

# Strategic assessment of neighbourhood environmental impacts on mental health in the Lisbon Region (Portugal)

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**BACKGROUND**



**OBJECTIVE**



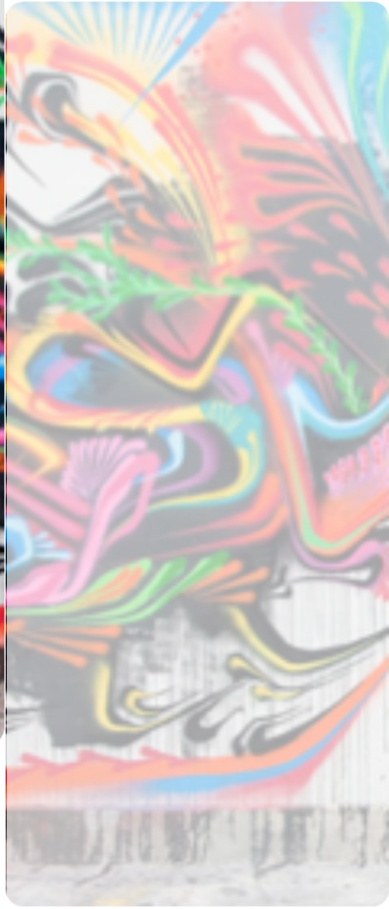
**METHODS**



**RESULTS**



**FINAL NOTES**



# Determinants of Mental Health

# Determinants of Mental Health

INDIVIDUAL





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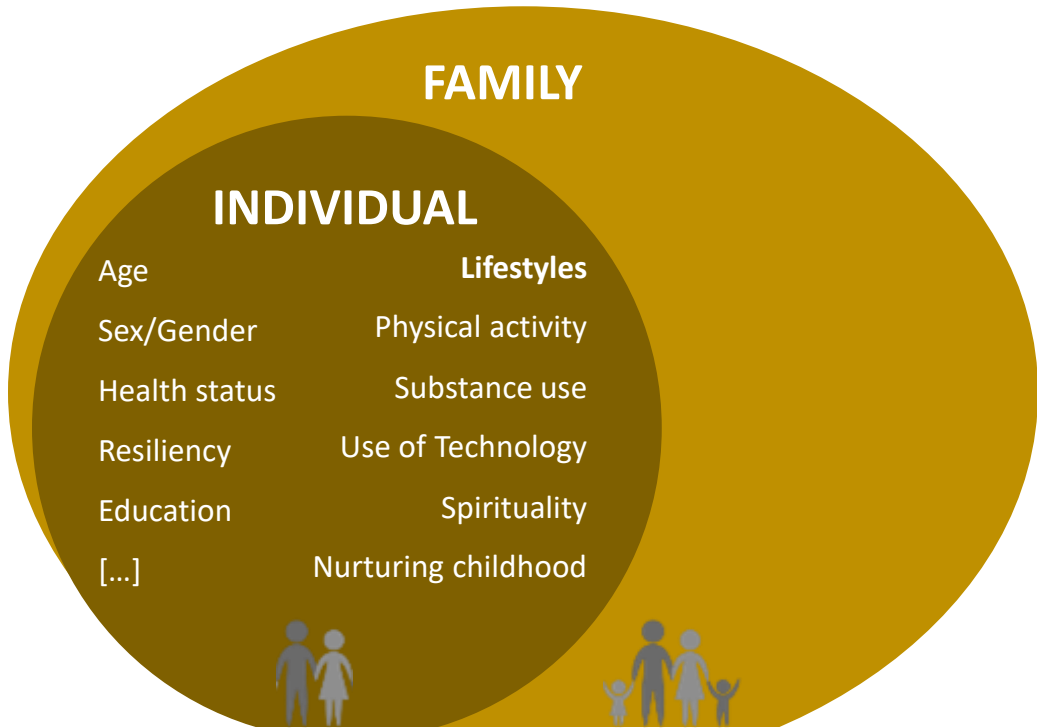
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## INDIVIDUAL

- |               |                     |
|---------------|---------------------|
| Age           | Lifestyles          |
| Sex/Gender    | Physical activity   |
| Health status | Substance use       |
| Resiliency    | Use of Technology   |
| Education     | Spirituality        |
| [...]         | Nurturing childhood |



# Determinants of Mental Health



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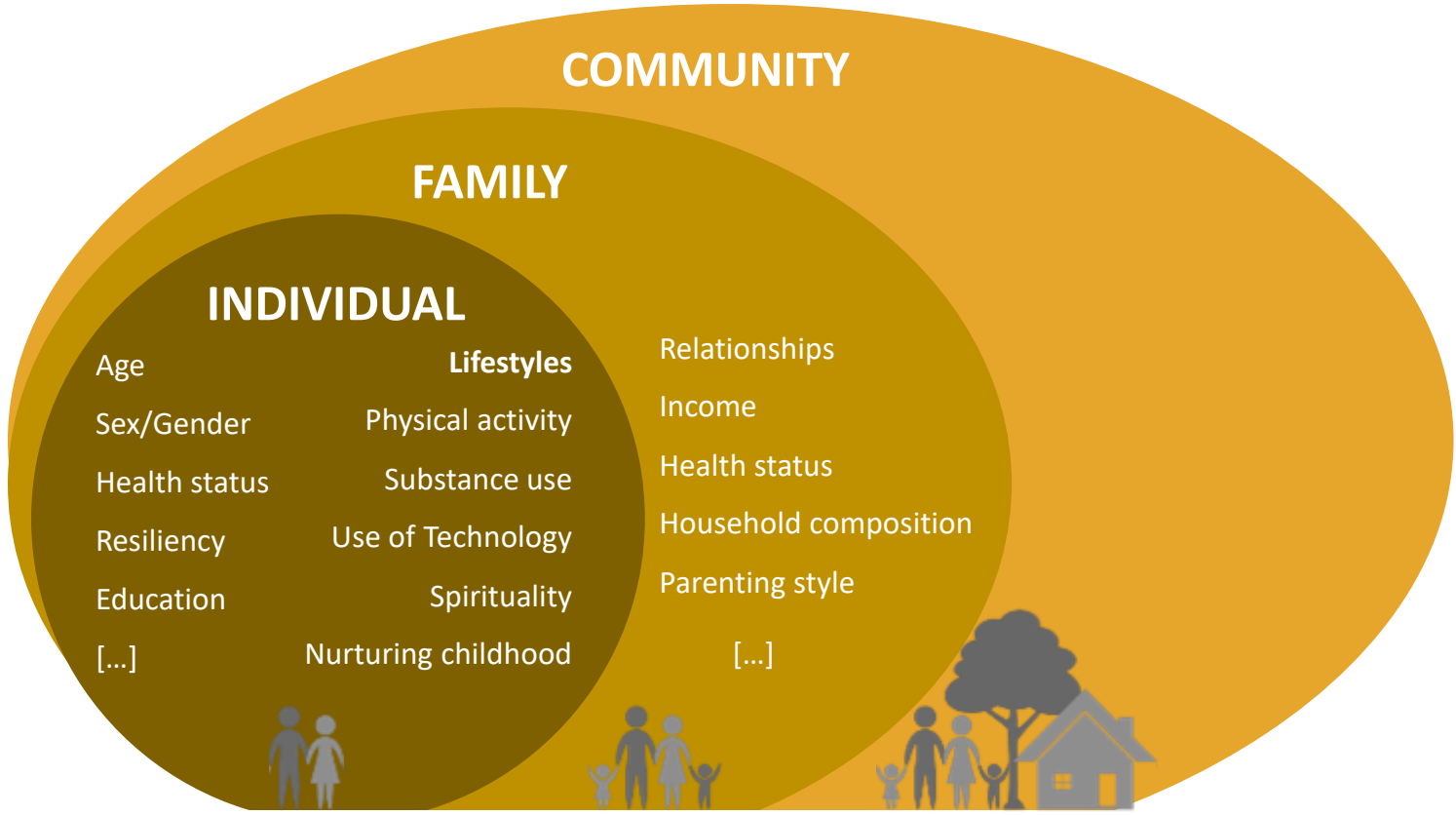
## FAMILY

### INDIVIDUAL

- |               |                     |                       |
|---------------|---------------------|-----------------------|
| Age           | Lifestyles          | Relationships         |
| Sex/Gender    | Physical activity   | Income                |
| Health status | Substance use       | Health status         |
| Resiliency    | Use of Technology   | Household composition |
| Education     | Spirituality        | Parenting style       |
| [...]         | Nurturing childhood | [...]                 |



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[http://www.gethealthsmc.org/sites/main/files/imagecache/lightbox/main-images/slide\\_5\\_everyday\\_physical\\_activity.jpg](http://www.gethealthsmc.org/sites/main/files/imagecache/lightbox/main-images/slide_5_everyday_physical_activity.jpg)



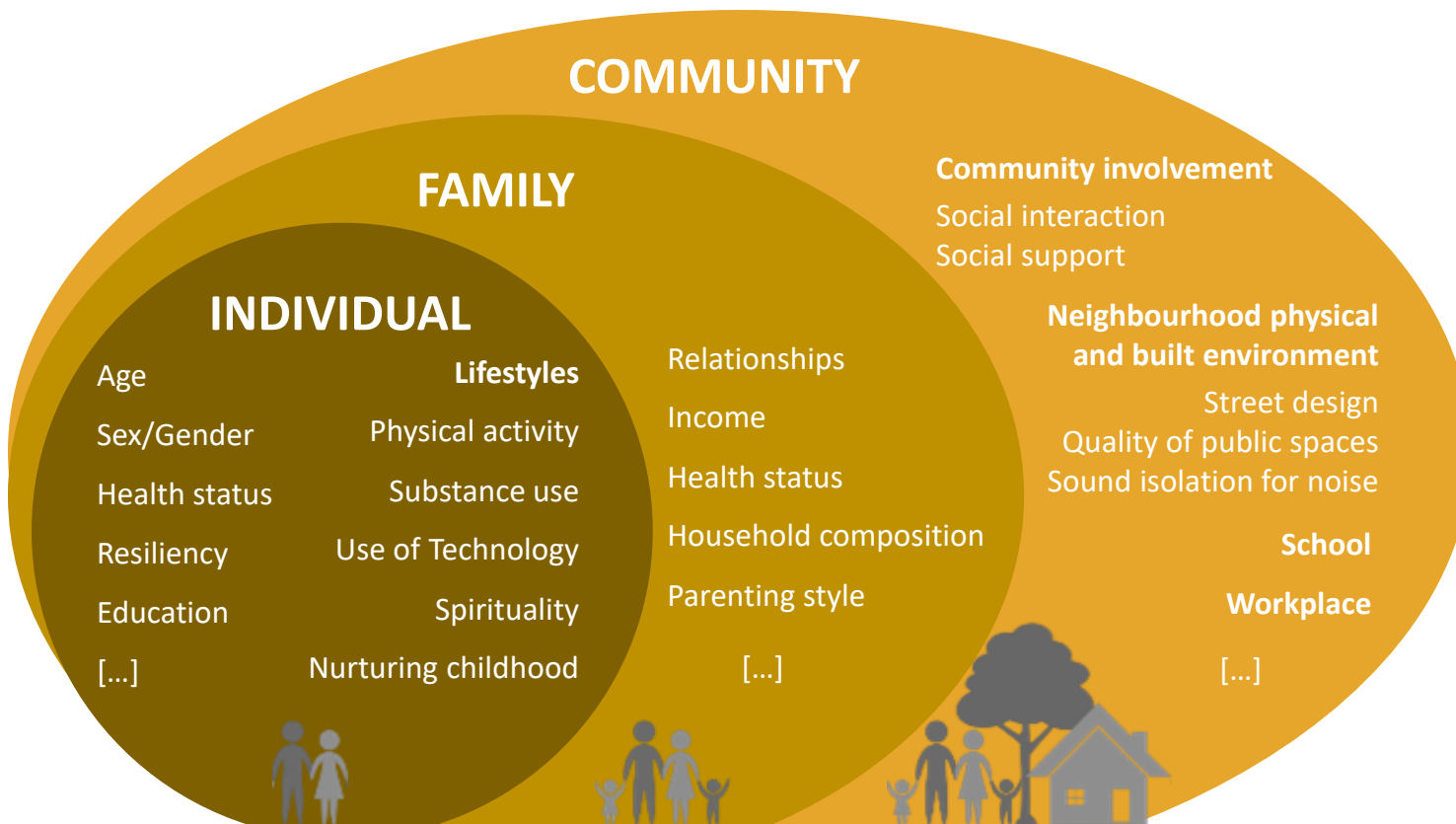
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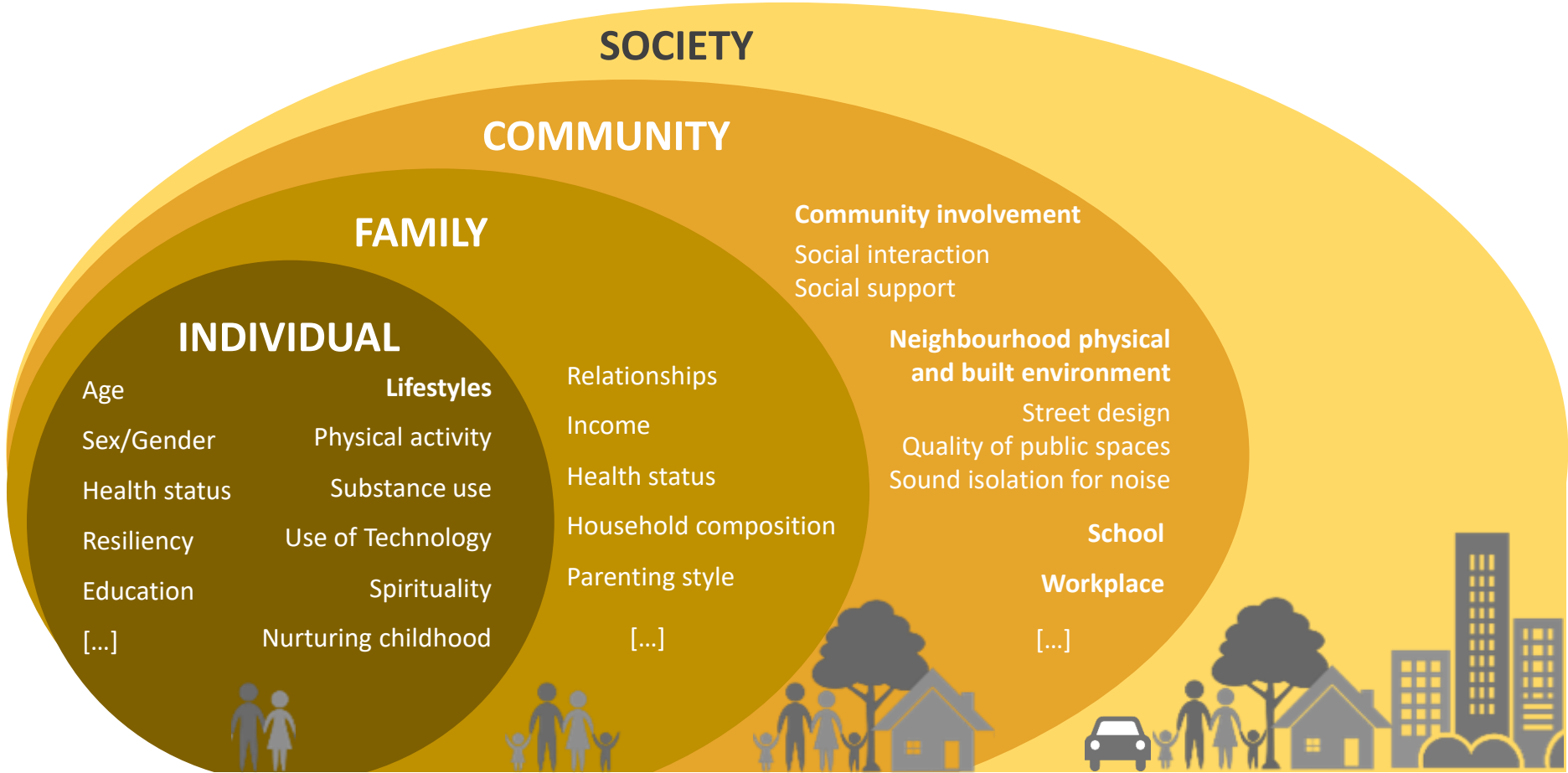
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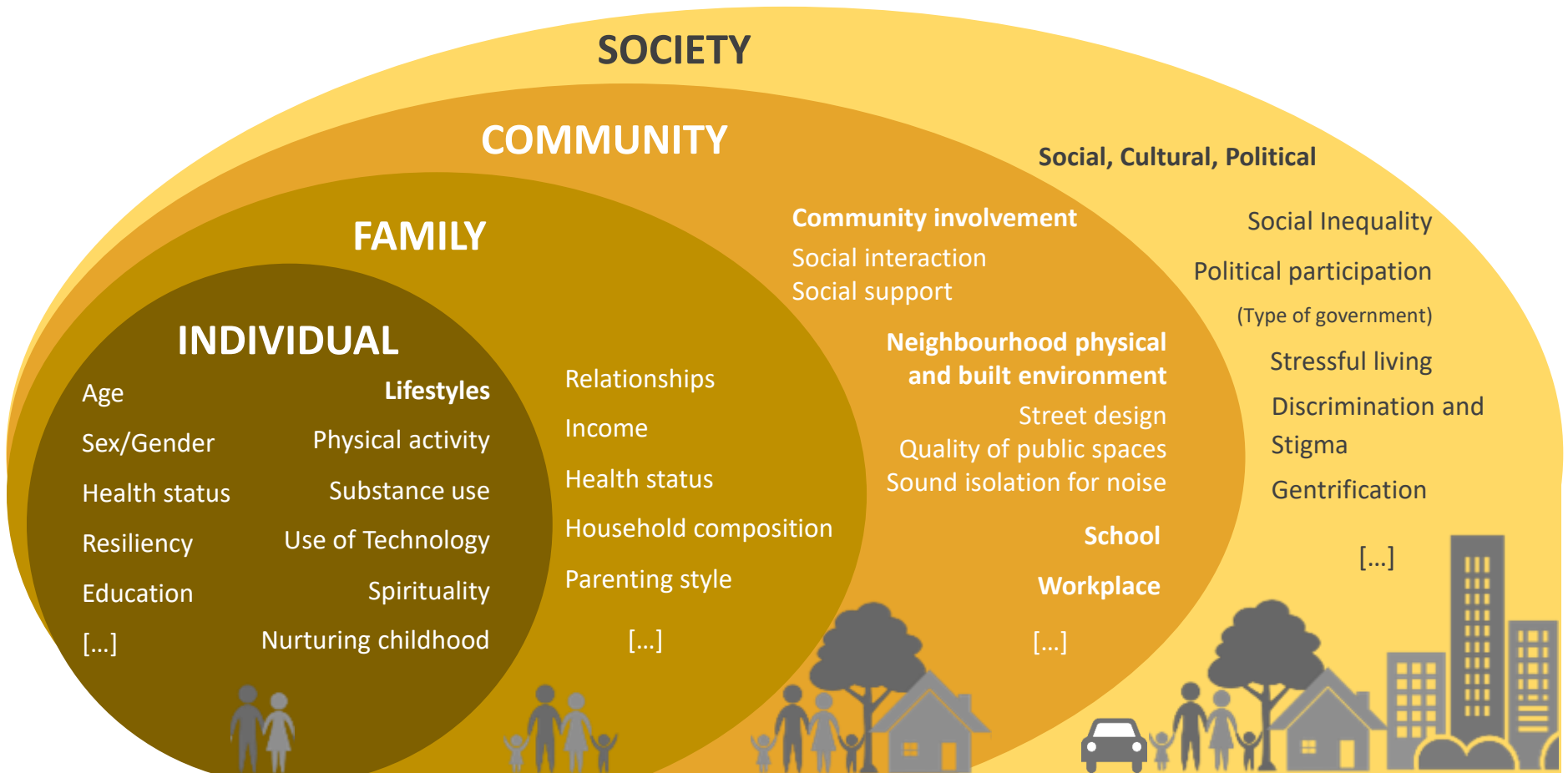
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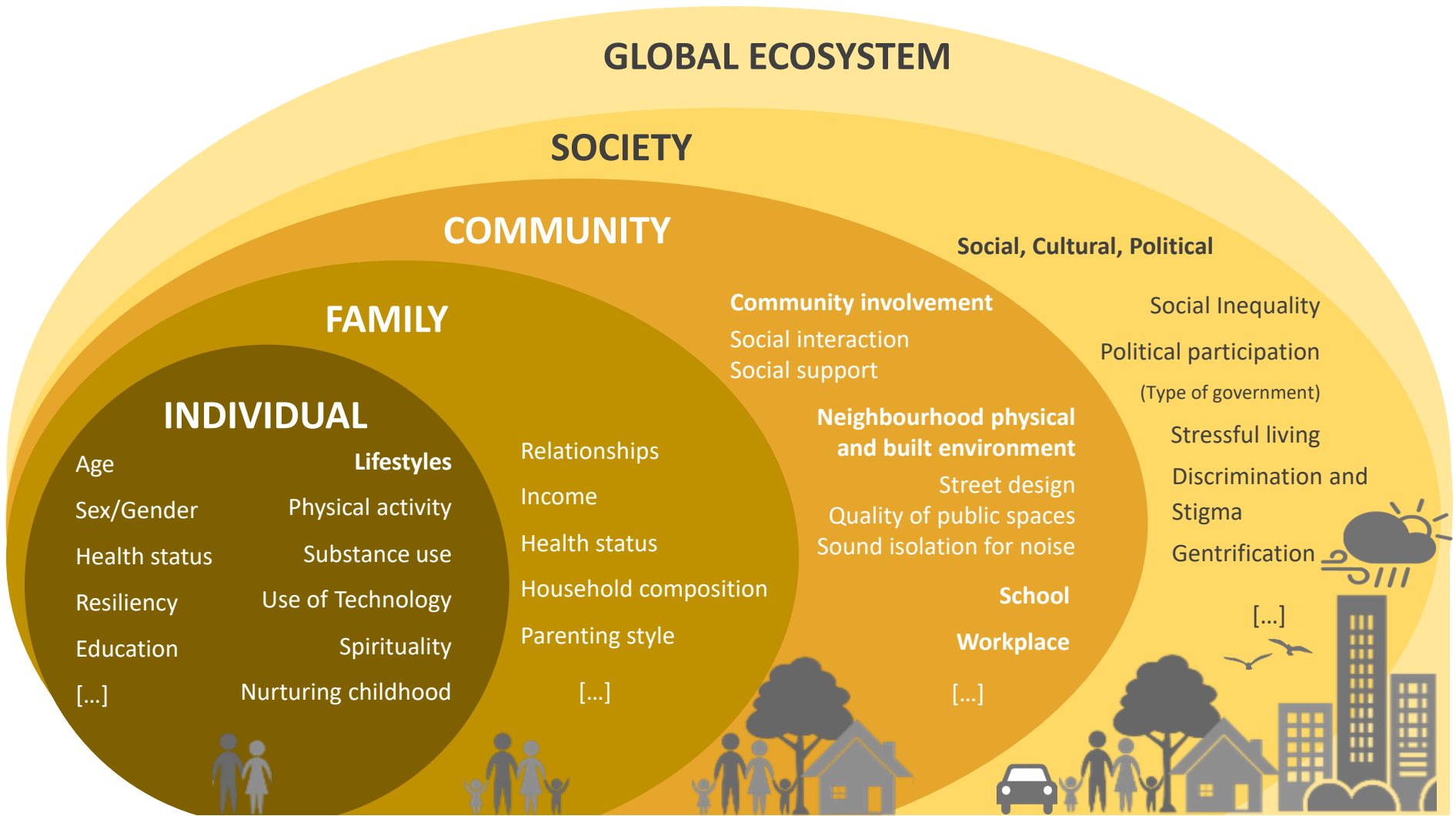
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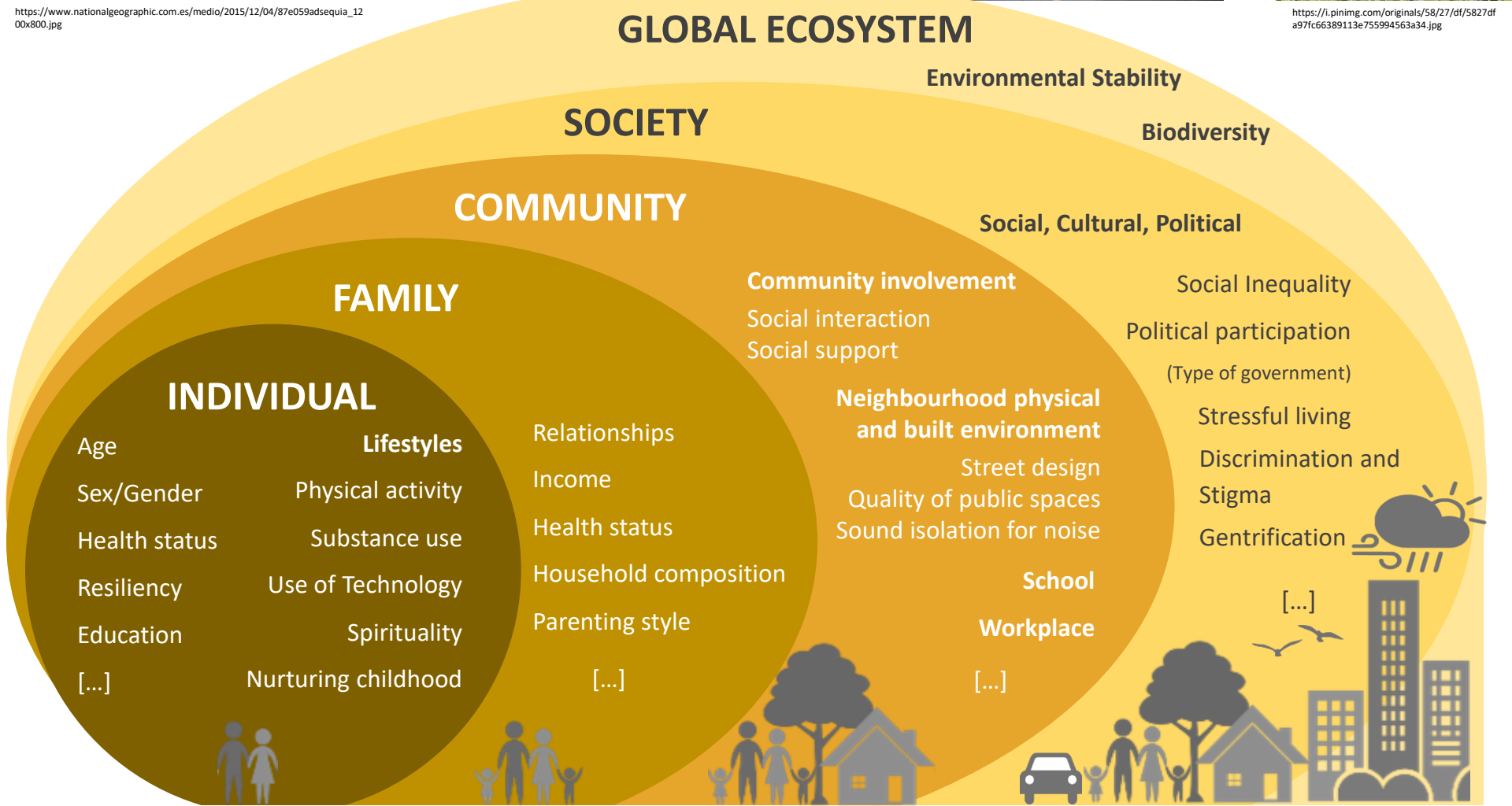
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# DIGITAL

## GLOBAL ECOSYSTEM

Environmental Stability

## SOCIETY

Biodiversity

## COMMUNITY

Social, Cultural, Political

## FAMILY

Community involvement

Social Inequality

Social interaction  
Social support

Political participation

(Type of government)

## INDIVIDUAL

- Age
- Sex/Gender
- Health status
- Resiliency
- Education
- [...]
- Lifestyles
- Physical activity
- Substance use
- Use of Technology
- Spirituality
- Nurturing childhood

Neighbourhood physical and built environment

Street design  
Quality of public spaces  
Sound isolation for noise

Stressful living  
Discrimination and Stigma  
Gentrification

School

Workplace

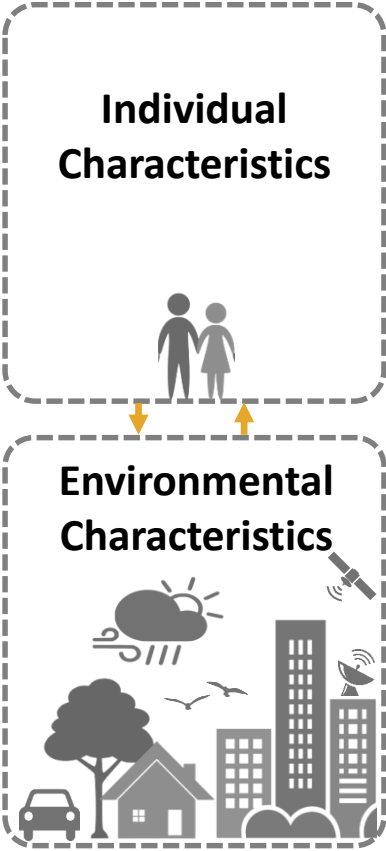
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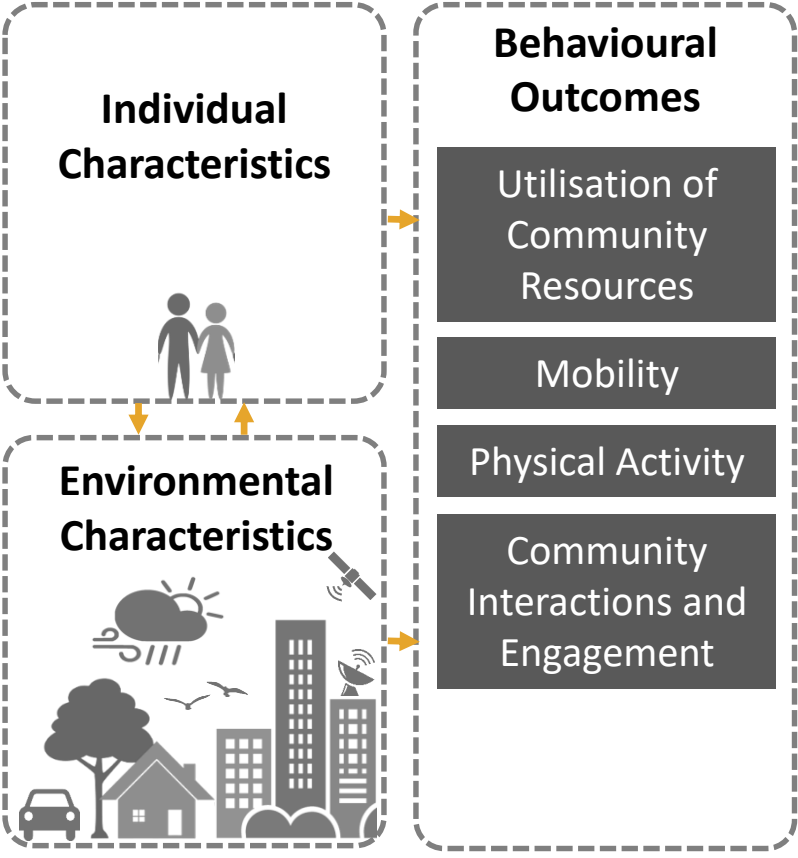


# Determinants of Mental Health



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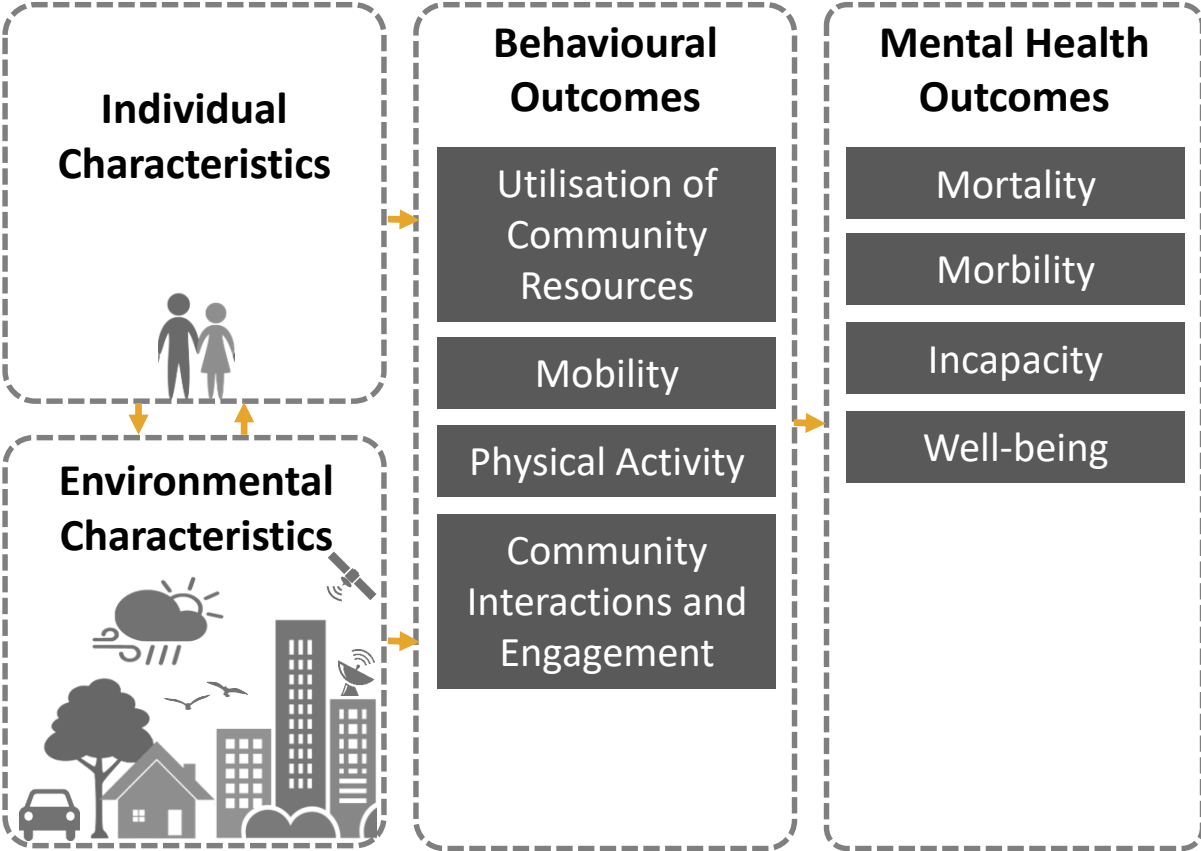
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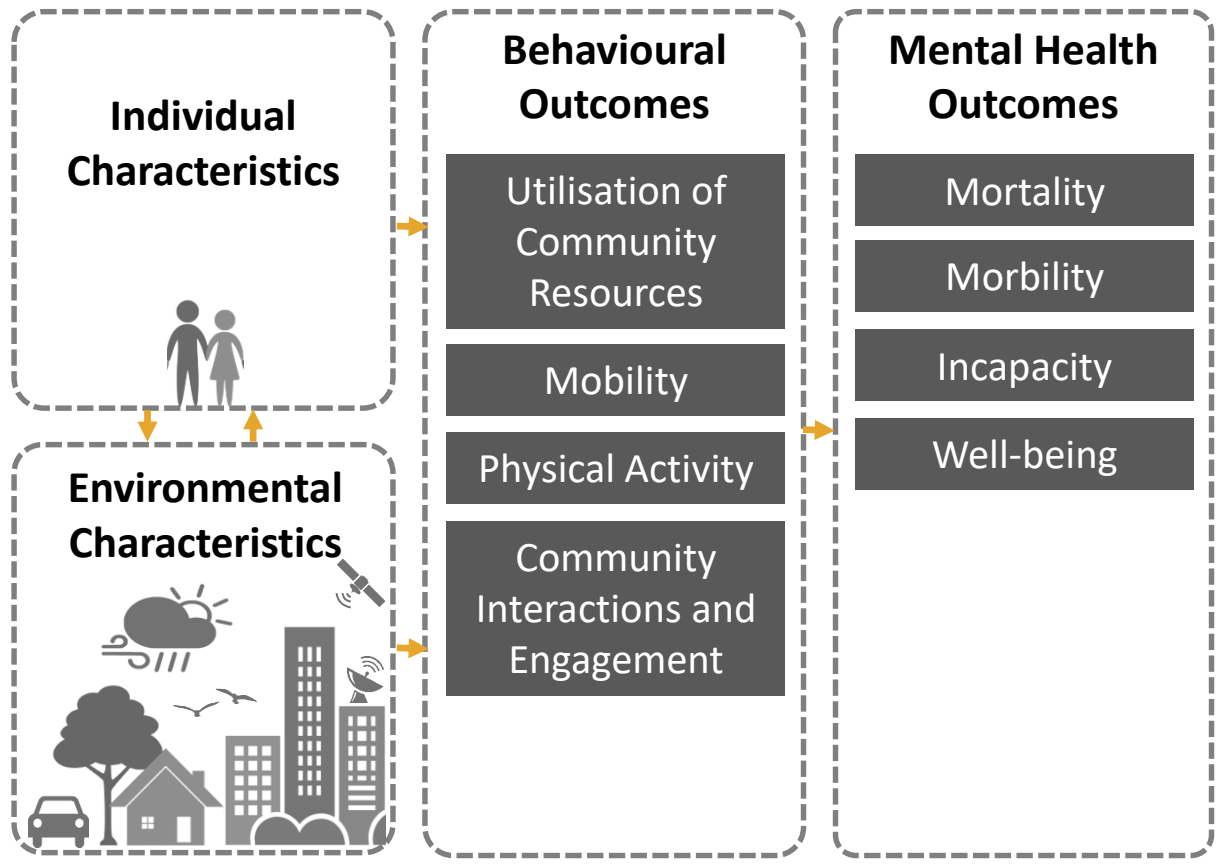
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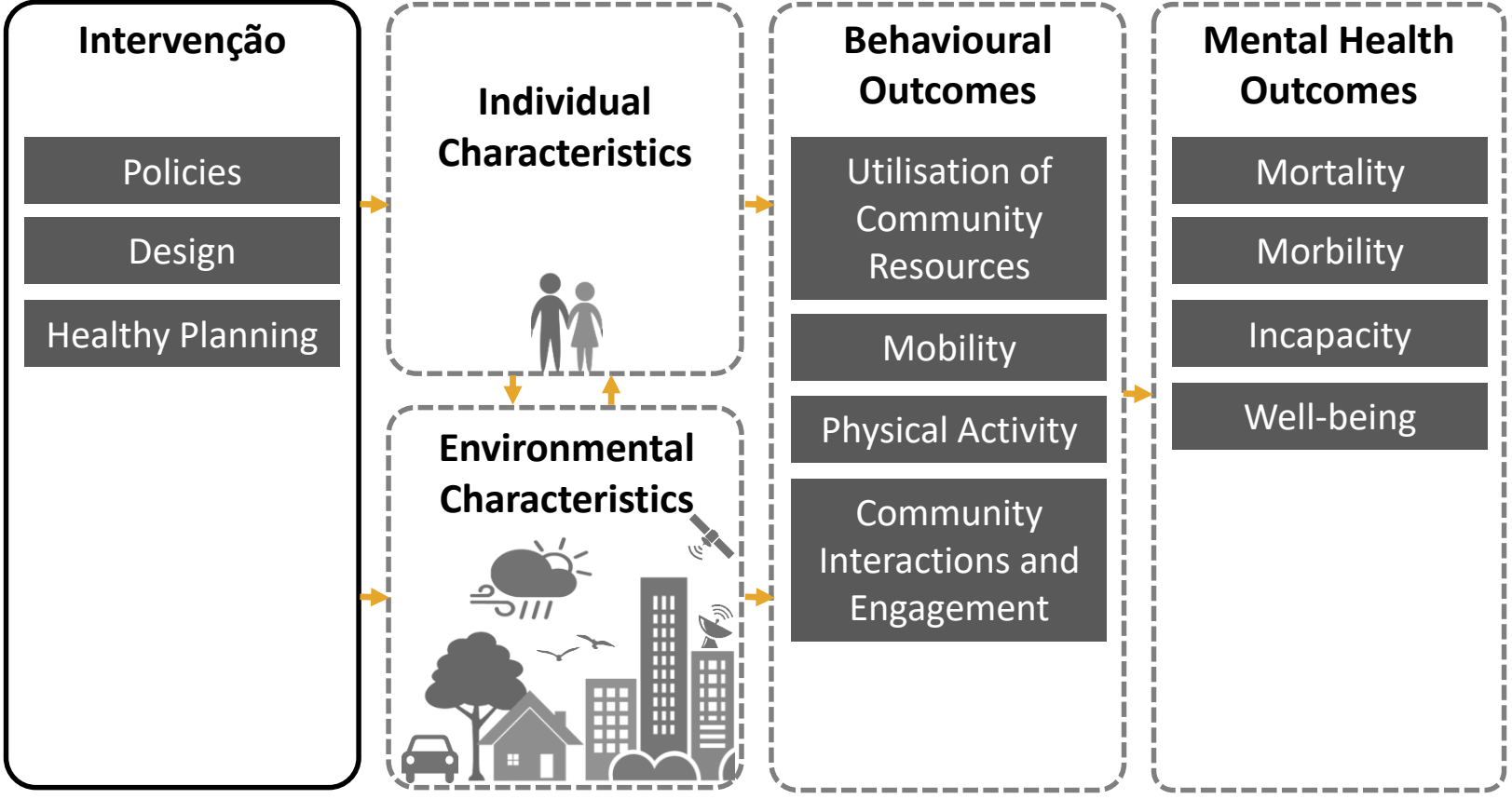
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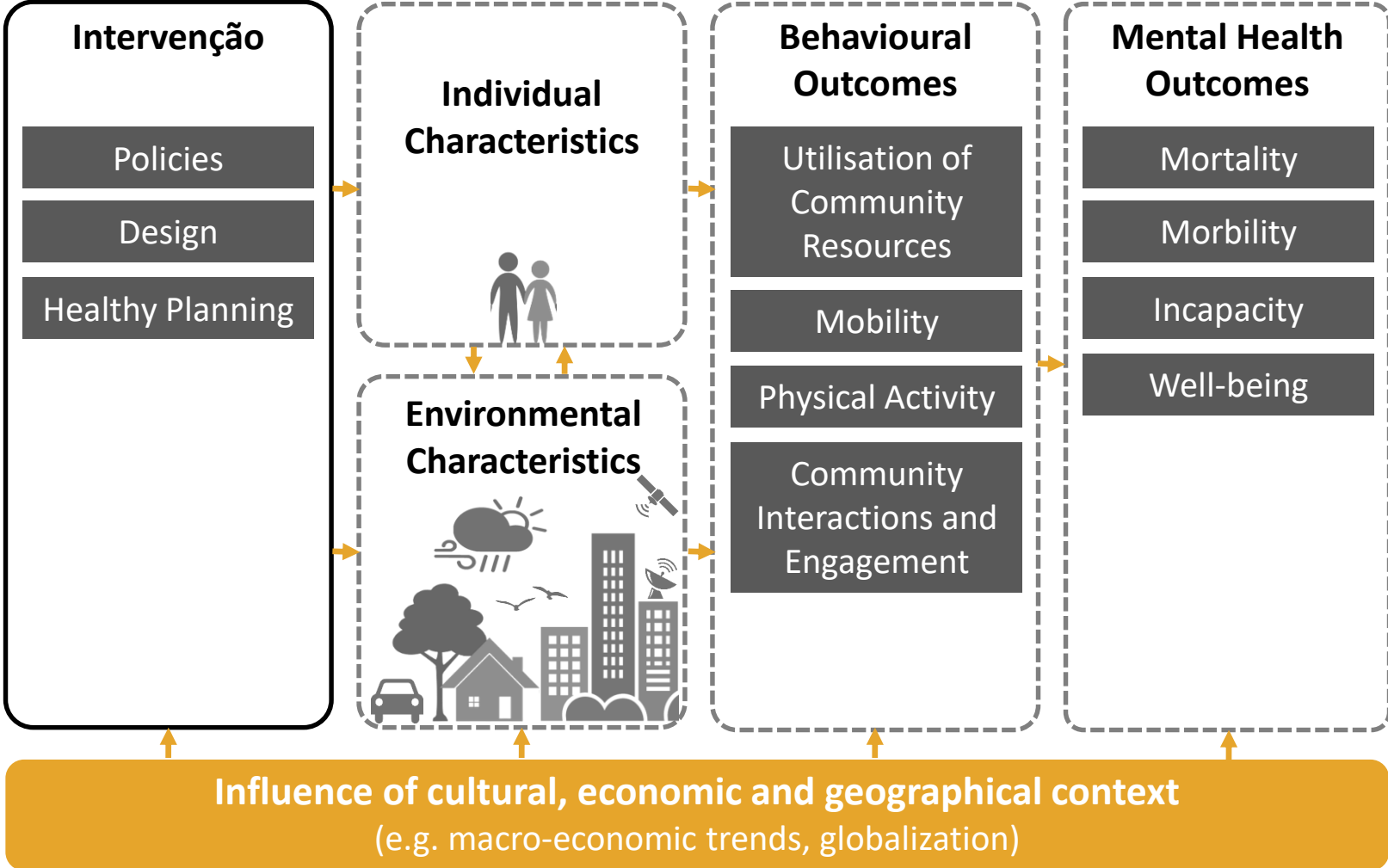
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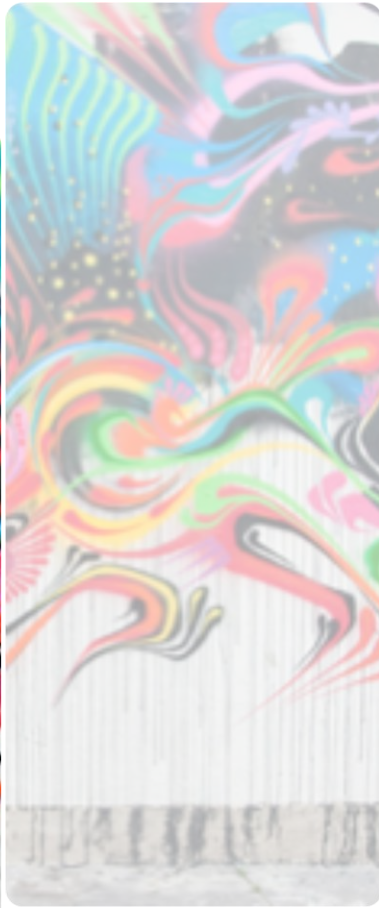
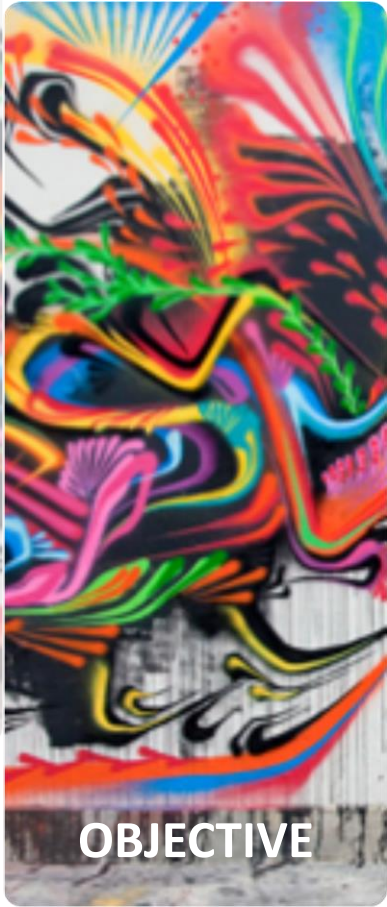
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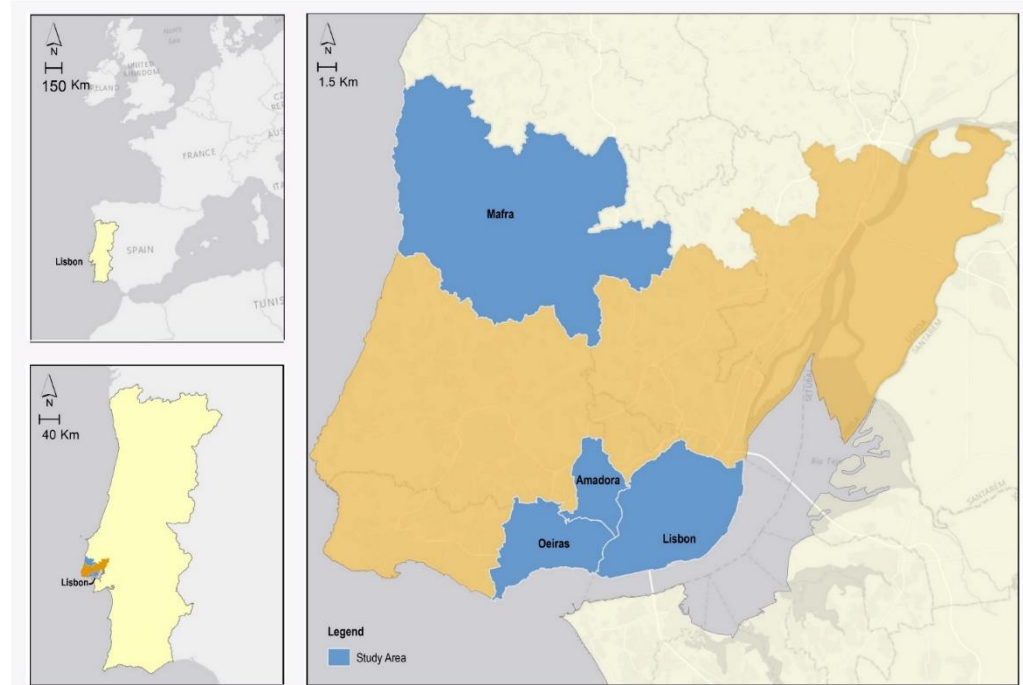


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**Mental Health Promotion**

# Objective



to strategically assess  
the neighbourhood environmental factors  
that contribute to mental health promotion  
in the **Lisbon Region** (Portugal)

[4 municipalities: Amadora, Lisboa, Mafra e Oeiras]



**METHODS**

# **Strategic Environmental and Health Assessment**

**[to contribute to mental health promotion]**

# Method

## Strategic Environmental and Health Assessment

Strategic thinking for Sustainability in Strategic Environmental Assessment (Partidário, 2012)

### 1. Identification of the neighbourhood environmental characteristics that are relevant to the mental health of the population

Questionnaire to the population | Multilevel Binary Logistic Regression Model

Y [Mental Health – binary scale of SF-36v2 instrument]

= X1 [neighborhood environmental characteristic] + X2 [sex] + X3 [age]

**Probability of event (odds ratio) > to 1,5 (p-value <= 0,05)**



# Method

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### 2. Definition of the evaluation framework with the identification of the critical decision factors and assessment criteria

Critical Decision Factors – Assessment Criteria – Indicators

# Method

## Strategic Environmental and Health Assessment

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Probability of event (odds ratio) > to 1,5 (p-value <= 0,05)



### 2. Definition of the evaluation framework with the identification of the critical decision factors and assessment criteria

Critical Decision Factors – Assessment Criteria – Indicators



### 3. Assessment of effects on the mental health

Risks and opportunities of different strategic options



## Critical Decision Factors and Strategic Options

[to contribute to mental health promotion]

# Critical Decision Factors and Assessment Criteria



# Critical Decision Factors and Assessment Criteria

## 1. Quality of the public space

1.1 Safety

1.2 Sense of place

**access, characteristics** and **elements of the public space** that insure opportunities to make healthy choices, promoting

- sense of safety, identity and belonging to the place
- contact with nature
- social and cultural interaction



**MENTAL HEALTH**

# Critical Decision Factors and Assessment Criteria

## 1. Quality of the public space

- 1.1 Safety
- 1.2 Sense of place

## 2. Physical quality of the environment

- 2.1 Air quality
- 2.2 Noise in housing
- 2.3 Solid waste and urban cleaning

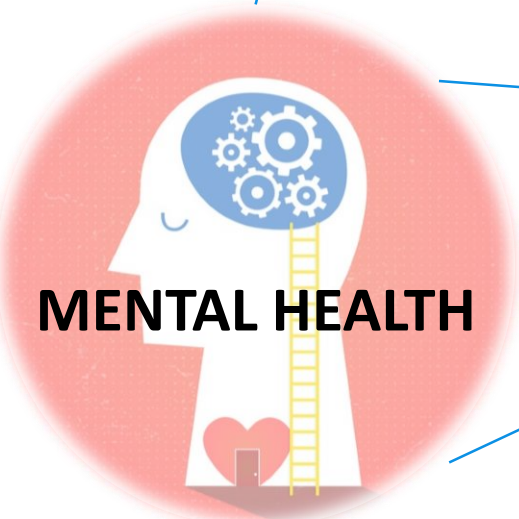
**characteristics** and **elements of the physical and natural environment** that support human life, such as

- air quality and adequate sound levels
- solid waste management and urban cleaning



**MENTAL HEALTH**

# Critical Decision Factors and Assessment Criteria



## 1. Quality of the public space

- 1.1 Safety
- 1.2 Sense of place

## 2. Physical quality of the environment

- 2.1 Air quality
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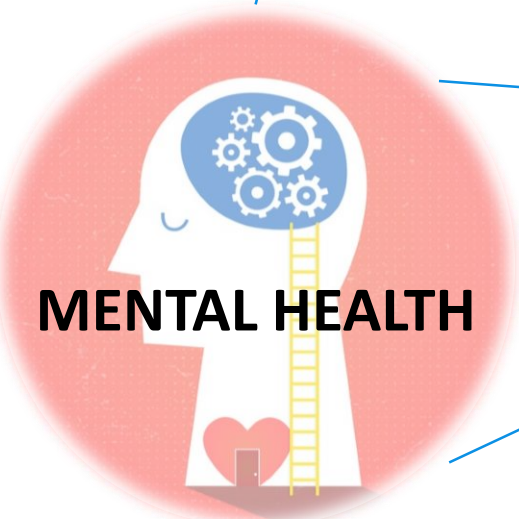
## 3. Professional qualification and creation of economic activities

- 3.1 Professional qualification
- 3.2 New economic activities and business initiatives
- 3.3 Employment | Labour

**training opportunities** and **qualification of individuals** and **local economic dynamics**, including

- lifelong learning
- business attractiveness
- employment creation
- innovation and entrepreneurship

# Critical Decision Factors and Assessment Criteria



**1. Quality of the public space**

- 1.1 Safety
- 1.2 Sense of place

**2. Physical quality of the environment**

- 2.1 Air quality
- 2.2 Noise in housing
- 2.3 Solid waste and urban cleaning

**3. Professional qualification and creation of economic activities**

- 3.1 Professional qualification
- 3.2 New economic activities and business initiatives
- 3.3 Employment | Labour

**4. Services and facilities**


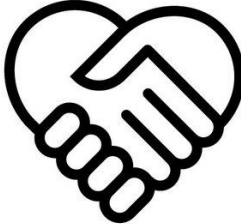
- 4.1 Health
- 4.2 Education
- 4.3 Sport
- 4.4 Public Transportation
- 4.5 Associative and community spaces
- 4.6 Local commerce

**offer, access and quality services and facilities**  
supporting community activities






# Critical Decision Factors - Assessment Criteria - Indicators

Quality of the public space

CDF	Criteria	Indicators
	<p><b>Safety</b></p> 	<ul style="list-style-type: none"><li>▪ Crimes recorded by the police pickpocketing, robbery on public roads, theft of vehicles, burglary, theft in establishments</li><li>▪ Buildings with large repair needed or most degraded</li><li>▪ Street lighting density</li><li>▪ Running over</li><li>▪ Resident population living within 15 minutes walking from urban green space</li><li>▪ Expenditure of the municipality in public space</li></ul>
	<p><b>Sense of place</b></p> 	<ul style="list-style-type: none"><li>▪ Abstention in elections to parish assemblies</li><li>▪ Initiatives generated by / for the community within the parish council promoting the sense of place</li><li>▪ Participants in initiatives generated by / for the community within the parish council promoting the sense of place</li></ul>




# Critical Decision Factors - Assessment Criteria - Indicators

Physical quality of the environment

CDF	Criteria	Indicators
	<p><b>Air quality</b></p> 	<ul style="list-style-type: none"><li>▪ Resident population exposed to PM10 concentrations</li><li>▪ Resident population exposed to PM2.5 concentrations</li><li>▪ Population exposed to pollutants emission sources</li></ul>
	<p><b>Noise in housing</b></p> 	<ul style="list-style-type: none"><li>▪ Resident population affected by noise levels</li><li>▪ Population exposed to noise emission sources</li><li>▪ Complaints about noise recorded in the municipality</li><li>▪ Municipal licences attributed for the installation of windows with double glazing</li></ul>
	<p><b>Solid waste and urban cleaning</b></p> 	<ul style="list-style-type: none"><li>▪ Urban solid waste collected</li><li>▪ Urban waste selectively collected</li><li>▪ Expenditure of the municipality in waste management</li><li>▪ Weekly frequency of cleaning / solid waste collection</li></ul>

# Critical Decision Factors - Assessment Criteria - Indicators

Professional qualification and creation of economic activities

CDF	Criteria	Indicators
<b>Professional qualification</b>		<ul style="list-style-type: none"> <li>▪ Individuals (18 and more years old) who participated in adult education and training courses</li> <li>▪ Individuals (18 and more years old) certified by the system of recognition, validation and certification of competences</li> <li>▪ Unqualified workers</li> <li>▪ Resident population not in education, employment, or training</li> </ul>
<b>New economic activities and business initiatives</b>		<ul style="list-style-type: none"> <li>▪ Birth of enterprises</li> <li>▪ Survival of enterprises</li> <li>▪ Average age of incubated enterprises</li> <li>▪ Business plans aproved by incubators</li> <li>▪ Occupancy of the incubators</li> </ul>
<b>Employment   Labour</b>		<ul style="list-style-type: none"> <li>▪ Employment evolution</li> <li>▪ Self-employed workers</li> <li>▪ Resident population that works or studies in the same municipality</li> <li>▪ Unemployment evolution</li> <li>▪ Employment created by enterprises incubated</li> </ul>

# Critical Decision Factors - Assessment Criteria - Indicators

CDF

Criteria

Indicators

Health



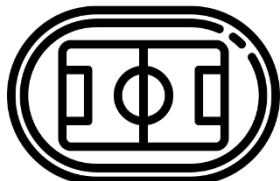
- Population living within 15 minutes walking from primary health care
- Medical doctors in primary health care
- Resident population without general practitioner/family doctor
- Nurses in primary health care
- Medical appointments with general medical practice and family medicine/general medicine

Education



- Early leavers from education and training
- Population with tertiary education concluded
- Children (3 to 10 years old) living within 15 minutes walking from pre-primary education and primary education (1st. cycle) schools
- Capacity (number of places) of the pre-primary education and primary education (1st. cycle) schools

Sport







- Population living within 15 minutes walking from sports facilities
- Expenditure of the municipality in activities and sports facilities
- Participants in sport activities

Services and facilities (I)

# Critical Decision Factors - Assessment Criteria - Indicators

Services and facilities (II)

CDF	Criteria	Indicators
	<p><b>Public Transports</b></p>  	<ul style="list-style-type: none"> <li>Population using public transportation and/or active (soft) modes daily</li> <li>Population living within 15 minutes walking from a public transportation stop</li> <li>Average time spend on commuting (min) of employed or student resident population using collective mode of transport</li> </ul>
	<p><b>Associative and community spaces</b></p> 	<ul style="list-style-type: none"> <li>Affiliated individuals of local associations by association typology</li> <li>Population living within 15 minutes walking from local association</li> <li>Elderly (65 or more years old) living within 15 minutes walking from social/conviviality center or daycare center</li> <li>Capacity (number of places) of social/conviviality center or daycare center</li> </ul>
	<p><b>Local commerce</b></p> 	<ul style="list-style-type: none"> <li>Commercial establishments density</li> <li>Average time to nearest commercial establishments</li> </ul>



CDF		Quality of the public space	
Criteria	Safety	Sense of place	
Policie	Improvement of the availability of public spaces		
Strategic Option	Trees planting, creation of resting places and instalation of benches		




**CDF** **Quality of the public space**


Criteria **Safety**

**Sense of place**

Policie **Improvement of the availability of public spaces**

Strategic Option **Trees planting, creation of resting places and instalation of benches**

. Increase of the sense of safety (natural vigilance) 

. Promotion of the social and cultural interaction 




**CDF** **Quality of the public space**


Criteria **Safety**

**Sense of place**

Policie **Improvement of the availability of public spaces**

Strategic Option **Trees planting, creation of resting places and instalation of benches**

. Increase of the sense of safety (natural vigilance) 

. Promotion of the social and cultural interaction 

Strategic Option **Creation of green corridors and green spaces**



**CDF** **Quality of the public space**

<b>Criteria</b>	<b>Safety</b>	<b>Sense of place</b>
-----------------	---------------	-----------------------

**Policie** **Improvement of the availability of public spaces**

**Strategic Option** Trees planting, creation of resting places and instalation of benches

- |   |  |
|---|--|
| . Increase of the sense of safety (natural vigilance)  | . Promotion of the social and cultural interaction  |
|---|--|

**Strategic Option** **Creation of green corridors and green spaces**

- |   |  |
|---|--|
| . Increase or decrease of the sense of safety according to the green space characteristics (e.g. iluminnation, vegetation density)<br><br><div style="text-align: right;">   </div> | . Promotion of the contact with the nature<br>. Promotion of healthy choices (e.g. practice of physical exercise)<br>. Promotion of the social and cultural interaction<br>. Promotion of the sense of identity and belonging<br><br><div style="text-align: right;">  </div> |
|---|--|





CDF		Quality of the public space	
Criteria	Safety	Sense of place	
Policie	Promotion of active (soft) modes of mobility		
Strategic Option	Increase od side-walk space and walking and cycling ways (avoiding road crossing)		


**CDF** **Quality of the public space**

<b>Criteria</b>	<b>Safety</b>	<b>Sense of place</b>
-----------------	---------------	-----------------------

**Policie** **Promotion of active (soft) modes of mobility**

**Strategic Option** **Increase od side-walk space and walking and cycling ways (avoiinding road crossing)**

- . Increase of safety levels (reduction of running overs)
  - . Conflits between the space users
- 


- . Promotion of the social and cultural interaction
  - . Promotion of healthy choices (e.g. walking and cycling)
- 



FINAL NOTES

## The importance of Neighbourhood Environment

[to contribute to mental health promotion]

# The importance of Neighbourhood Environment

- Application of methodologies of **Strategic Environmental and Health**

## **Assessment to promote Mental Health** allow:

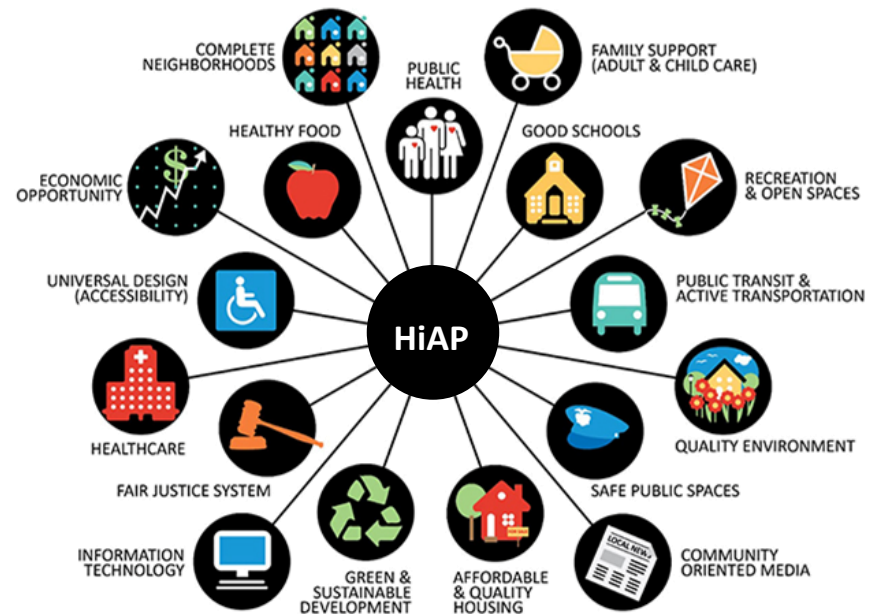
- Inform and support the local planning decision-making processes with the strategic considerations on neighbourhood environmental characteristics
- Highlight the important role to be played by the local governments (municipalities/parishes) in design public healthy policies

# The importance of Neighbourhood Environment

## - Application of methodologies of Strategic Environmental and Health Assessment to promote Mental Health allow:

- Inform and support the local planning decision-making processes with the strategic considerations on neighbourhood environmental characteristics
- Highlight the important role to be played by the local governments (municipalities/parishes) in design public healthy policies that are

**HOLISTIC | MULTILEVEL | INTERSECTORIAL | COMMUNITY BASED**



## Health in All Policies (HiAP)

Intersectoral approach to public policy

# Thank you for your attention!

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StinkFish [Colombian street artist] (2011), Shoreditch, London, United Kingdom