

7 June 2022

Regional Development Composite Index

2020

In 2020 there was the largest interregional disparity in competitiveness and the lowest disparity in cohesion since 2011

In 2020, the first year of the COVID-19 pandemic, there was, compared to the previous year, a decrease of the territorial disparity results in the *environmental quality* and *cohesion* indexes - reaching the lowest value of the entire series in the latter dimension - and an increase in the disparity in the *competitiveness* index - the highest value since 2011.

In 2020, according to the *regional development composite index*, five out of the 25 NUTS 3 sub-regions stood above the national average in terms of the overall regional development – the metropolitan areas of Lisboa (105.96) and Porto (103.06), Região de Aveiro (101.76), Cávado (101.23) and Região de Coimbra (100.50).

In the *competitiveness index* only three sub-regions stood above the national average: Área Metropolitana de Lisboa (113.45), standing out from Região de Aveiro (107.09) and Área Metropolitana do Porto (105.56). The *Competitiveness* revealed the highest disparity among the three dimensions of regional development.

In the *cohesion index*, seven NUTS 3, mostly from the mainland coast, stood above the national average. In this dimension, Região de Coimbra (106.86), Cávado (106.56) and Área Metropolitana de Lisboa (105.51) stood out with the highest *indexes*.

The *environmental index* results highlight the inner mainland sub-regions and the two autonomous regions with higher values. The national average was exceeded by 17 NUTS 3, showing a lower interregional disparity than the other dimensions. Região Autónoma da Madeira (110.98) was the sub-region with the highest score in the *environmental index*.

The **Regional Development Composite Index** (ISDR) relies on a conceptual framework which benefits from a multidimensional approach to regional development that encompasses three dimensions: *competitiveness*, *cohesion* and *environmental quality*. The technical note at the end of this press release contains the list of indicators considered and their relation with each of the three indexes, and the correlation matrix of the input indicators to compute ISDR is also presented.

With the release of the 2020 results, Statistics Portugal continues the production cycle of ISDR's version 2.1, comprising a data series for the 2011-2020 period.

The conceptual and computational methodological options as well as annual results data for the 2011-2020 period are available at www.ine.pt, in accordance with the technical note included in the end of this press release.

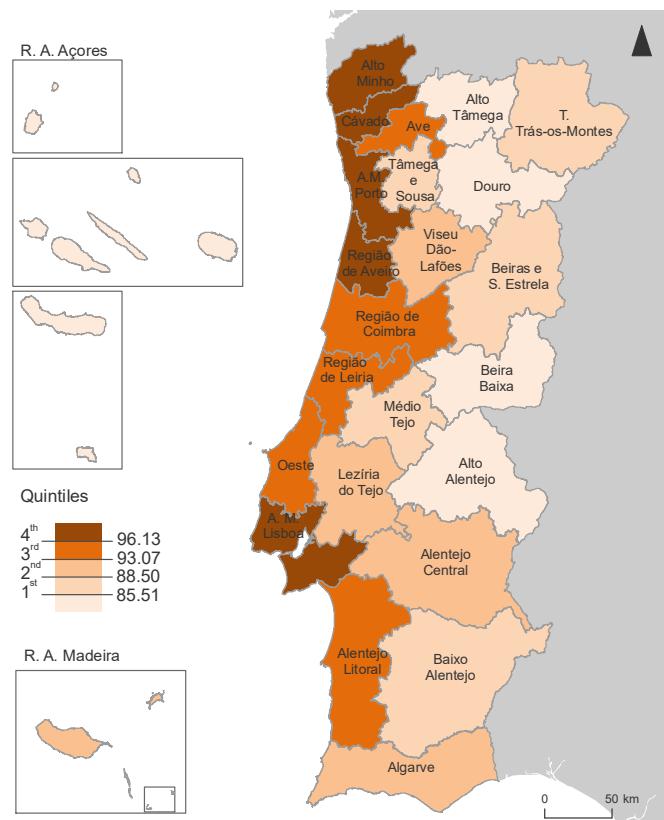
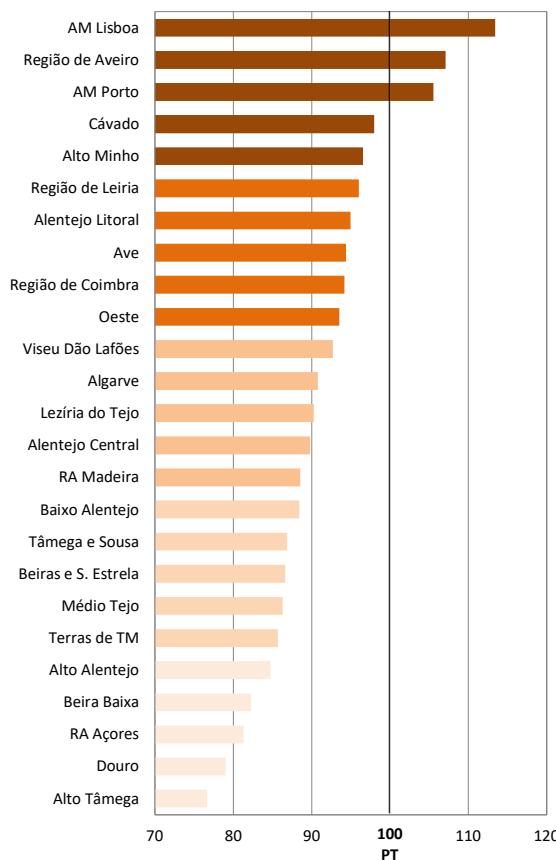
The NUTS 3 performance in 2020: *competitiveness, cohesion and environmental quality*

Competitiveness index

The 2020 results revealed that the sub-regions with higher scores in the *competitiveness index* are concentrated in the mainland coast. Área Metropolitana de Lisboa (113.45) scored the highest index standing out from the other sub-regions with values above the national average: Região de Aveiro (107.09) and Área Metropolitana do Porto (105.56). In general, the inner mainland and the autonomous regions scored lower *competitiveness* indexes compared to coastal mainland.

Within the three dimensions of development, the *competitiveness index* in the Portuguese NUTS 3, revealed the highest regional disparity, according to the coefficient of variation¹.

Figure 1: Competitiveness (Portugal = 100), NUTS 3, 2020



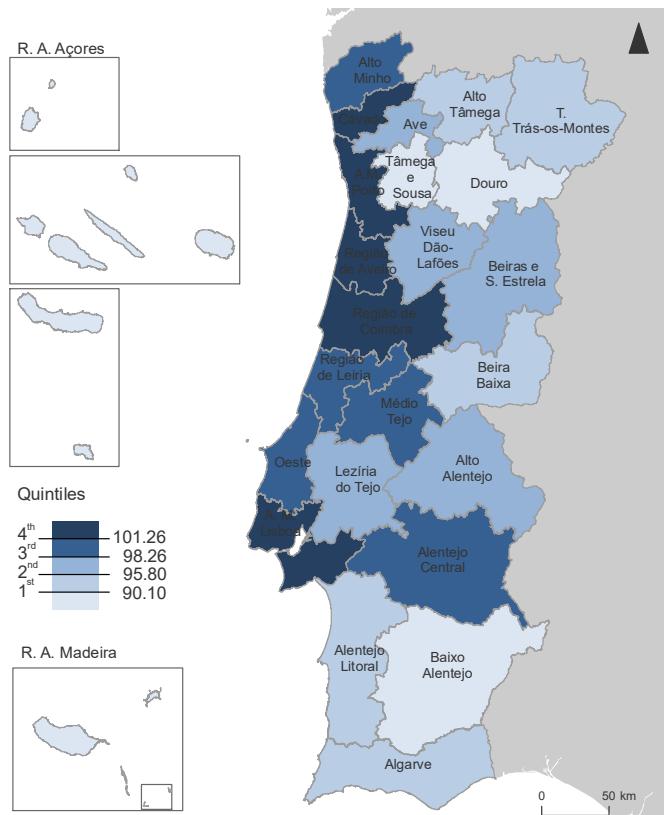
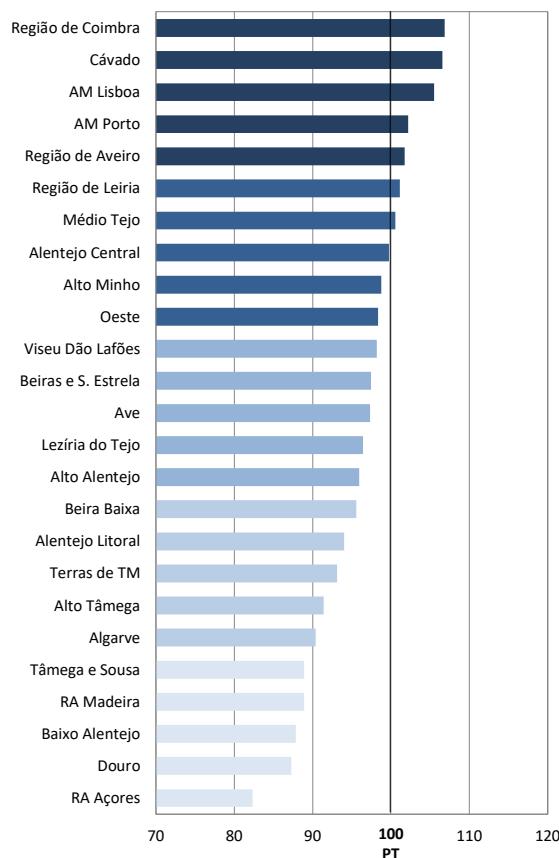
¹ In 2020, the coefficient of variation of the competitiveness index was 9.4%, for the cohesion index was 6.6% and for environmental quality index was 5.1%.

Cohesion index

In the *cohesion index*, the results display a more balanced territorial picture than the one resulting from *competitiveness* as seven sub-regions exceeded the national average: Região de Coimbra (106.86), with the highest cohesion index, but also, on the northern coast, Cávado (106.56) and Área Metropolitana do Porto (102.20), on the central coast, Região de Aveiro (101.75), Região de Leiria (101.14) and Médio Tejo (100.55) and, further south, Área Metropolitana de Lisboa (105.51).

The autonomous regions of Açores and Madeira, the territory of Norte region, formed by Douro and by Tâmega e Sousa and, in south, the Baixo Alentejo scored the lowest cohesion indexes.

Figure 2: Cohesion (Portugal = 100), NUTS 3, 2020



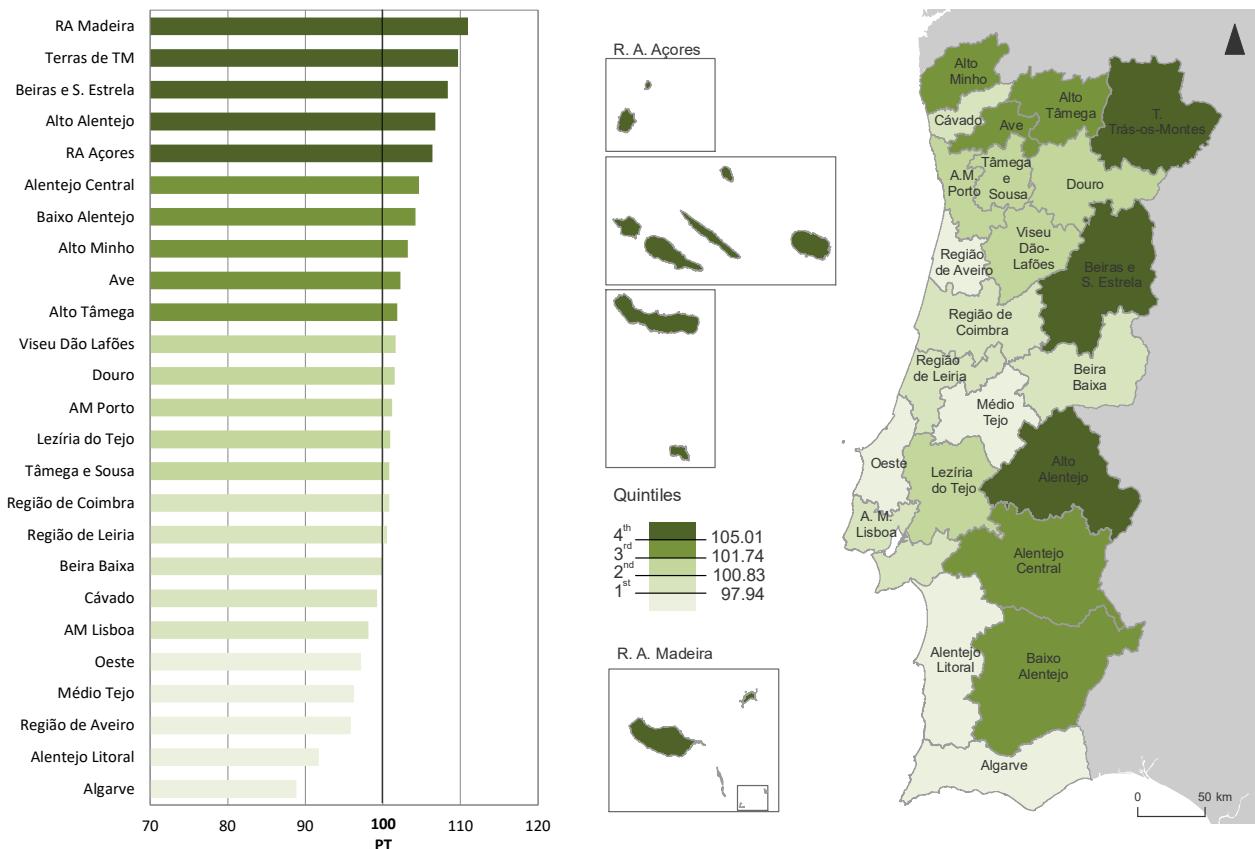
Environmental quality index

The 2020 results tend to have a territorial pattern symmetrical to *competitiveness*, with a concentration of sub-regions with higher *environmental indexes* in the inner mainland and in the two autonomous regions, suggesting that *environmental quality* progressively increases from the coast towards the inner mainland. In this context, is important to highlight the coastal mainland NUTS 3 – Alto Minho (103.23), Área Metropolitana do Porto (101.20), Região de Coimbra (100.82) and Região de Leiria (100.55) – with results above the national value.

The national average in this dimension was exceeded by 17 NUTS 3 and it presents a lower territorial disparity compared to the other dimensions. Among the eight sub-regions with indexes below the national average, were five out of the 10 most competitive NUTS 3: Cávado, Região de Aveiro, Oeste, Área Metropolitana de Lisboa and Alentejo Litoral.

Região Autónoma da Madeira (110.98) was, in 2020, the NUTS 3 with the best performance in the *environmental quality index*.

Figure 3: Environmental quality (Portugal = 100), NUTS 3, 2020



The joint analysis of regional development

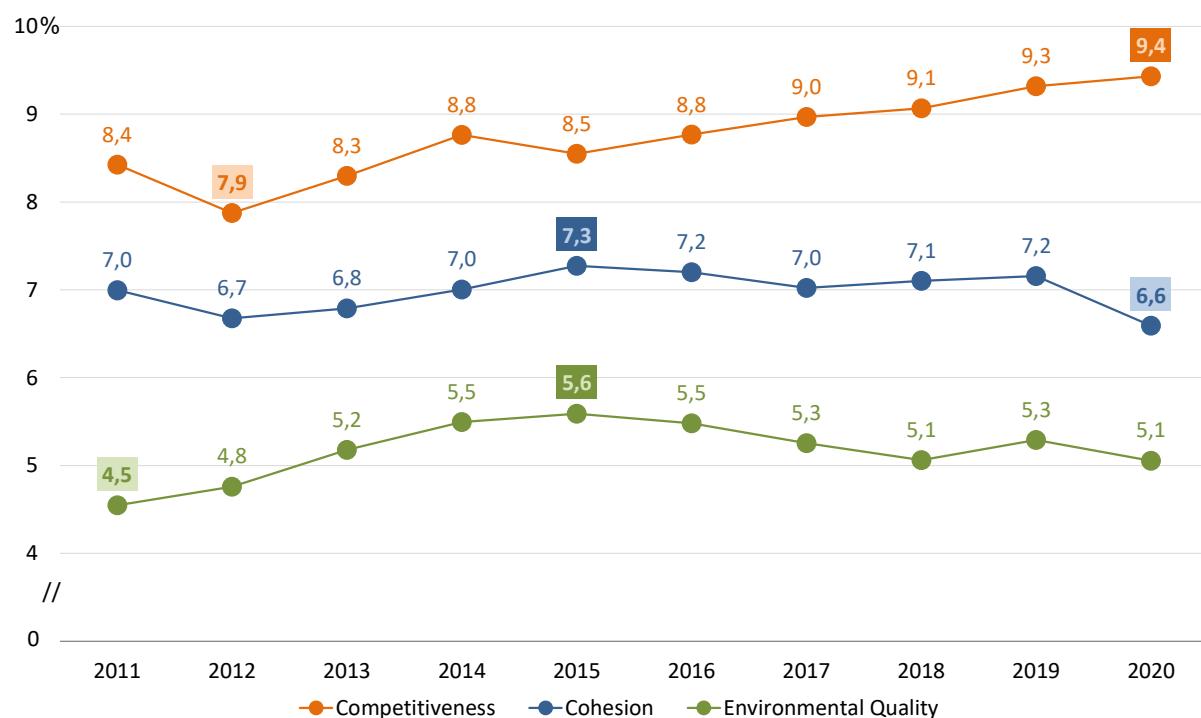
Evolution of interregional disparities

Considering the available ISDR series (2011-2020) and the 25 NUTS 3 sub-regions, the *competitiveness index* scored successively the highest level of disparity between the three partial indexes of regional development, followed by the *cohesion index* and, with a lower disparity, the *environmental quality index*.

In 2020, the first year of the COVID-19 pandemic, there was, compared to the previous year, a decrease of the territorial disparity results in the *environmental quality* and *cohesion* indexes - reaching the lowest value of the entire series in the latter dimension - and an increase of the disparity in the *competitiveness index* - the highest value since 2011, maintaining the upward trend recorded since 2016. It should be noted that in the year 2012, in the middle of the economic and financial crisis, the lowest level of disparity in the *competitiveness* and *cohesion index* had been recorded, in the latter case, with the exception for 2020. The highest level of disparity in the *cohesion index* was in 2015. These results suggest a differential effect of the economic and financial crisis and the pandemic crisis on the interregional disparity of these two dimensions of regional development.

In the case of the *environmental quality index* the lowest level of interregional disparity was in 2011 and the highest in 2015.

Figure 4: Coefficient of variation of the partial indexes of competitiveness, cohesion and environmental quality, 2011-2020

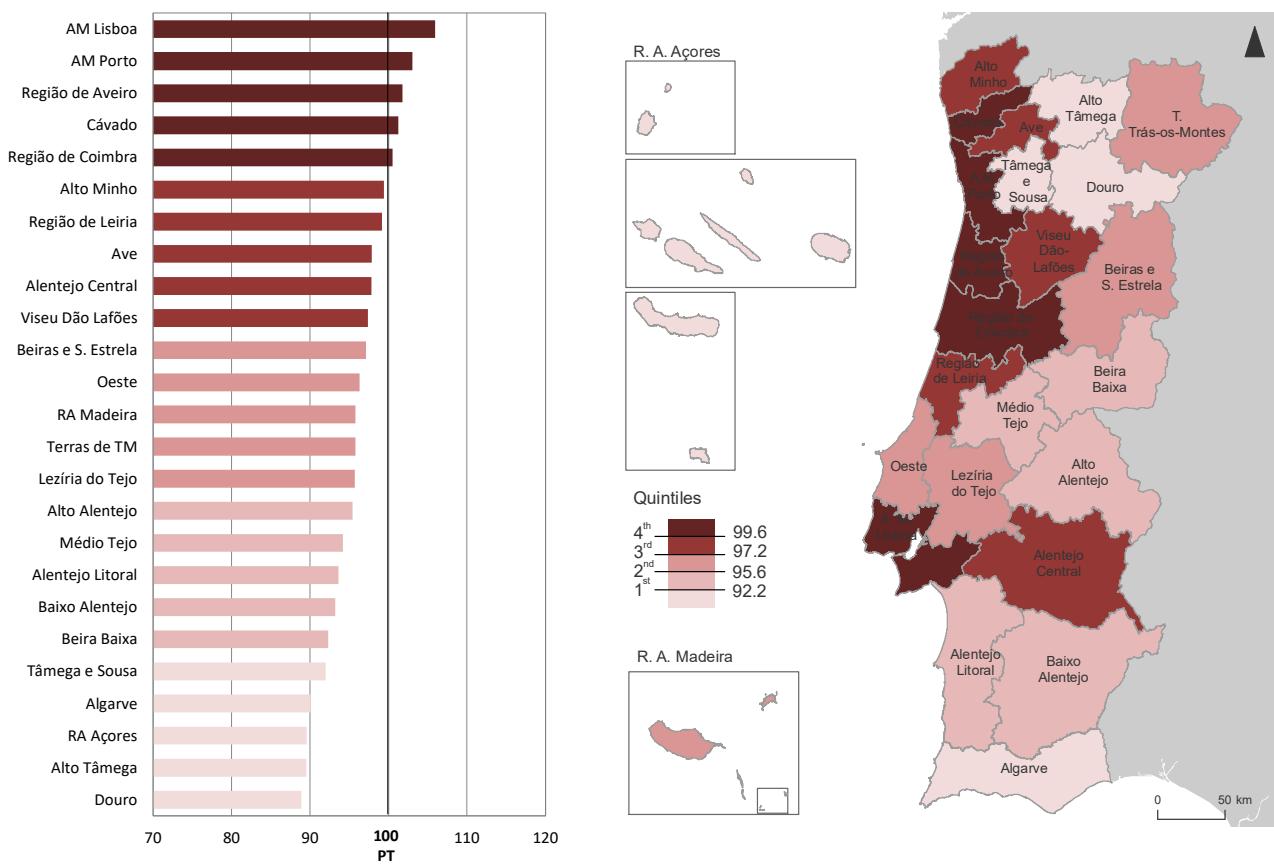


Overall index of regional development in 2020

The *overall index of regional development* is the result of the joint performance of the dimensions (partial indexes) *competitiveness*, *cohesion* and *environmental quality*.

The 2020 results show that, five out of the 25 NUTS 3 sub-regions scored above the national average – the metropolitan areas of Lisboa (105.96) and Porto (103.06), Região de Aveiro (101.76), Cávado (101.23) and Região de Coimbra (100.50).

Figure 5: Overall index of regional development (Portugal = 100), NUTS 3, 2020



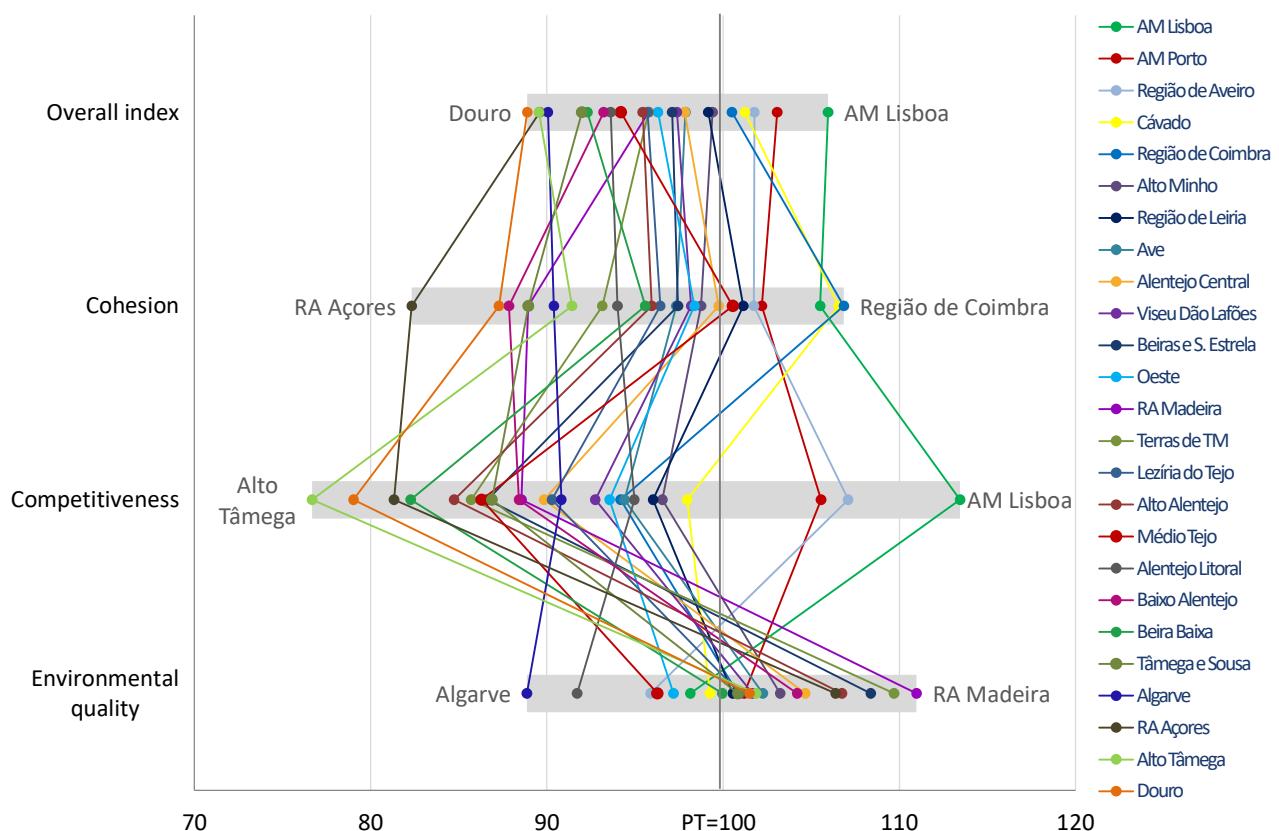
In 2020, considering the results of the 25 NUTS 3 sub-regions, the *competitiveness* and *cohesion* indexes showed a positive correlation with the *overall index of regional development* (of +0.9 in both), while in case of *environmental quality* there was a null correlation (0.0). At the dimension level, there is a positive association between the Portuguese sub-regions' performance in the *competitiveness* index and in the *cohesion* index (+0.7) while the correlations between the *environmental quality* and the *competitiveness* index and between *environmental quality* and *cohesion* were negative (-0.4 and -0.2, respectively).

Figure 6: Correlation matrix, NUTS 3, 2020

	Overall index	Competitiveness	Cohesion	Environmental quality
Overall index	-			
Competitiveness	0,9	-		
Cohesion	0,9	0,7	-	
Environmental quality	0,0	-0,4	-0,2	-

The differentiated behavior in the three dimensions of development reflects the multidimensionality and the complexity of regional development that the *Regional Development Composite Index* intends to capture through the identification of the heterogeneity of regional profiles.

Figure 7: Overall index of regional development, competitiveness, cohesion and environmental quality (Portugal = 100), NUTS 3, 2020



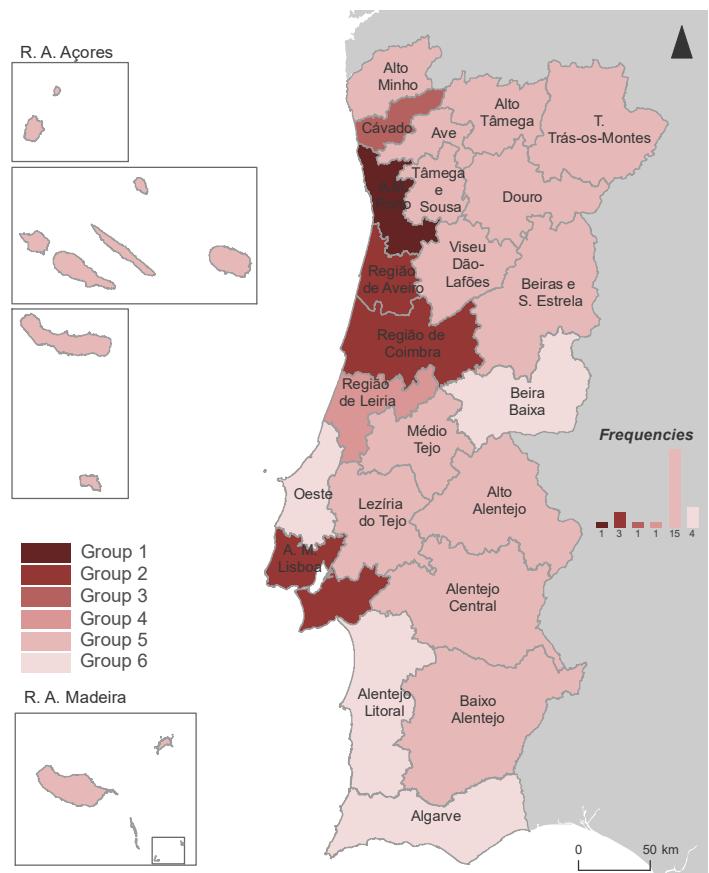
In 2020, Área Metropolitana do Porto was the only sub-region with a performance above the national average in the four composite indexes, a situation that has been registered since 2018. Área Metropolitana de Lisboa, Região de Aveiro, Região de Coimbra and Cávado were also above the national average in the *overall index of regional development* sharing the characteristic of staying below that reference in, at least, one of the three partial indexes: Área Metropolitana de Lisboa and Região de Aveiro did not exceed the national average in the *environmental quality index*, Região de Coimbra was below the national average in *competitiveness*, and Cávado did not surpass the national average in both *competitiveness* and *environmental quality*.

At the opposite side, performing below the national average in the four indexes were the NUTS 3 Alentejo Litoral, Algarve, Beira Baixa and Oeste.

The most common regional profile, covering 14 NUTS 3, consisted in an *environmental quality index* above the national average and results in *competitiveness* and *cohesion indexes* below the national value.

Figure 8: Overall index of regional development, competitiveness, cohesion and environmental quality: performance in relation to the national average (Portugal = 100), NUTS 3, 2020

	ISDR > 100	ISDR < 100
COMP > 100 COES > 100 AMB > 100	AM Porto	Group 1
COMP > 100 COES > 100 AMB < 100	AM Lisboa Região de Aveiro	Group 2
COMP > 100 COES < 100 AMB > 100		Group 4
COMP < 100 COES > 100 AMB > 100	Região de Coimbra	Região de Leiria
COMP > 100 COES < 100 AMB < 100		
COMP < 100 COES > 100 AMB < 100	Cávado	Group 3
COMP < 100 COES < 100 AMB > 100		Médio Tejo
COMP < 100 COES < 100 AMB < 100		Group 5
	Alentejo Central Alto Alentejo Alto Minho Alto Tâmega Ave Beiras e S. Estrela Baixo Alentejo	Douro Lezíria do Tejo RA Ações RA Madeira Tâmega e Sousa Terras de TM Viseu e Dão Lafões
		Group 6
		Alentejo Litoral Algarve Beira Baixa Oeste



Note: The acronym ISDR refers to the *overall index of regional development*, COMP to the *competitiveness index*, COES to the *cohesion index* and AMB to the *environmental quality index*.

Technical note

The *Regional Development Composite Index* (ISDR) is calculated annually for the Portuguese NUTS 3 sub-regions. Three dimensions are considered - *competitiveness*, *cohesion*, and *environmental quality* - which, considering data availability, determined the selection of base indicators for the calculation of the index for the 25 Portuguese regions (NUTS-2013, which correspond to the Intermunicipal Entities on the mainland - Intermunicipal Communities or Metropolitan Areas - and the Autonomous Regions of Madeira and Açores). It is, however, worthwhile to highlight the diversity of territorial contexts among these regions, of which the autonomous regions and the metropolitan areas are representative, as well as the heterogeneity regarding the size of the 25 Portuguese NUTS 3.

Based on a matrix of 65 statistical indicators, for the 25 Portuguese NUTS 3, properly normalized (statistical standardization and minmax rescaling, with the minimum and maximum reference values extracted from the set of 65 standardized indicators for the time span available), distributed by three dimensions – *competitiveness*, *cohesion* and *environmental quality* – and subsequently aggregated by a non-weighted average, for the dimensions level as well as from the dimensions level to the *overall index* level, four composite indicators are produced – *competitiveness*, *cohesion*, *environmental quality* and *overall index of regional development*. The four composite indicators are referenced to the national value (Portugal = 100), being the national value the average of the NUTS 3 indexes weighted by the resident population. As the national value, the indexes for the NUTS 2 regions correspond to the population weighted average indexes of their respective NUTS 3.

The conceptual and computational methodological options are presented in the methodological document *Índice Sintético de Desenvolvimento Regional*, código 127 / versão 2.1, INE (available at www.ine.pt, in Metadata, Metadata System, Methodological documentation).

Comparing to the results released in 2021 for the period 2011-2019, the maximum reference value has changed, but remains associated with the same region and the same individual indicator: *lodging capacity in hotel establishments with 3 or more stars per 1 000 inhabitants* observed in the Algarve in 2020. The minimum reference value did not change, corresponding to the *energy intensity of the economy in final energy* observed in Alentejo Litoral in 2014.

In this edition of ISDR, compared to the previous version, it was not possible to count on additional information that would allow updating three indicators associated with the *environmental quality* component - *Regional contribution to replacing fossil primary energy electricity production produced with renewable energy or lower emission content*, *Wastewater sewerage per capita* and *fresh water supplied per inhabitant*.

Annual figures for the 2011-2020 period, in accordance with the 2.1 version of the methodological document, are available at www.ine.pt, in Statistical information, Statistical data, Database.

The following table lists the 65 indicators that are part of the *Regional Development Composite Index* with the association to their respective dimension, and the correlation matrix of the baseline indicators is also presented.

List of individual indicators of the *Regional Development Composite Index*

Code	Designation	Competitiveness	Cohesion	Environmental quality
COMP1	Gross domestic product per inhabitant	+		
COMP2	Apparent labour productivity	+		
COMP3	Proportion of sales and services rendered abroad in the turnover of companies	+		
COMP4	Population density	+		
COMP5	Persons employed in establishments by 100 inhabitants in active age	+		
COMP6	Renewal index of the population in active age	+		
COMP7	Proportion of employees with higher education	+		
COMP8	Potential Broadband Territorial Coverage (ADSL)	+		
COMP9	Lodging capacity in hotel establishments with 3 or more stars per 1 000 inhabitants	+		
COMP10	Proportion of resident population in urban areas with 10 000 or more inhabitants	+		
COMP11	Participation rate in youth oriented education/training modalities at upper secondary education	+		
COMP12	Degree of specialisation within advanced competitive factors	+		
COMP13	Proportion of sales and services rendered abroad in the turnover of companies in high and medium-high technology sectors	+		
COMP14	Proportion of gross value added in international activities branches	+		
COMP15	Technological intensity of industrial activity and services	+		
COMP16	Proportion of persons employed in information and communication technology activities	+		
COMP17	Proportion of employees that have changed enterprise of work related to total employment	+		
COMP18	Enterprises birth rate	+		
COMP19	Survival rate of enterprises on international activities' branches	+		
COMP20	Proportion of persons employed in enterprises with mostly foreign capital	+		
COMP21	Proportion of gross expenditure on research and development (GERD) by enterprises in enterprises' GVA	+		
COMP22	Proportion of gross expenditure on research and development (GERD) in GDP	+		
COMP23	Crude migratory rate	+		
COMP24	Net attraction rate of employees	+		
COMP25	Persons employed, inside and outside the territorial unit, of enterprises with head office in the territorial unit per person employed in the territorial unit of enterprises with head office outside the territorial unit		+	
COES1	Life expectancy at birth			+
COES2	Quinquennial infant mortality rate			-
COES3	Municipal dispersion of family income per inhabitant			-
COES4	Family income per inhabitant			+
COES5	Retention capacity of the generated income			+
COES6	General fertility rate			+
COES7	Young registered unemployment per young person			-
COES8	Medical doctors per 1 000 inhabitants by place of residence			+
COES9	Pharmacies and mobile medicine depots per 1 000 inhabitants			+
COES10	Teachers per students enrolled in tertiary education			+
COES11	Number of live shows performances per 1 000 inhabitants			+

Code	Designation	Competitiveness	Cohesion	Environmental quality
COES12	Proportion of resident population in urban areas with 5 000 or more inhabitants			+
COES13	Gross enrolment rate in pre-primary education			+
COES14	Gross enrolment rate in upper secondary education			+
COES15	Average monthly earnings			+
COES16	Average value of social security pensions			+
COES17	Youth rate			+
COES18	Beneficiaries of social integration income of social security per 1 000 inhabitants with 15 and more years old			-
COES19	Retention and desistance rates in primary and lower secondary education			-
COES20	Transition/ completion rate in upper secondary education			+
COES21	Crime rate against people			-
COES22	Registered unemployment per inhabitants in active age			-
COES23	Gender disparity in the relationship between registered unemployment and the average resident population in active age			-
COES24	Proportion of marriages between Portuguese and foreigners			+
COES25	Teenage fertility rate			-
AMB1	Safe water for consumption			+
AMB2	Air quality			+
AMB3	Urban waste collected per inhabitant			-
AMB4	Wastewater sewerage per capita			-
AMB5	Local and regional non-governmental organizations for environment (ONGA) members per 1 000 inhabitants			+
AMB6	Proportion of use of potential non-urban land			+
AMB7	Proportion of urban waste landfilled			-
AMB8	Proportion of urban waste selective collected			+
AMB9	Proportion of classified areas in the total area			+
AMB10	Burnt forest rate			-
AMB11	Regional contribution to replacing fossil primary energy electricity production with renewable energy or lower emission content			+
AMB12	Proportion of the surface area of rehabilitation works in the total surface area of completed works			+
AMB13	Territorial concentration of new constructions			+
AMB14	Fresh water supplied per inhabitant			-
AMB15	Energy intensity of the economy in final energy			-

Matrix of correlations between indicators (Note: the results of Pearson's correlation coefficient >0.7 and <-0.7 are marked in gray in the matrix)

Regional Development Composite Index – 2020