

Future Cities

Full Text Book



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THE PARTICIPANTS OF THE 2ND INTERNATIONAL URBAN, ENVIRONMENT AND HEALTH CONGRESS FROM OUTSIDE OF TURKEY

	NAME AND SURNAME	TITLE	COUNTRY	PARTICIPATION	PRESENTATION TITLE	SCHEDULED PROGRAM
1	Gabriel GULIS	University of Southern Denmark, Unit for Health Promotion Research	Denmark	Invited Speaker - Curators	“Public health system within a municipal (urban) framework”	17 APRIL 2018 TUESDAY 16:30-18:30
2	Jana KOLLAROVA	Regional Public Health Authority in Kosice, Slovakia	Slovakia	Invited Speaker - Curators	“Public health system within a municipal (urban) framework”	17 APRIL 2018 TUESDAY 16:30-18:30
3	Mariana GOLUMBEANU	International/ National Institute for Marine Research and Development “Grigore Antipa” Constanta, Romania	Romania	Invited Speaker	Inter-Scientific cooperation for the environmental management and sustainable development within the Southeastern Europe and Black Sea region	18 APRIL 2018 WEDNESDAY 10:30-12:30
4	Carmen MAFTEI	Ovidius University of Constanta, Romania	Romania	Invited Speaker	The link of natura conservation and regional development - case study Techirghiol Lake	18 APRIL 2018 WEDNESDAY 10:30-12:30
5	Carolina CONSTANTIN	University Politehnica of Bucharest, Romania	Romania	Invited Speaker	Nitrate in Environment, Food and Health	18 APRIL 2018 WEDNESDAY 10:30-12:30
6	Magda NENCIU	National Institute for Marine Research on Development “Grigore Antipa”, Romania	Romania	Invited Speaker	Stakeholders’ engagement to better support decision-making in climate services: Bridging the gaps between scientists and end-users	18 APRIL 2018 WEDNESDAY 10:30-12:30
7	Rafi RiCH	Founder& CEO of SUITS (SmarterUrban IT& Strategies)	Israel	Invited Speaker	Urban Innvation & Smart Ctiy Initiatives	18 APRIL 2018 WEDNESDAY 15:40-16:20
8	Jens Erik LARSEN	The Father of Eurovelo	Denmark	Invited Speaker	Sustainable Tourism Model - EuroVelo	18 APRIL 2018 WEDNESDAY 16:20-17:20
9	Laska NENOVA	ISCA, International Sport and Culture Association NowWemove European director and creative coordinator	Bulgaria	Invited Speaker	MOVEment Spaces for future cities	18 APRIL 2018 WEDNESDAY 16:20-17:20
10	Dragan GJORGJEV	Policy Advisor, Institute of Public Health Medical Faculty Skopje Republic of Macedonia	Macedonia	Invited Speaker	“EU Scientific Programs In This Area Horison 2020- INHERIT” Air Pollution and Climate Change - among the biggest challenges of the cities	19 APRIL 2018 THURSDAY 09:40-10:30 11:00-12.30
11	Ana Oprişan	SOAS University of London	Romania	Invited Speaker	Challenging Roma Urban Poverty through Social Inclusion	16 APRIL 2018 THURSDAY 16:00-16:40

	NAME AND SURNAME	TITLE	COUNTRY	PARTICIPATION	PRESENTATION TITLE	SCHEDULED PROGRAM
12	Florin MOISA	Resource Center for Roma Communities	Romania	Invited Speaker	Public Representation of Roma People in Post-Communist Romania – The Dynamics of the Media	19 APRIL 2018 THURSDAY 16:00-16:40
13	Giovanni QUARANTA	University of Basilicata - Italy	Italy	Congress participant	Rural Extinction and Agriculture: Rural - Urban Linkages and Short Food Supply Chain: A Multidimensional Win-Win Option	18 APRIL 2018 WEDNESDAY 15:00-16:30
14	Rosanna SALVIA	University of Basilicata – Italy	Italy	Congress participant	Rural Extinction and Agriculture: Rural - Urban Linkages and Short Food Supply Chain: A Multidimensional Win-Win Option	18 APRIL 2018 WEDNESDAY 15:00-16:30
15	Elena V. IONESCU	Ovidius” University of Constanța, Faculty of Medicine	Romania	Congress participant	Balneal Resources Management of Lake Techirghiol in International Tourism Integrator Concept	18 APRIL 2018 WEDNESDAY 15:00-16:30
16	R. E. ALMASAN	Ovidius” University of Constanța, Faculty of Medicine	Romania	Congress participant	Balneal Resources Management of Lake Techirghiol in International Tourism Integrator Concept	18 APRIL 2018 WEDNESDAY 15:00-16:30
17	Elena HOLBAN	National Institute for Research and Development in Environmental Protection - INCDPM	Romania	Congress participant	Considerations on the Impact of Air Pollutants on the Environment and Health	18 APRIL 2018 WEDNESDAY 15:00-16:30
18	Phen SUKMAG	Health System Management Institute, Prince of Songkla University, Songkhla, Thailand.	Thailand	Congress participant	Community Health Impact Assessment for Solid Waste Management ; A case study of Ko-Yao Island, Phang-Nha, Thailand	19 APRIL 2018 THURSDAY 10:30- 11:30
19	Claudia MIHAILOV	Ovidius University of Constanta, (Romania)	Romania	Congress participant	Maximizing Physical and Kinetic Therapy of the Effects of Bodmards and Csdmards in Rheumatoid Arthritis	19 APRIL 2018 THURSDAY 10:30- 11:30
20	Simona Claudia CAMBREA	Faculty of Medicine, “Ovidius” University, Constanta, Romania	Romania	Congress participant	Evolution of Shigellosis in Constanta County of Romania over 9 years	19 APRIL 2018 THURSDAY 10:30- 11:30
21	Mumtas MERAMAN	Songkhla Rajabhat University, Thailand	Thailand	Congress participant	Vulnerability and Community Disaster Coping Capacity Indicators for Assessing Disaster Risk Reduction at the Local Level : A case study in the Coastal zone of Satun Province, Thailand	19 APRIL 2018 THURSDAY 10:30- 11:30
22	Iustina (Popescu) BOAJA	National Institute for Research and Development in Environmental Protection - INCDPM	Romania	Congress participant	Fate and Transport of Nitrogen Species in Unsaturated Soil	19 APRIL 2018 THURSDAY 10:30- 11:30
23	Irina Magdalena DUMITRU	Ovidius University of Constanța, Faculty of Medicine, 1 University Street, 900470, Constanța, Romania	Romania	Congress participant	Respiratory Infections and Air Pollution, Retrospective Study Over the Past 10 Years	19 APRIL 2018 THURSDAY 10:30- 11:30
24	Ümran DUMAN	Yakın Doğu Üniversitesi	KKTC	Congress participant	Examining the User Satisfaction in Relation to Urban Furniture a Study in Kyrenia, Baris Park	19 APRIL 2018 THURSDAY 17:20- 18:20

Sustainable Healthy Neighbourhoods for Cities of Tomorrow

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Abstract

Urbanisation is one of the most important global processes of the 21st century, with cities, as key players. It is widely accepted that cities, as the engines for business and innovation, can and should provide education, jobs, health, security and growth for the urban community. In this context, ‘the city we need’ was introduced by the UN, as a new paradigm for building sustainable and well-managed cities for tomorrow (UN-Habitat, 2016). This urban paradigm evolved into a manifesto, presenting a ‘common vision’ driven by principles and drivers of change - the New Urban Agenda.

Currently, the global urban community, in aggregate, has the most comfortable living conditions on earth. But the wellbeing of the world community is not yet achieved. Complex and chronic health conditions, particularly, rising mental health conditions, have a significant negative impact. There is still significant progress to be made towards a more unified understanding of health / wellbeing of human beings, which could positively influence the trajectory of urban planning and development. There is an evolving range of urban health protection initiatives, aiming to address this issue, with hopeful outcomes in more developed parts of the world. However, there are also some urban-village initiatives, as yet on the margins of the global discourse, which address the issue from a more holistic perspective in the eastern hemisphere.

From this perspective our research aims to contribute to the development of a rigorous model for sustainable urban development and inclusive governance, with particular reference to sustainable healthy neighbourhoods / villages. Therefore, the paper first reviews ‘the city we need’ initiative, as an overall analytical framework. In this context, the emerging concept of ‘sustainable healthy neighbourhoods’ is introduced to provide a more specific framework for a detailed analysis at a local level. The paper then presents some of the initial findings of exploratory case study research undertaken by the authors in Auroville, India in 2017. The paper concludes with a preliminary assessment of the potential of an innovative holistic approach to sustainable healthy neighbourhoods, which embraces a broader definition of health/well-being than that which is embedded in contemporary neighbourhood / village development.

Key words: eco-system, well being, holistic approach, sustainable healthy neighbourhoods, Auroville

1. Introduction

Urbanisation is widely accepted as one of the most important global trends and challenges of the 21st century. Cities are considered to be the dominant engines for business and innovation of this global process. Indeed, cities are providers of education, jobs, health, security and growth for the urban community, whilst increasingly attempting to build sustainability through good management. The universally accepted definition of sustainable development incorporates the three pillars of environmental, social and economic sustainability, and is therefore concerned with the relationship between urban environmental quality and human well-being (see WCED, 1987, p. 37). This broad concept of sustainable growth encompasses health / well-being, but this is not yet a prominent issue. Rather, its emphasis on a medium to long-term perspective focuses on more tangible outcomes, such as the built environment (see de Chazal, 2010).

However, complex and chronic health conditions, particularly rising mental health conditions, have a significant impact on people across the world. There is still to be a significant progress made towards unified understanding of human health / wellbeing. There are some health protection initiatives in the west which aim to address the issue, with hopeful outcomes. However, there are also some urban village initiatives in the east aiming to address the issue from a more holistic perspective which embraces more fully the key issue of human health / well-being.

This paper, therefore, first considers ‘the city we need’ initiative, as a new paradigm for cities of tomorrow, which

evolved into a manifesto, presenting a 'common vision driven by principles and drivers of change' (UN-Habitat, 2016). This provides an overall framework for this research. Within this framework, the issue of health / wellbeing in urban settlements is then considered, as a key component of the cities of tomorrow, contributing to this new global urban agenda. Hence, an emerging concept of 'sustainable healthy neighbourhoods' (SUHNes) is introduced to provide a more specific framework for unpacking the global agenda at a neighbourhood level. The paper then presents the initial analysis / findings of an exploratory research project undertaken by the authors in Auroville, India over the summer of 2017. This provides a preliminary assessment of this international town initiative, which seems to offer a unique experience of health / wellbeing to its vibrant community, with reference to the criteria for 'sustainable healthy neighbourhoods'. The paper concludes with an outline of a second stage case study.

2. Methodology

This paper presents some of the initial findings of ongoing exploratory research into a more holistic understanding of the concept of sustainable growth at a neighbourhood level than that which underpins much of current development practice. This issue came into focus for the authors when they visited Auroville in 2017 to access specialist homeopathic health treatment. This experience presented the opportunity to undertake a case study of a unique village-based settlement in a rural area of southern India. The case study helped to crystallise in the minds of the researchers the view that urban environmental quality and human health / wellbeing are more intimately linked than is generally acknowledged, but are two key themes in the cities of tomorrow - New Urban Agenda debate which unfolded in 2016.

The authors (¹) were Auroville residents for three months over summer 2017. The preliminary case study of Auroville was undertaken using basic research techniques which focussed on collating and analysing published material and original, local, semi-published documentation, participant observation, as temporary residents, and a range of semi-structured interviews with key actors, including both local officials and residents. The case study research was fully supported by the management team at the Savitri Bhavan, directed by Shradhavan.

Our analysis and interpretation of the resultant empirical data was then contextualised in the evolving international debate focussed on the concepts of cities of tomorrow and sustainable urban neighbourhoods. This in turn is shaping our thinking about the purpose and scope of a second stage, more fully developed, case study.

3. The city we need – a 'new urban paradigm' for cities of tomorrow

'... the battle for a more sustainable future will be won or lost in cities' (UN, 2012).

The industrial revolution of the 18th and 19th centuries in Europe and then North America caused an explosion of urban growth that has continued to this day and is now global in its reach. Cities increasingly became independent of their local hinterland and claimed their place as centres of consumerism, transport hubs and drivers of the global economy. Dynamic urbanisation generated phenomenal changes in human life styles, which were reflected in new concepts of urban planning.

Currently, the modern city is a 'petropolis', which is a petrol dependent system and is not sustainable (see Figure 1). The global challenge therefore is to evolve the conventional petropolis into a more sustainable / environmentally friendly system. An eco town / 'ecopolis' is a more sustainable alternative, implementation of which may vary depending on the unique conditions of urban localities (see Figure 1).

The goal of sustainable growth was the focus of a new urban paradigm for the 21st century entitled 'the city we need', providing guidance for urban settlements to evolve from 'petropolis' into 'ecopolis' (UN-Habitat, 2016; see Figure 2). This was a manifesto presenting a 'common vision', prepared through 'an unprecedented global consensus-building process' (see Figure 2). This vision of sustainable urbanisation for a better future, builds on the '2030 Agenda for Sustainable Development' and the outcomes of the 'Paris Climate Conference' (see UN-Habitat, 2015 and UNFCCC, 2015);

.....
1 Note: Murat Diren was diagnosed with Alzheimer's in December 2015. He is an expert in metropolitan planning with over 30 years senior experience and, is both the husband and professional colleague of the main author.

Figure 1. The vision of cities of tomorrow

EVOLVING FROM PETROL DEPENDANT URBAN SPRAWL TO SUSTAINABLE ECO SYSTEM		
Key components	A) Key features of 'petropolis'	B) Key features of 'ecopolis'
• overall emphasis	Mobile-physical movement, particularly by car	Accessibility – to goods, services and activities
• density	Lower density, dispersed activities	Higher density, clustered activities
• growth pattern	Lower density, dispersed activities	Infill development
• land-use mix	Single-use, segregated	Mixed
• public service	Regional, consolidated, larger, requiring car access	Local, distributed, smaller, walking access
• transport	Car oriented, poorly suited to walking, cycling and public transport	Multi-modal transportation and land-use patterns supporting walking, cycling, public transportation
• connectivity	Hierarchical road network with many unconnected roads, barriers to non-motorised	Highly connected roads, pavements allowing more direct travel by motorised transport modes
• street design	Designed to maximise vehicular movement	To accommodate a range of activities with street calming
• planning process	unplanned / little coordination / inappropriately planned to local conditions	Planned and coordinated between jurisdictions and stakeholders
• public space	Emphasis on the private realms of shopping malls, gated communities, etc.	Emphasis on streetscape, pedestrian areas, public parks and public facilities

FROM PETROPOLIS ➔ **TO ECOPOLIS**

• desired shift from A to B (*The basic premise here is that a real 'ecopolis' cannot exist, as the very act of displacing nature to build a city is ecologically unsound. However, the global community can aim to realise a low carbon footprint on earth with 'carbon neutral neighbourhoods', see Gibson, 2007).*

Source: Adapted from an ongoing research report. See Kocabas (2018).


'How we plan, build and manage our cities today will determine the outcome of our efforts to achieve a sustainable and harmonious development tomorrow. **Well-planned cities** allow all residents the opportunity to have safe, healthy, and productive lives. **Well-designed** cities present nations with major opportunities to promote social inclusion, resilience, and prosperity' (UN-HABITAT, 2015/6, p. ii, emphasis added by the author).

The 17 Sustainable Development Goals (SDGs) of the 2030 Agenda are considered to be unique, as they call for action by all countries to promote prosperity, whilst protecting the planet (see Figure 2). Embracing these SDGs, countries are to mobilize efforts to end all forms of poverty, fight inequalities and tackle climate change, while ensuring that no one is left behind. In this context, the 2015 Paris Conference is an important milestone, as the first-ever universal, legally binding climate 'agreement' that sets out a global action plan, aiming to keep global warming below 2°C (see UN, 2015).

Whilst further urbanisation can help drive sustainable development, it is within cities that poverty and inequality are at their most acute. Recognising and responding to this dual nature of urbanisation requires an holistic approach to both sustainable metropolitan and city scale growth and the complex relations between quality of life, health / wellbeing at a neighbourhood level.

Figure 2. Towards a new urban paradigm for sustainable growth: ‘the city we need’

THE CITY WE NEED (TCWN)					
PRINCIPLES FOR A NEW URBAN PARADIGM	1	TCWN is socially inclusive and engaging	DRIVERS OF CHANGE	1	Governance, partnerships
	2	TCWN is affordable, accessible and equitable		2	Planning and design
	3	TCWN is economically vibrant and inclusive		3	Finance
	4	TCWN is collectively managed and democratically governed		4	Land, housing and services
	5	TCWN fosters cohesive territorial development		5	Environment
	6	TCWN is regenerative and resilient		6	Health and safety
	7	TCWN has shared identities and sense of place		7	Economy and livelihoods
	8	TCWN is well-planned, walkable, transit friendly		8	Education
	9	TCWN is safe, healthy and promotes well-being		9	Technology
	10	TCWN learns and innovates		10	Monitoring and evaluation



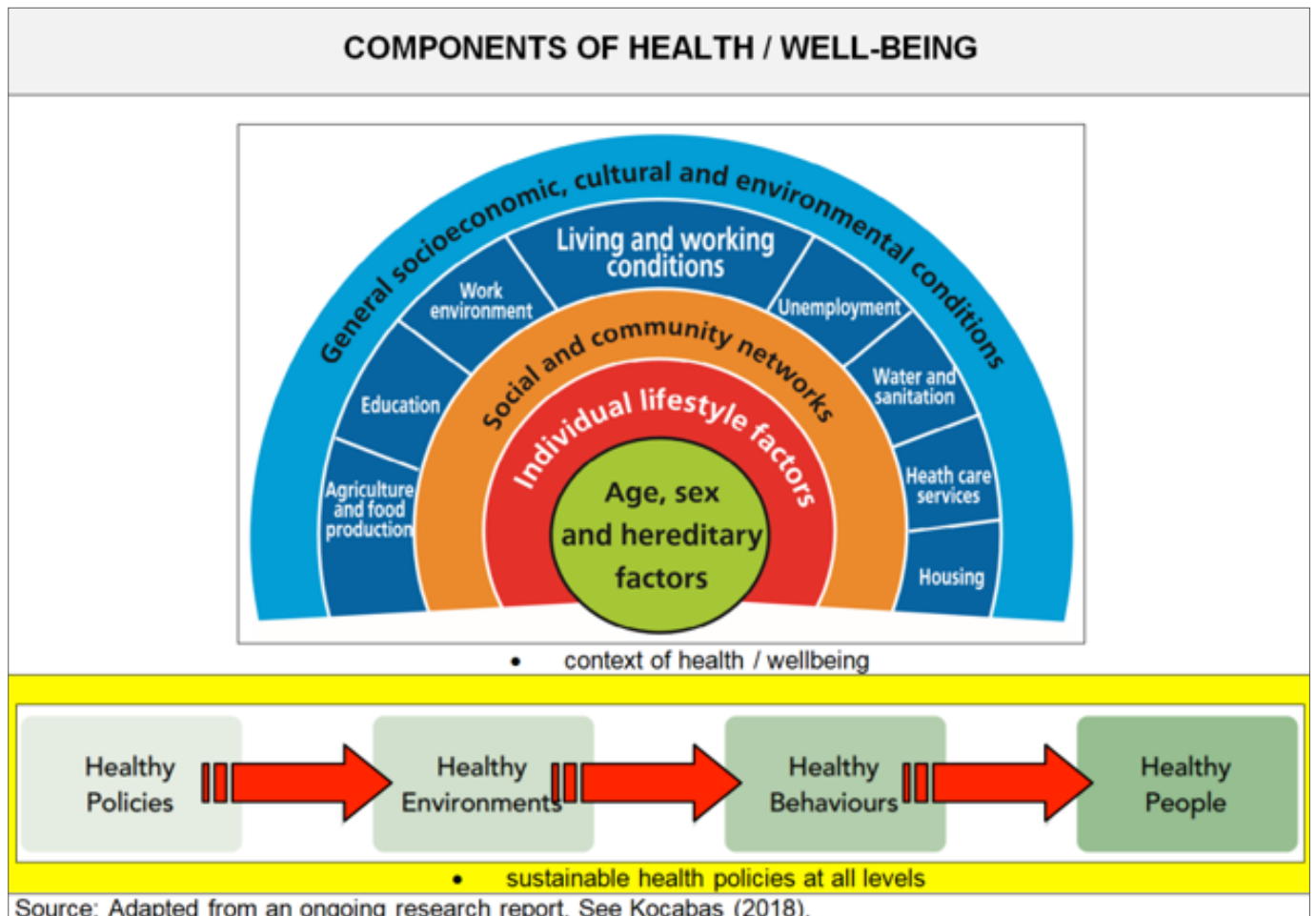
Source: EC (1999)

KEY CHALLENGES / LESSONS LEARNED FROM THE PAST / CURRENT TRENDS IN CITIES	
<ul style="list-style-type: none"> • outdated / poorly defined responsibilities between tiers of government leading to unhealthy competition for resources, overlapping jurisdictions and uncoordinated regulatory frameworks; 	
<ul style="list-style-type: none"> • poor planning, often using outdated / rigid planning approaches that are surpassed by reality leading to urban sprawl, congestion, pollution and wasteful use of land, water and energy exacerbating climate change; 	
<ul style="list-style-type: none"> • lack of transparency / accountability in town planning and decision making leading to lack of trust on behalf of civil society and business in the leadership of public agencies; 	
<ul style="list-style-type: none"> • unsustainable pressures on the carrying capacity of natural supporting systems leading to destruction of ecosystems; 	
<ul style="list-style-type: none"> • exclusionary approaches to urban development causing the formation of slums and lack of access by the poor to public goods and services; 	
<ul style="list-style-type: none"> • irresponsible land use / construction that increase vulnerability to natural and human-made disasters; 	
<ul style="list-style-type: none"> • poorly regulated real estate markets that create speculative bubbles and financial crises; 	
<ul style="list-style-type: none"> • loss of urban identity caused by the destruction of cultural heritage and local biodiversity along with disregard for social and cultural diversity leading to exclusion / segregation of communities; 	
<ul style="list-style-type: none"> • inadequate policies and financing affecting marginalised groups to access basic services of clean water, sanitation and waste removal that result in poor health and diseases; 	
<ul style="list-style-type: none"> • inadequate housing and land management policies that exclude large segments of the population from accessing affordable housing leading to continued growth of informal settlements. 	

Source: Adapted from an ongoing research report. See Kocabaş (2018).

Thus within this emerging international consensus, there are indications that the relationship between health / well-being and urban development is moving in from the margins to the mainstream of the ongoing debate. This is exemplified by a recent ground-breaking report in the UK entitled ‘Securing constructive collaboration and consensus for planning healthy developments - A report from the Developers and Wellbeing project’. This was the product of a partnership between the Town and Country Planning Association and the National Health Service (TCPA 2018).

Figure 3. Context of health / well being at local, metropolitan, national and global levels



Health is defined by the World Health Organisation (WHO), as a ‘state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity’ (see WHO, 2008, p. 33). Urban planning has from the outset been associated with public health, especially at the neighbourhood level - see, for example, origins of British town planning; yet there seems to be relatively little systematic research exploring the nature of relationship between different components of health and urban environmental quality at a neighbourhood level. Promoting mental health and well-being is clearly an integral part of the sustainable development agenda, but it is a relatively underdeveloped component. It is from this perspective that our research focuses upon planning, designing, building and managing sustainable healthy neighbourhoods that would improve the quality of life and health / wellbeing of the residents of the cities of tomorrow.

4. Sustainable Healthy Neighbourhoods (SUHNes)

‘... planning and placemaking can make [contributions] towards improving physical as well as mental health and wellbeing’ (GCC, 2012).

In recent years, both urban planning and health professionals have become increasingly

aware of the connection between planning / designing places and health / wellbeing of people. However, substantial cross-sectional comparative research is needed to develop a rigorous conceptual model that could be applicable, in a variety of ways to neighbourhoods in both developed and developing countries. In the mid-1990s, a schematic diagram was developed which represented the components of health / wellbeing at local, metropolitan, national and global levels (see Dahlgren & Whitehead, 1992 and Figure 3). In 2006, model was further developed with a focus on neighbourhood level (see Figure 4a). This demonstrates that the mutually dependent interrelationship between health / wellbeing, urban planning and development becomes clearer, at a neighbourhood level (see both Figures 2 and 4a / 4b).

In this context, **sustainable healthy neighbourhoods** (SUHNes) are considered to be neighbourhoods that are 'intentionally' 'well planned', 'well designed', 'well built' and 'well managed' to support holistic health / wellbeing of people living there. It is possible to distil the principles of The City We Need (see Figure 2) into the following five statements of 'well planning' any neighbourhood (see UN-Habitat, 2014):

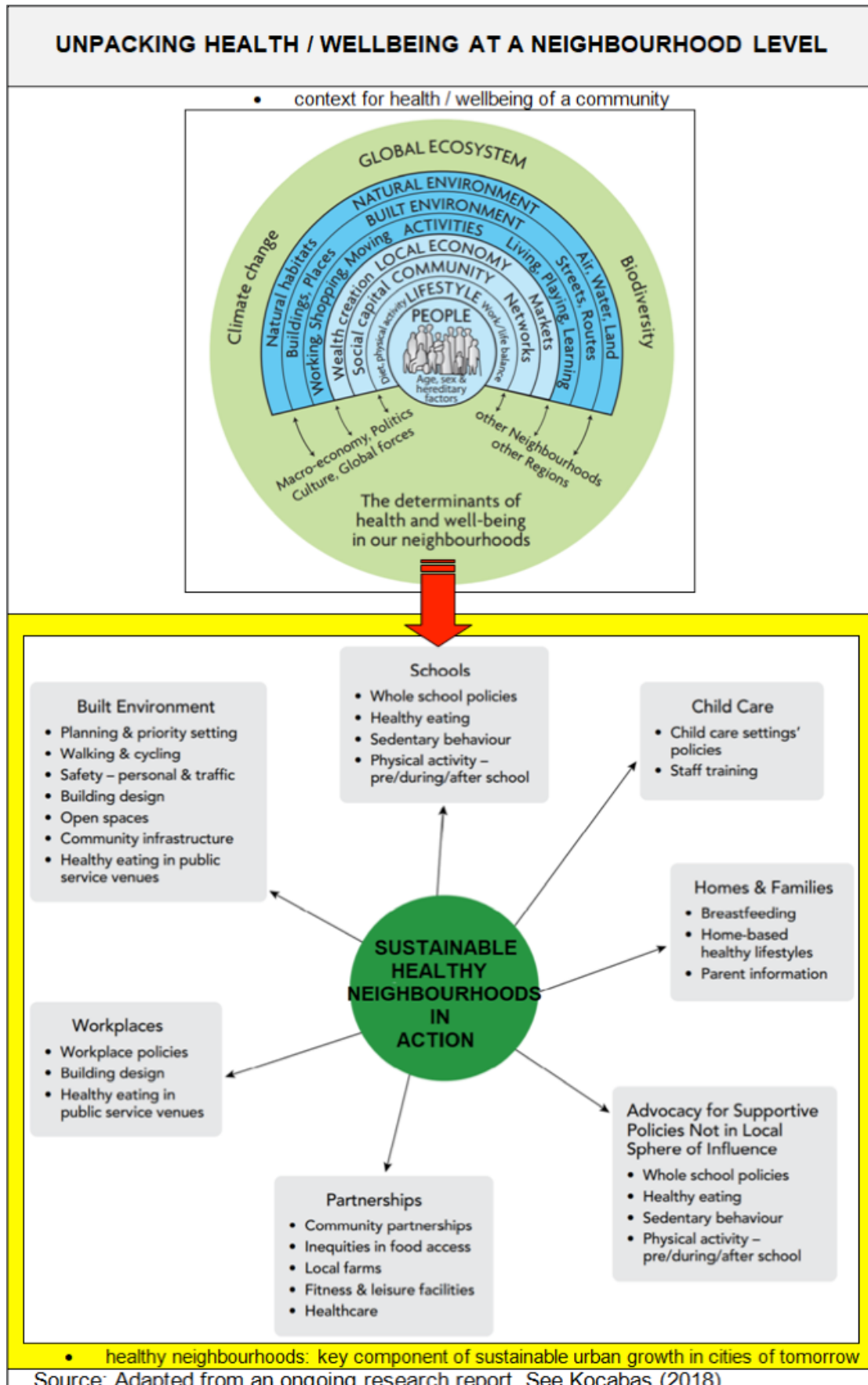
- adequate space for street layout: the street network to occupy at least 30 % of the land - at least 18 km of street length per km²;
- high density: at least 150 people/ha.;
- mixed land-use: at least 40 % of floor space to be allocated for economic use;
- social mix: 20 to 50 % of the residential floor area to be for low cost housing; and
- limited land-use function: single function blocks to cover less than 10 % of any neighbourhood.

Considering the existence of global diversity in approach, in the context of varying local conditions, these five principles can be applied in the following situations:

- fast growing cities: to help cities that have to provide land, infrastructure and public services for a rapidly expanding population resulting from natural growth, rural immigrants or displaced **people fleeing conflict / disaster**.
- new urban settlements / urban extensions: to avoid repeating past mistakes in new urban areas.
- urban renewal / renaissance: to deliver revitalization / regeneration initiatives in declining cities, or declining neighbourhoods in prosperous cities.
- urban densification: to achieve a smoother densification process in growing cities that have no land for further extension.

Planning, designing and building new neighbourhoods or retrofitting existing communities / neighbourhoods to be sustainably healthy is all about 'enabling all user groups in the community to easily move around, stay connected with one another, feel safe, and have access to good quality services' (Figure 4a / 4b). Thus, 'well designed' sustainable healthy neighbourhoods;

Figure 4a. Planning healthy neighbourhoods: ‘sustainable healthy neighbourhoods’, as building blocks of sustainable urban growth



- enable physical activity: easy / safe / close location of services can enable residents to be more active.
- encourage healthy eating: easy access to healthy food can positively affect our ability to make healthy choices.
- increase social capital and safety: active / social / connected communities are safer and vibrant.
- strengthen social connections and improves access to services: children, elderly, people with disabilities and lower income groups particularly benefit from sustainably healthy community design (see Figures 4a / 4b).

In sum, SUHNes are necessary to deliver environmental, economic, and social objectives of sustainable growth. At a local level, planning and design processes are key tools to build / rebuild a healthy community. Local plans and projects already contain land use, incorporating buildings, public spaces, street layout and park locations. It is therefore possible to arrange / regenerate and manage the relevant processes for community design without adding extra cost to the holistic approach by utilising these local tools in place (see Figures 4a / 4b). More specifically, holistic approach would serve to clarify how multiple initiatives of placemaking / broader partnerships / social cohesion – innovation can be supported from a health / wellbeing perspective. Although the concept of sustainable growth / development is universal and well documented, there are obvious differences in ways in which the concept is interpreted and implemented in developed and developing parts of the globe. Western models of the concept do not seem to capture the realities of the Eastern hemisphere, where both the contribution of spirituality and community relationships are crucially important in maintaining and improving both physical and mental health / wellbeing of neighbourhood / village residents (see GCC, 2012).

The following section therefore presents the researchers' preliminary analysis of Auroville in India in the Eastern hemisphere. We were guided to this case study location for its unique and healing settings, where the main focus has been on the health / wellbeing of its international community right from its inception back in 1960s.

6. Auroville, India: a sustainable global community in the making

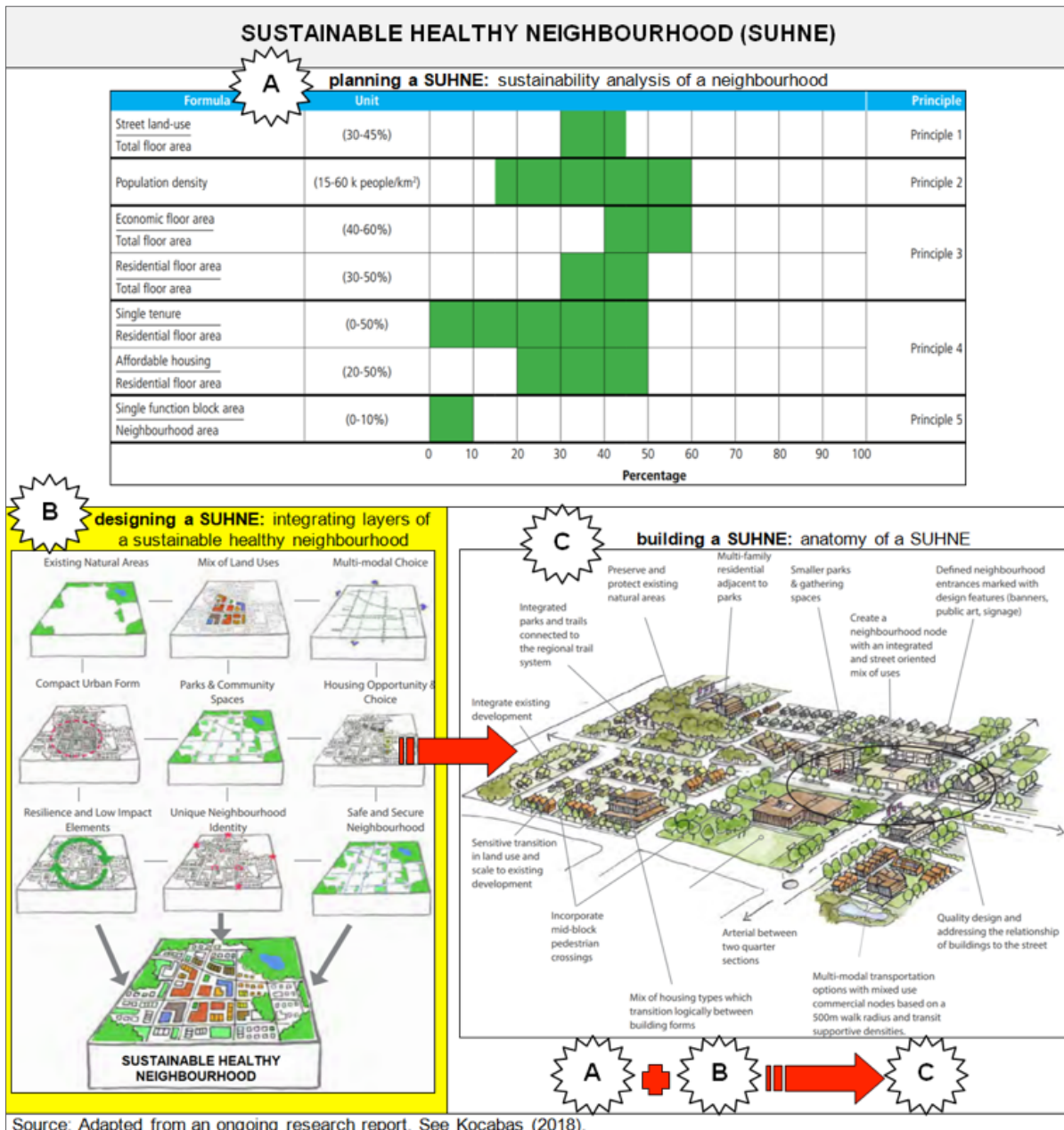
Auroville is an international settlement in the making, located in the State of Tamil Nadu, one of the most underdeveloped areas of south India (see Figure 5). The settlement has no borders and includes more than 100 communities, living in villages and informal Tamil settlements. Currently, there are 12,000 Tamil in the settlement, who are employed, and 2,700 registered residents, representing 49 nationalities (see Kunkl, 2014).

Auroville has a unique concept of 'ideal township'. The visionary behind this concept was Sri Aurobindo and the Mother who held the concept in the 1930s. It was in the 1960s that the idea was presented to the government of India, who supported and proposed it to the UNESCO, as follows:

'a cultural township known as 'Auroville' was to be set up. This settlement would be a place '... where people of different countries will live together in harmony in one community and engage in cultural, educational, scientific and other pursuits' (see UNESCO, 1966, p. 71).

Officially, Auroville, as 'a project of importance to the future of humanity', was founded in February 1968 (ibid.). At the Foundation Ceremony, the Member States were invited by the UNESCO to '...participate in the development of Auroville, as an international cultural township designed to bring together the values of different cultures and civilisations in a harmonious environment with integrated living standards which correspond to man's physical and spiritual needs' (UNESCO, 1968, pp. 56-57). At the Ceremony, the Charter of Auroville

Figure 4b. Planning and designing ‘sustainably healthy neighbourhoods’

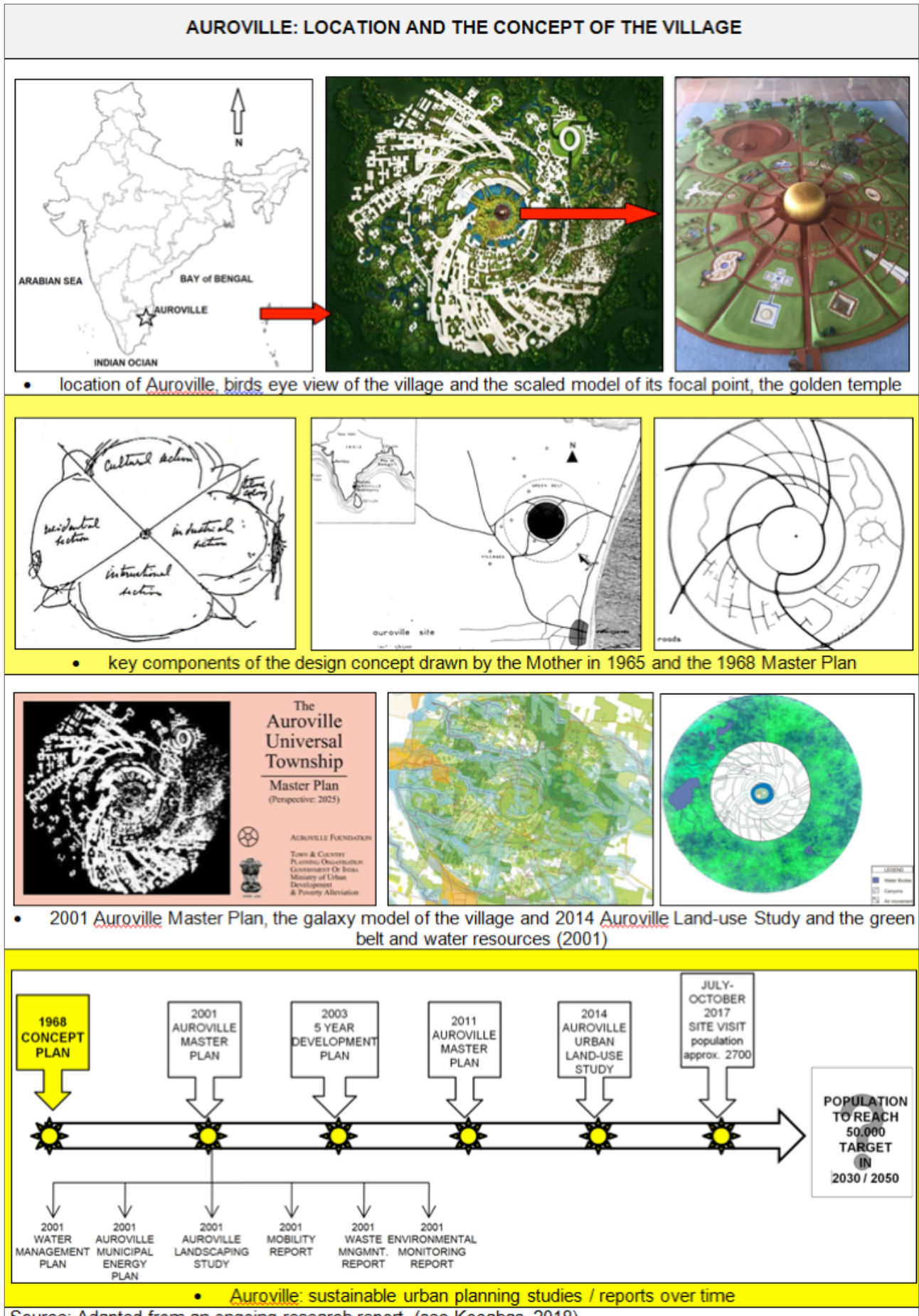


was delivered by the Mother, declaring that ‘Auroville belongs to nobody in particular, but to humanity as a whole’ (The Mother, 1968). It was further declared that Auroville would be;

- the place of an unending education of constant progress,
- the bridge between the past and the future, and
- a site of material and spiritual researches for a living embodiment of an human unity.

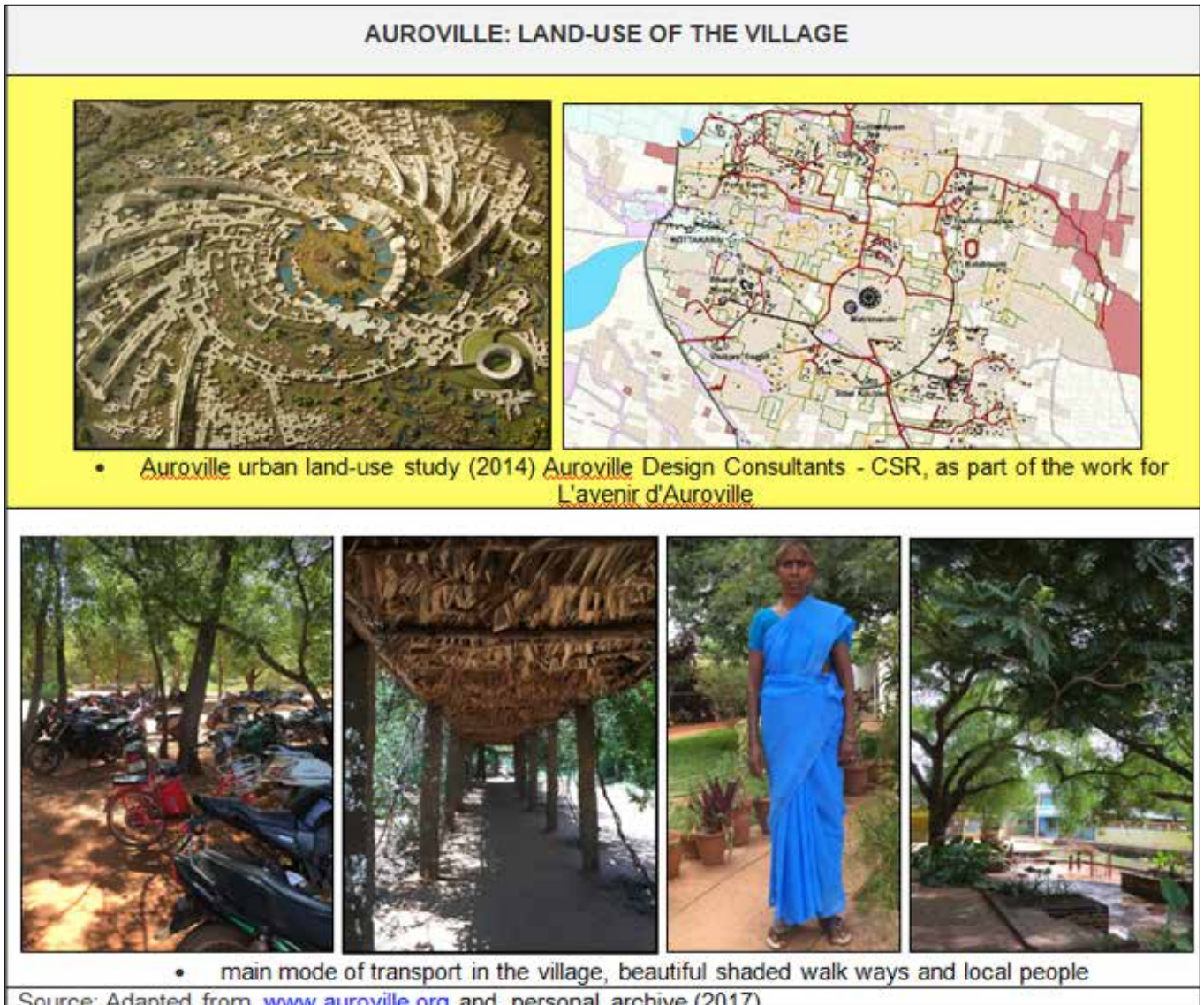
In 1970, it was noted that Auroville was ‘already preparing and creating an instrument of education capable of meeting the formidable demands of our age, linking East and West in a new relationship’ (see UNESCO, 1970, p. 52).

Figure 5. Location and the key concept of sustainable growth of Auroville over time



Source: Adapted from an ongoing research report. (see Kocabas, 2018).

Figure 6. Auroville land use map and the aerial view

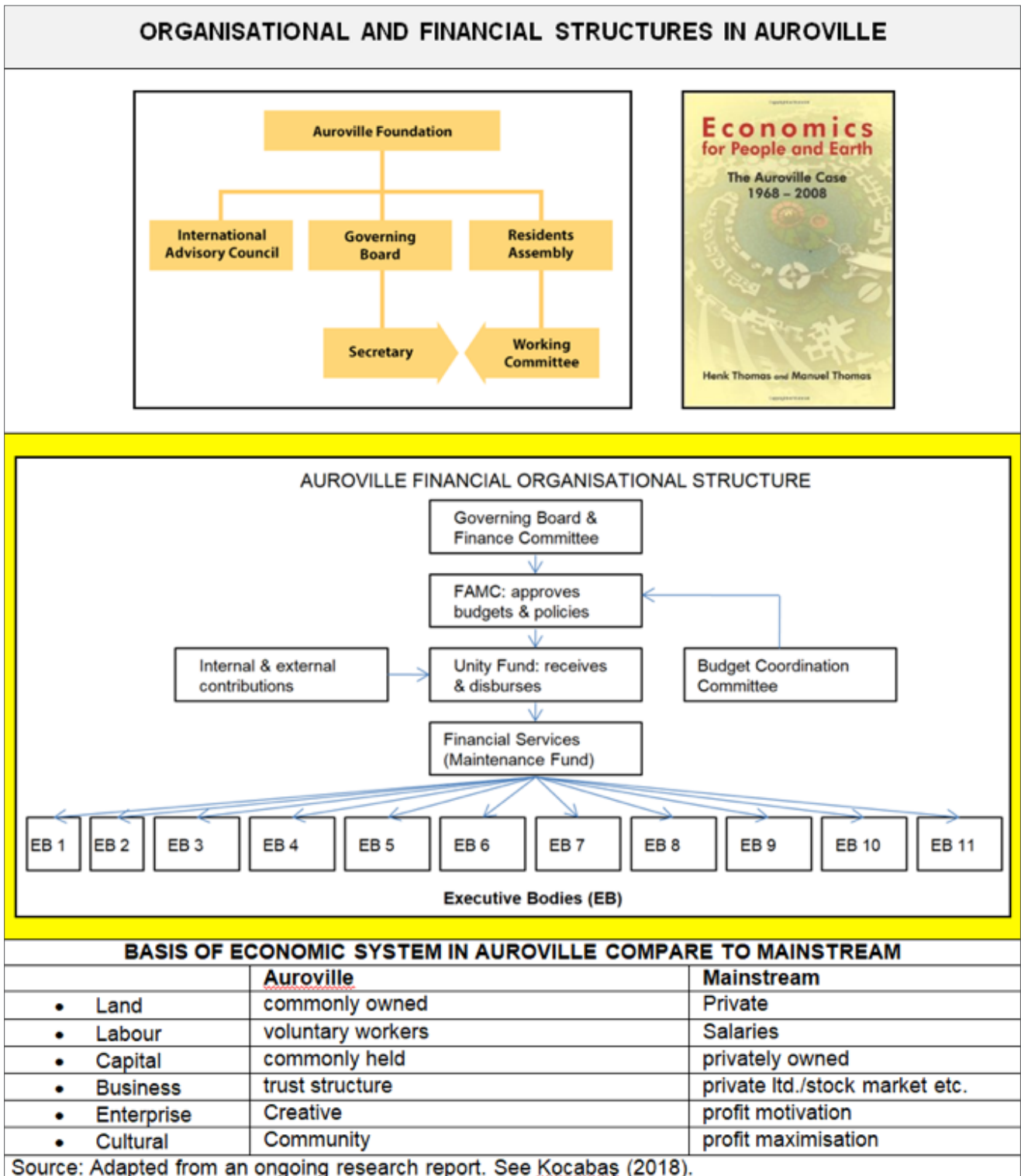


initial visionary galaxy concept to a Master Plan to guide the physical development of the town. When interviewed in 1980s and 1990s, he said that ‘Mother had given a couple of parameters’ to us. On this basis, ‘... we started to make suggestions to her. ... finally the concept of ‘galaxy’ came out ..., and was accepted by her ... She inspired and guided the work’. But ‘...the plan is not finished. ... the city is still to be invented, ... Apart from the central lines of force, everything is flexible ...’ (see Anger, 1988 and 1992). This organic process of development is guided by a comprehensive research process, transcending all politics and ideologies. It is considered to be a ‘centre of advanced research’, encompassing both science and spirituality (see Joshi, Preface, 2001). In the context of both the master plan and the management of the settlement, innovative models and techniques were developed, tested and constantly improved (see Figures 5 / 6 / 7).

Auroville has an official master plan, guiding its physical, economic and social development. The 2001 Auroville Universal Township Master Plan Perspective: 2025 and beyond was prepared by the community participation and approved by the Ministry on 12th April, 2001 (see Figures 4 / 5 / 6 / 7). The Master Plan of the settlement is laid out in the form of a galaxy, with the golden temple as its centre, several ‘lines of force’ radiating out. The context of the Plan was set out as follows:

‘...based on the original concept given by the Mother’, it ‘envisages intertwining of four major functional zones, namely, Residential, Cultural, International, and Industrial, - around a Peace Area in the centre. About 25% of the township would be built up portion, surrounded by a green belt based on the concept of eco-friendly and sustainable development ...’ (Jagmohan, Foreword, 25 January 2001).

Figure 7. Organisational and financial structures of management in Auroville



As the 2001 Master Plan sets out, within the hierarchical planning framework in the country, various planning tools are defined from a settlement to a project scale. **Master plan** is a settlement scale strategic plan, incorporating key planning policies with general structure of land use, transportation and amenities. **Development plan**, which builds upon the master plan, takes into account and reviews local data on the ground. It is at this level that participation of local community is required and essential. **Implementation Plan**, which is conceived within the framework of a development plan, contains details of a programme of new / ongoing projects to be implemented within successive financial years (see Figure 7).

In this context, the 2001 Plan intends 'to spread development evenly, and to create an equitable and economically strong community'. As the town is surrounded by a 'green belt', consisting of forested areas, farms and scattered settlements, contributing to the sustainable growth of the overall region, it relies on developing and delivering sustainable urban development strategies within the framework of the master plan. Thus, the Plan adopts an holistic approach and aims to integrate urban and rural development in a complementary way. The results of innovative methods developed and implemented in key sectors – including food production and water management - are made available for application in both rural and urban areas, to create opportunities for contributing to their sustainable development (see www.auroville.org/contents/670).

The Auroville Foundation is responsible for the overall management and development of the settlement. The Foundation consists of a Governing Board (GB), an International Advisory Council (IAC) and a Residents Assembly (RA). The GB has overall responsibility for the ongoing development of the town in line with its aims and ideals. The IAC advises the Governing Board on management and development issues. The RA comprises of all residents who are over the age of 18. This body is mainly responsible for evolving and implementing the Plan for future development in consultation with the Governing Board. There is also a Secretary to the Foundation appointed by the Government of India, who resides and has an office in Auroville (see www.auroville.org/contents/572). In '... promoting and establishing foundation for sustainable development' the Foundation received 'great support from the governmental / non-governmental organisations, besides ... international agencies' (see Joshi, Preface, 2001).

Preliminary assessment of progress to date

In 2007, in the run up to the 40th anniversary of the setting up of Auroville project, it was stated that;

'... recognizing that the aims of Auroville are to promote international understanding, peace, innovative education, a learning society, and all-round material and spiritual development for harmonious individual and collective growth, and that such aims contribute to the advancement of the objectives of UNESCO, especially dialogue among civilizations, cultures and religions and cultural diversity, and culture as a factor for development, ... recognizing that Auroville is a successful and unique model project, proving the capacity of an international community, after 40 year of existence, to continue to live up to its initial founding ideals of peace and international harmony and within the spirit of mutual respect and sustainable development which are also UNESCO's own values and principles, as well as some of its major priorities, ...' (see UNESCO, 2007, pp. 54-55).

February 2008 marked the 40th anniversary of the Auroville journey. However, whilst the progress of the settlement has been endorsed internationally, it has been the subject of some criticism nationally:

'...The community is charged with being elitist, being dependent upon ... neighbouring villages for its survival, ... The community relies heavily on ... the surrounding countryside for its economic and social survival. However, what ... worked as a completed project is ... several innovative architectural projects that are remarkable for their elegance and commitment to environmental concerns' (elseplace.blogspot.com.tr/2008/07/architecture-of-india-auroville.html).

Auroville is indeed a unique settlement on many fronts. Since its inception, the town has been growing steadily to accommodate its target population, even though it has got a long way to go. Whilst the settlement is a 'synergy between the East and West', it is also a testing ground through ongoing research into sustainable growth / living, focussing on the future socio-cultural, environmental and spiritual needs of humanity. It is recognised, as the first and only internationally endorsed ongoing experiment in human unity in diversity and transformation of consciousness. In particular, the importance placed on both physical and mental health chimes with the increasing attention being paid to well-being in the evolving global debate about the nature and scope of sustainable urban development.

Within this 'Auroville perspective' a person is considered to be a multi-dimensional being with physical, mental, emotional, psychological and spiritual components (see Sri Aurobindo, 1970). More specifically, it is understood that there is a science / technology of inner wellbeing, as there is science / technology of external wellbeing (see *ibid.*). Unity between inner and outer wellbeing is considered to be necessary (see also the Mother, 1978). In this context, it is understood that the regular practice of yoga (which means union), can aid people to achieve inclusive consciousness beyond culture, religion, race and nationality. This is a capability that has to be acquired individually

(see Sri Aurobindo, 1970). Hence, daily life is organised in such a way as to enable yoga to be practised by residents on a regular basis throughout the settlement because it is considered to be essential for inner / outer well-being. Over a period of three months, the authors noted through active participant observation that this practice is an important dimension of the way that residents apply the ideas of the Charter in their daily life, both at a personal level and at a management level.

At a global level, June 21st 2014 was proclaimed as an International Yoga Day by the UN (see UN, 11.12.2014). This was a political decision, which seems to be a visionary one too. The fundamental science of well-being requires an holistic approach, which aims to unite inner and outer wellbeing, in the absence of which, human beings would not be complete. This approach requires revisiting the accepted fundamental science of health / wellbeing that is supposed to hold the key to happiness. This exploratory research points to the possibility that the realisation of unity of inner / outer wellbeing at an individual level could lead to 'realising our unity with the eco-system' - taking the concept of sustainable, healthy urban development to a new level.

An assessment of progress can be taken further by the application of the analytical criteria of a Sustainable Healthy Neighbourhood (SUHNe) set out earlier in this paper and elaborated in Figure 8. Whilst there is a long way to go to delivering the Master Plan and associated improvement in governance arrangements, the evidence suggests that Auroville, is evolving as a well-planned, well designed and well managed sustainable healthy neighbourhood because the settlement;

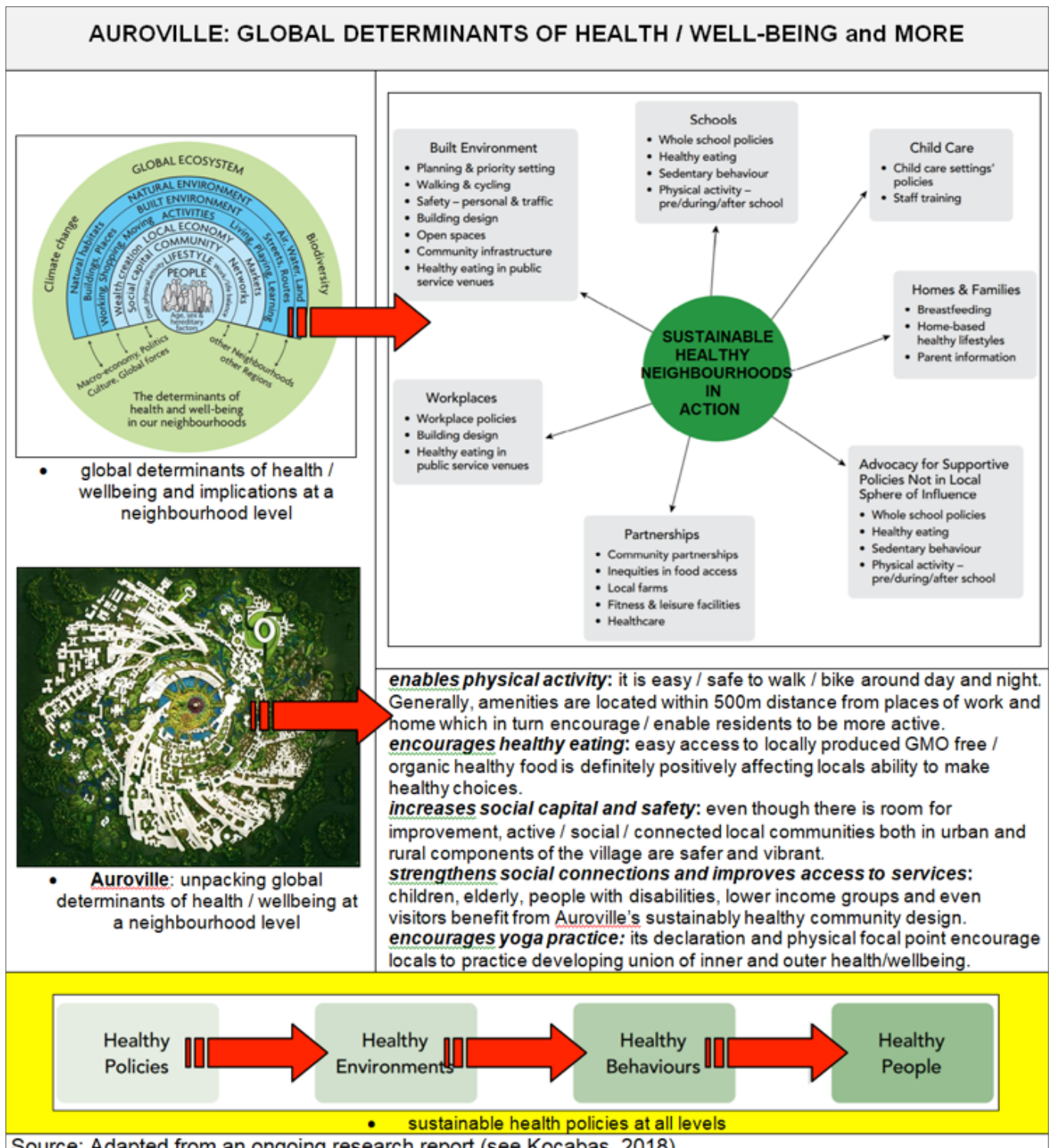
- enables physical activity: it is easy / safe to walk / bike around day and night. Generally, amenities are located within 500m distance from places of work and home which in turn encourage / enable residents to be more active.
- encourages healthy eating: easy access to locally produced GMO free / organic healthy food is definitely positively affecting locals ability to make healthy choices.
- increases social capital and safety: even though there is room for improvement, active / social / connected local communities both in urban and rural components of the village are safer and vibrant.
- strengthens social connections and improves access to services: children, elderly, people with disabilities, lower income groups and visitors all benefit from Auroville's sustainably healthy community design.
- encourages yoga practice: both the Declaration of the settlement and the focal point of its physical layout, along with the way the life is organised, encourage locals to practice developing inner and outer health/wellbeing towards achieving unity consciousness.

7. Conclusions

In the context of the new urban paradigm of 'the city we need' and the associated New Urban Agenda, this paper has developed a model of Sustainable Urban Neighbourhoods (SUHNes), as the building blocks of a transition from Petropolis to Ecopolis. This model gives more importance than existing neighbourhood development models to the importance of maintaining and improving both physical and mental health, as vital components of well-being. This innovative emphasis was inspired by a preliminary case study of the development of the hitherto unique settlement of Auroville, which was based on the authors' experience of being a temporary residents in the town.

This preliminary research has provided evidence which suggests that the progress to date of the innovative settlement of Auroville warrants a second stage research project. This would include an assessment of the constraints and opportunities which have shaped the development of the settlement to date and will influence its further development, in terms of its physical, economic, socio-cultural and environmental dimensions. In particular, further research would aim to evaluate more fully the positive impacts of the settlement on the health and well-being of its residents. This assessment would also examine the potential application of key lessons from the Auroville experience, as an input to the cities of tomorrow in both developed and developing countries. This would focus on a more holistic approach to the creation of sustainable healthy neighbourhoods, which embeds in the mainstream urban discourse, a broader understanding of quality of life and health / wellbeing.

Figure 8. Auroville: unpacking global determinants of health / wellbeing at a local level



Note

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Web links

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