

FOR THE DEFENCE OF COMMONS  
GOODS

# AIR

Democratic control  
for air quality



**Guide for municipalities**

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# AIR

## Democratic control for air quality



**Guide for municipalities**

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**Acknowledgements:**

We would like to thank all of the people and communities fighting to bring air quality under citizen control. This guide was inspired by them.

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*No, air,  
don't sell yourself,  
don't be channelled,  
don't be entubed,  
don't be boxed,  
compressed,  
don't be stamped out in pills,  
don't be bottled,  
be careful!*

*Call  
when you need me,  
I am the poet son  
of the poor, brother  
in flesh and brother  
in law  
of the poor, of  
everywhere,  
of my country and all  
the others,  
of the poor who live  
on the river,  
of those who live in  
the heights  
of the vertical  
mountains,  
break rock,  
nail boards,  
sew clothes,  
cut wood,  
haul earth,  
and for this  
I want them to  
breathe,  
you are all they have,  
this is why  
you are  
invisible,  
so they can see*

*what tomorrow brings,  
for this  
you exist,  
air,  
catch your breath,  
don't shackle yourself,  
don't fix yourself to  
anyone  
who comes in a car  
to examine you,  
leave them,  
laugh at them,  
flee from them through  
the shadows,  
don't accept  
their propositions,  
we'll go together  
dancing through the  
world,  
knocking the blossoms  
from the apple trees,  
entering windows,  
whistling  
melodies  
from yesterday and  
tomorrow,  
already  
the day is coming  
when we will  
liberate  
the light and the  
water,  
earth and men,  
and all will be  
for all, as you are.  
For this, for now,  
be careful!*

From the poem "Ode to the Air"  
by Pablo Neruda

# Introduction

Air quality is one of the fundamental rights of every person. When we breathe, our physiology is put into direct contact with the environment and, therefore, if this is polluted it can be hazardous, leading to very serious consequences for our health. Concerns about living in healthy air are not new, neighbourhoods and towns have been worried about it for many years now. In fact, the campaigns for healthy air, undertaken in Europe and also in Catalonia, were the first to focus on the environment. Campaigns were fought by workers piled up in neighbourhoods near factories, where the fumes they emitted left the air almost unbreathable.

The difference with these campaigns that were fought is that the origin of pollution has changed. It used to be the factories polluting the air we breathe, now these are a minority and instead vehicles are causing the pollution. The densification of cities leads to a lot of traffic and in the event of anticyclone



weather conditions, gases and particles accumulate causing serious health problems affecting 9 out of 10 people living on the planet. This type of pollution is already one of the most serious global problems according to the World Health Organisation. Numerous scientific studies show the direct relationship between poor air quality and high numbers of respiratory, cardiovascular, neurological and immunological diseases and cancers resulting in about 7 million deaths a year.

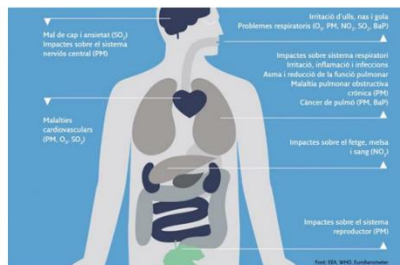
Air pollution is the top preventable environmental risk factor in Europe and Catalonia. Its impact on health is mainly due to its effect on ageing through oxidative stress and low-grade systemic inflammation. It has short- and long-term effects on the respiratory tract and the cardiovascular and neurological systems, and a rapid improvement with health benefits is perceived after interventions on air pollution. The risk is due to the presence of solid particles in the atmosphere, such as mineral matters, marine aerosols and carbon compounds, among others. The main pollutants in the air are NO<sub>x</sub>, SO<sub>x</sub>, O<sub>3</sub>, CO, NH<sub>3</sub> and VOC, among others and the particles in suspension (PM) have a great impact on our health. Particles smaller than 30 microns in diameter have an impact on the nose and throat. Particles smaller than 10 microns, such as SO<sub>2</sub>, NO<sub>2</sub>, and ozone, have an impact on the trachea, bronchi, and bronchioles. The particles promote early atherosclerosis and systemic oxidation. For this reason, it has already been scientifically proven that there is a significant relationship between air pollution and daily mortality.

In Barcelona, there is an increase in pollution during the winter months and according to different studies of the

Barcelona Institute of Global Health there is a clear relationship between air pollution and mortality caused by traffic that is the main pollutant. For this reason, living in one municipality or another is very different. Different studies in California have concluded that when living near busy roads, children are at greater risk of asthma and it may also have an impact during pregnancy. One of the other effects is the relationship between air quality and children's' work reports, with lower school performance in centres near busy roads.

Headaches and anxiety (SO<sub>2</sub>) have an impact on the central nervous system (PM)

Cardiovascular diseases (PM, O<sub>3</sub>, SO<sub>2</sub>)



Irritation of eyes, nose and throat  
Respiratory problems (O<sub>3</sub>, PM, NO<sub>2</sub>, SO<sub>2</sub>, BaP)

Impacts on the respiratory system  
Irritation, inflammation and infections  
Asthma and reduction of lung function  
Disease. Chronic obstructive pulmonary disease (PM)  
Lung cancer (PM). BaP

Impacts on the liver, spleen and blood (NO<sub>2</sub>)

Impacts on the reproductive system (PM)

The main cause of pollution in the Barcelona Metropolitan Region is private vehicle traffic, followed by industrial activity and maritime and air traffic. Combating air pollution would entail structural changes in the areas of transport and industry, together solving serious public health, mobility, energy and climate issues.

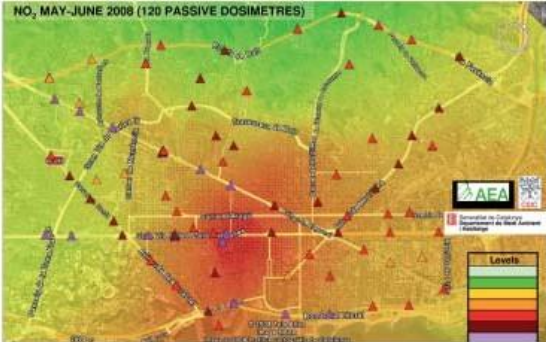
### 3 Índexs de Contaminació de l'Aire

#### LA CIUTAT DE BARCELONA

#### Arees crítiques de qualitat de l'aire

Font: QUEROL, X. et al, Qualitat de l'Aire i alternatives, IDAEA CSIC, 2011.

#### Critical Air Quality problems

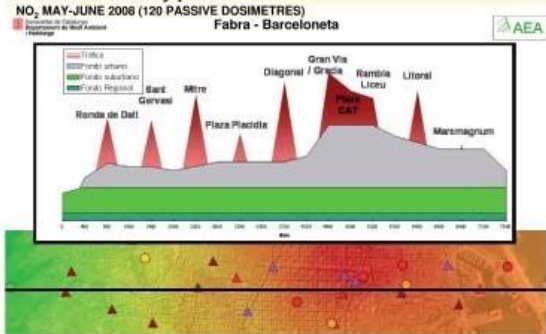


#### ELS CARRERS BARCELONA

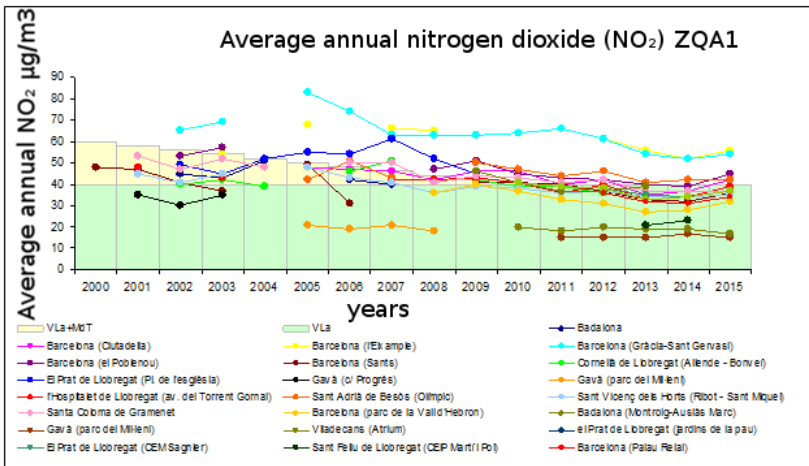
#### Carrers crítics en qualitat de l'aire

Font: QUEROL, X. et al, Qualitat de l'Aire i alternatives, IDAEA CSIC, 2011.

#### Critical Air Quality problems



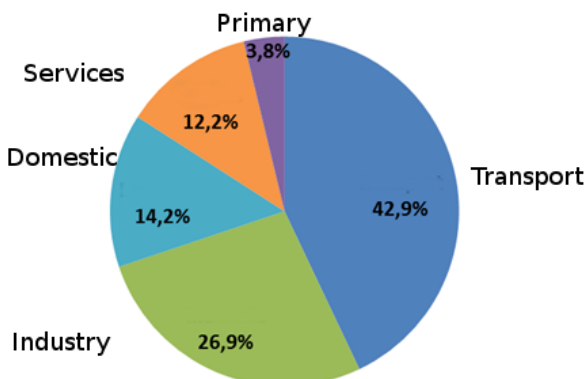
Part of the Breathe exhibition 'Respira', transforms the urban environment of the health service, prepared by the CST and the UPC.



*Graph of the Generalitat de Catalunya showing the nitrogen dioxide contamination of the AMB.*

In Catalonia, road transport represents 40% of the energy consumed and is based mainly on hydrocarbons, which is at 95%, generating high energy dependence.

Final energy consumption by sectors in Catalonia - Year 2017



*Graph by ICAEN*

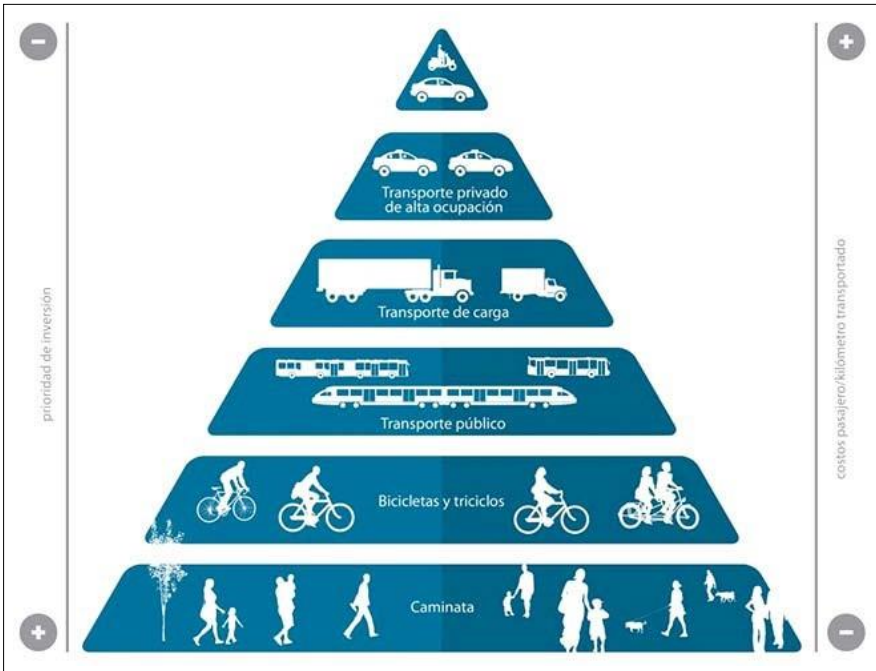


# Chapter 1

## Healthy municipalities

### **Focus Area 1.1** Urbanism that promotes sustainable mobility

Urban planning is vital for sustainable mobility from different perspectives. Services must be located nearby to people. The fact that there are urban developments far from the centre generates dependence on motor vehicles and, especially, on private ones. For this reason, it is necessary to consider a development that generates autonomous journeys creating proximity, with streets where we can move about on foot or by bicycle and at the same time living spaces to conserve and inhabit.



*Pyramid of hierarchy for mobility while promoting public policies. The base is a priority.*

## Focus Area 1.2 Public transport

A good public transport network that is frequently used and competitive with private vehicles is more sustainable and helps social cohesion. In highly populated cities, this service is based on the metro, trams and buses. Buses can be used in smaller towns and intercity travel.

Public transport is a tool for advancing social equity, improving the health of people and the environment.

Public transport guarantees much more citizen mobility by using fewer vehicles, which contributes to the flow of traffic and a better urban environment. Neither hybrid cars, nor electric cars, nor autonomous ones can exceed the capacity of public transport.

According to the Platform for Public Transport<sup>1</sup> the main reason is because cars take up a lot of travelling space and almost always carry only one occupant. The average occupancy of cars in Catalonia ranges from 1.1 to 1.3 occupants per vehicle. On the other hand, public transport makes the most of its capacity during rush hour and offers much more capacity using less space. During rush hour, each bus can comfortably carry between 60 and 140 people, depending on its length, a tram between 200 and 400, and a subway or metro between 800 and 1,200.

More than 2,000 people can travel through a bus lane every hour with a service every 3 minutes. The same capacity by car would require two to three lanes and one vehicle travelling every two seconds. In addition to providing more capacity for public transport, it also gives way to quieter streets and freer public spaces.

Railways have even more capacity. A simple tram line every 3 minutes equals the capacity of a city street with 4 lanes of traffic, while a subway line equals 16 lanes of traffic. In suburban areas, a commuter line with trains every 10 minutes is equivalent to a 10-lane motorway running in each direction.

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<sup>1</sup> <https://mestransportpublic.cat/mes-mobilitat-menys-transit/>

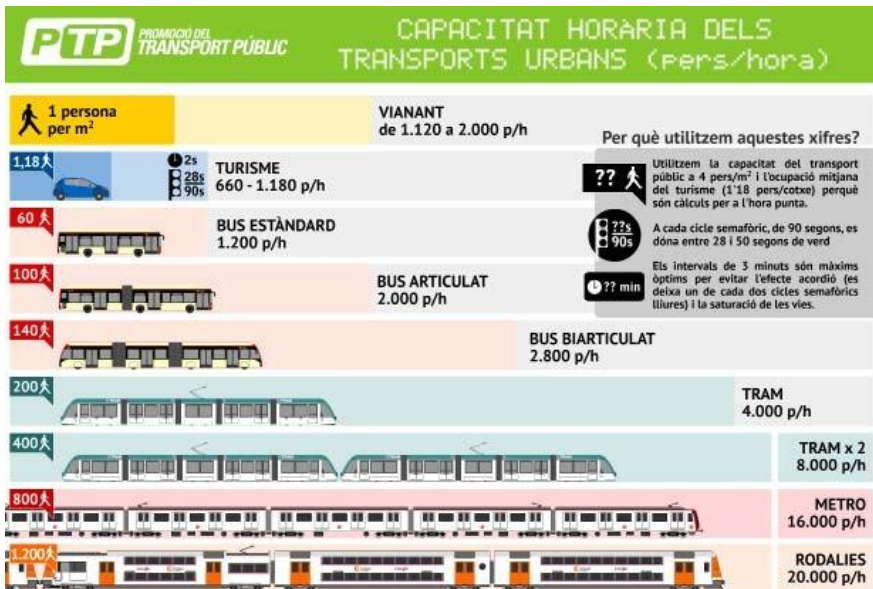


Diagram drawn up by the Platform for public transport

### Focus Area 1.3 Travel plans for companies<sup>2</sup>

Work is one of the most important reasons for people to travel. In addition, 20% of people injured in a work accident have it happen when they are travelling (when travelling from home to work or vice versa). For safety, social cohesion and improvement of air and climate quality, it is important to analyse and take steps to ensure that workers travel to the workplace by collective transportation.

<sup>22</sup>Documentation extracted from the report "Plans for business travel and change of mobility model for workers in the case of Barcelona as an example" by the CCOO



For this reason, company travel plans are an ideal tool for assessing the mobility of working people and determining measures to move towards a new, more sustainable, healthy, secure and equitable model.

The PDE contemplate trips between home and the workplace (in travel) during the working day, as much for their own workers, as for their collaborators, clients and suppliers, etc. And there are actions that can be promoted, such as: Promoting or improving shuttle-type buses connecting with stations, providing transport tickets to workers and / or visitors, providing clear information on the collective public transport offer, promoting car sharing, managing car parking in the workplace with sustainable mobility criteria, facilitating bicycles to the company's employees to travel to stations or home, renewing the fleet of vehicles of the company with energy and environmental efficiency criteria or promoting car-sharing in professional travel.

#### **Focus Area 1.4 Public and shared bicycle service**

The management of this service is public and it is located in large cities in Catalonia. It is based on a network of fixed stations and bicycles with anchors that prevent the use of unauthorised persons. This service would need to be extended to metropolitan scales so that populations close to the cities can also benefit.

Mobility should be encouraged from all train stations, so that users can travel to the neighbourhoods or villages nearby.

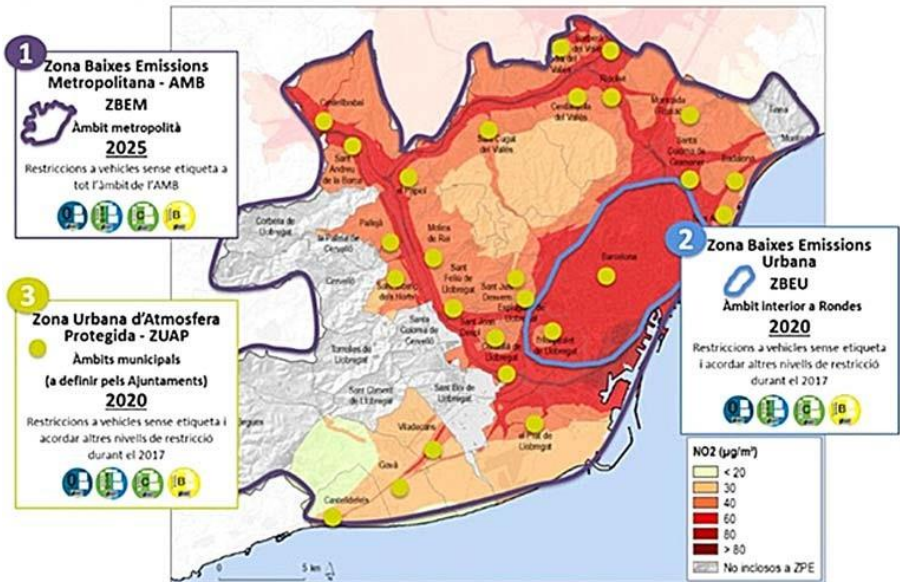
### **Focus Area 1.5 Cooperative and public car sharing and shared vehicles**

One of the options that initially helps us improve air quality in the case of vehicles that carry very few people is car sharing via community platforms and car sharing or multi-user cooperatives. These initiatives create a culture of long-term sharing of goods and using them more efficiently.

Just as there are public bicycle services, the multi-user car may also be promoted by public administrations in order to promote a qualitative and quantitative leap in its use.

### **Focus Area 1.6 Sustainable management of ports and airports**

The limitation of the capacity in ports and airports through analysing their load capacity (merchandise and tourism) with respect to the metabolism that these generate, pollution, consumption of water and energy, social costs... is necessary in order to reach criteria of sustainability. What limits should airports and ports have? For example, each cruise ship is like a small city producing daily the waste and pollution that corresponds to it, such as the gas equivalent of 12,000 vehicles, 600,000 litres of water...



Map prepared by the AMB of the most polluting areas and traffic restriction measures.

## Focus Area 1.7 Control measures for private vehicles.

The limitation of vehicles in the centre of the cities helps to reduce pollution, noise, increases safety with fewer accidents and calms the streets. These limitations may involve a complete ban or be limited to 30 zones where for motorised vehicles the speed limit is 30 km / h and pedestrians have the right of way.

Another measure is the creation of a park & ride located on the outskirts of cities and towns, often linked to a public transport



station where the purpose of private vehicles is to park and access the centre from the city by public transport.

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### **Focus Area 1.8 Environmental taxes**

Councils would need to include the tax on mechanical traction vehicles to include CO<sub>2</sub> emissions.

Pressure should be put on setting up an ecotax at airports to record the emission of aircraft, and for part of it to benefit the affected municipalities.

### **Focus Area 1.9 Map of public facilities vulnerable to pollution**

Contamination and noise from private vehicles cause children in the most polluted schools to have significantly impaired learning ability in school, as opposed to schoolchildren in premises less exposed to pollution, especially in relation to travel.

### **Focus Area 1.10 Extractive industry and activities**

Some polluting industries, for example the cement and petrochemical industries are bound by strict rules and regulations so that they do not cause health and environmental problems in their immediate environment. From the municipal level, we must ensure we provide transparent and truthful information on the emissions of these companies, neighbourhood participation in the control of the data and avoid lobbying against municipal policies.

### **Focus Area 1.11 Commercial distribution**

Direct-to-consumer delivery, also known as the last mile, is one of the challenges facing big cities and even more since we have

been thrust into online shopping. Planning by reception and delivery centres helps to reduce traffic. That is why logistics are important and even more so if they are aimed towards sustainability. Cooperative initiatives must be promoted with respect to this logistics distribution, facilitating and betting on imagination and disruptive solutions.

# Chapter 2 Participation of citizens and transparency

## **Focus Area 2.1** Transparency and communication of air quality data and the impact generated

The basis of citizen participation is to provide the data obtained in a transparent and understandable way. This is important for air quality, and risk alerts need to be created, but also, pollution data should be available to anyone who wants to consult it. The best tool is through the web and the municipal bulletins.

## **Focus Area 2.2** Neighbourhood and school participation in campaigns to obtain air quality data

Air pollution can be measured relatively easily through a mobile



application or receivers attached to street windows. For this reason, it is easy to activate schoolchildren and neighbours in citizen science programmes empowering data, in order to be able to subsequently participate in pollution mitigation policies.

There is currently a programme along these lines called "Air Watchers" promoted by the AMB.

### **Focus Area 2.2 Participation tables between city councils, environmental entities and neighbours and experts**

From the municipalities that are affected or threatened by air pollution, whether by traffic, industry, extractive dust or due to climatic reasons, the pollution from other areas affects them,



as is the case in the Osona region, tables of participation should be promoted between administration, environmental and neighbourhood organisations as well as experts contributing data to the debate in order to tackle the best policies for mitigating this risk.

Considering the air is a medium that does not involve administrative limits, it would be appropriate for these tables to be formed between different municipalities.

To participate in these tables, it is necessary to invite only actors whose objective is the common good and entity.

### **Focus Area 2.3 Citizen Observatory of the Air**

People and entities in the same municipality dedicated to promoting transparency and citizen participation with regard to air quality. The aim is to be able to control the state of the environment by the citizens themselves, in this case regarding the air, and for the government to be accountable for the actions undertaken.

It must also be a space where any citizen can ask about the subject and obtain information from it.

### **Focus Area 2.4 Environmental education programmes**

Education is important in order to generate critical thinking about the importance of the transformations that must be taken to mitigate the pollution that affects people's health and for it to be carried out with social equity.



In the air there are numerous initiatives undertaken by civil society and administrations that can be considered. For example, the Metropolitan Area entity has materials and resources that can be used:

- User guide for low-emission generators.<sup>3</sup>
- Activities from the 'we share a future' programme: Let's reduce the fumes! Operation environmental health. Breathe with an AMB bicycle. The air we breathe.

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<sup>3</sup><http://www.amb.cat/web/medi-ambient/actualitat/publicacions/detall/-/publicacio/guia-d-usuaris-per-a-generadors-de-baixes-emissions-atmosferiques/6179314/11818>

- Brochure for citizens on air pollution and good practices that citizens can do to reduce it<sup>4</sup>.
- The 'air watchers'. Educational poster on air quality. It defines what a pollution event is, what the prevention measures are and what you can do to prevent it.

Municipalities must get involved and promote events in European mobility week, which runs from 16 to 22 September.

These environmental education programmes will be carried out with expert educators and resources and will be included in the educational projects of the educational centres. They will also be promoted in the various work centres and neighbourhood councils or neighbourhood associations.

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<sup>4</sup> <http://www.amb.cat/web/medi-ambient/actualitat/publicacions/detall/-/publicacio/l-aire-que-respirem/5616029/11818>



## Chapter 3. Human right to breathe clean air

Breathing is a human right, not a privilege, and two points of interest to work on have been proposed until the proper policies are in place to secure that right.

### **Focus Area 4.1 The industries of the municipality as a lobby**

One of the most conflicting and problematic aspects to be tackled by municipal policies is the pressure that is created by certain interest groups as they enter into the dispute between environmental improvement, jobs and the contribution of funds to culture and social fabric. The case of air quality is not exempt from the policies of the business lobbyists. The boundaries are clear and should be framed in the right to a healthy environment and not fall under the pressure of relocation.

## Focus Area 4. 2 What to do in a pollution crisis

As long as the various policies promoted do not achieve decent air quality, ensuring the right to breathe clean air, plans must be drawn up for a pollution crisis and information provided to high-risk people such as infants, the elderly and people with cardiovascular and respiratory disease.

Do not exercise in the points of the city with a higher concentration of vehicles and in case of crisis do not carry out prolonged physical activities outdoors.

The combination of smoking and breathing polluted air at the same time is a poisonous cocktail. For this reason, and although the recommendation extends to days of low pollution, it is advisable not to smoke.

Stay as little as possible in the open air. Use public transport and avoid travel by private vehicles, which are responsible for the emission of polluting gases.

## Websites of interest

Environmentalists with action '*Ecologistes amb acció*':

<https://www.ecologistasenaccion.org/wp-content/uploads/2019/01/propuestas-fiscalidad-ambiental-resumen.pdf>

ISGLOBAL: <https://www.isglobal.org/es/-/contaminacion-atmosferica>

Catalonia is walking '*Catalunya camina*':

<https://www.catalunyacamina.org/>

Centre for Sustainability: <https://mouteirespira.wordpress.com/>

Barcelona Metropolitan Area: <http://www.amb.cat/s/web/medi-ambient/sostenibilitat/qualitat-de-laire.html>

Department of Territory and Sustainability:

[http://mediambient.gencat.cat/ca/05\\_ambits\\_dactuacio/atmosfera/qualitat\\_de\\_laire/](http://mediambient.gencat.cat/ca/05_ambits_dactuacio/atmosfera/qualitat_de_laire/)

Public transport platform: <https://transportpublic.org/>

CCOO business mobility plans: <http://www.ccoo.cat/sostenibilitat/>



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