

Safety and Security Challenges

Spanish scale





Co-Evolve4BG

Analysis of Threats and Enabling Factors for Sustainable Tourism at Pilot Scale

Safety and Security Challenges Spanish scale



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OVERVIEW

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REVIEW

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Abstract

This report aims to explain the main safety and security challenges in Spain. It is developed through the review of existing security documents developed by the Spanish Government. The document is structured as follows:

- The first part is a brief introduction to the Spanish Security policy.
- The second part explains the natural risks in Spain.
- The third part describes the Anthropogenic risks in Spain.

I. Introduction

In our societies today there are global phenomena that propitiate the propagation or transformation of threats and risks, both natural and anthropic, facing us and increasing our vulnerability. These phenomena determine the threats and risks, but also, in many cases, provide the necessary instruments to respond to them.

Guaranteeing the safety of Spain and its inhabitants and citizens is the essential responsibility of the Government and of the Public Administrations as a whole, also that of the society. Today security is everyone's responsibility.

It is a complex task, in an interdependent and changing world in which the worst economic crisis in more than 80 years and a shift of economic power from the West to Asia converge. We face cross-cutting, interconnected and transnational threats and risks. Preserving security requires coordination, both international and internal, and the contribution of society as a whole. The lines between internal security and external security have been blurred. National policies in traditional areas of security are no longer sufficient to safeguard security in the 21st century.

Only a comprehensive approach, which conceives security in a broad and interdisciplinary way, at national, European and international levels, can respond to the complex challenges we face.

Analyzing threats and risks to our security, identifying response lines and defining coordination mechanisms are the central objectives of this Spanish Security Strategy (EES) (Gobierno de España, 2011)(Fig. 1). The useful horizon of the Strategy is about one decade. It will be reviewed every five years or when circumstances demand it. The security policy will be based on six basic concepts:

- Comprehensive approach to the various dimensions of security.
- Coordination among Public Administrations and with society.
- Efficiency in the use of resources.
- Anticipation and prevention of threats and risks.
- Resistance and recovery of systems and instruments.
- Responsible interdependence with our partners and allies.

This Strategy has been conceived with a national, European, international and global, and from Spain's condition of power media with its own profile and significant comparative advantages.

Our capacity for action is reinforced by belonging to a European Union (EU) related to our interests and our recognition as a country committed to effective multilateralism. We have global interests to defend and face transnational threats and risks. Many of these will emerge abroad. To preserve our security, we will sometimes have to get involved in actions far from our borders.

The dysfunctions of globalization, demographic imbalances, poverty and inequality, climate change, technological dangers, and radical and undemocratic ideologies, are all transnational factors that can potentiate the effects of threats and risks and even change their nature.

This Strategy identifies the most important threats and risks to the security of our country and indicates how to respond to them. They can take place in different spheres where it is necessary to act: land, sea, air, space, cyberspace or news. This analysis constitutes the basis on which to formulate strategic lines of response and develop capacities and undertake organizational reforms.

LA EES, DE UN VISTAZO	
Objetivo	La seguridad de España, sus ciudadanos y habitantes
Actores involucrados	La Administración General del Estado, Comunidades Autónomas, Administración Local y la sociedad en su conjunto
Método	1. Enunciación de conceptos básicos y nuestros valores e intereses vitales y estratégicos 2. Líneas del perfil propio de España y sus implicaciones para la seguridad 3. Estudio de los potenciadores del riesgo que facilitan la propagación y potencian las amenazas y riesgos 4. Análisis de las amenazas y riesgos y desarrollo de las líneas estratégicas de acción para responder a estos 5. Consecuencias organizativas

Figure 1. Abstract of Spanish Security Strategy(Gobierno de España, 2011)

II. Natural risks in Spain

The geographical diversity of Spain also entails a great variety of manifestations from the point of view of natural hazards (Fig. 2). The Iberian Peninsula is subject to very diverse climatic influences, as a result of its position at a crossroads in front of the Atlantic and Mediterranean areas. The contrasts mark both its relief and its geology as well as the regime of its river courses, conditioned by many different factors. These unique characteristics offer an entire inventory of situations capable of generating risks, especially if they are misunderstood or rarely considered in the processes of territorial transformation, which are operating at an increasing rate today.



Figure 2. Climatic regions in Spain Climate in Spain, (IGN, 2008)

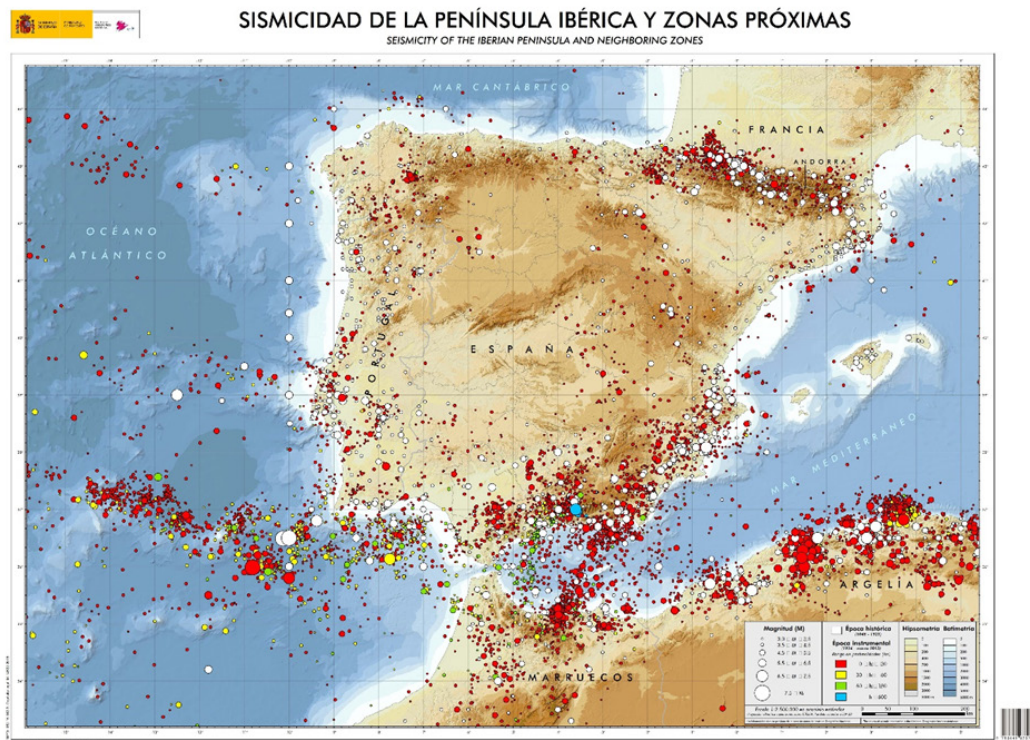
II.1. Seismicity

The Iberian Peninsula is located within the seismotectonic context of the Mediterranean, on the border of the Eurasian and African plates that, despite not being among the most tormented areas of the world, seismically speaking, does present a history of important crises to take into account. Although without reaching the level of the eastern Mediterranean (Italy, Greece, Yugoslavia), the seismic danger in Spain is a reality that should not be overlooked (Fig. 3).

In Spain, the most seismically active area is the southern third, especially the provinces of Granada, Córdoba, Jaén, Málaga, Almería, Murcia and Alicante. In this area the movements are continuous, although usually light or moderate. Another area of important seismicity is the one corresponding to the Pyrenean chain, especially the area belonging to the provinces of Huesca and Gerona. The Canary archipelago presents manifestations linked to its volcanic nature.

In this regard, Spain has the following Plans and Protocols:

- Special plans for Seismic Risks: they will be prepared by those Autonomous Communities in whose territory there are areas where earthquakes of intensity equal to or greater than grade VI are foreseeable, delimited by the corresponding isoseismal map of the seismic hazard map for a return period of 500 years of the IGN, in accordance with the provisions of the Basic Directive on Civil Protection against Seismic Risks (BOE, 1995). They are Catalonia, the Balearic Islands, Murcia, the Basque Country, Andalusia, Extremadura, the Canary Islands, Aragón, Galicia, Valencia, Navarra and Castilla La Mancha.
- State Plan for Civil Protection against Seismic Risks: its objective in the face of simian risks is to establish the organization and action procedures of those State services and, where appropriate, of other public and private entities, which are necessary to ensure an effective response in face of different seismic situations that may affect the Spanish State.



II.2. Volcanism

In the case of the Canary Islands, there is evidence of the existence of historical and recent volcanism. It can, therefore, be considered as the only Spanish Autonomous Community in which there is a certain volcanic risk. Canarias volcanism is of the distended type, in association with the efforts created by the upward thrusts of the magma. The possibility of explosive-type eruptive phenomena, already recorded in historical times in the Teide stratovolcano, cannot be totally ruled out. Another associated effect that can contribute to generating risk situations is the tendency for large blocks of volcanic buildings to slide. Despite everything, the existence of this type of risk in the archipelago has not had an answer in the territorial planning of the islands.

Since June 2004, the IGN has worked on the design and implementation of a Volcanic Alert and Surveillance System whose project is being launched, first on the island of Tenerife and then spread to the rest of the volcanically active islands. Similar to what happens with seismicity, the Canary Islands have a Special Plan for Volcanic Risks. In addition, there is the State Plan for Civil Protection against Volcanic Risks, similar to that of seismicity, but for this area (Fernandez, 2008).

II.3. Tsunamis

The main tsunamigenic affected areas of Spain are those corresponding to the seismic region of the Azores-Gibraltar line, in the southwest sector, from Cape of San Vicente to the Gulf of Cádiz. As for the activity in the Mediterranean, which is considered an extension of the previous one, the most active part is the Alborán Sea, and it can affect southern Spain, southern Italy, northern Morocco and the Adriatic and Aegean coasts. Tsunamis are rare in Spain and generally of low intensity (Fernandez, 2008).

II.4. Slope movements

Most of the Spanish surface is prone, from the point of view of its lithology and relief, to the occurrence of slope movements, the main exposed areas being the alpine regions, the intermediate mountains and the tertiary basins of the great rivers. It is in mountainous areas where the largest movements take place (mobilizing millions of cubic meters of material). Granada is one of the most affected provinces in Spain, a circumstance also linked to its not inconsiderable seismicity. Despite improvements in recognition, prediction, preventive measures, and emergency systems, damage from hillside movements around the world is on the rise. The causes are, mainly, the increase in urbanization and development in areas exposed to landslides, the continuous deforestation of areas with potential landslides and the increase in regional precipitation in certain areas due to climatic changes.

If the problem of hillside movements is transferred to the coastal context, it acquires certain specificities and a not inconsiderable importance. It must be taken into account that the Spanish territory is made up of a peninsula, two archipelagos and two

autonomous cities with a coastal location, so that it has a total of 7880 km of coastline; It is clear that the effects of coastal dynamics represent an issue that fully concerns the country.

Regardless of the urban impact and landscape degradation derived from this intense occupation, its effects on the erosion of low-lying coasts (which are excluded from this study), and other issues related to hydrological aspects, there are direct relative implications to detachment from cliffs: the risk that the phenomenon of coastal retreat subject to buildings located on active coastlines imposes the need to limit development in unsuitable areas.

Another specific type of gravitational movement that may be interesting for this study is subsidence associated with karst. Karst areas abound in the Iberian Peninsula, which can pose risks related to the dissolution of carbonate rocks. These represent a total area of approximately 100,000 square kilometers, a fifth of the Spanish territory (Fernandez, 2008).

II.5. Floods

In Spain, the rainfall regime is highly variable, going from states of drought to heavy rainfall that in a few hours reach values above the average. These extraordinary precipitations cause extreme flows, usually called floods or avenues, which when overflowing their usual channel cause the flooding of land, affecting people and property.

In Mediterranean countries, it is considered the catastrophic risk with the highest incidence due to its frequency and magnitude. This statement can also be applied to Spain, which is within this context: here floods not only constitute a threat to human lives but are precisely at the top of the list of natural phenomena in terms of production damage. Indeed, Spain has a remarkable list of historical episodes (Fernandez, 2008) (Table 1).

The areas most affected by this risk are distributed mainly in Catalonia, the Valencian Community, Murcia, and part of Andalusia, Asturias, Cantabria and the Basque Country. The main causes of floods are due to a combination of orographic characteristics and specific climatic situations.

In the case of a problem of such magnitude, Spain has the following Plans and Protocols:

Flood Risk Management Plans: their objective is to achieve a coordinated action of all public administrations and society to reduce the negative consequences of floods, based on the programs of measures that each of the administrations must apply in the field of their competencies to achieve the intended objective.

State Flood Plan: its objective is to establish the organization and action procedures of those services of the State and, where appropriate, of other public and private entities, that are necessary to ensure an effective response to the different types of floods that may affect the Spanish State.

Special plans for floods: prepared by the Autonomous Communities. Except for Madrid, all have had to draw up such a plan.

Table 1. Main catastrophic floods with fatalities that have occurred since the mid-twentieth century in Spain (Fernandez, 2008)

FECHA	LUGAR	VÍCTIMAS
Octubre 1953	Cuenca del Segura	50
Octubre 1957	Valencia	86
Enero 1959	Puebla de Sanabria (Zamora)	150
Septiembre 1962	El Vallés (Barcelona)	973
Octubre 1963	Murcia y Almería	300
Julio 1965	Cáceres	47
Septiembre 1971	Cuenca del Bajo Llobregat	24
Octubre 1973	Granada, Almería y Murcia	300
Julio 1979	Valdepeñas (C. Real)	22
Octubre 1982	Cuenca del Júcar (Presa de Tous)	38
Noviembre 1982	Gerona, Lérida y Huesca	30
Agosto 1983	País Vasco, Cantabria y Navarra	45
Septiembre 1989	Este de la Península	14
Noviembre 1989	Málaga	12
Agosto 1996	Biescas (Huesca)	87
Noviembre 1997	Badajoz	21
Junio 2000	Cataluña	16
Marzo 2002	Tenerife	8
TOTAL		2.223

II.6. Risk of avalanches

Although in Spain the risk of avalanches cannot be considered as high as in other European countries with alpine regions, there are mountain areas where the risk is significant and has been responsible for a good number of economic losses and fatalities: in 30 years, from 1970 to the spring of 1999, avalanches in Spain have claimed the lives of 105 people, which is an average of 3.5 people per year. In Spain, the main areas at risk of avalanches correspond to the highest mountain ranges: Sierra Nevada, Pyrenees, Cantabrian Mountains and Sierra de Gredos; the risk is somewhat less in the Sierra de Guadarrama or the Iberian Mountain Range (Fernandez, 2008).

II.7. Deaths in Spain due to natural risks in 2019

The National Database of Deaths due to Natural Risks, managed by the General Directorate of Civil Protection and Emergencies (Dirección General de Protección Civil y Emergencias; DGPCyE), collects systematized information since 1990, its fundamental source being the reports issued by the Civil Protection Units of the Government Delegations and Sub-delegations to the National Emergency Centre Department (CENEM), which are contrasted with as many sources as possible. In 2019, 52 people died from natural phenomena, 38 men and 14 women (Fig. 4).

Figure 4 (DGPCyE, 2020), represents a notable decrease compared to 2018, the year in which 88 people died. As in previous years, high temperatures continue to be the phenomenon with the most fatalities (21 deaths), followed by floods (20 deaths). In Spain, meteorological phenomena, whether directly (winds, lightning, rainfalls) or indirectly (floods, ground movements, forest fires), are those that cause the most human losses, far above other phenomena of natural origin. Since the beginning of the century, the meteorological phenomena that have caused the most fatalities have been high temperatures (28%), followed by floods as a result of heavy rainfalls (20%) and maritime storms on the coast (17%).

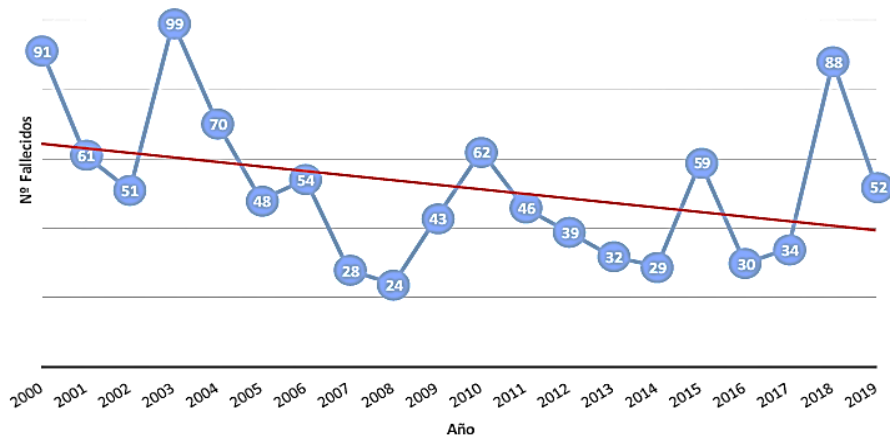


Figure 4. Total deaths from natural risks in Spain. Historical evolution 2000-2019 (Dirección General de Protección Civil y Emergencias (DGPCyE, 2020))

III. Anthropogenic risks in Spain

III.1. Nuclear Risks

Spain currently has seven reactors in operation. Real experience has shown that, although the probability of accidents with serious damage to the reactor core, which could cause the release of significant amounts of radioactive substances to the environment, is extremely low, this possibility must be taken into account, for part, not only of the industry and the exploiters, but also, on the part of the public powers to be able to reach the level of trust and security acceptable to all.

In order to respond efficiently to emergency situations, derived from accidents at the power plants, which could have radiological repercussions outside the facilities, on the population, property and the environment, it is necessary to have civil protection plans, that allow the implementation of protection measures to avoid or minimize exposure to ionizing radiation. Currently, this planning materializes in:

1. *The Basic Nuclear Emergency Plan (PLABEN)*, which follows common criteria for planning, implementation and maintenance of external response plans.
2. *The Foreign Emergency Plans* of each of the provinces that have nuclear power plants: Burgos (PENBU), Cáceres, (PENCA), Guadalajara (PENGUA), Tarragona (PENTA) and Valencia (PENVA), which include municipal action plans of the municipalities belonging to the planning area,
3. *The Nuclear Emergency Plan of the Central Response and Support Level (PENCRA)*, for the contribution of all national and international means and resources that may be required according to the conditions and evolution of the nuclear accident.

In the event of release of radioactive substances to the outside, there would be an increase in environmental radioactivity that would be detected by the Radioactivity Alert Network (RAR).

On the other hand, the Radiological Risks that may derive from the four nuclear facilities other than the nuclear power plants in Spain, three from the nuclear fuel cycle and one from research, cannot be underestimated (Spanish Security Strategy, 2011).

III.2. Chemical Risks

There are numerous objects, materials and products, which we use in our daily activities, which contribute to improving our quality of life and allow us to enjoy advantages, services and comforts. However, to obtain and manufacture them, industrial processes depend on the use of hazardous substances and conditions. Activities that require the use and handling of hazardous substances and the use of industrial processes carry a certain risk. In other words, there is the possibility of accidents causing significant damage. The quantification of this risk will depend on the probability of an accident

occurring and the magnitude of the damage that it is capable of generating (Spanish Security Strategy, 2011). Faced with these risks, Spain has stated:

- A plan for civil protection against chemical risks
- Special Civil Protection Plans for the SEVESO establishment.

III.3. Transport of dangerous goods

We define dangerous matter as that substance that during its manufacture, storage, transport or use generates fumes, gasses, vapors, dusts or fibers of an explosive, flammable, toxic, infectious, radioactive, corrosive or irritant nature, in quantities that can cause damage to people, property or the environment.

But dangerous merchandise is understood to be the materials and objects whose transport is prohibited by the transport regulations or those whose transport is authorized by said regulations, only under the conditions that it provides.

Due to the number and severity of accidents that occurred in the transport of some goods, it was decided to regulate the conditions that must be met in this type of transport. Similar to what happens for most risks; the Autonomous Communities of Spain have Special Plans for Civil Protection and Attention to Emergencies for Risks in the Transport of Dangerous Goods by Road and Rail (Spanish Security Strategy, 2011).

III.4. Armed conflicts

Spain can be affected by, and involved in, armed conflicts related to national or transnational threats against our territory, citizens, interests or values. Global interdependence has decreased the likelihood of classic armed conflicts between states. Most of the violent clashes today are intrastate. Its consequences in many cases go beyond borders and are related to so-called failed states, illicit activities by both state and non-state actors, inter-ethnic and cultural tensions or competition for scarce natural resources. Due to the global dimension of security, in the face of these conflicts, it will be necessary to apply the comprehensive approach required by today's conflicts in distant places. This approach includes, among others, diplomatic, military, police, intelligence and development cooperation elements.

Spain may have to participate together with allies and partners in conflicts that directly affect our interests because there is a direct threat to the security of the territory, citizens or Spanish interests, in addition to European and Western ones. Participation can be derived from the ties that unite us and from the interests and obligations of mutual defense that we share with our partners and allies of the EU and NATO, and others with whom we have strategic bilateral relations. Spain's military missions abroad will be carried out with the appropriate parliamentary control and in accordance with the principles of the United Nations Charter, as established by Organic Law 5/2005 on National Defence, and through a proportionate use of force or the threat of using it (Spanish Security Strategy, 2011).

III.5. Terrorism

Terrorism directly threatens the lives and security of citizens, seeks to undermine our democratic institutions and puts at risk our strategic interests, infrastructure, supplies and critical services. Preventing and defeating terrorism, whether of national or transnational origin, is a national and European priority. Since the establishment of democracy in our country, terrorism has been one of the major concerns of Spanish society, as shown by the periodic sociological consultations. This phenomenon is currently reflected in two major threats: the first derived from the violence perpetrated by the terrorist organization ETA and the second posed by terrorism, also known as international or global, perpetrated by the Al Qaeda organization and other associated groups; or self-constituted cells. The probable permanence of this last threat in the coming years, advises the design of a counterterrorism strategy in the medium and long term. This is derived from the lessons that emerge from the long experience in the fight against the terrorist phenomenon that our country treasures and from the evaluation of the antiterrorist policies adopted during the democratic period in response to ETA's terrorism.

Although the ETA phenomenon can currently be considered residual, as far as global terrorism is concerned, the conclusion is very different. The current global socio-economic structures established in certain areas of our planetary scenario and that contribute to deepening inequalities, as well as cultural differences successfully exploited by radical groups, will continue to be present in the medium and long term, which will not contribute to reducing the risk of terrorist attacks in Europe. Despite the apparent weakening of the Al-Qaeda structure, global tensions continue to be present and terrorist groups of limited organizational sophistication and reduced economic resources will continue to carry out attacks based on their capabilities, in those scenarios where they perceive attitudes of vulnerability. For all these reasons, terrorism will continue to be a concern of the first order for the internal security structures of the States.

As a result of the attacks that occurred in Madrid on March 11th, 2004, Spain has since that year had the Antiterrorist Prevention and Protection Plan, which establishes the general guidelines that, based on a permanent effort in the preventive field, allow ensure the detection, monitoring, analysis and continuous assessment of the risks of a terrorist attack, as well as the implementation and coordination of preventive devices if necessary, understood as the set of actions carried out before a terrorist attack takes place with the aim of preventing that it takes place (Secretaría de Estado de Seguridad, 2013).

III.6. Health risks (diseases)

Spain, due to its geographical location, experiences intense cross-border traffic with Africa and other areas of the planet, of people, food and merchandise, as well as migratory birds, which can act as an important risk factor in the propagation of diseases. However, of all these factors, the focus is on immigrants who come to Spain from underdeveloped countries by considering them the main agents for the appearance of new diseases or the reappearance of some endemics in our country. But the data show

us how, first of all, and for mere statistical purposes, that it is due to the more than 50 million tourists Spain receives each year represent a much higher risk of introducing diseases than the 400,000 annual immigrants, a clear example being the current health crisis derived from COVID.

On the other hand, our better standard of living means that more and more Spaniards, for vacations or for business, go to other countries where unknown diseases prevail, in addition to rural tourism that has increased certain pathologies. Finally, it has not been possible to establish an intense relationship between these phenomena. Furthermore, although we find outbreaks of diseases such as tuberculosis that take time to manifest, especially if we are faced with irregular immigrants, we cannot deny the possibility of the Spanish health system to absorb these cases (Spanish Security Strategy, 2011).

IV. Conclusions

The main conclusions of this work are:

- Today, there are phenomena that help the propagation or transformation of threats and risks that increase our vulnerability.
- Due to the climatic diversity of Spain and its geographical location, located on the edges of the European and African plates, there are various natural risks.
- The most important risks of anthropological origin are the chemical risks and the transport of dangerous substances since they are necessary for the development of activities in the industrial sector.
- The risks of contagion from diseases are enhanced by cross-border traffic, especially with Africa due to geographical proximity and the arrival of immigrants.

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