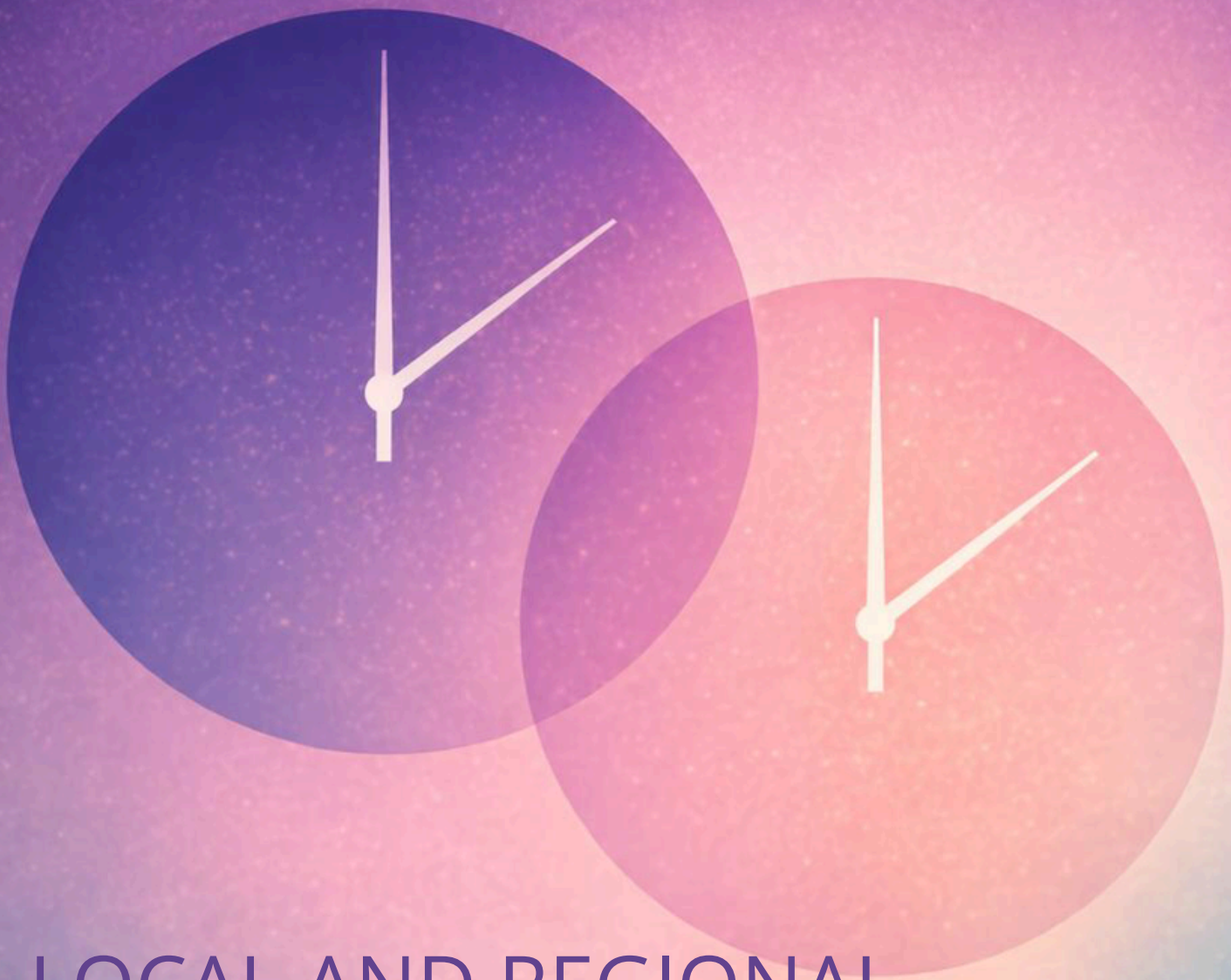

LOCAL AND REGIONAL **TIME** AGENDA

Topic 6

CHRONOCITIES FOR **SUSTAINABLE FUTURES**

Local and Regional Time Network

The **Local and Regional Time Agenda (LRTA)** is a pioneering compilation of time policies implemented by local and regional authorities around the world. It provides an updated compendium of time policies grouped by topic and practical recommendations on how to implement them.

The Agenda is coordinated by the **Local and Regional Time Network**, the international alliance of cities, metropolises, and regions aimed at promoting the right to time where people need it most. It is the main forum to exchange and promote implementable time policies that are already changing daily life for more than 90 million people in Europe, Asia, and the Americas.

More information:
https://timeuse.barcelona/local-and-regional-time-network/

The **Time4All 2.0** project is a two-year initiative (2025-2026) that includes a series of exchanges and workshops in partner cities. Its main objective is to raise awareness about time policies and promote a balanced and sustainable use of daily time, engaging citizens and cities in discussions on the right to time. The project targets 1,800 participants, focusing on young people and women, who are disproportionately affected by time poverty.

Funded by the European Union through the EACEA Agency (European Education and Culture Executive Agency), Time4All 2.0 seeks to explore the value of time organisation while developing policies that enhance health, equality, productivity, sustainability, and civic participation. The project is part of the Citizens, Equality, Rights and Values (CERV) programme and builds upon the achievements of its predecessor, Time4All project, implemented in 2023-2024.

The project is led by the city of Bergamo and Time Use Initiative (TUI), the international organisation promoting time policies and the right to time, which currently runs the Network's secretariat.

More information:

https://timeuse.barcelona/time-networks/time4all-2-0/

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A CHRONOCITY FOR SUSTAINABLE FUTURES

A Blueprint for Designing the Cities of Time

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In the 21st century, urban planning has traditionally focused on space: the optimisation of square meters, green spaces, transit routes' efficiency, and housing density. However, a critical dimension has been largely neglected: time. As we face the challenges of the **24/7 society**, characterized by perpetual lighting and blurred boundaries between rest and labour, the concept of the Chronocity emerges as a necessary pillar for sustainable development. A Chronocity is an urban environment designed not just for the movement of people, but for the biological harmony of its inhabitants.

By integrating the principles of chronobiology (i.e., the science of biological rhythms) into public policy, we can transform our cities into spaces that respect the **right to time** as a fundamental human right, as championed by the Time Use Initiative and the Barcelona Declaration on Time Policies.

The Biological Foundation: The Internal Clock

To design a Chronocity, one must first understand that every citizen is a "walking clock". Deep within the nervous system lies a biological master clock (the suprachiasmatic nucleus) that dictates the timing of sleep, hormone release, and cognitive performance. This internal rhythm must be synchronized daily with the external world through environmental signals known as zeitgebers, the most powerful of which is the cycle of light and darkness.

When urban design ignores these rhythms, it results in social jetlag, a chronic misalignment between biological and social time. The consequences are staggering: research indicates that sleep deprivation and circadian disruption cost developed economies billions of dollars—roughly 1-3% of a country's GDP—due to lost productivity, accidents, and increased healthcare costs.

Designing the Chronocity: Key Strategies

1. Circadian-Friendly Urban Lighting

Modern cities have waged war on darkness. While artificial light provides security and extends economic activity, nocturnal light pollution is a major disruptor of melatonin production and, ultimately, sleep. Designing a Chronocity requires a reengineering of light. Indeed, public spaces should be designed to maximize exposure to natural morning light, which is the fuel that resets the biological clock. Moreover, urban lighting should transition from **blue-rich cool lights during the day** (to boost alertness) to **warm amber tones at night** (to preserve sleep cycles). Finally, streetlights should be designed to project light horizontally or downward, preventing the glow that spills into bedroom windows and disrupts residents' nocturnal rest.

2. Chrono-education: aligning school with biology

Perhaps one of the most urgent design interventions in the Chronocity is the reform of school schedules. During adolescence, the biological clock naturally shifts, creating a delay in sleep and wake times. Forcing teenagers to start school at 7:00 or 7:30 AM creates a **perfect storm of sleep deprivation**, leading to poor academic performance, depression, and increased risk-taking behavior. Therefore, delaying secondary school start times to at least 8:30 AM aligns with the adolescent chronotype, significantly improving cognitive function and mental health.

3. Labor and the 24/7 economy

Economic sustainability depends on a healthy workforce. However, the Chronocity must manage the necessary evils of shift work and rotative schedules. For example, implementing fatigue risk management systems (FRMS) and educational programs for shift workers can **mitigate the risks of metabolic syndrome and cardiovascular disease associated with night work**. Moreover, encouraging flexible hours that **respect individual chronotypes** (whether an employee is an "owl" or a "lark") **enhances productivity and reduces burnout**.

4. The circadian hospital: healthcare in time

A Chronocity treats **health as a temporal variable**. In circadian hospitals, the timing of medical interventions is as important as the intervention itself. Administering medications (such as chemotherapy or blood pressure drugs) at specific times of the day can maximize efficacy and minimize toxicity. Also, hospital rooms should be designed to provide clear light-dark signals to patients, as a robust circadian rhythm is essential for recovery and immune function.

5. Governance: the Geography of Time

Designing a Chronocity also involves larger-scale geographical decisions. For example, most scientific evidence argues for **maintaining Standard Time** (the "winter time") over permanent Daylight Saving Time. Permanent Standard Time ensures that the sun rises as close as possible to the start of social activities, providing the morning light necessary for biological synchronization. Local and regional governments must also address time poverty, particularly among women, who often bear the double burden of paid labor and unpaid care tasks. Sustainable urban planning must ensure that essential services are accessible in a way that minimizes wasted transit time and maximizes restorative time.

Conclusion: Towards a Chrono-equitable Future

The Chronocity is not a utopia; it is a scientific and social necessity. By respecting our internal rhythms, we foster a city that is more productive, healthier, and environmentally sustainable. Sustainability is often defined as meeting the needs of the present without compromising the future. If we continue to compromise our biological time, we are borrowing against the health and well-being of future generations.

Only by respecting our times (and our sleep) will we be able to fulfill our dreams.

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