrast, is about ensuring the equitable access to resource, to job and essential services. The housing crisis, for example, provides a modern basis for cultural and educational development making a more complete urban picture.

To support this vision of immediate recovery and long-term growth, it is proposed that fiberglass (pultrusion) factories be established in Gaza. These factories would provide urgent, short-term employment through the production of building materials, but would also lay the foundations for sustainable job creation. By producing materials locally, Gaza could reduce its dependence on imports and external aid, thereby strengthening its economic resilience and promoting self-sufficiency. Key to this initiative is a focus on labour-intensive sectors to ensure that as many people as possible are involved. This ensures that Gaza's workforce is directly involved in rebuilding its own future, fostering economic resilience and reducing reliance on outside support.

Gaza's economy has historically been tied to access to neighbouring markets, international remittances and aid from global organisations, resulting in a deeply unbalanced economy where a small elite holds the wealth and the majority - especially the youth - face chronic unemployment. In addition, low levels of education have hindered the development of high-value industries[22]. However, reconstruction offers an opportunity to reshape Gaza's economy by diversifying its productive base.

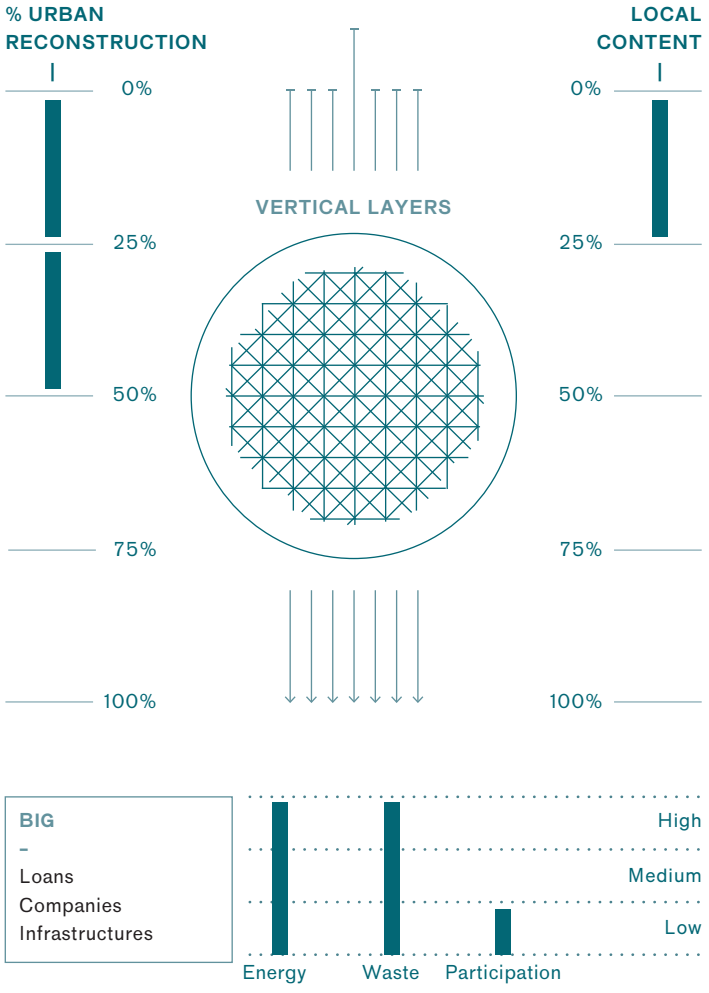
At the same time, the new urban form can incorporate sustainable agricultural production, using waterless solutions to support both local consumption and exports. Beyond food production, agricultural products could also be converted into building materials through biochemical processes, creating additional economic opportunities.

The key to a truly sustainable transition lies not only in reconstruction, but also in a technological leap forward. In conflict-prone and economically fragile regions, technological progress often lags behind due to limited resources and access to global innovation. However, reconstruction offers a unique opportunity to bypass traditional development stages and directly adopt cutting-edge technologies that improve sustainability, efficiency and resilience. However, technological advances must be implemented with a deep understanding of their social impact. While innovation can empower communities, it can also exacerbate inequalities if not managed inclusively. Technology should therefore be used to promote collective well-being, improve cooperation and prevent social fragmentation. To achieve this, reconstruction efforts should prioritise maximising local employment through a network of small construction firms and service providers. Automation must be integrated with irreplaceable human labour, and innovation should be driven by a careful respect for both natural and social resources.

Gaza offers much more than the restoration of buildings; it offers a unique opportunity to redefine Gaza's future by creating a self-sustaining, resilient economy. By integrating sustainable urban planning, local job creation and technological advances, Gaza can rebuild not only its cities, but also its economy and communities, ultimately fostering a future where local people drive their own development.

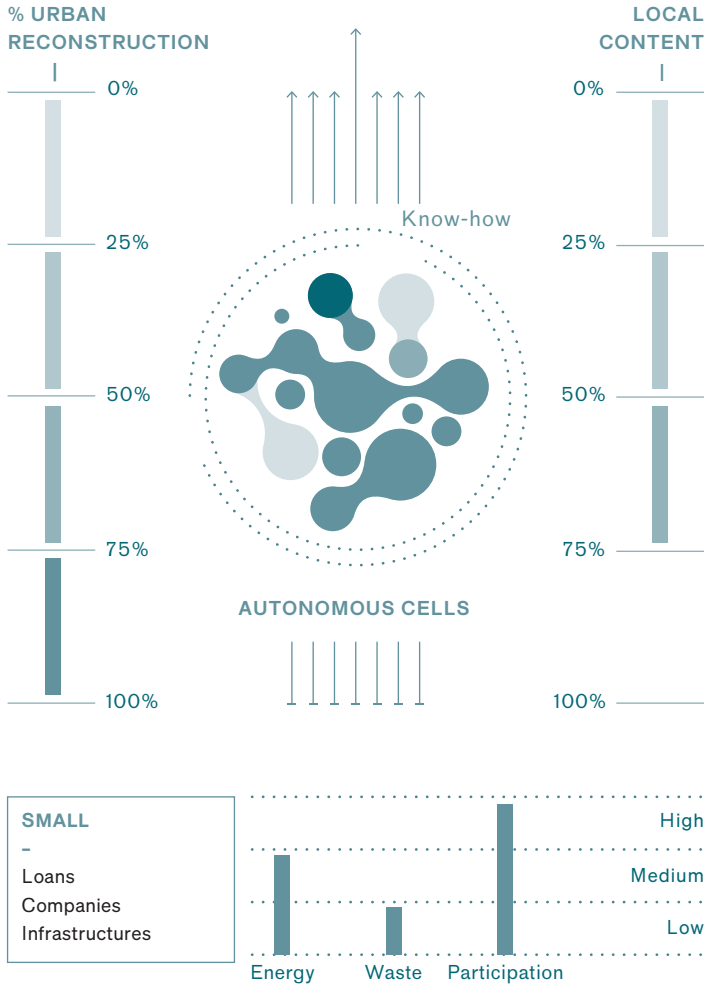
22 World Bank, *Twenty-Seven Months : Intifada, Closures, and Palestinian Economic Crisis: An Assessment*, cit.; Y. A. Sayigh, *The Palestinian Economy Under Occupation: Dependency and Pauperization*, cit.

Top Down Approach
Vertical Layers



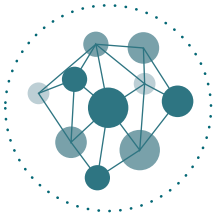
Urbicide Task Force, *Top-down VS Bottom-up Approach*, Cities Under Pressure research project, Venice, 2023.

Bottom up Approach
Autonomous Cells



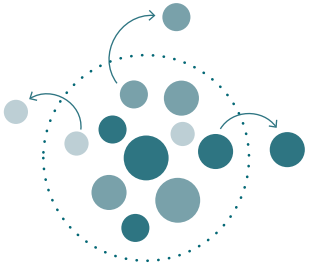
Urbicide Task Force, *Top-down VS Bottom-up Approach*, Cities Under Pressure research project, Venice, 2023.

Advantages
Autonomous Cells Bottom-up Strategy

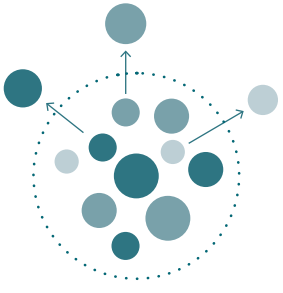


Coordination
—
The process involves citizens, institutions, productive chains, and communities in the design process, thus reducing blind spots.

Control
—
The cellular features of the strategy allow for immediate measurability and adaptability in terms of materials, techniques, typologies, etc.

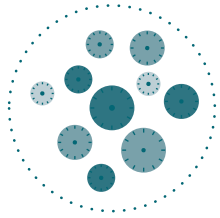


Emulation
—
The design solutions are immediately replicable in other cells and neighborhoods, learning from mistakes and enhancing positive choices.

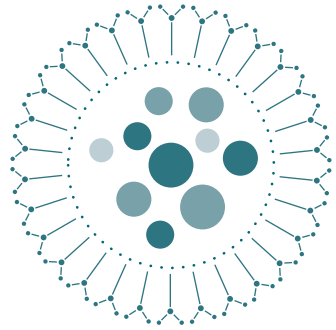


Scalability
—
The strategy is applicable at different scales (building, cell, city territory) through the application of the same concepts and operative tools.

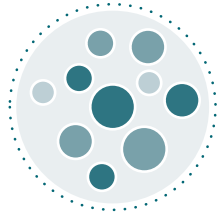
Urbicide Task Force, *Autonomous Cells Bottom-up Strategy/Advantages*, Cities Under Pressure research project, Venice, 2023.



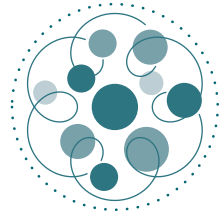
Secure time frame
—
The strategy allows one to assess time frames by considering multiple variables and by setting goals for short, medium, and long periods.



Involvement
—
The local communities can participate actively in self-produced reconstruction, activating a laboratory of reconstruction for the triggering and control of design processes.



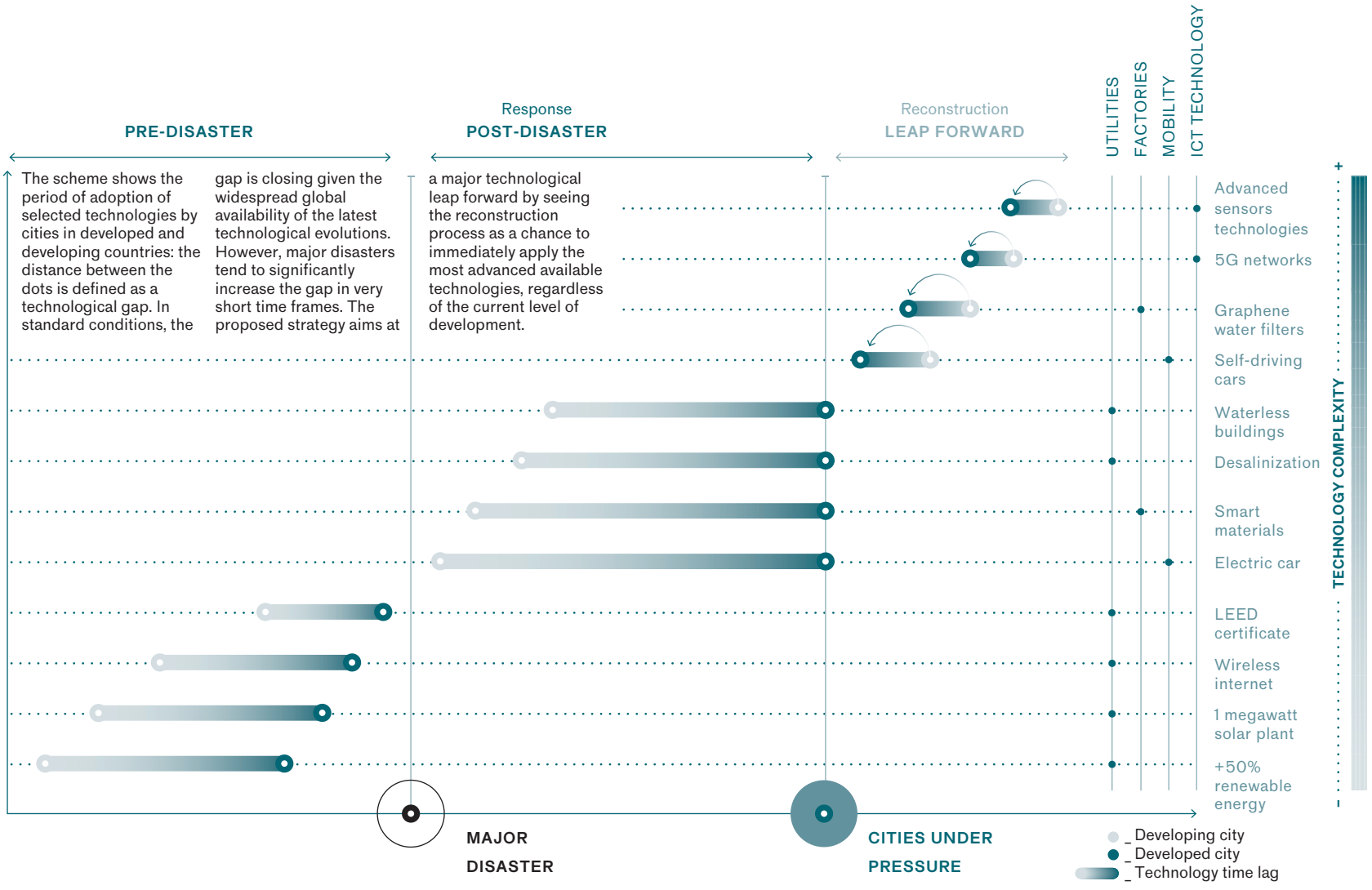
Place attachment
—
The emotional bond between person and place can be an engine for local reconstruction, ensuring the reestablishment of material and immaterial heritage.



Community design
—
A collaborative process allows one to react to internal and external changes and to quickly discharge fixed schemes and recurring errors.

Urbicide Task Force, *Autonomous Cells Bottom-Up Strategy/Advantages*, Cities Under Pressure research project, Venice, 2023.

The Leap Forward
Filling the Technological Gap



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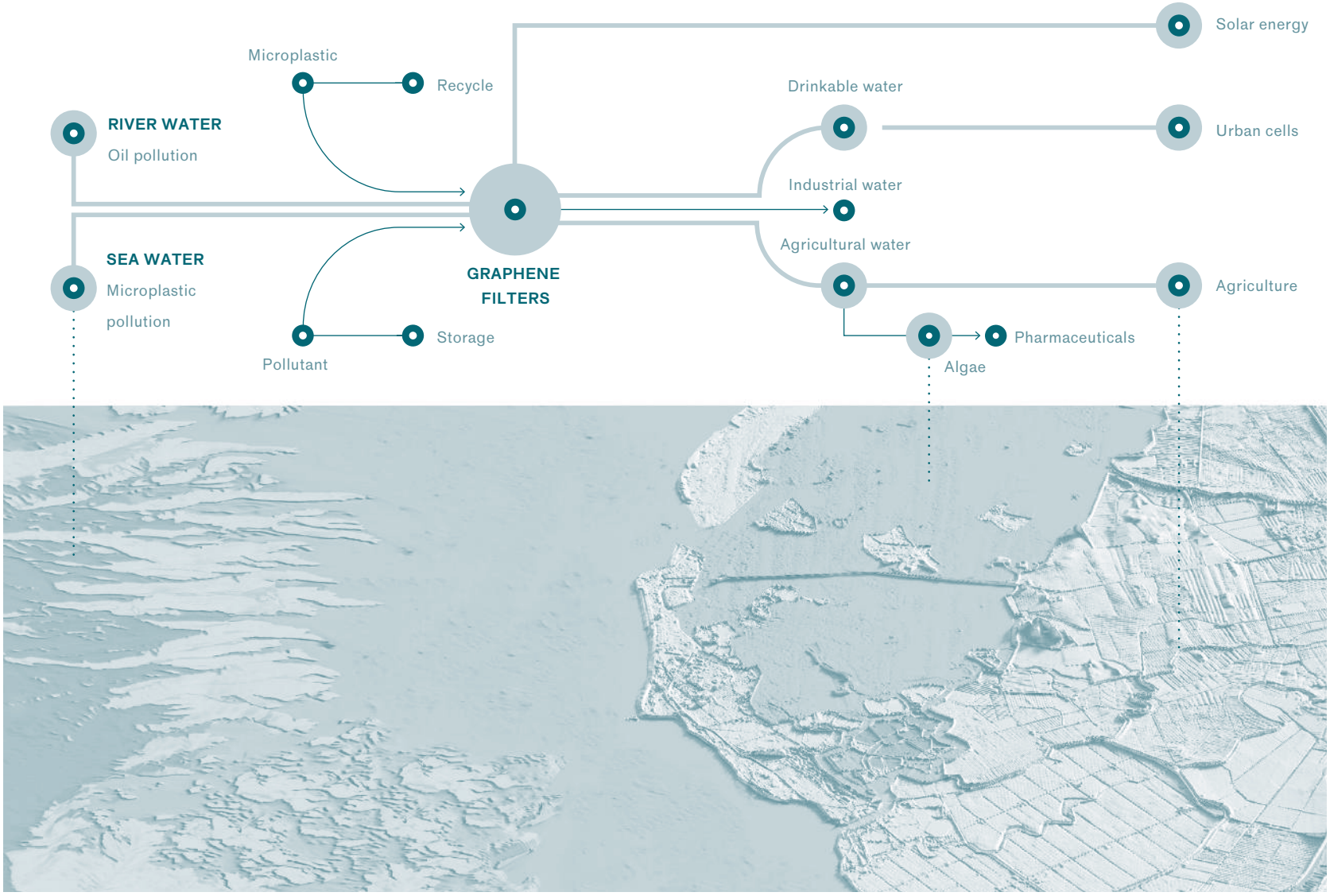
Adaptive Circularity
Waterscape



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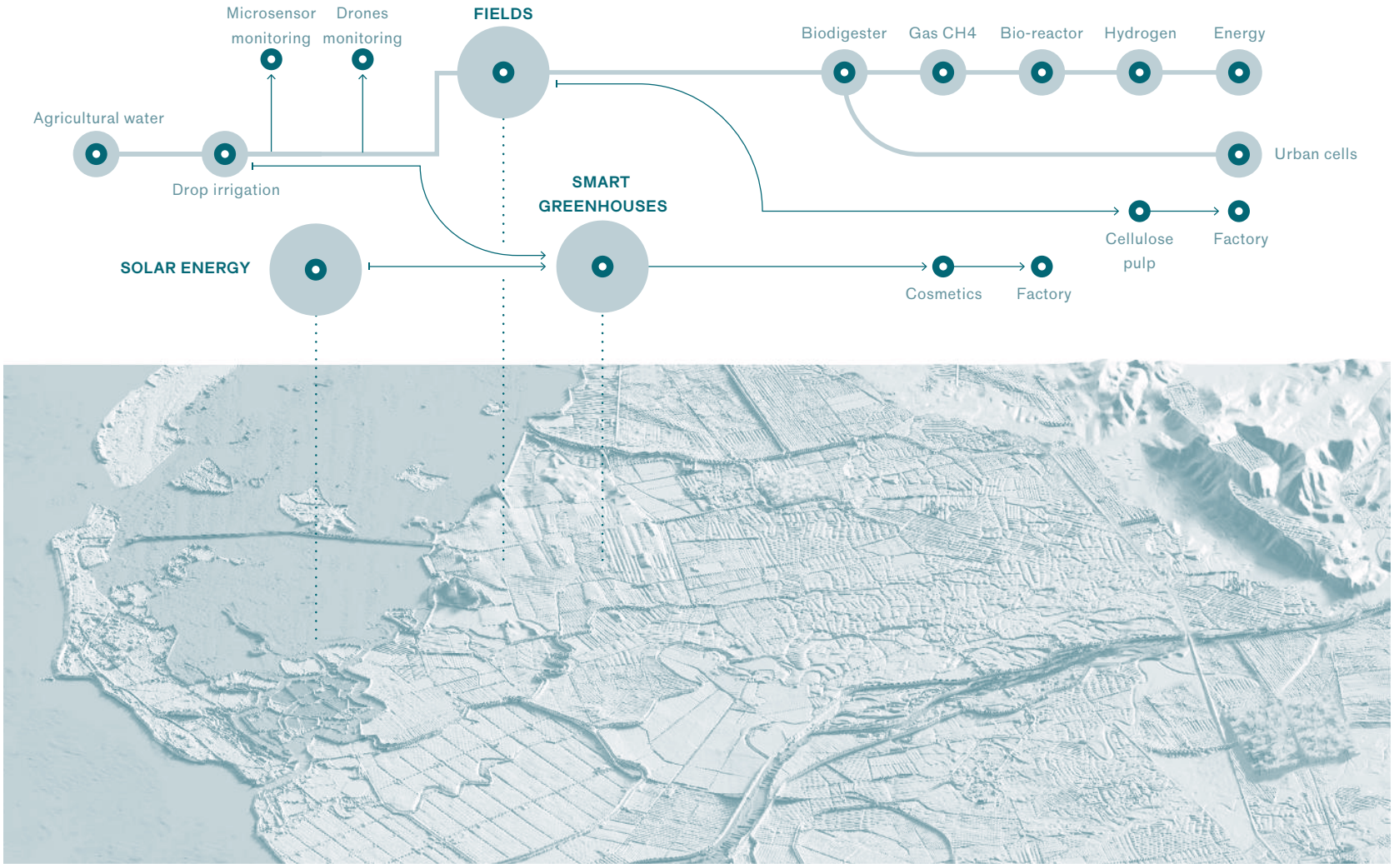

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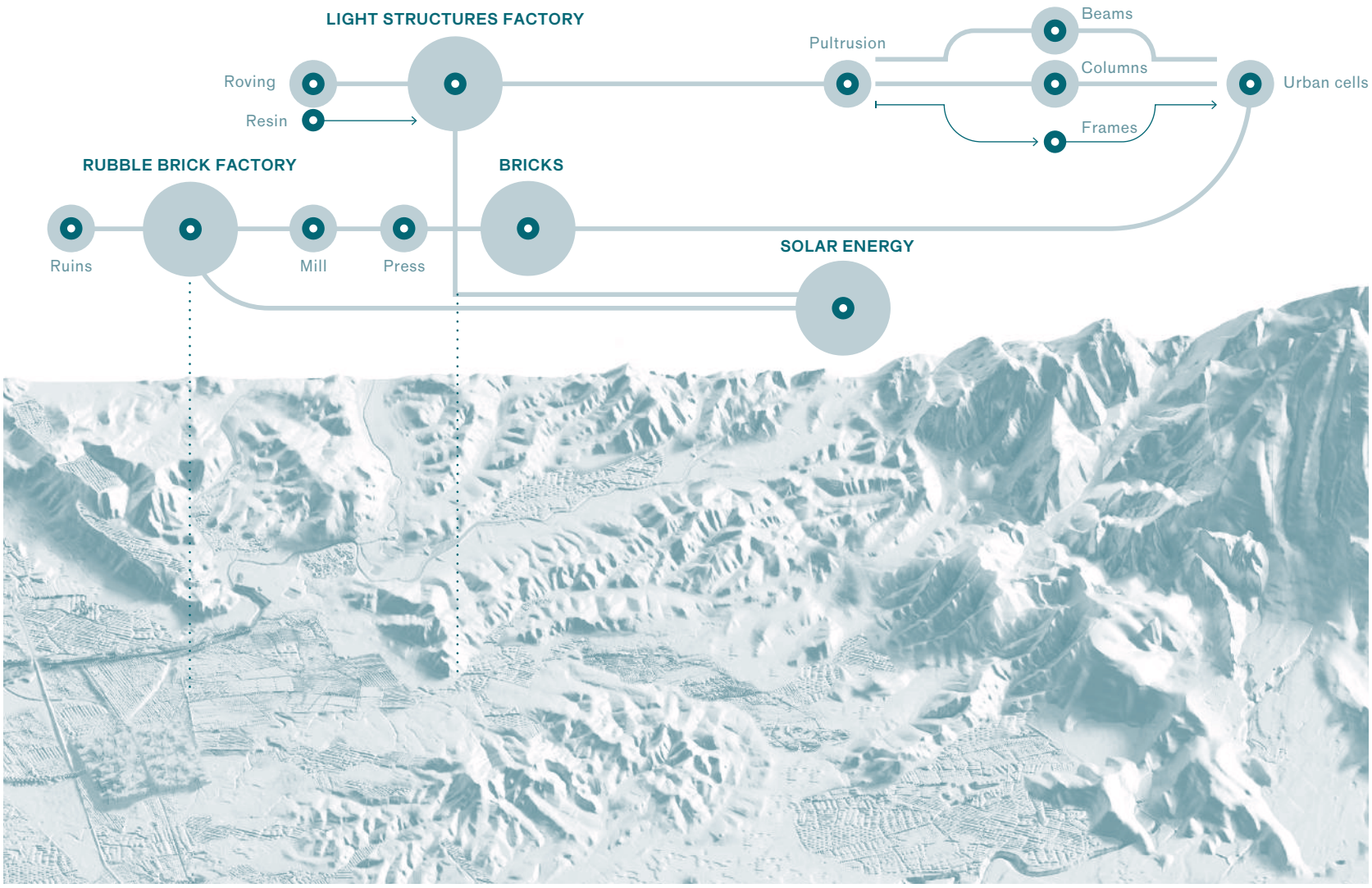

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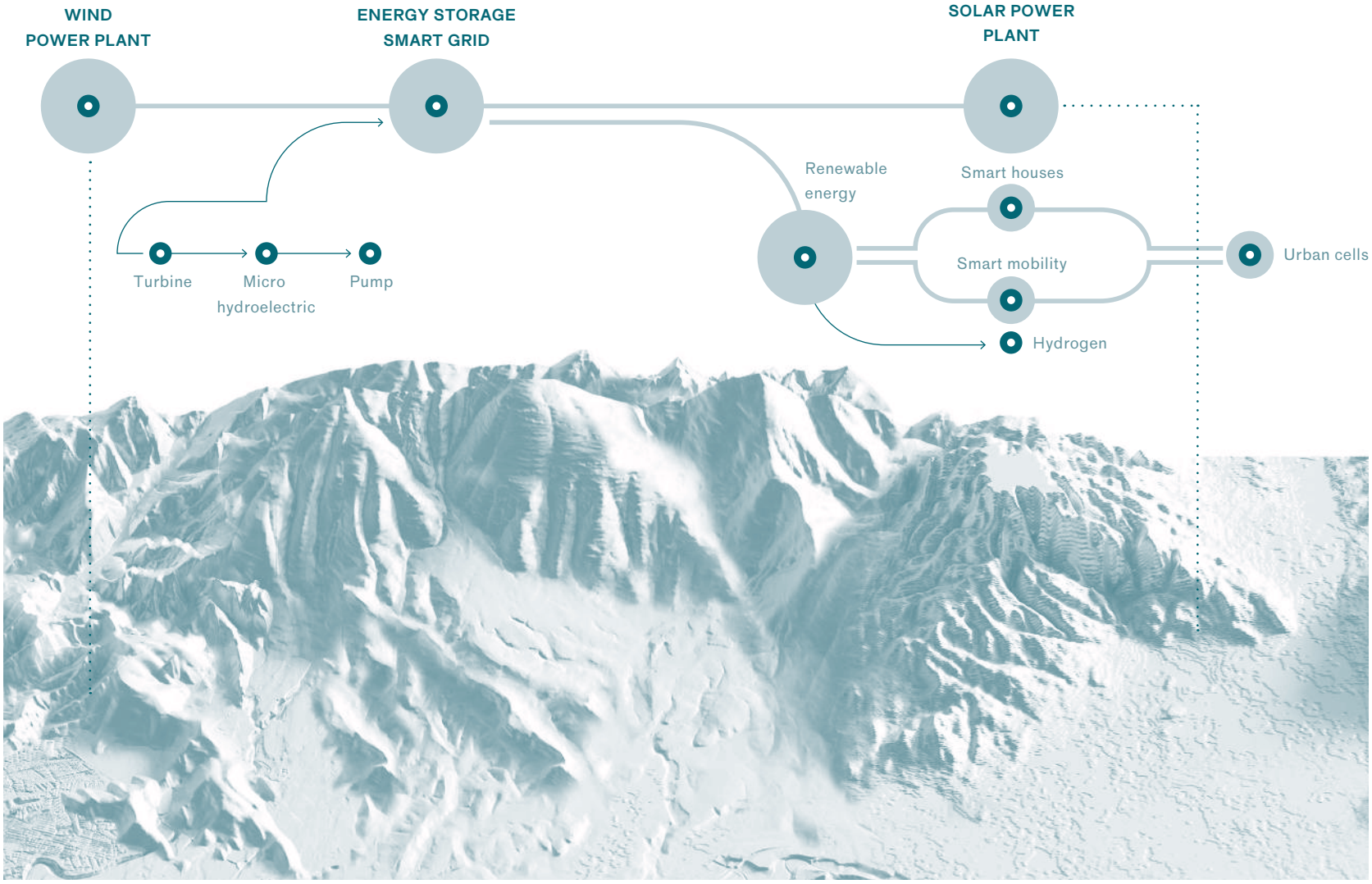
Adaptive Circularity
Energyscape



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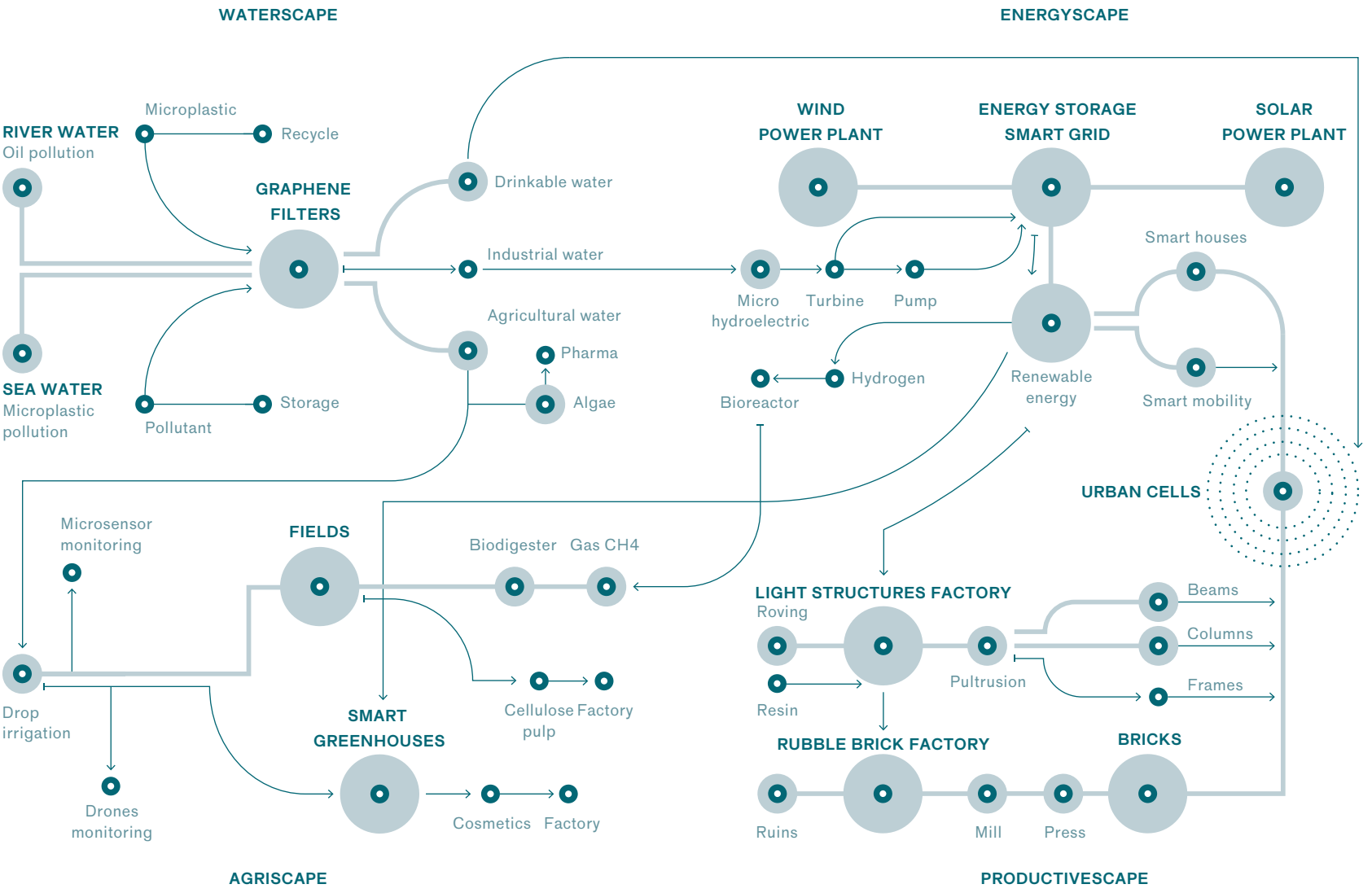
Adaptive Circularity
Waterscape, Agriscape, Productivescape, Energyscape



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