



The state of local infrastructure investment in Europe EIB Municipalities Survey 2022-2023



European
Investment Bank

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About this publication

The EIB Municipalities Survey gathers information from officials at local municipalities on local infrastructure investment activities and needs. This overview presents selected findings of the third wave of the survey, based on telephone interviews with 744 municipalities across the European Union carried out between May and August 2022. The first wave of the survey was conducted in 2017. As a complement to the EIB Investment Survey (EIBIS), it was developed by the EIB Economics Department and is managed by the department with the support of Ipsos MORI.

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About the EIB Economics Department

The mission of the EIB Economics Department is to provide economic analyses and studies to support the Bank in its operations and in the definition of its positioning, strategy and policy. The Department, a team of 45 economists, is headed by Debora Revoltella, Director of Economics.

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Preface

I am delighted to present to you the findings of the 2022 Municipality Survey. Covering 744 municipalities across the European Union, this survey gathers unique data on past and planned investments, as well as the obstacles municipalities face and their progress on the digital and green transitions.

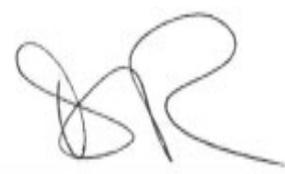
One notable finding from the 2022 survey is that a lack of funding continues to pose a significant deterrent for municipalities when it comes to planning investment, alongside lengthy and uncertain regulatory processes. However, when it comes to implementing their investment plans, municipalities cite a shortage of skilled labour and supply chain bottlenecks as the two main constraints. The importance of skills is reflected also in our EIB Investment Survey of European firms, with most firms finding that the recruitment of skilled staff poses a major hurdle to their investment. Consequently, in fields where municipalities and firms vie for limited skilled labour, smaller municipalities and firms may find themselves at a disadvantage.

As we enter the European Year of Skills in 2023, our research underscores the critical importance of providing necessary training to the current and future labour force. In particular, there is an urgent need to develop technical skills that are essential for driving progress towards the green and digital transformations. The survey reveals that a significant majority of municipalities report difficulties in securing experts with environmental and climate skills, as well as technical and engineering expertise. These challenges pose significant obstacles to the execution of their investment plans.

Indeed, more than six in ten municipalities express dissatisfaction with their investments in climate mitigation and adaptation over the past three years, while 40% report dissatisfaction with their investments in digital infrastructure. Looking forward to the next three years, climate change mitigation, adaptation, and digital infrastructure will therefore play a key role in municipalities' investment plans. Addressing the shortage of skills will be crucial in achieving these plans.

Overall, European municipalities are more advanced in their digital agenda compared to the green transition. In more developed regions, a high proportion of municipalities are actively investing in both the green and digital transitions, but the share of municipalities making similar progress in less developed regions is lower. The level of progress towards investments in the green and digital transitions thus varies between regions.

The European Investment Bank recognises this disparity and continues its efforts to address and bridge this gap. Through its initiatives and financing programmes, the EIB aims to support and encourage municipalities in less developed regions to enhance their investments in both transitions. By doing so, the EIB aims to foster more balanced and sustainable development across all regions in Europe.



Debora Revoltella
Director, Economics Department
European Investment Bank

The EIB Municipality Survey at a glance

- Third wave of the Municipality Survey in 2022 (previous waves in 2020 and 2017).
- Survey administered on the phone between end of May and end of July 2022.
- Sample size of 744 (compared to 685 in 2021 and 555 in 2017).
- The survey aims to be representative at the EU level, with sampling targets that were achieved in all countries except the Czech Republic, Denmark and Slovenia.
- Sampling is representative by cohesion region type.
- Two types of sampling weights (EU level and cohesion region level) were applied and are described in the technical note.
- Around 30% of municipalities that responded to the survey in 2022 had also responded to the survey in 2020.

Key findings

Investment Gaps: Most municipalities (88%) view their infrastructure investments in the past three years as insufficient in at least one investment area. Specifically, more than 60% of all municipalities express dissatisfaction with their investments in climate mitigation and adaptation infrastructure during this period.

Investment Priorities: Municipalities intend to primarily increase their investments in climate change adaptation, mitigation and digital infrastructure in the next three years. Moreover, the modernisation and adaptation of infrastructure remain the largest expected category of expenditure in investment across all regions.

Investment Barriers: Insufficient funding and regulatory hurdles remain the primary obstacles for municipalities' infrastructure investment. Access to skilled labour and supply chain constraints are the main challenges municipalities face when implementing infrastructure investment programmes. Shortages of experts with environmental and engineering skills further compound these obstacles.

Investment Finance: Municipalities' financing mix remained largely unchanged between 2020 and 2022. Less developed regions exhibit the highest proportion of financially constrained municipalities (32%), surpassing both transition regions (21%) and more developed regions (16%) by a significant margin.

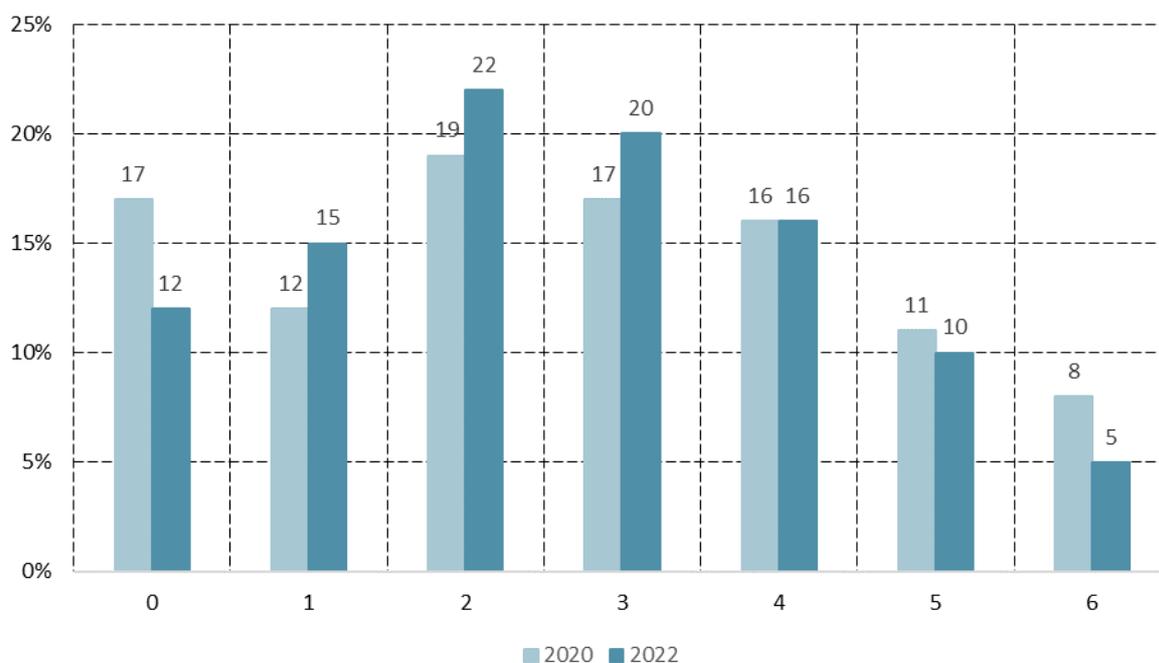
Green/Digital Transition: EU municipalities demonstrate greater advancement in the digital agenda compared to the green transition. The share of municipalities pushing ahead on investments for both the green and digital transition is significantly higher in more developed regions (26%) than in less developed regions (8%). Among municipalities, investing in energy efficiency of municipal assets or social housing is the most popular measure to reduce greenhouse gas emissions.

What are municipalities' main investment gaps?

The survey findings reveal that a majority of municipalities (88%) perceive their infrastructure investments in the past three years as inadequate in at least one investment area. This dissatisfaction has increased slightly compared to the previous survey in 2020, where 83% expressed similar sentiments (see Figure 1). Notably, municipalities are particularly dissatisfied with their investments in climate mitigation and adaptation, although their satisfaction levels have shown a slight improvement compared to 2020 (see Figure 2). Over 60% of municipalities perceive their investments in climate change and adaptation infrastructure during the past three years as insufficient (see Figure 2).

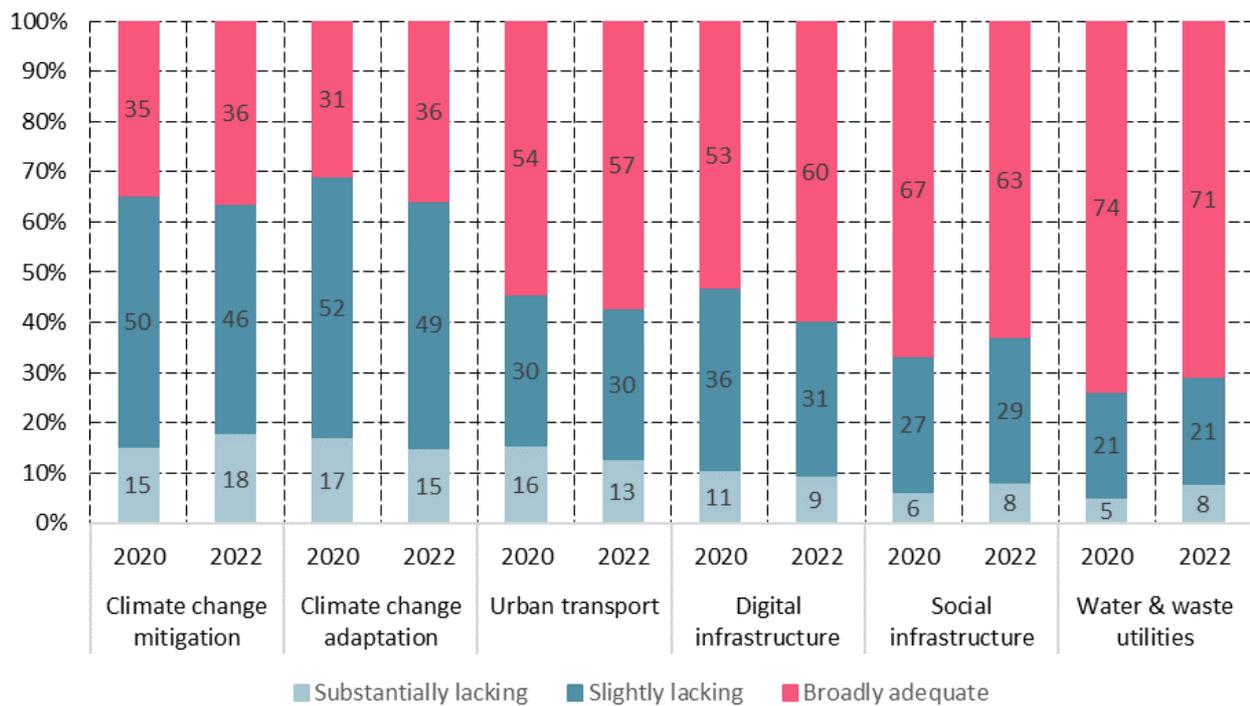
Furthermore, it is worth noting that municipalities in less developed regions tend to consider their past investments in climate change adaptation as substantially lacking more frequently (27%) than those in more developed and transition regions (13%) (see Figure 3).

Figure 1: Share of municipalities, by the total number of investment areas where investment in infrastructure was considered as lacking in the previous three years, in percent



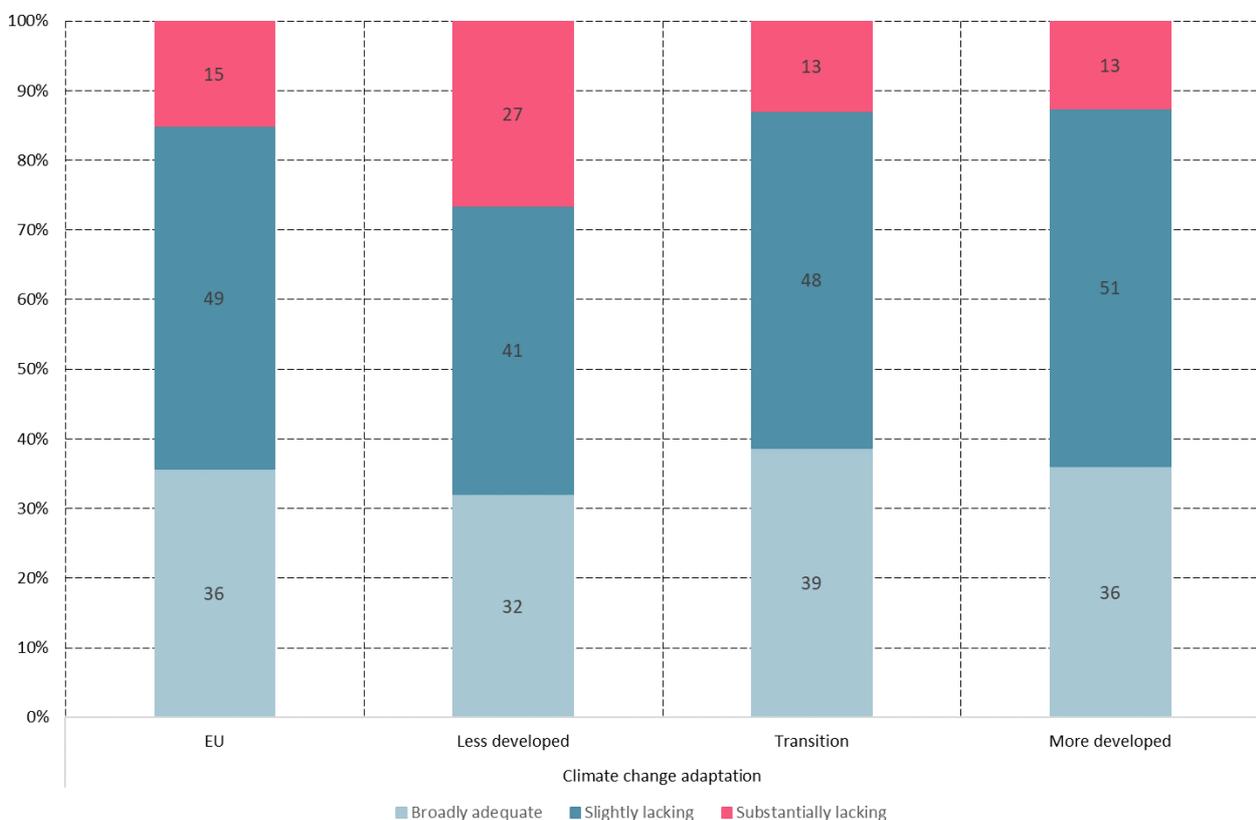
*Base: All municipalities (excluding don't know/refused responses)

Figure 2: In the last three years, would you say that within your municipality the level of investment in infrastructure projects was broadly adequate, slightly or substantially lacking (Q4), in percent



*Base: All municipalities (excluding don't know/refused responses)

Figure 3: In the last three years, would you say that within your municipality the level of investment in infrastructure projects [in climate change adaptation] was broadly adequate, slightly or substantially lacking? (Q4), in percent



*Base: All municipalities (excluding don't know/refused responses)

Municipalities continue to be most satisfied with their past investments in water and waste utilities, with a similar satisfaction level to that of 2020, 71% of municipalities rated their investments in this area as broadly adequate, compared to 74% in 2020 (see Figure 2). Similarly, the proportion of municipalities that consider their investments in social infrastructure as broadly adequate remains unchanged from 2020 (63%) (see Figure 2).

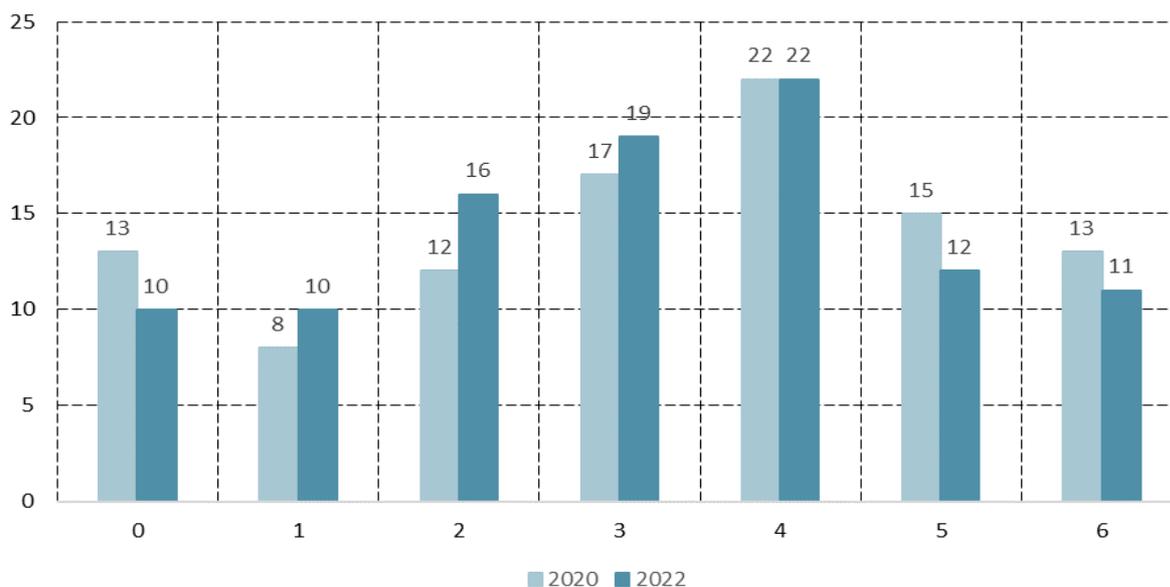
However, a notable improvement in satisfaction is observed in investments related to digital infrastructure, with the proportion of municipalities rating their investments in digital infrastructure as broadly adequate rising from 53% to 60% (see Figure 2).

What are municipalities' investment plans?

The survey findings indicate that a significant majority of municipalities (90%) plan to increase their infrastructure investments in at least one area in the next three years. This represents a slightly higher proportion compared to 2020 (87%) (see Figure 4). The areas where municipalities primarily intend to increase their investments are climate change adaptation, climate change mitigation, and digital infrastructure. Over 60% of municipalities plan to boost their investments in climate change mitigation and adaptation in the upcoming three years, in comparison to their investment levels in the previous three years. Similarly, 63% of municipalities plan to increase their investments in digital infrastructure (see Figure 5).

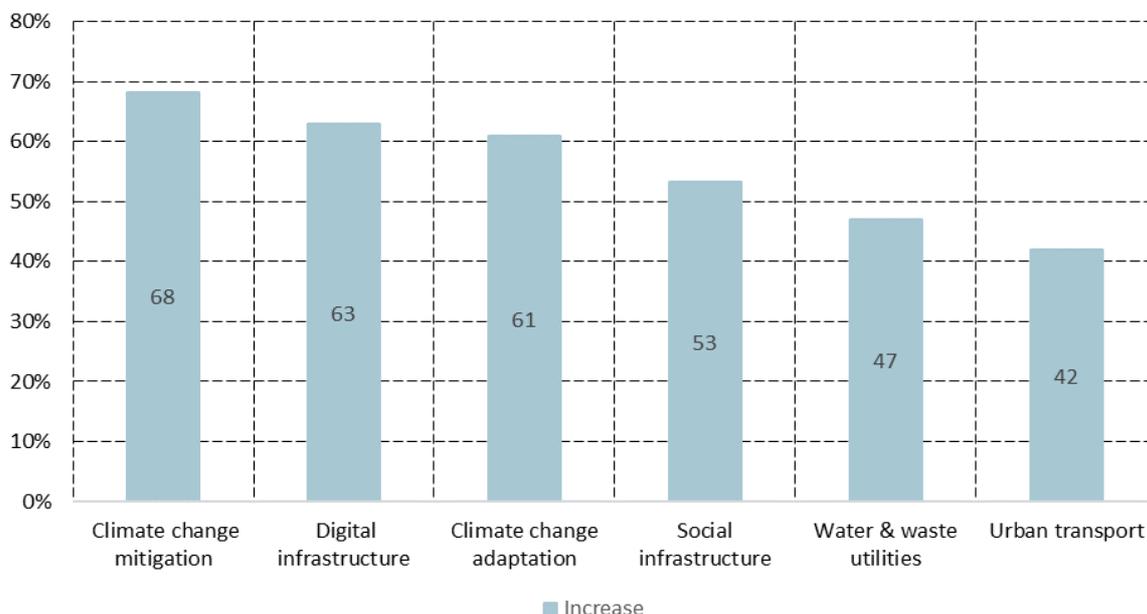
In terms of digital infrastructure investment, municipalities across regions have similar intentions to increase their investments in the coming years (see Figure 5). However, when it comes to investments in climate change mitigation and adaptation, there is a considerable disparity. The share of municipalities in more developed regions that intend to increase their investment in this area is notably greater than in less developed regions (see Figure 6).

Figure 4: Share of municipalities, by the total number of investment areas where investments in infrastructure are planned to be increased in the next three years, in percent



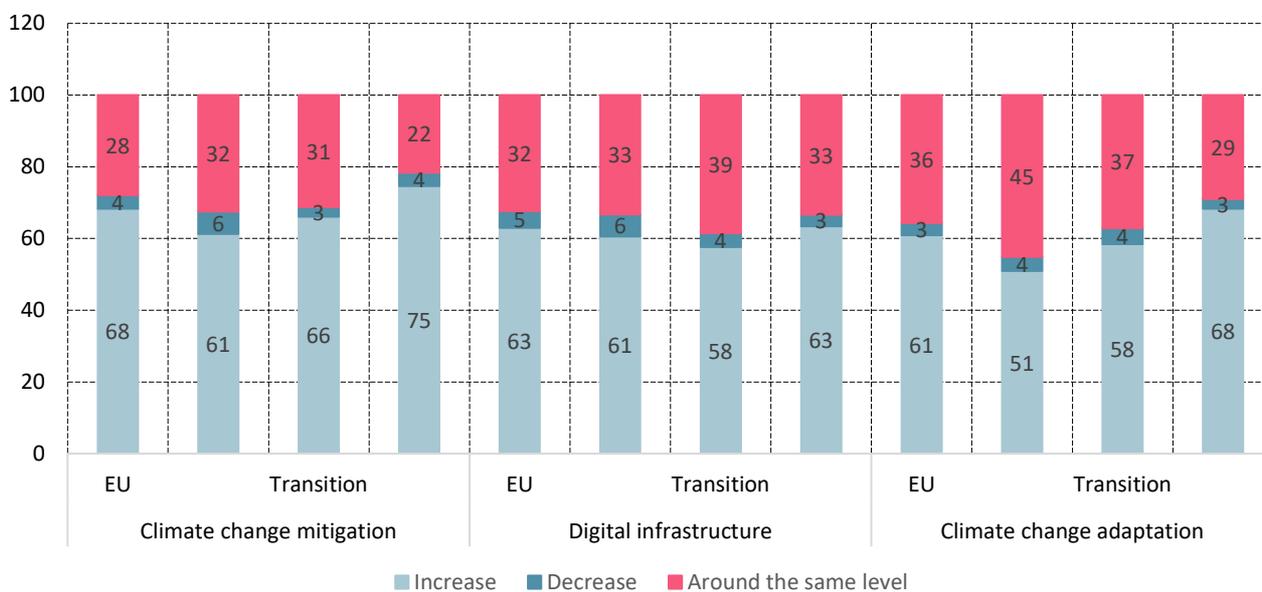
*Base: All municipalities (excluding don't know/refused responses)

Figure 5: For each of the following areas, if you compare the average annual infrastructure investment you are planning for the 2022-2026 period versus the average annual infrastructure investment recorded in 2019-2021, does your municipality expect to **increase**, decrease or have around the same level of spending on infrastructure investment? (Q5), in percent



*Base: All municipalities (excluding don't know/refused responses)

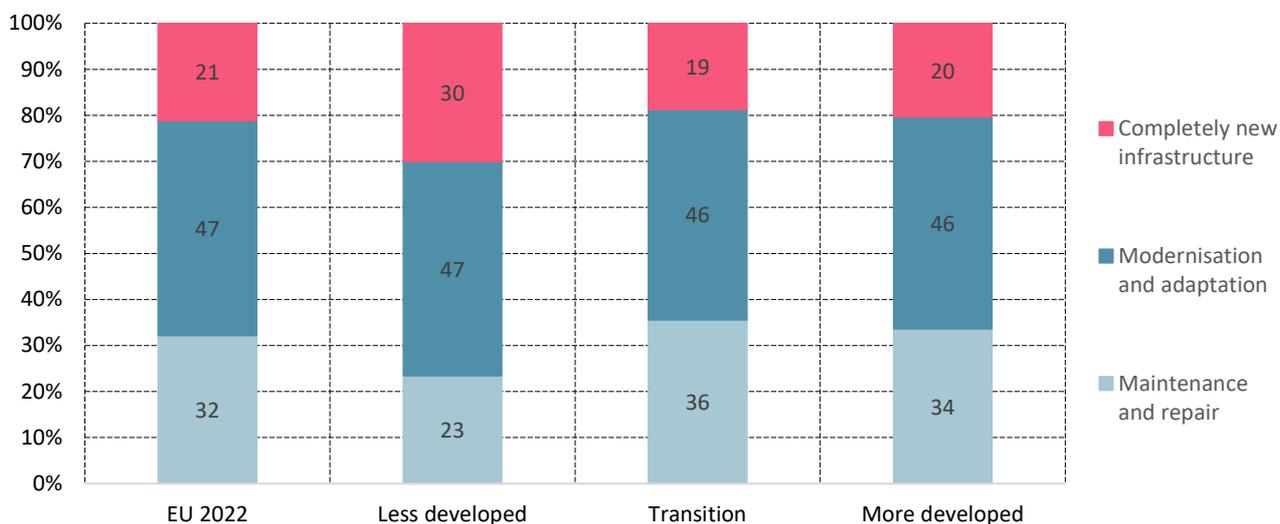
Figure 6: For the following areas, if you compare the average annual infrastructure investment you are planning for the 2022-2026 period versus the average annual infrastructure investment recorded in 2019-2021, does your municipality expect to increase, decrease or have around the same level of spending on infrastructure investment? (Q5), in percent



*Base: All municipalities (excluding don't know/refused responses)

Modernisation and adaptation of infrastructure continue to be the primary areas of expected expenditures in investment across all regions (see Figure 7). Municipalities in less developed regions tend to allocate a higher share of their investments towards new infrastructure. Conversely, municipalities in more developed regions prioritise investment in maintenance (see Figure 7).

Figure 7: In 2022-2026, except for routine maintenance, which of the following activities do you expect will have the largest share in terms of your infrastructure investment spend? (Q7), in percent

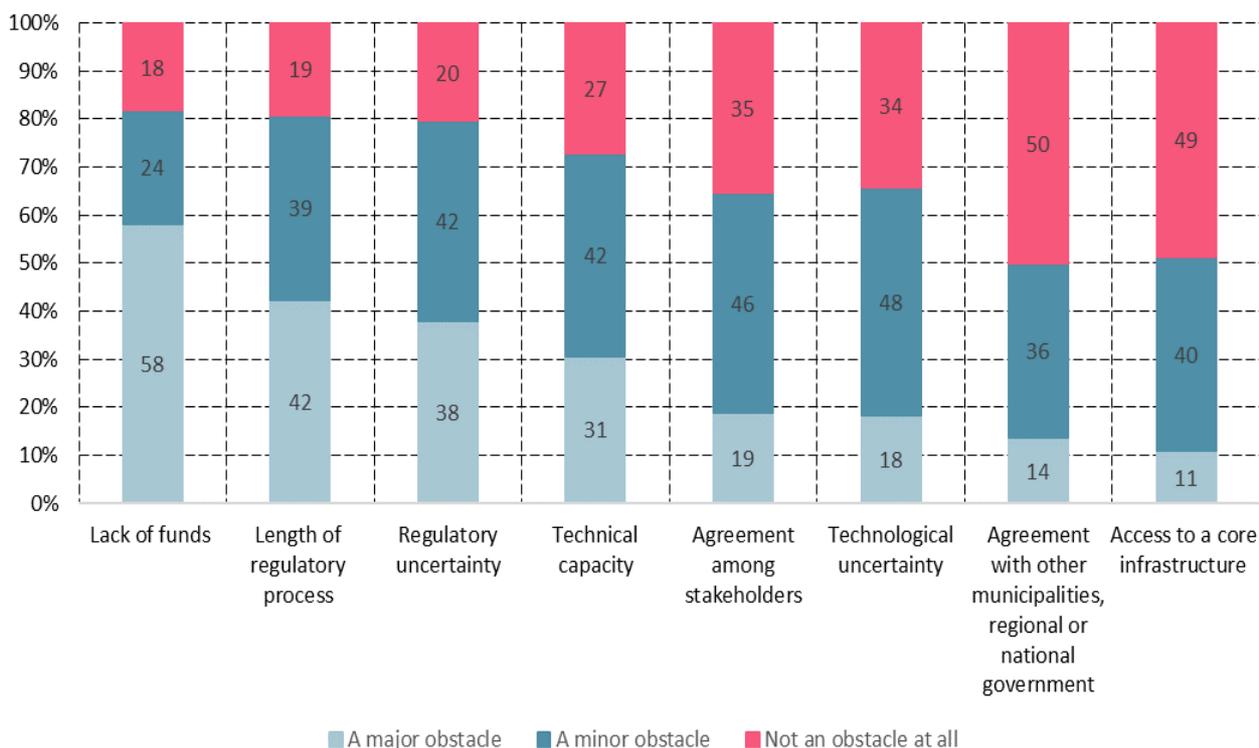


*Base: All municipalities (excluding don't know/refused responses)

What are the main investment obstacles that municipalities face?

The survey results indicate that the lack of funding remains the most significant obstacle to municipal infrastructure investment, strongly affecting 58% of municipalities surveyed. Following closely behind are the challenges posed by the length of the regulatory process and regulatory uncertainty (see Figure 8).

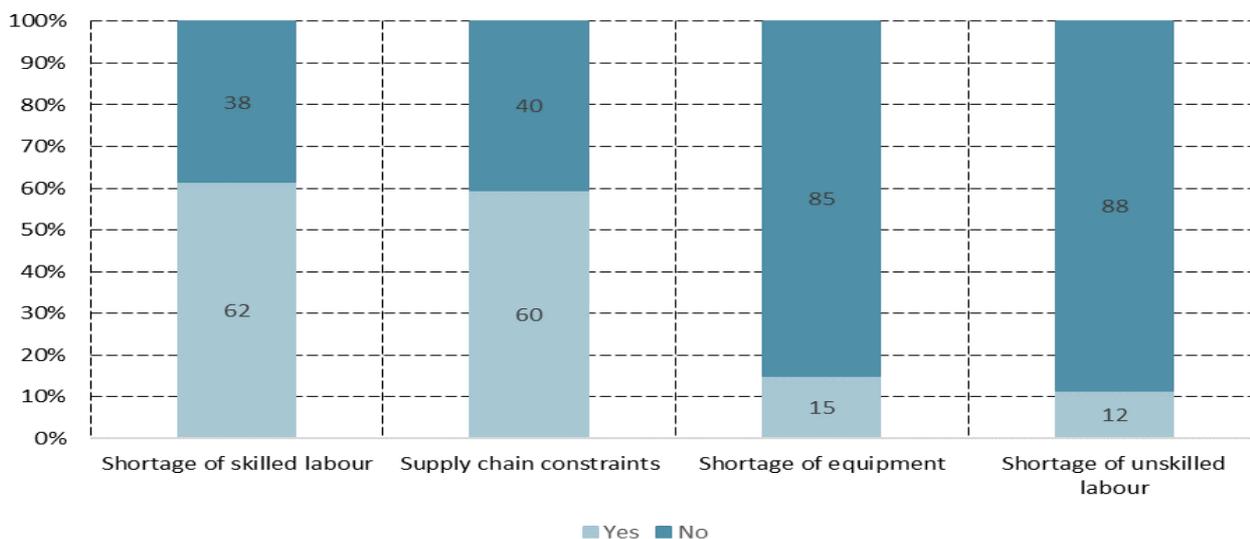
Figure 8: To what extent is each of the following an obstacle to the implementation of your infrastructure investment activities? Is it a major obstacle, a minor obstacle or not an obstacle at all? (Q23), in percent



*Base: All municipalities (excluding don't know/refused responses)

In terms of human and physical capital, access to skilled labour and supply chain constraints emerge as the primary obstacles for municipalities in executing their infrastructure investments. While most municipalities report having access to unskilled labour and equipment for their infrastructure investment, 62% face a shortage of skilled labour and 60% encounter supply chain constraints (see Figure 9).

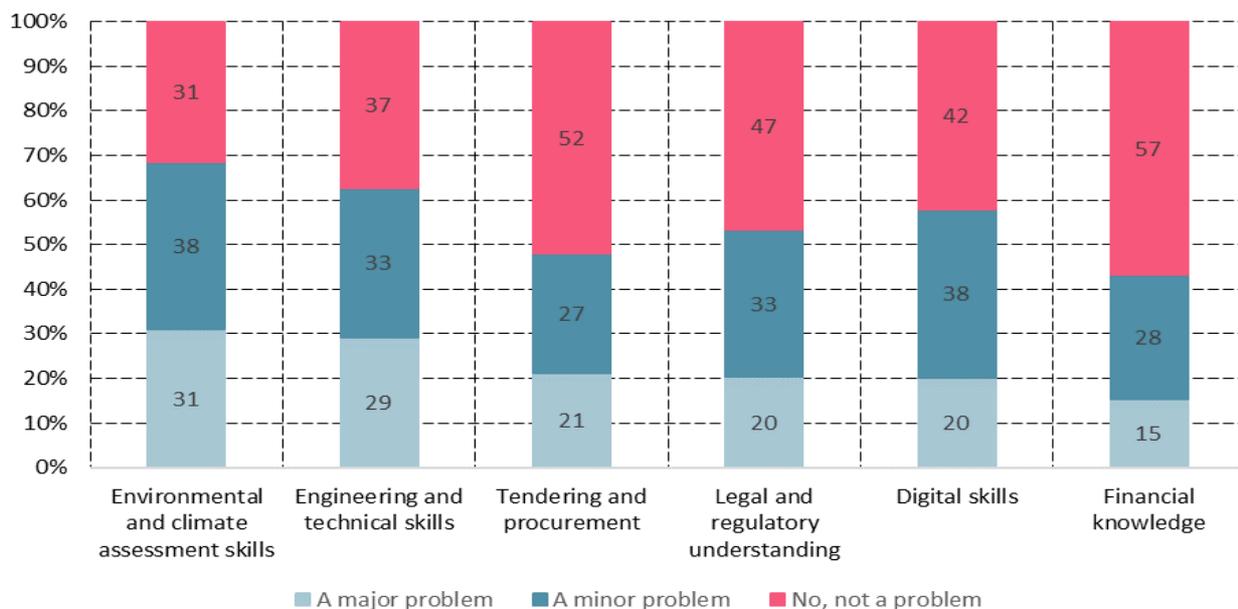
Figure 9: Which, if any, of the following are the main obstacles to the implementation of your infrastructure investment activities. Please tell me your top two obstacles (Q24), in percent



*Base: All municipalities (excluding don't know/refused responses)

Municipalities face a shortage of experts with environmental and climate assessment skills, which poses a problem for 69% of them (see Figure 10). Additionally, accessing experts with engineering and technical skills presents the second-largest challenge in delivering municipal investment programmes, with 29% of municipalities considering it a major challenge and 33% perceiving it as a minor challenge (see Figure 10).

Figure 10: For each of the following areas, to what extent is access to experts a problem to the delivery of your municipality investment programme? (Q11), in percent

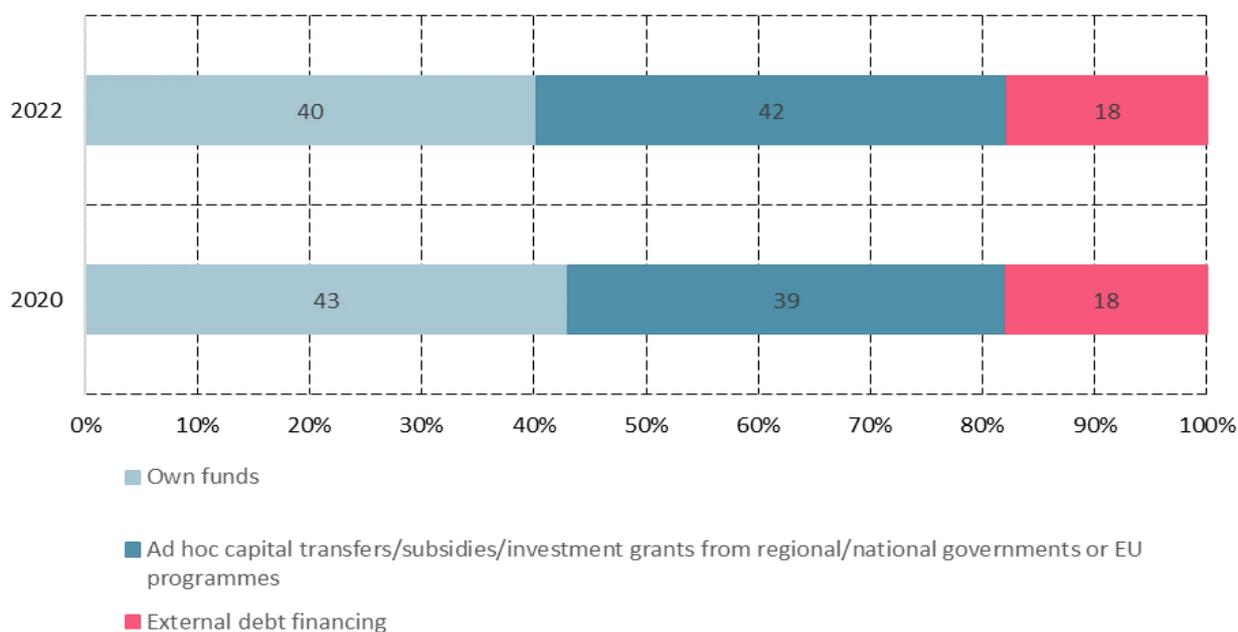


*Base: All municipalities (excluding don't know/refused responses)

How do municipalities fund their investment and where are funding shortages?

The sources of financing for municipal investment remained relatively stable between 2020 and 2022. The use of own funds, transfers for project-specific funding, and external debt financing maintained a similar proportion (see Figure 11). However, it is important to note that the access to different funding sources for public investment by municipalities is influenced by several factors. These factors include the institutional setup, revenue generation capacity, access to capital markets, and policies regarding the use of EU funds. Consequently, there can be substantial variations in the availability and utilisation of funding sources for municipal investments across the European Union.

Figure 11: Can you tell me approximately what proportion of your infrastructure investment activities over the last three years were financed by each of the following? (Q17), in percent

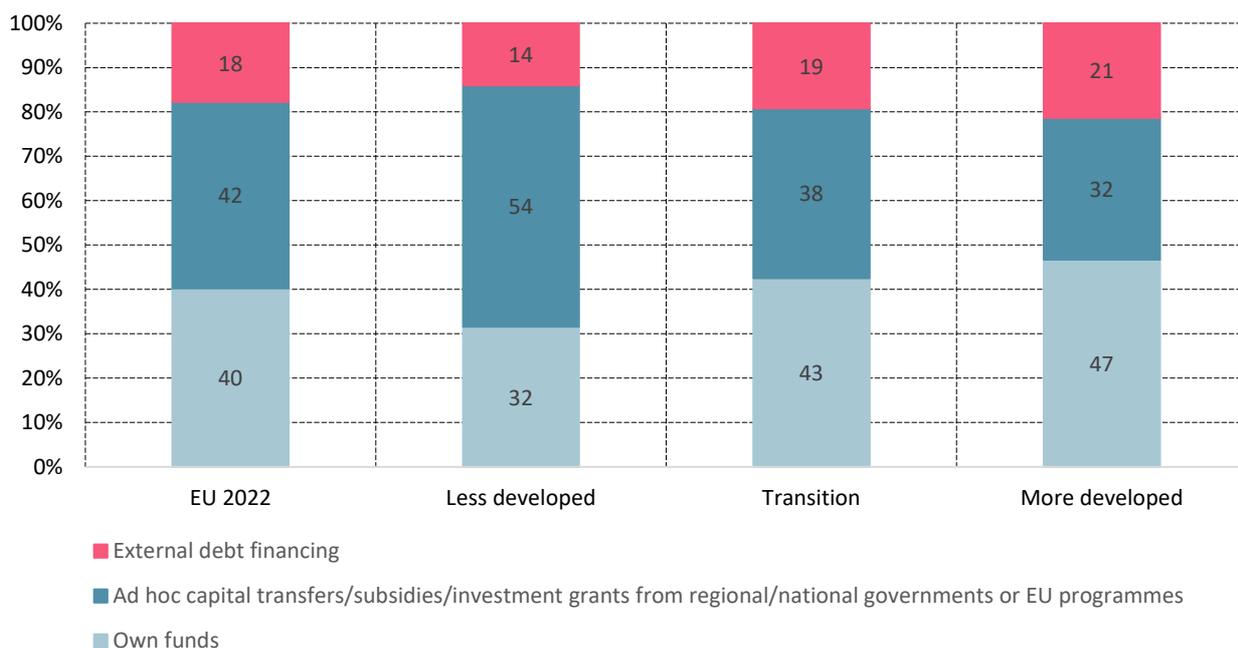


**Base: All municipalities (excluding don't know/refused responses)*

In more developed and transition regions, external debt financing constitutes approximately one-fifth of the financing for infrastructure investments by municipalities. However, in less developed regions, the proportion is somewhat lower at 14% (see Figure 12). Out of the municipalities that did not utilise external debt financing (82% of the total), the majority (85%) stated that they had no need for borrowing (see Figures 12 and 13). It is worth noting that the proportion of municipalities citing no need for borrowing is lower in less developed regions (79%) compared to transition (91%) or more developed regions (87%) (see Figure 13).

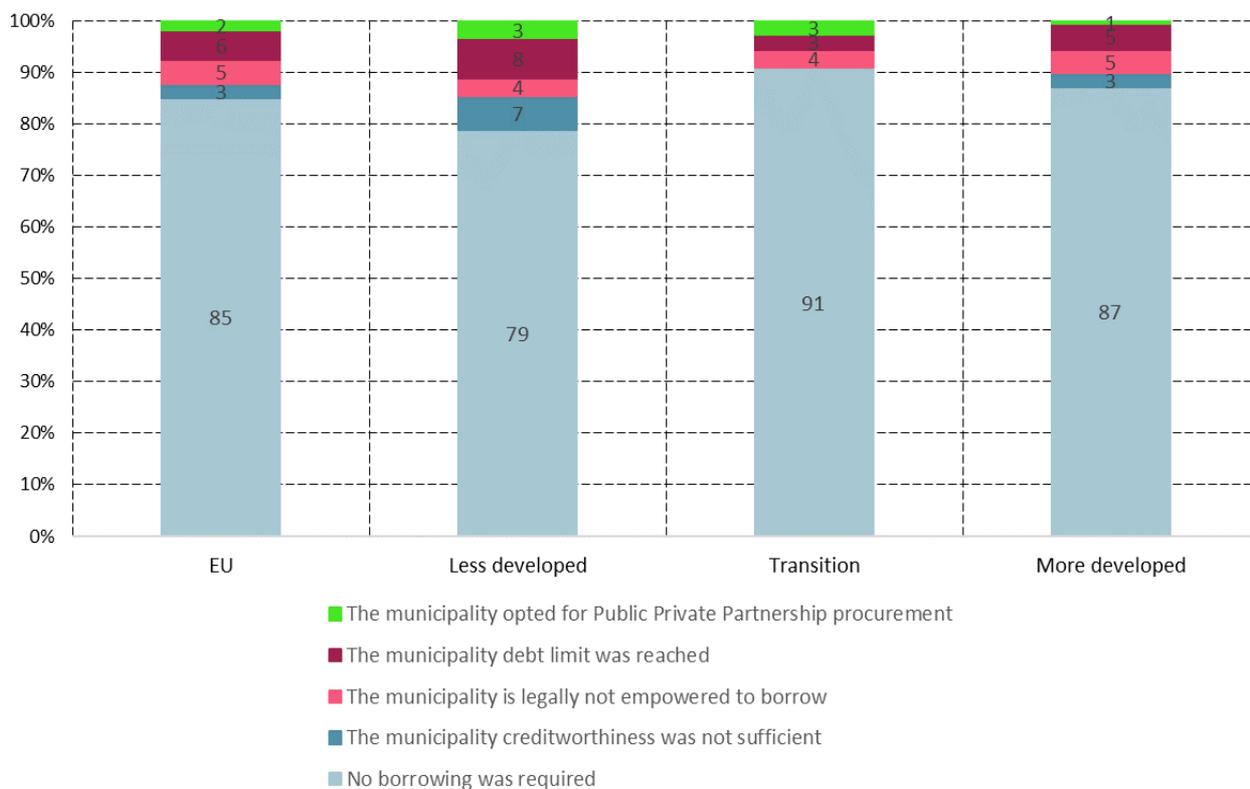
Municipalities in less developed regions more frequently reported not using external debt financing due to insufficient creditworthiness (7%), whereas their counterparts in transition regions reported 0% and more developed regions reported 3% for that reason. Additionally, municipalities in less developed regions cited reaching their debt limit or facing borrowing restrictions at a higher government level (8%) more often than municipalities in more developed (5%) or transition regions (3%) (see Figure 13).

Figure 12: Can you tell me approximately what proportion of your infrastructure investment activities over the last three years were financed by each of the following? (Q17), in percent



*Base: All municipalities (excluding don't know/refused responses)

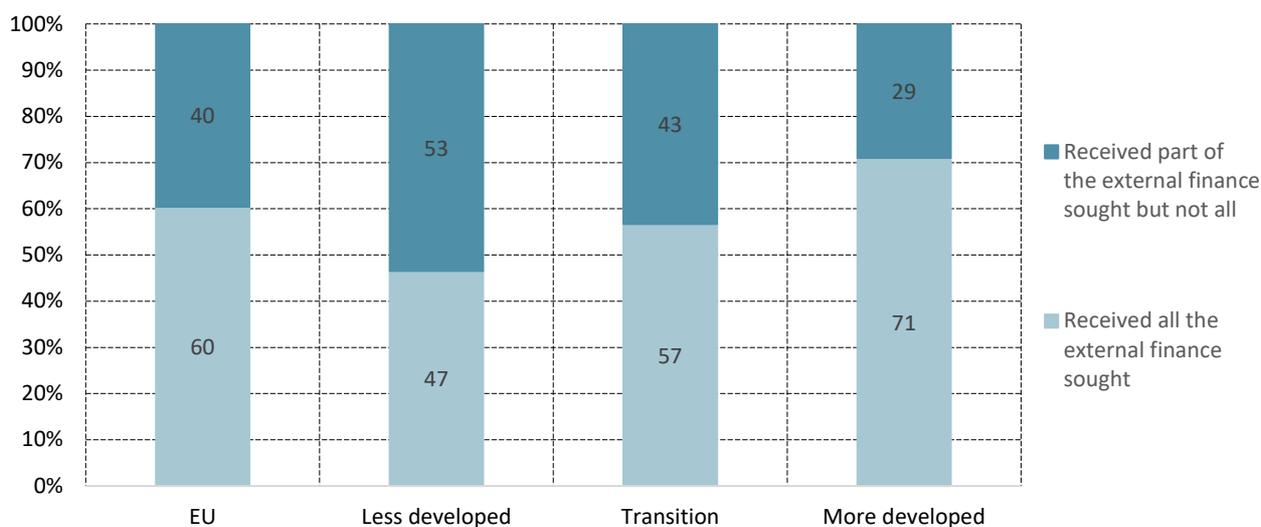
Figure 13: Did your municipality not use any external [debt] financing, because...? (Q18)



*Base: Out of the 744 municipalities in the sample, 273 replied that they did not use any external debt financing over the last three years. Out of this subsample only 263 municipalities answered this question.

In 2022, 18% of EU municipalities had utilised external debt financing to fund their infrastructure investment in the preceding three years (see Figure 11). Among these municipalities, a significant 60% successfully obtained all the external debt finance they had sought (see Figure 14). However, the rate of obtaining all the external financing sought differs across regions. Specifically, only 47% of municipalities in less developed regions secured all the desired external financing in the last three years. This figure is notably lower compared to more developed regions, where 71% of municipalities obtained all the external financing sought, and transition regions, where 57% achieved the same level of success (see Figure 14).

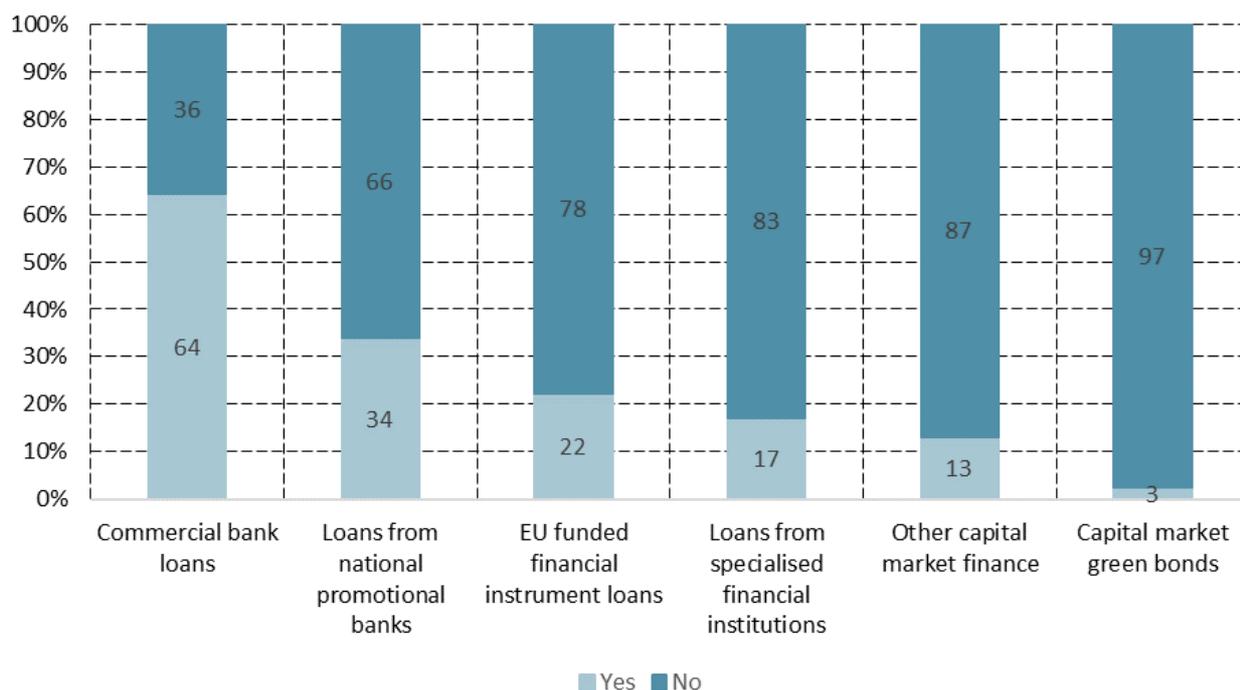
Figure 14: Looking back at the investments you had planned over the last three years, did you receive all of the external finance that you sought for the planned investments, or only part of the external finance you sought? (Q20)



**Base: Out of the 744 municipalities in the sample, 355 replied that they had used external debt financing over the last three years. Out of this subsample only 350 municipalities answered this question.*

Among the municipalities that accessed external debt financing, commercial banks emerged as the most prevalent source, with 64% of municipalities obtaining funds from this source (see Figure 15).

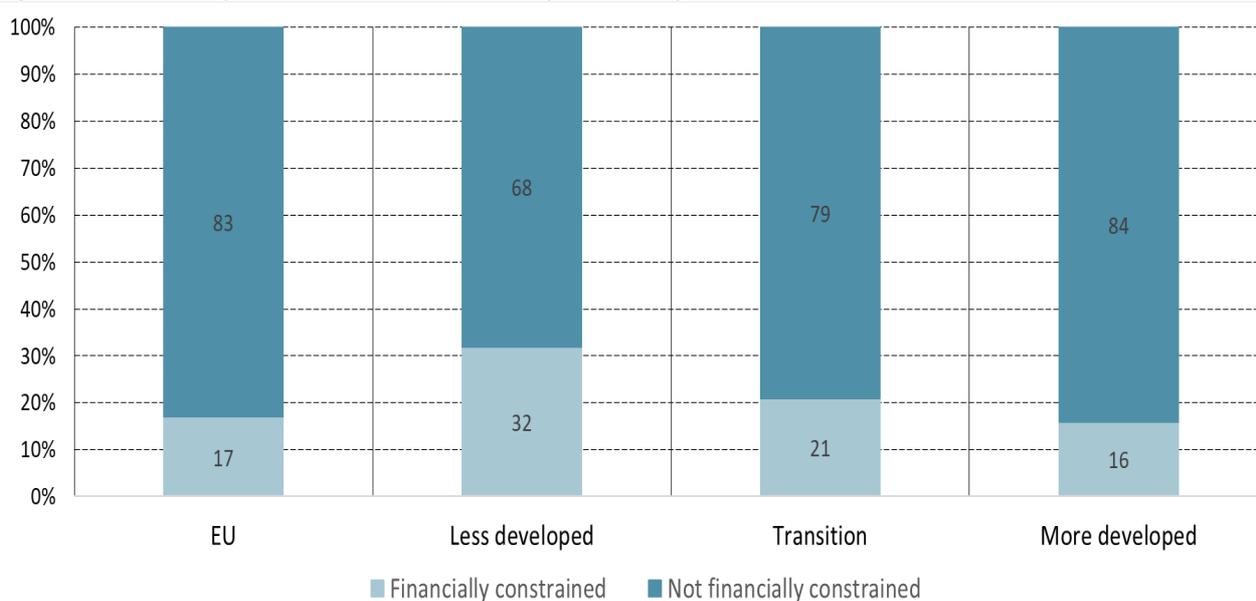
Figure 15: When sourcing external [debt] financing, which of the following have you used? (Q19), in percent



*Base: Out of the 744 municipalities in the sample, 355 replied that they had used external debt financing over the last three years. Out of this subsample all 355 municipalities answered this question.

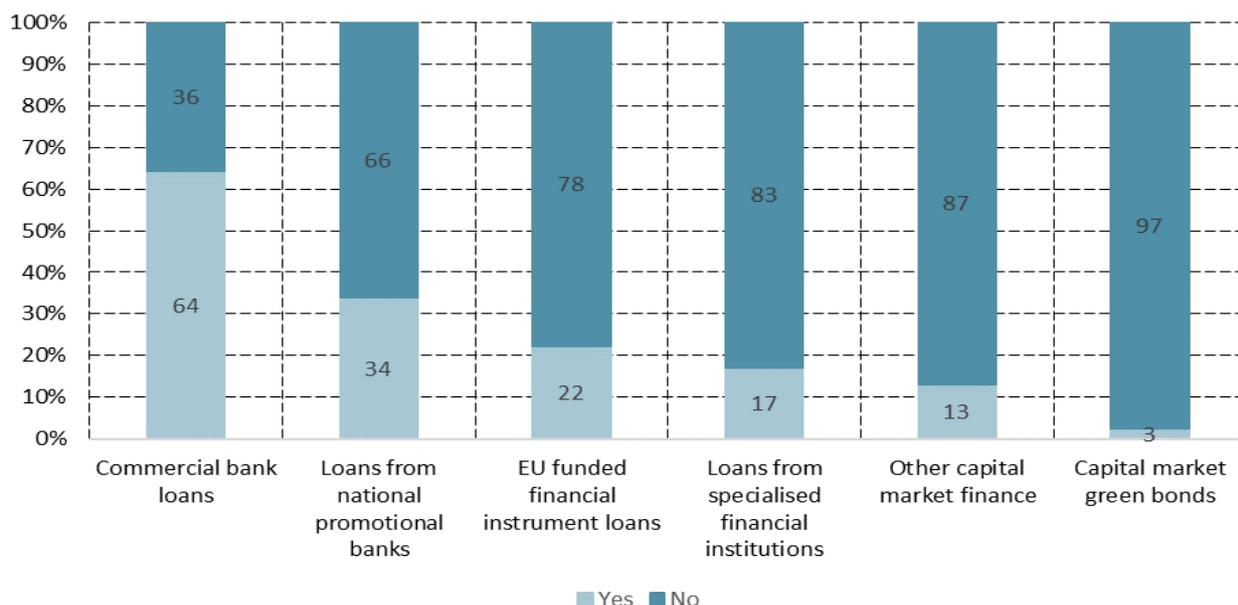
By examining municipalities that utilised external debt financing but were unable to secure the full requested amount, alongside municipalities that refrained from external debt financing due to poor creditworthiness or reaching their debt limit, it becomes possible to detect a measure of financial constraint. It is noteworthy that less developed regions exhibit the highest proportion of financially constrained municipalities (32%), surpassing both transition regions (21%) and more developed regions (16%) by a significant margin (see Figure 16).

Figure 16: External finance constrained municipalities, in percent



*Base: All municipalities (excluding don't know/refused responses)

Figure 17: When sourcing external [debt] financing, which of the following have you used? (Q19), in percent



*Base: Out of the 744 municipalities in the sample, 355 replied that they had used external debt financing over the last three years. Out of this subsample all 355 municipalities answered this question.

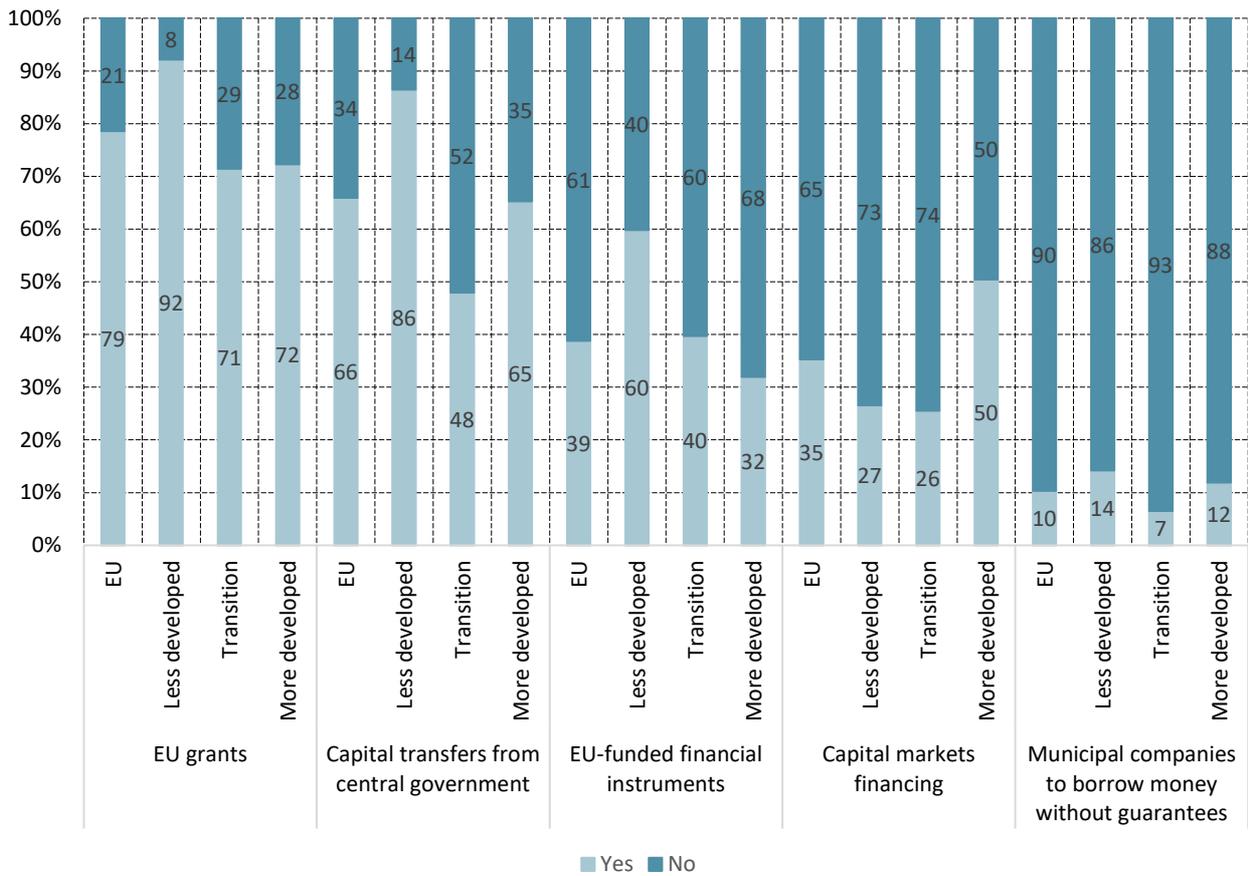
There are notable differences in financing plans among municipalities in different regions. In less developed regions, a significant majority of municipalities (92%) plan to finance their investments in the coming years using EU grants. This proportion is substantially higher compared to more developed regions (72%) and transition regions (71%) (see Figure 18).

Additionally, in less developed regions, a considerably higher proportion of municipalities (60%) intend to utilise EU-funded financial instruments to finance their investments in the coming years, surpassing the figures for more developed regions (32%) and transition regions (40%) (see Figure 18).

Moreover, most municipalities in less developed regions (86%) plan to use capital transfers from their central government to finance their investments in the coming years. In contrast, the proportion is considerably lower in transition regions (48%) and more developed regions (65%) (see Figure 18).

Furthermore, while half of the municipalities in more developed regions intend to use capital market financing in the coming years, only 27% of municipalities in less developed regions and 26% in transition regions plan to utilise this financing source (see Figure 18).

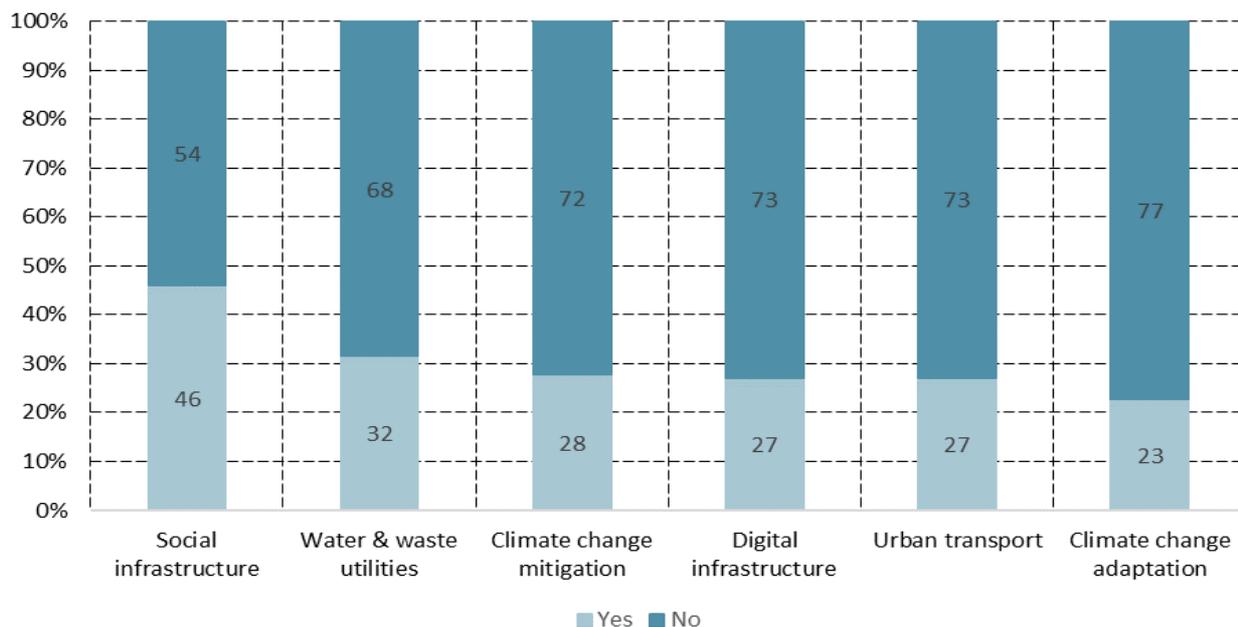
Figure 18: In the 2022-2026 period, in order to finance planned investment projects, does your municipality plan to draw on any of the following? (Q21), in percent



*Base: All municipalities (excluding don't know/refused responses)

Among the municipalities that plan to utilise EU-funded financial instruments and/or capital transfers from the central government in the coming years, a higher proportion expressed their intention to allocate these funds towards social infrastructure (46%) and water and waste utilities (32%). These sectors were identified as the primary areas where the funds would be directed. In contrast, climate adaptation investment was reported to be the least cited projected use of EU funds (see Figure 19).

Figure 19: For which, if any, of the following investment areas are you expecting to use EU-funded financial instruments and/or capital transfers from central government? Please tell me the top two investment types. (Q22)



*Base: Subsample of 537 municipalities that answered that they were planning to draw on EU-funded financial instruments and/or capital transfers from central government in 2022-2026.

How are municipalities moving towards the green and digital transition?

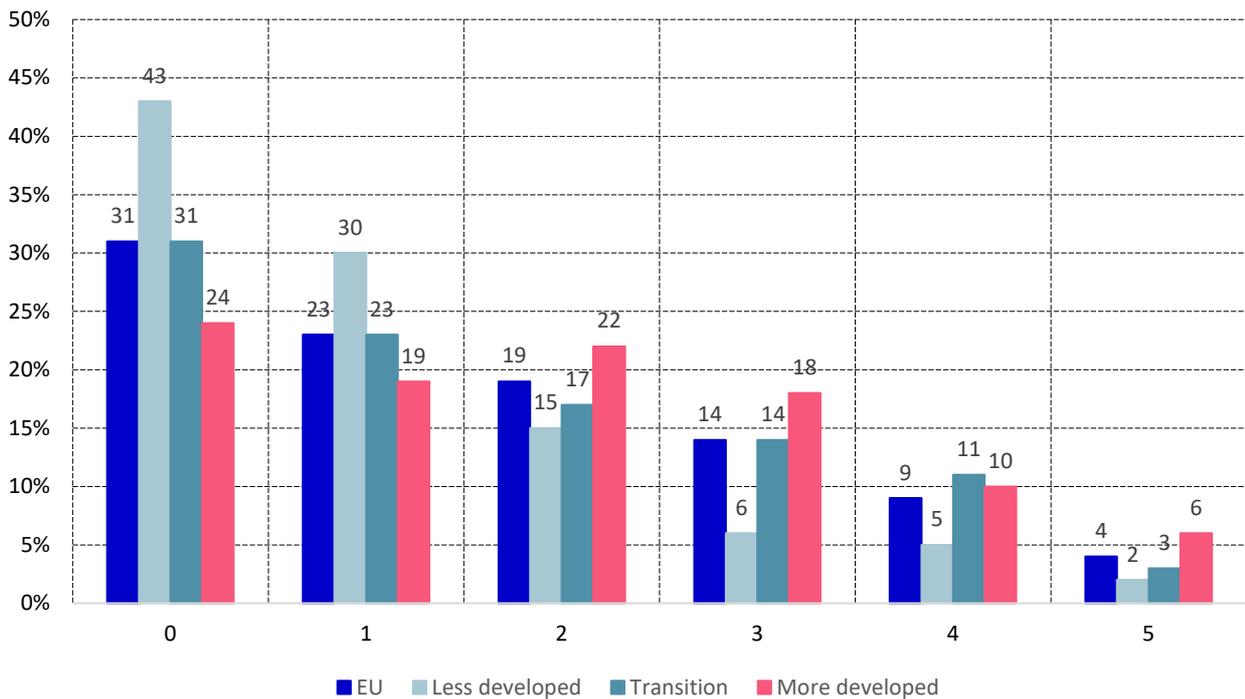
EU municipalities are found to be more advanced in implementing measures to support the digital transformation compared to the transition to a climate-neutral economy. The proportion of municipalities defined as being ahead in “green” measures¹ stands at 27%, which is considerably lower than the 45% of municipalities excelling in the digital agenda² (45%) (see Figures 18 and 19).

The adoption of digital measures is relatively more uniform across regions compared to green measures. Among the surveyed municipalities, 43% of those in less developed regions have not implemented any of the five green measures inquired about. This figure is 31% for transition regions and 24% for more developed regions (see Figure 20). In contrast, the proportion of municipalities that have not implemented any of the five digital measures shows less variation across regions, with 19% in less developed regions, 14% in transition regions, and 10% in more developed regions (see Figure 21).

¹ Green municipalities are defined as municipalities that respond having already implemented at least three green measures out of the five that are mentioned in question 12a (green budgeting, circular economy, systematic assessment of energy efficiency of municipality assets, systematic assessment of municipality assets for resilience to climate change, and dedicated staff working on climate change plans).

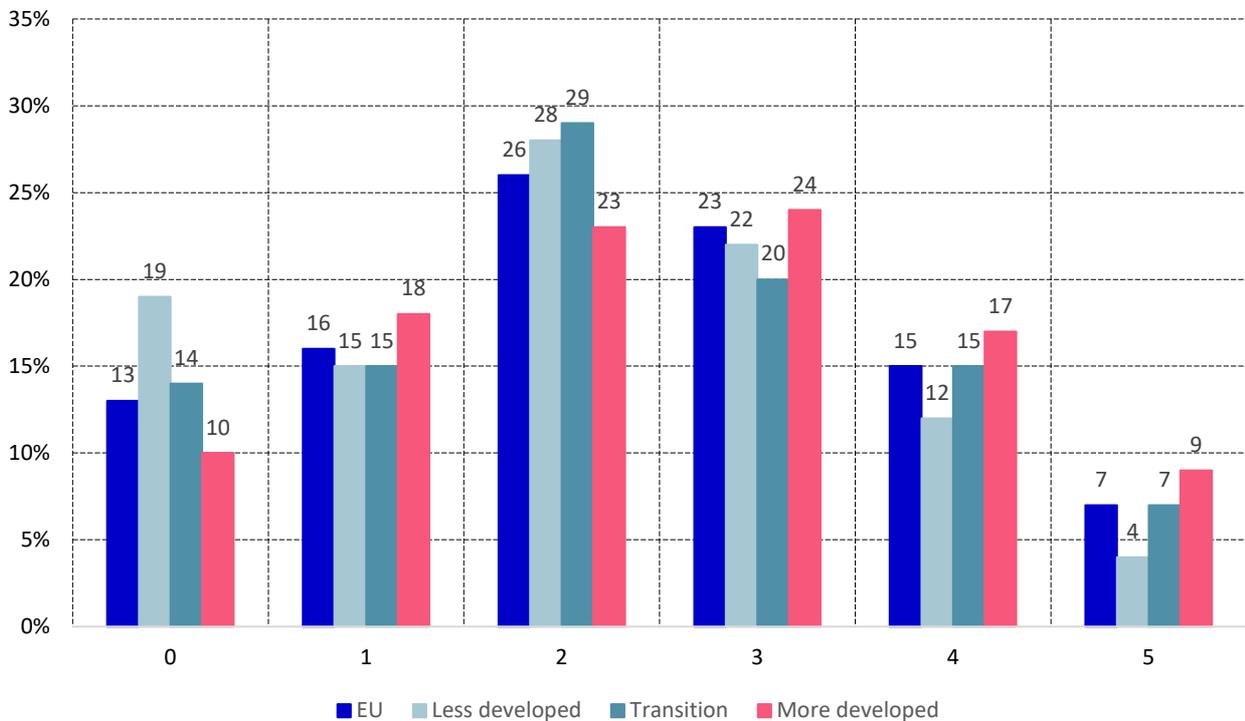
² Digital municipalities are defined as municipalities that respond having already implemented at least three digital measures out of the five that are mentioned in question 12b (integrity/protection of IT systems, including cybersecurity; provision of digital or online government services; systematic assessment of adequacy of digital infrastructure in municipality; deployment/use of remote sensors; and dedicated staff working on digitalisation plans).

Figure 20: Share of municipalities which reported having already implemented exactly X (count) green measures out of the five that are mentioned in the survey, at EU level and across regions (Q12a), in percent



*Base: All municipalities (excluding don't know/refused responses)

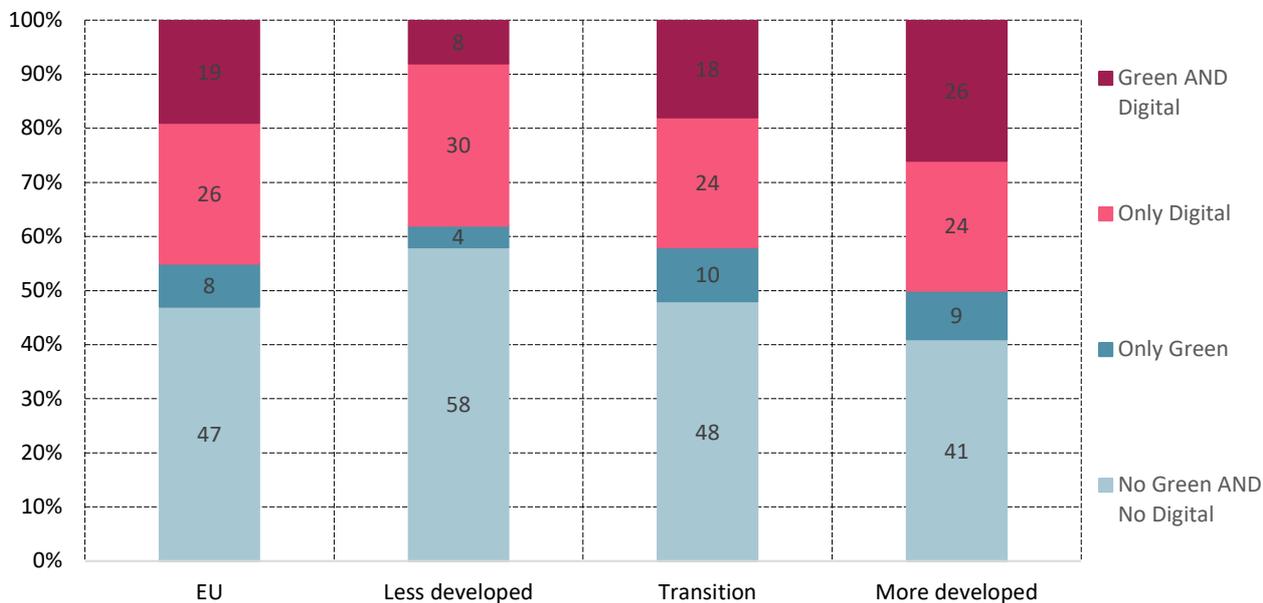
Figure 21: Share of municipalities which reported having already implemented exactly X (count) digital measures out of the five mentioned in the survey, at EU level and across regions (Q12b), in percent



*Base: All municipalities (excluding don't know/refused responses)

Furthermore, the share of municipalities that are advanced in both green and digital measures is significantly higher in more developed regions (26%) compared to less developed regions (8%) (see Figure 22).

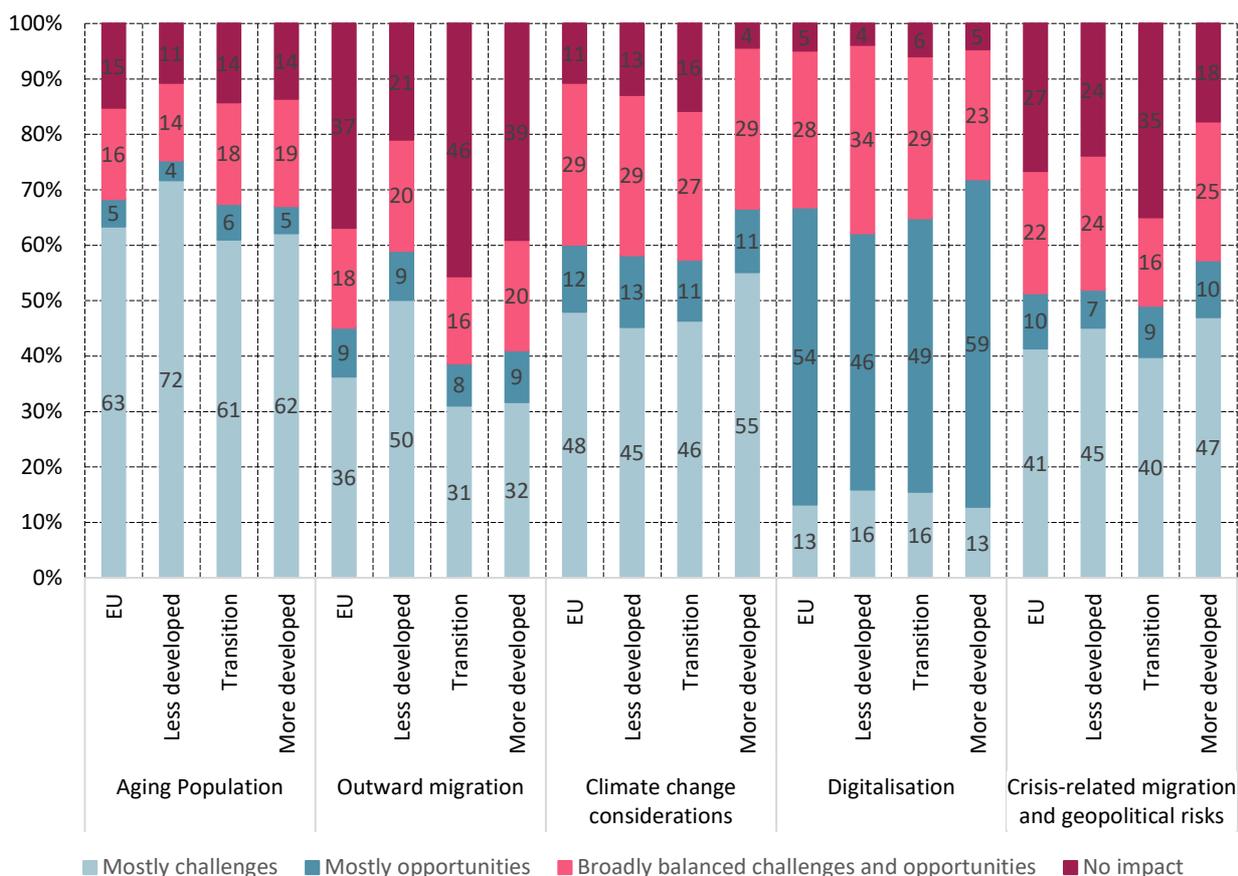
Figure 22: Share of digital and green municipalities in the European Union and across regions (implemented at least three digital measures out of five and three green measures out of five), (Q12a and Q12b), in percent



*Base: All municipalities (excluding don't know/refused responses)

Regarding the outlook on challenges and opportunities, municipalities across all regions predominantly cite climate change considerations as posing challenges, while digitalisation is perceived as offering opportunities. The proportion of municipalities believing that climate change considerations will mostly pose challenges is slightly higher in more developed regions (55%), with similar figures for transition regions (46%) and less developed regions (45%). Conversely, 59% of municipalities in more developed regions, 46% in less developed regions, and 49% in transition regions believe that digitalisation will mostly involve opportunities (see Figure 23).

Figure 23: Thinking about the following considerations, do you expect each to present opportunities or challenges to your municipality? (Q3) in percent



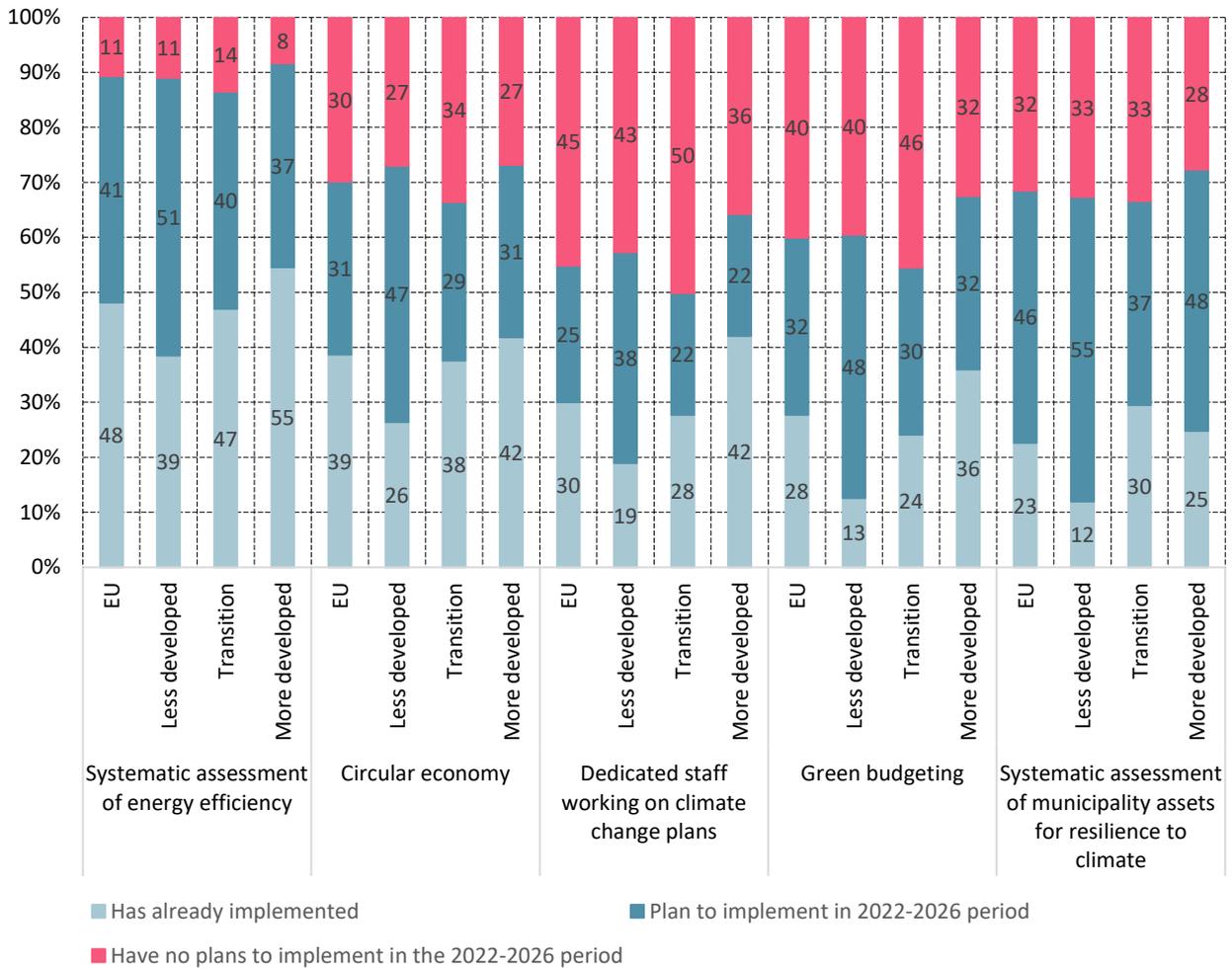
*Base: All municipalities (excluding don't know/refused responses)

A higher proportion of municipalities have dedicated staff working on digitalisation plans compared to those dedicated to climate change plans, with 44% focused on digitalisation and 30% on climate change. The most prevalent green measure already implemented by municipalities is the systematic assessment of energy efficiency in municipality assets, with 48% of municipalities having adopted this measure. This is followed by circular economy activities (39%), dedicated staff working on climate change (30%), green budgeting (28%), and systematic assessment of municipality assets for resilience (23%) (see Figure 24).

In terms of digital investments, the top priority for municipalities in the next four years is the systematic assessment of the adequacy of their digital infrastructure, with 42% of municipalities prioritising this area. This is followed by the provision of online government services, which is a priority for 29% of municipalities (see Figure 25).

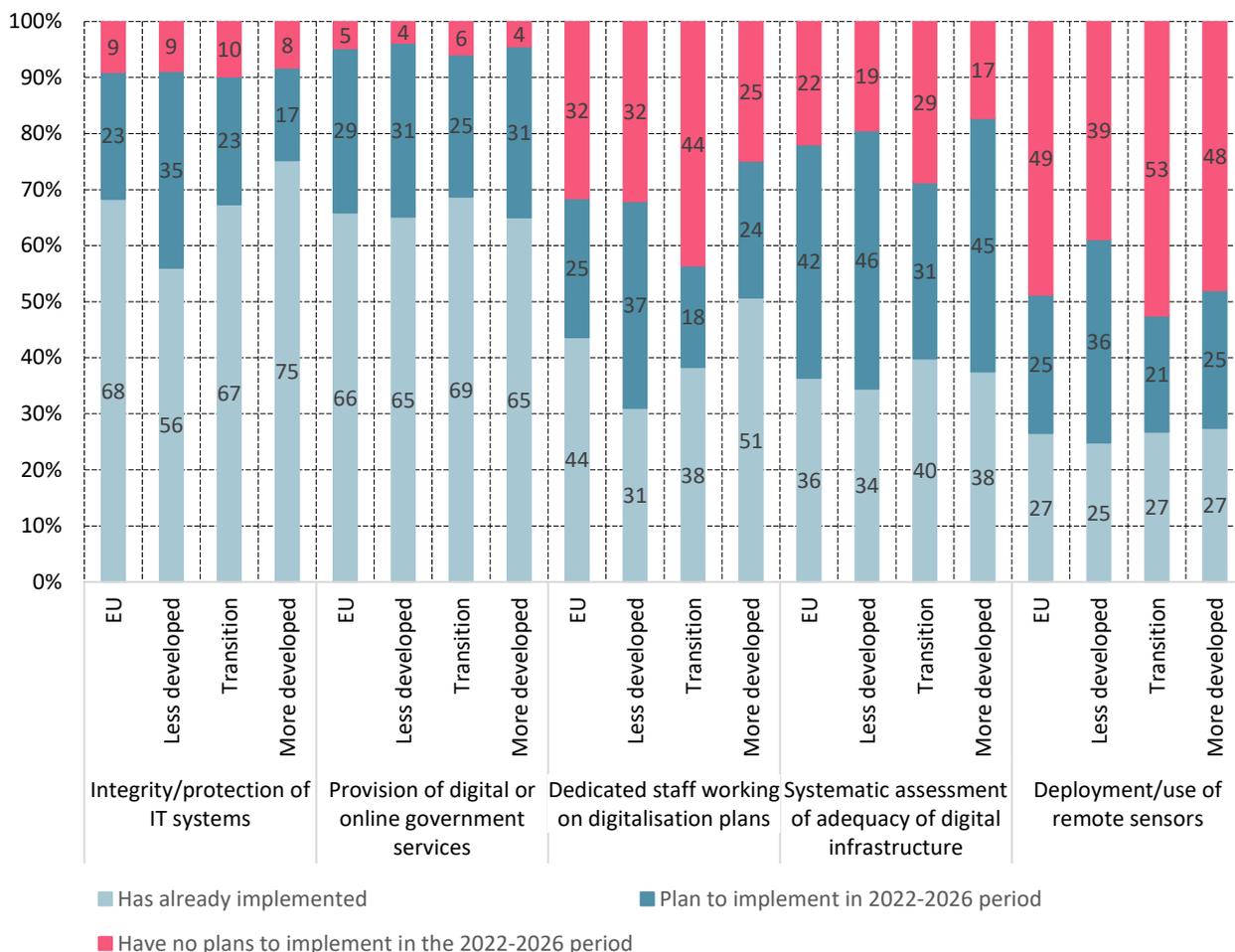
When it comes to IT system protection measures, three-quarters of municipalities in more developed regions have already implemented such measures. In comparison, 56% of municipalities in less developed regions and 67% of municipalities in transition regions have implemented such measures (see Figure 25).

Figure 24: Thinking about climate change and environment sustainability. For each of the following please tell me whether your municipality has already implemented, has plans to implement in the 2022-2026 period, or has no plans to implement in the 2022-2026 period? (Q12a)



*Base: All municipalities (excluding don't know/refused responses)

Figure 25: Now thinking about digital technologies. For each of the following please tell me whether your municipality has already implemented, has plans to implement in the 2022-2026 period or has no plans to implement in the 2022-2026 period? (Q12b), in percent



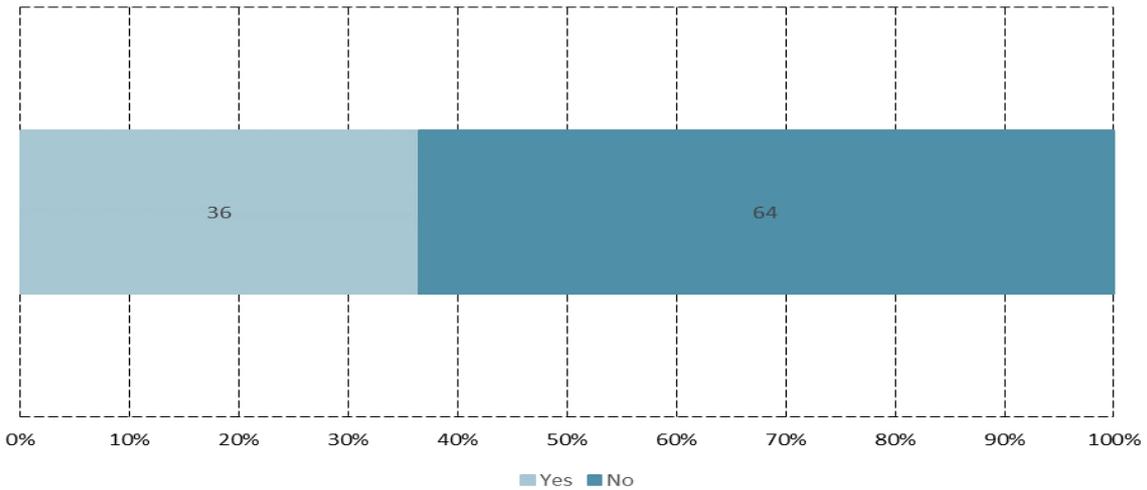
*Base: All municipalities (excluding don't know/refused responses)

According to the survey, only 36% of municipalities currently set and monitor targets for greenhouse gas emissions (see Figure 26). Among the measures aimed at reducing greenhouse gas emissions, investing in energy efficiency of municipal assets or social housing is the most popular, with 82% of municipalities adopting this approach. This is followed by implementing more sustainable means of transport (58%) and investing in renewable energies (43%). However, the adoption rates for other measures are relatively lower, with only 38% of municipalities investing in the circular economy and 35% implementing district heating (see Figure 27).

When it comes to renewable energy generation, slightly over half of the municipalities in more developed regions have implemented measures for generating, storing or distributing renewable energy. The adoption rate is slightly lower in less developed regions at 43%, while it drops considerably to 35% in transition regions (see Figure 27).

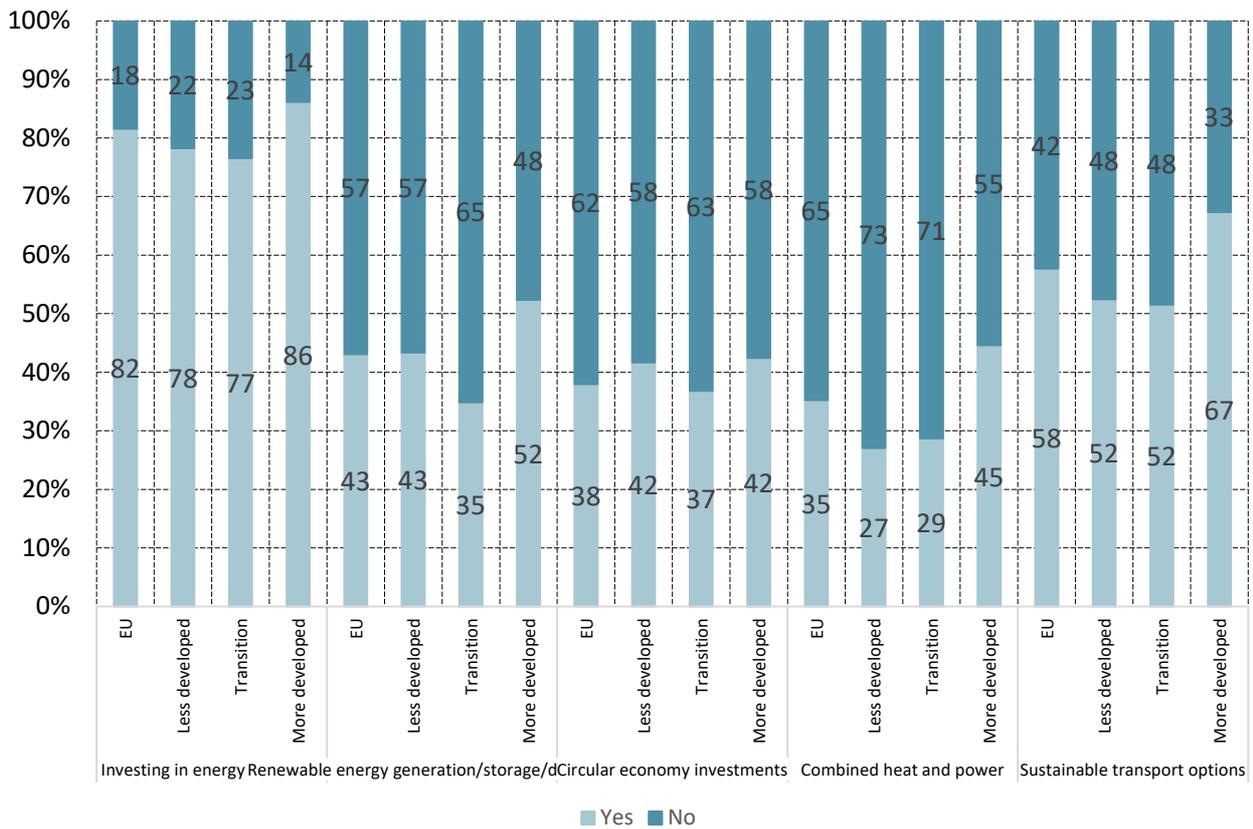
In terms of combined heat and power and district heating, municipalities in more developed regions are leading the way. Approximately 45% of municipalities in more developed regions have implemented district heating systems, whereas only 27% of municipalities in less developed regions and 29% in transition regions have done the same (see Figure 27).

Figure 26: Does your municipality set and monitor targets for greenhouse gas (GHG) emissions? (Q8)



*Base: All municipalities (excluding don't know/refused responses)

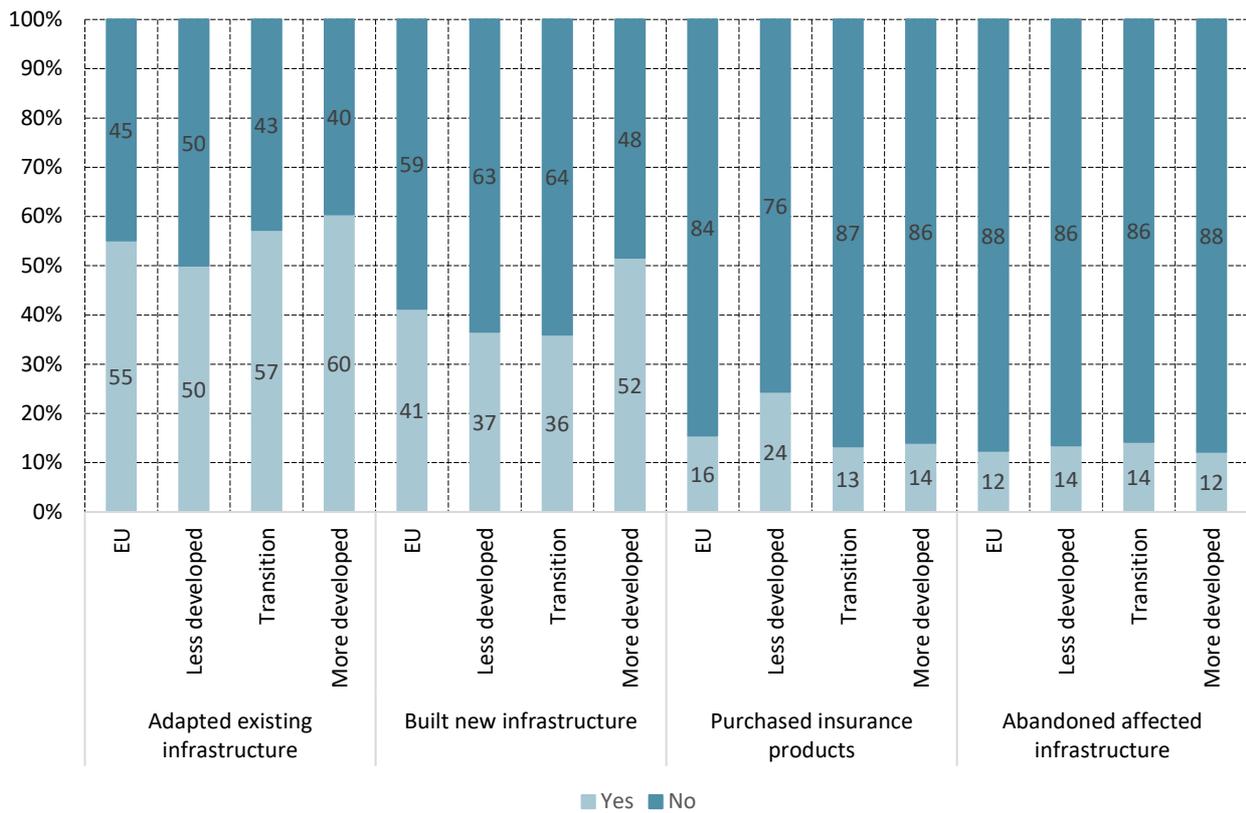
Figure 27: Is your municipality implementing or coordinating renewable energy generation/storage/distribution to reduce greenhouse gas (GHG) emissions? (Q16), in percent



*Base: All municipalities (excluding don't know/refused responses)

The survey findings highlight disparities in climate risk mitigation and renewable energy adoption among municipalities across different regions. More than half of the municipalities in more developed regions (52%) have already constructed new infrastructure to avoid or reduce exposure to climate risks. In contrast, only a third of municipalities in less developed and transition regions have taken similar measures (see Figure 28).

Figure 28: Has your municipality developed or invested in any of the following to build resilience to climate change risks? (Q14), in percent



*Base: All municipalities (excluding don't know/refused responses)

Annex 1: Macroeconomic context

Figure 29: EU infrastructure investment (% GDP)



Source: EIB calculations, EPEC, Eurostat, IJGlobal

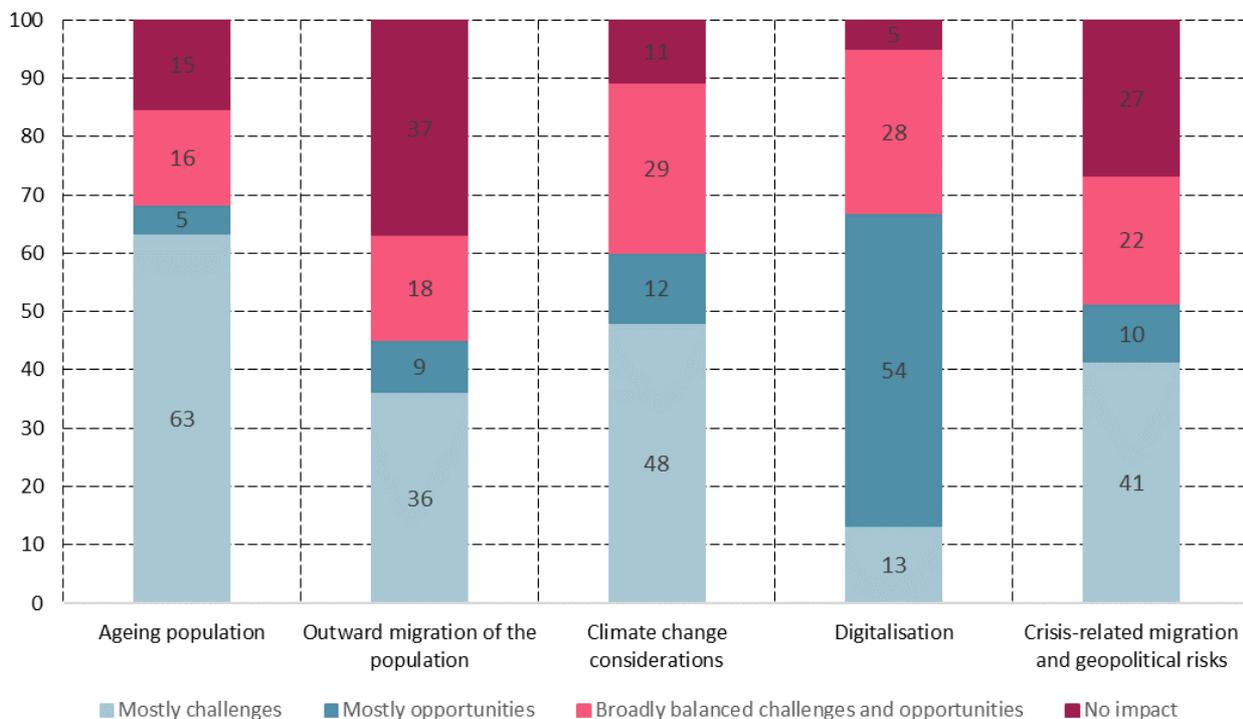
During the pandemic, infrastructure investment experienced a lesser decline in 2020 compared to overall GDP, and it rebounded faster in 2021. The suspension of EU fiscal rules, as the COVID-19 pandemic hit in 2020, meant that governments were not constrained to reduce investment to compensate for the large, unexpected expenditures. Furthermore, government investment plans were boosted by the implementation of the Recovery and Resilience Facility (RRF). The RRF made approximately €750 billion available to EU Member States over a period of five years. This amount is nearly twice the total government investment in the European Union in 2019. Strong government investment has likely had a positive effect on private infrastructure investment during this period, as contended in the [EIB Investment Report 2022/2023: Resilience and renewal in Europe](#).

Despite the challenges posed by the COVID-19 pandemic, local government infrastructure investment remained resilient during the period 2020-2021. Local governments had previously experienced significant declines in infrastructure investment during the fiscal consolidation period following the European sovereign debt crisis (see Figure 29), and these declines were disproportionately larger compared to central government infrastructure investment. However, during the pandemic, local governments across the European Union managed to sustain their infrastructure investment. This was achieved despite the need for increased expenditure related to the pandemic response and the impact of constrained economic activity on tax revenues. The ability to maintain infrastructure investment can be attributed to the increased transfers from central government to local governments (see Chapter 2 in the [EIB Investment Report 2021/2022: Recovery as a springboard for change](#)).

Annex 2: Questions at the EU level

Most municipalities see ageing population as a trend that presents challenges, while they consider digitalisation as offering opportunities

Figure 30: Thinking about the following global trends, do you expect each to present opportunities or challenges to your municipality? (Q3) in percent

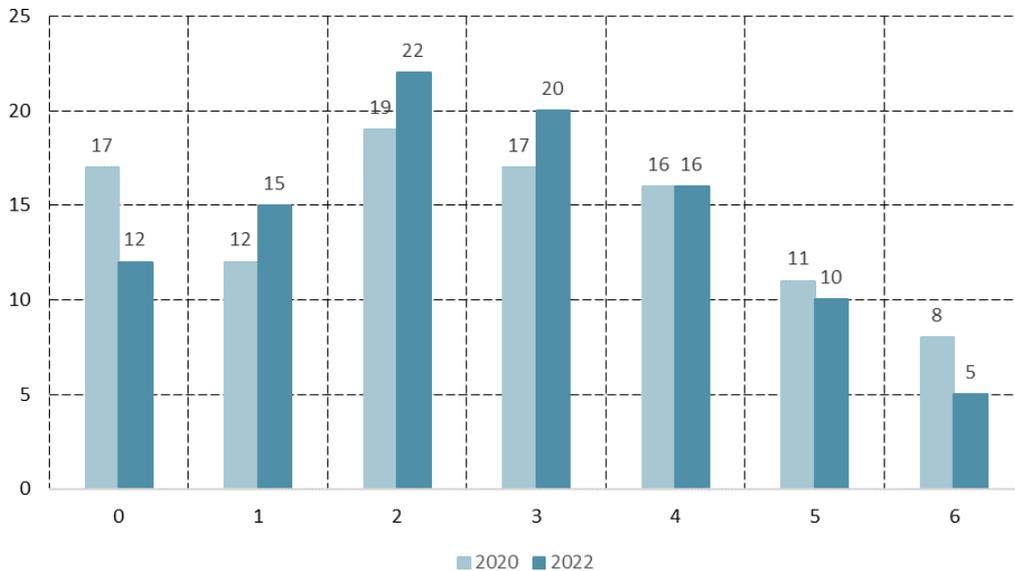


*Base: All municipalities (excluding don't know/refused responses)

- Ageing population is the global trend that is regarded by most municipalities (63%) as one that mostly presents challenges.
- Climate change considerations are viewed by 48% of municipalities as a trend that mostly presents challenges and by 29% as broadly balanced in representing a challenge and an opportunity.

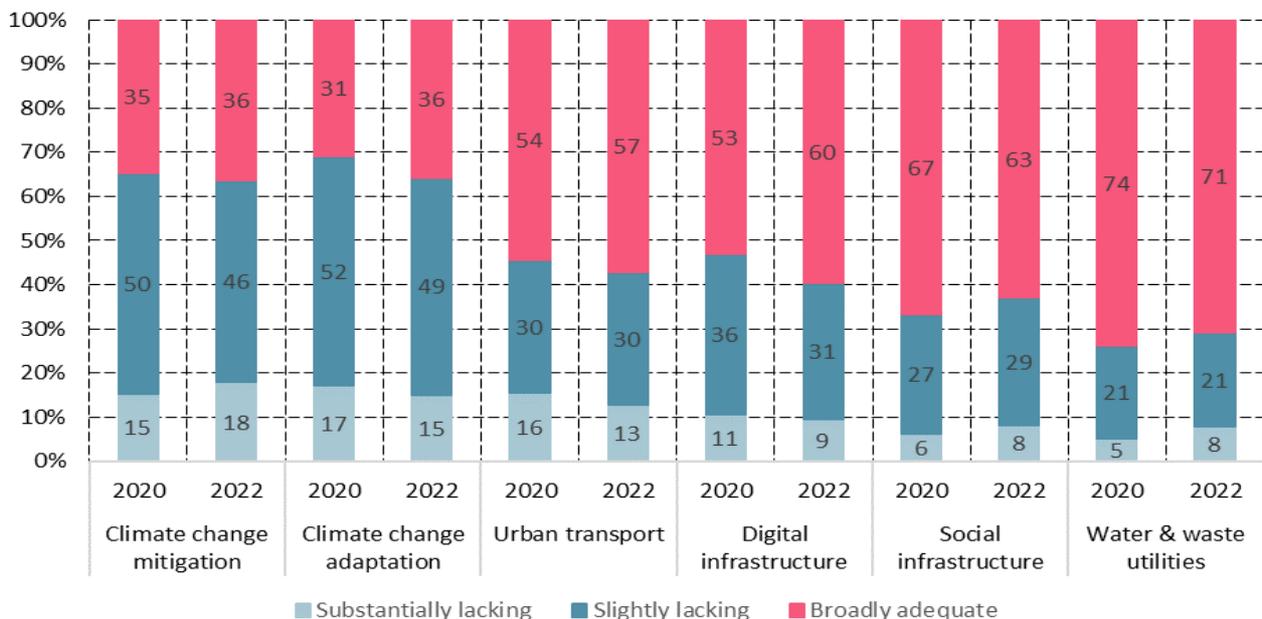
Satisfaction with past investment activities is high, except in climate change mitigation/adaptation

Figure 31: In the last three years, that is to say between 2019 and 2021, would you say that within your municipality the level of investment in infrastructure projects was broadly adequate, slightly lacking or substantially lacking (Q4), in percent.



*Base: All municipalities (excluding don't know/refused responses)

Figure 32: In the last three years, that is to say between 2019 and 2021, would you say that within your municipality the level of investment in infrastructure projects was broadly adequate, slightly lacking or substantially lacking (Q4), in percent



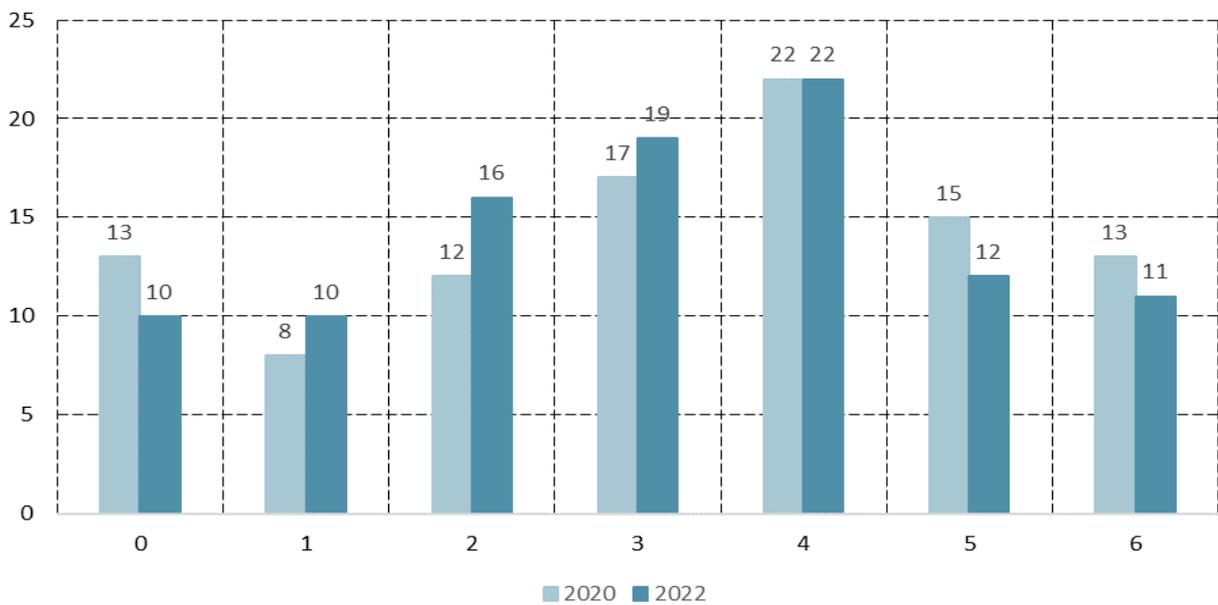
*Base: All municipalities (excluding don't know/refused responses)

- More than half of all municipalities considered their investments in climate change mitigation/adaptation as insufficient in the previous three years.

- Satisfaction levels with prior investments were highest for the category of water and waste utilities (71%), followed by social infrastructure (63%) and digital infrastructure (60%).
- Compared to 2020, the level of satisfaction with investments in the previous three years is similar in 2022 for social infrastructure (63% vs. 67%) and climate change mitigation (36% vs. 35%); slightly higher for urban transport (57% vs. 54%), digital infrastructure (60% vs. 53%) and climate change adaptation (36% vs. 31%); and somewhat lower in water and waste utilities (71% vs. 74%).

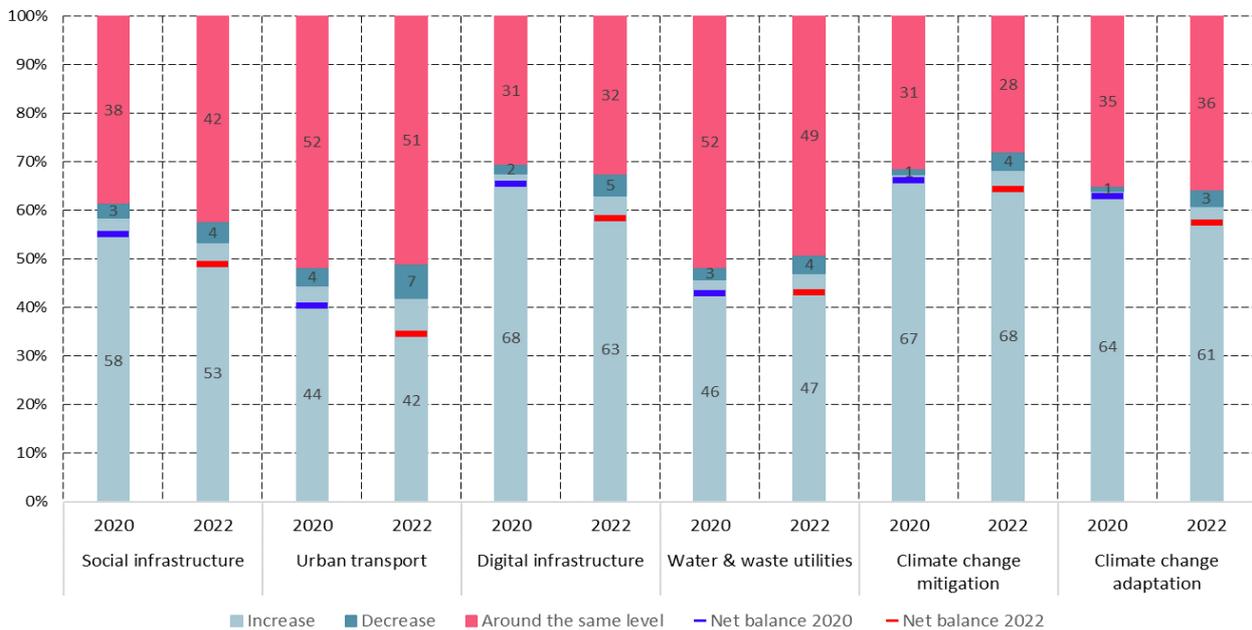
Municipalities intend to mainly increase their investments in climate change adaptation, mitigation and digital infrastructure

Figure 33: For each of the following areas, if you compare the average annual infrastructure investment you are planning for the 2022-2026 period versus the average annual infrastructure investment recorded in 2019-2021, does your municipality expect to increase, decrease or have around the same level of spending on infrastructure investment? (Q5), in percent.



*Base: All municipalities (excluding don't know/refused responses)

Figure 34: For each of the following areas, if you compare the average annual infrastructure investment you are planning for the 2022-2026 period versus the average annual infrastructure investment recorded in 2019-2021, does your municipality expect to increase, decrease or have around the same level of spending on infrastructure investment? (Q5), in percent

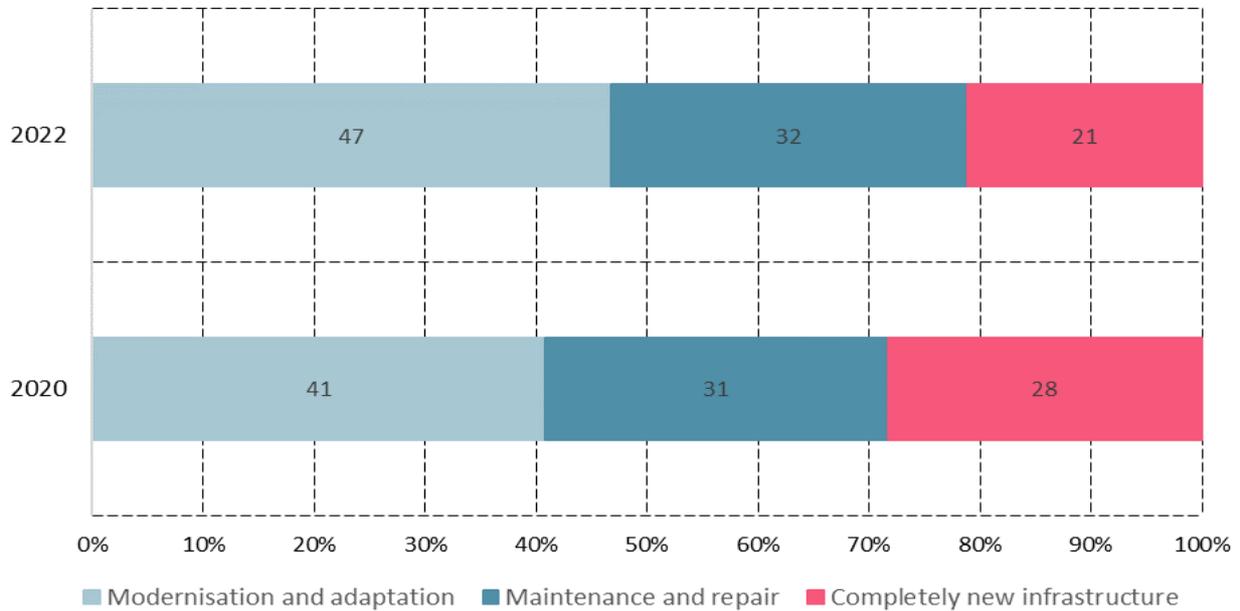


*Base: All municipalities (excluding don't know/refused responses)

- Over 60% of municipalities plan to increase their investments in climate change mitigation (68%) and climate change adaptation (61%) in the next three years, compared to their investment in the previous three years.
- 63% of municipalities also plan to increase their investments in digital infrastructure, which was perceived as substantially lacking in the previous three years by 9% of the municipalities and as slightly lacking by 31% of them.
- Social infrastructure appears in fourth place as an investment area that municipalities intend to increase (53%).
- Overall, the net balance is positive across all infrastructure areas. The top three infrastructure types in which municipalities plan on investing are climate change mitigation (64%), digital infrastructure (58%) and climate change adaptation (58%). However, across all infrastructure categories a smaller share of municipalities plans to increase their investments compared to 2020, except for waste and water utilities where it increased slightly in 2022 (47%).
- The net balance of municipalities planning to increase their investments in climate change adaptation slightly declined from 63% in 2020 to 58% in 2022. There is a similar trend for planned increases in digital infrastructure investment (66% in 2020 and 58% in 2022) and increases in climate change mitigation investment (66% in 2020 and 64% in 2022).

Modernisation and adaptation of infrastructure remain as the largest expected expenditure in investment

Figure 35: In the 2022-2026 period, except for routine maintenance, which of the following activities do you expect will have the largest share in terms of your infrastructure investment spend? (Q7), in percent

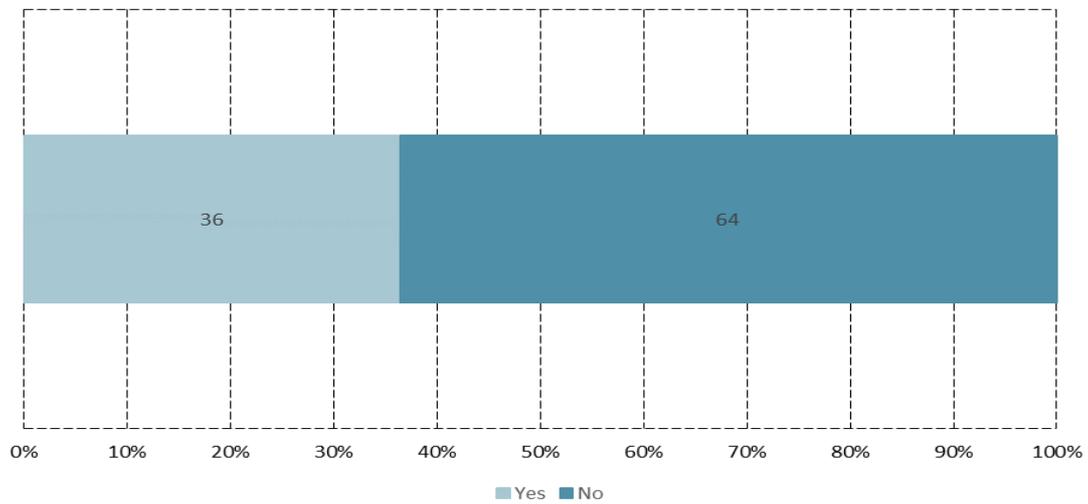


*Base: All municipalities (excluding don't know/refused responses)

- As in 2020, the greatest expected infrastructure spending will go to modernisation and adaptation (47% in 2022, 41% in 2020), followed by maintenance and repair (32% vs. 31%), and completely new infrastructure (21% in 2022 and 28% in 2020).

Most municipalities do not set and monitor targets for greenhouse gas emissions

Figure 36: Does your municipality set and monitor targets for greenhouse gas (GHG) emissions? (Q8)

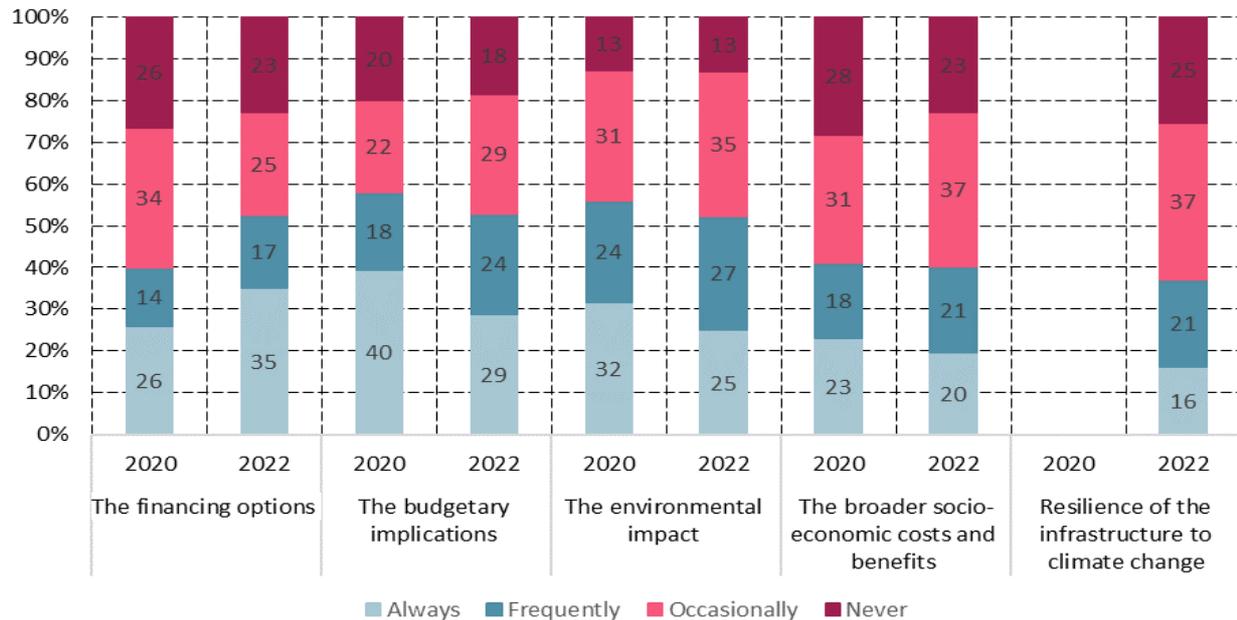


**Base: All municipalities (excluding don't know/refused responses)*

- Only 36% of municipalities report currently setting and monitoring targets for greenhouse gas emissions.

A quarter of all municipalities never assess the resilience of a potential infrastructure project to climate change

Figure 37: Before going ahead with an infrastructure project, does your municipality obtain an independent assessment of any of the following...(Q9), in percent

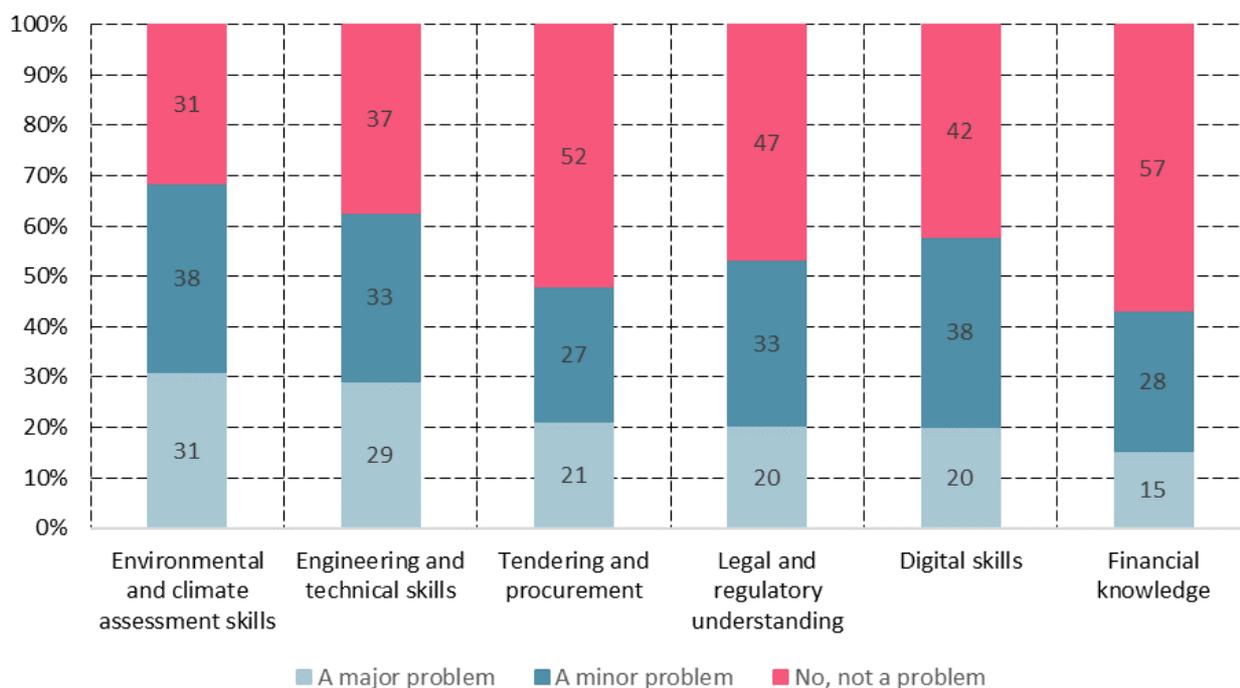


*Base: All municipalities (excluding don't know/refused responses)

- More than half of the municipalities (62%) rarely or never assess how resilient the infrastructure they intend to invest in is to climate change, but 25% of them always assess the environmental impact of the project and 27% assess it frequently.
- The most frequent type of independent assessment prior to investing in infrastructure that is always carried out examines the project's financing options (35%), followed by analysing the budgetary implications of the operation and maintenance of the project, which is always done by 29% of the municipalities.

Experts with environmental and engineering skills are in short supply for municipalities

Figure 38: For each of the following areas, to what extent is access to experts a problem to the delivery of your municipality investment programme? (Q11)

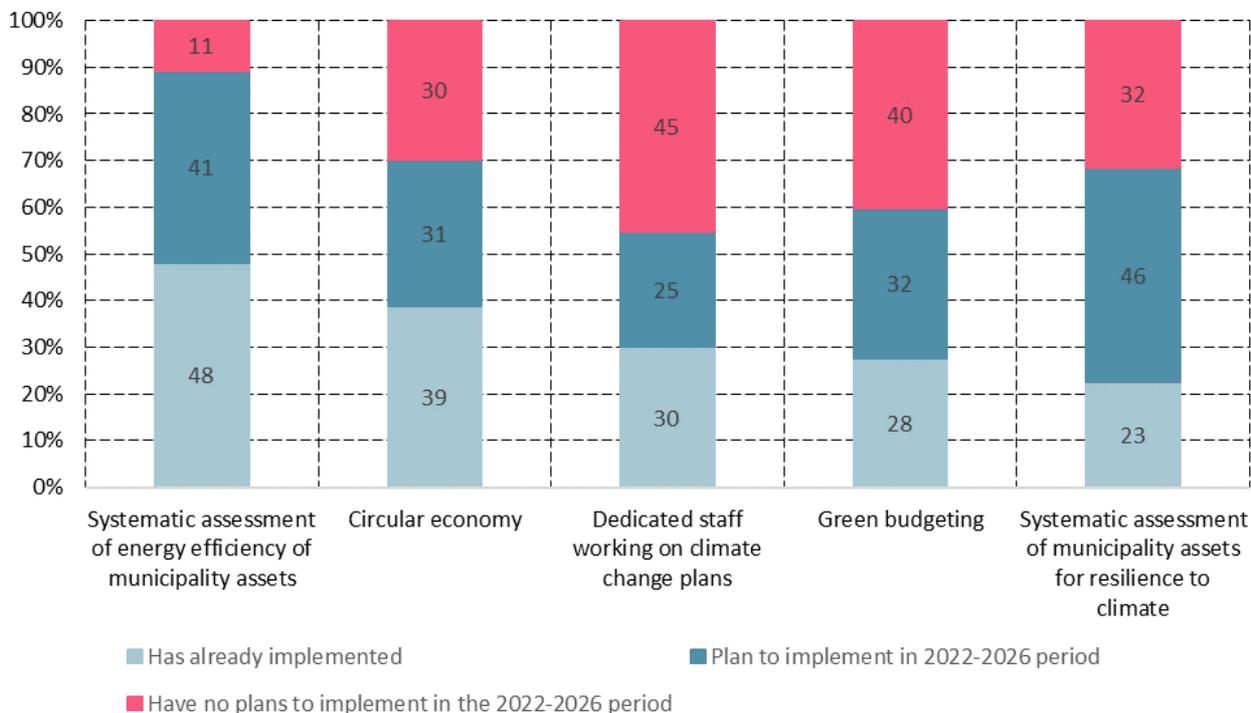


*Base: All municipalities (excluding don't know/refused responses)

- For 69% of municipalities, accessing experts with environmental and climate assessment skills poses a major (31%) or minor (38%) problem. Accessing engineering and technical skills creates the second-largest challenge for delivering municipal investment programmes, with 29% citing it as a major and 33% as a minor challenge.
- The availability of digital skills, while less cited as a major problem (20%), remains an issue — with an additional 38% of municipalities finding it a minor obstacle.
- More than half of the municipalities do not find it difficult to find financial or tender/procurement experts.

EU municipalities have progressed more towards the digital than the green transition in the last three years

Figure 39: Thinking about climate change and environment sustainability. For each of the following, please tell me whether your municipality has already implemented, has plans to implement in the 2022-2026 period or has no plans to implement in the 2022-2026 period? (Q12a)

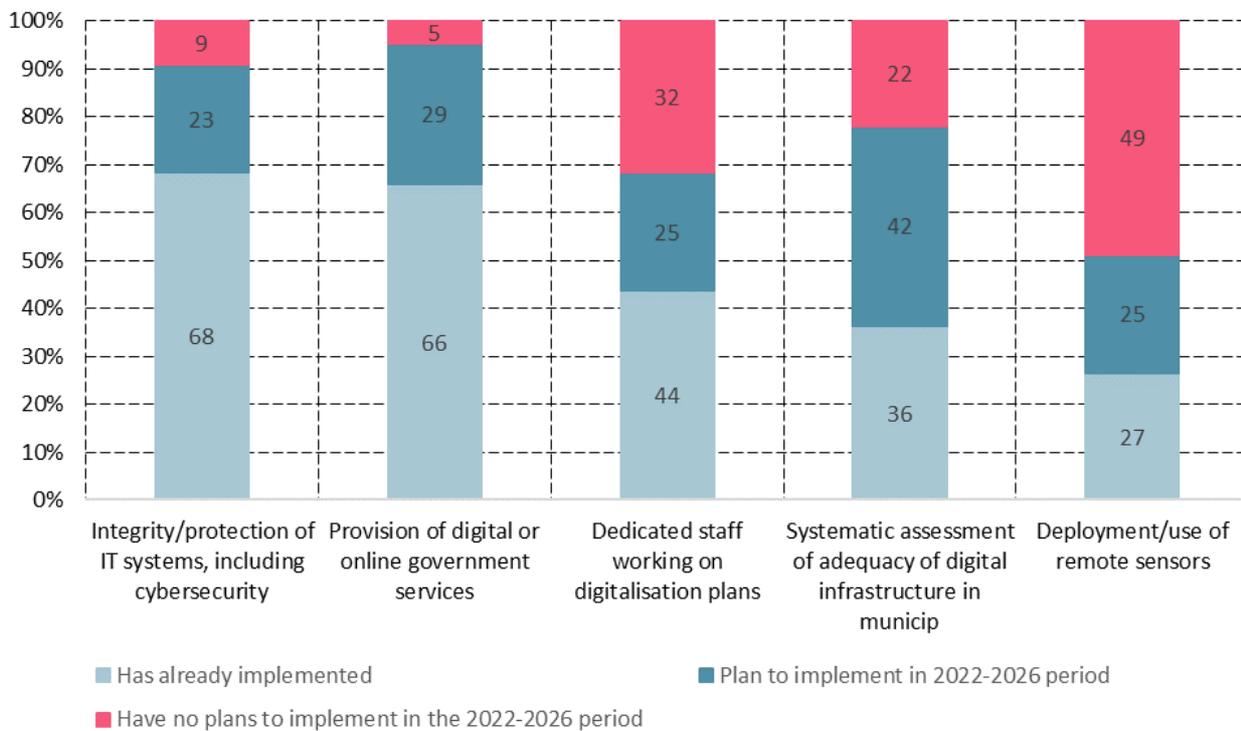


*Base: All municipalities (excluding don't know/refused responses)

- The most preponderant already implemented green measure across municipalities is the systematic assessment of energy efficiency of municipality assets (48%), followed by circular economy activities (39%), dedicated staff working on climate change (30%), green budgeting (28%) and systematic assessment of municipality assets for resilience (23%). Regarding the latter, 46% of municipalities plan to implement a resilience assessment in 2022-2026.
- Around half of the sampled municipalities (45%) do not plan to dedicate staff to climate change and 40% have no intention of implementing any green budgeting. Almost a third of sampled municipalities have no plans of implementing systematic assessments of municipality assets to climate change and circular economy measures, while 11% have no intention of conducting systematic assessments of energy efficiency of their municipality assets.

More than two-thirds of municipalities have already implemented protection measures/cybersecurity of municipal IT systems and online government services

Figure 40: Now thinking about digital technologies. For each of the following please tell me whether your municipality has already implemented, has plans to implement in the 2022-2026 period or has no plans to implement in the 2022-2026 period? (Q12b), in percent

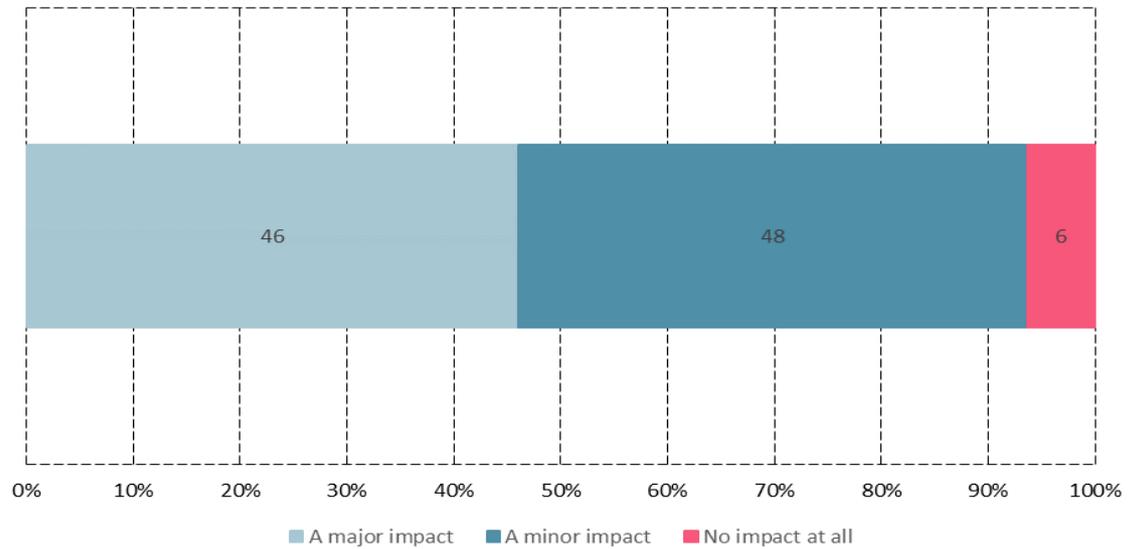


*Base: All municipalities (excluding don't know/refused responses)

- A higher proportion of municipalities have dedicated staff working on digitalisation plans than on climate change plans (44% compared to 30%).
- The top digital investment priority of municipalities in the next four years is the systematic assessment of the adequacy of their digital infrastructure (42%), followed by the provision of online government services (29%).

The perception of climate change's physical risk impact on municipalities is split

Figure 41: Thinking about the impact of climate change on your company, such as losses due to extreme climate events, including droughts, flooding, wildfires or storms or changes in weather patterns due to progressively increasing temperature and rainfall. What is the impact, also called physical risk, of this on your municipality? (Q13)

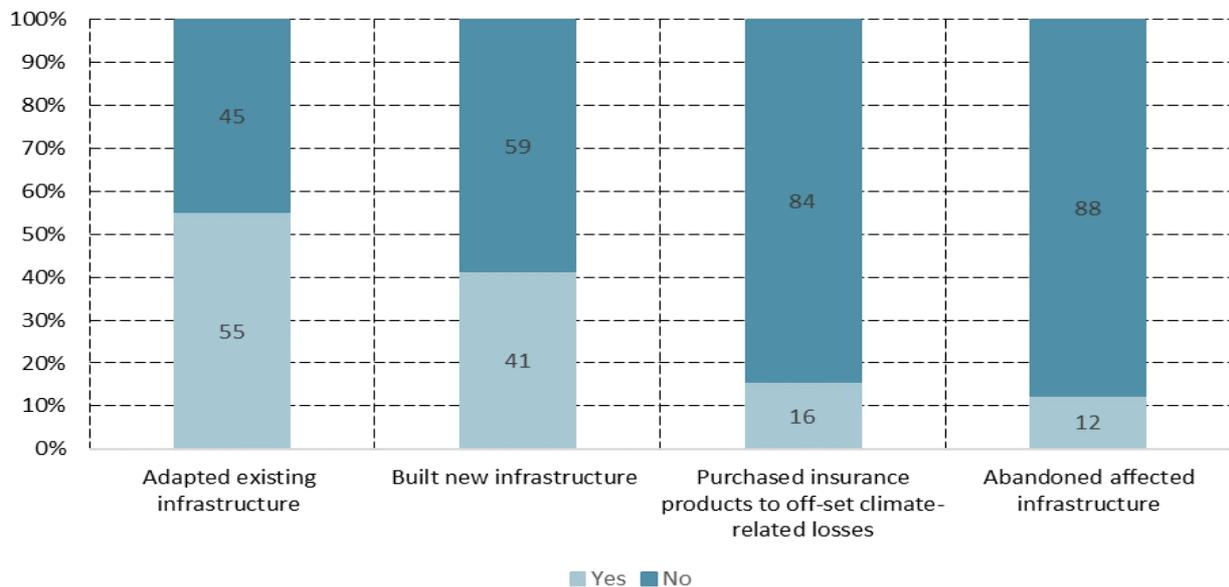


*Base: All municipalities (excluding don't know/refused responses)

- Municipalities are convinced that climate change represents a physical risk for their territory, citing it as having a major or minor impact on their municipality (48% and 46%, respectively).

Municipalities most frequently try to build resilience to climate change risk by adapting existing infrastructure

Figure 42: Has your municipality developed or invested in any of the following to build resilience to climate change risks? (Q14)



*Base: All municipalities (excluding don't know/refused responses)

- Most municipalities have neither purchased climate-related insurance nor abandoned infrastructure that is affected by climate change risks (84% and 88% respectively).
- Around half of municipalities (55%) have adapted their existing infrastructure to avoid or reduce exposure to climate change and 41% have built new infrastructure resilient to climate risks.

Municipalities have a neutral outlook overall on the impact that the transition to a low-carbon economy will have for them

Figure 43: The transition to a low-carbon economy is underway, due to the introduction of climate policies and changes in demand from customers and/or the wider public. On balance, in the 2022-2026 period, what economic impact do you expect this transition to have on your municipality? (Q15), in percent

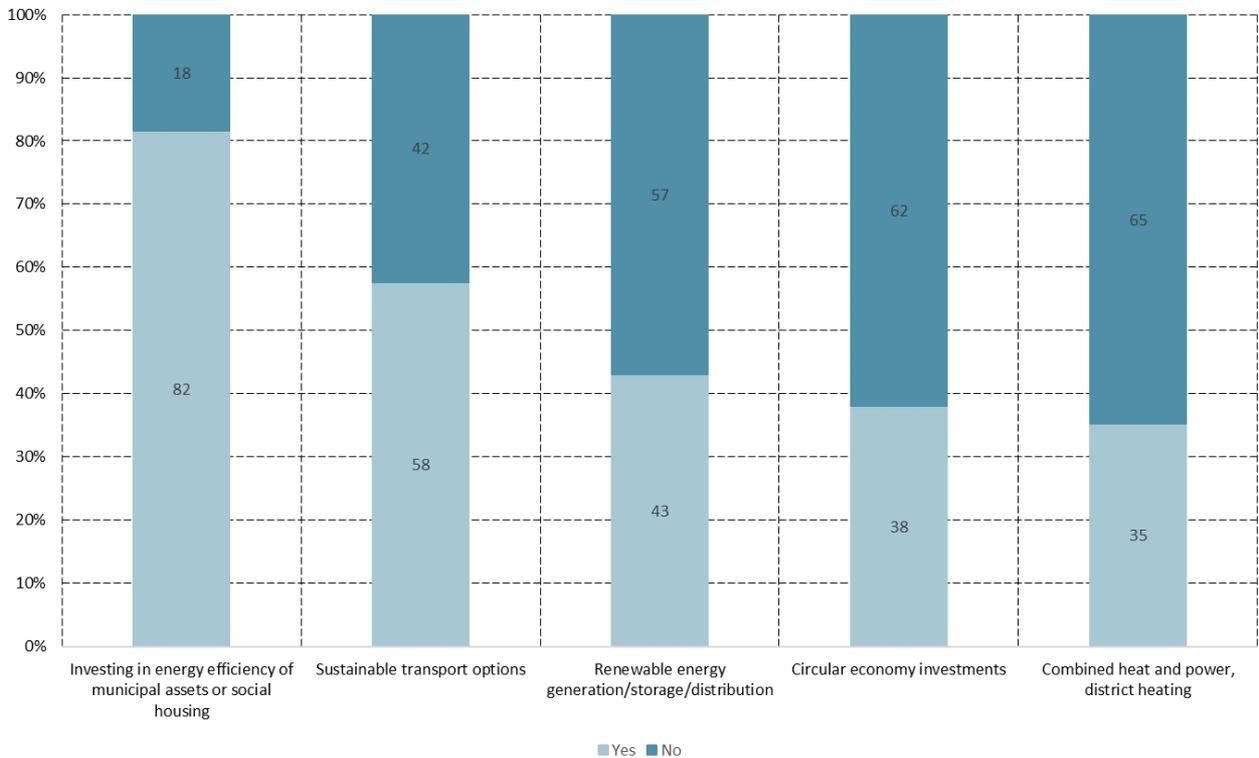


*Base: All municipalities (excluding don't know/refused responses)

- Municipalities have become more pessimistic on the economic impact of the transition to a low-carbon economy. In 2022, only 17% of municipalities view the transition to a low-carbon economy as mostly presenting economic opportunities, compared to 27% in 2020. Conversely, the share of municipalities perceiving the green transition as primarily involving economic challenges has risen from 21% to 29%.
- Nevertheless, the majority of municipalities still perceive the climate transition as being broadly balanced in terms of economic challenges and opportunities. In 2022, some 43% of municipalities hold this view, slightly lower than the 46% recorded in 2020. The proportion of municipalities that do not anticipate any associated economic risk remains relatively unchanged across both survey waves.

When it comes to measures that reduce greenhouse gas emissions, most municipalities opt for energy efficiency

Figure 44: Is your municipality investing, implementing or coordinating any of the following, to reduce greenhouse gas (GHG) emissions? (Q16)

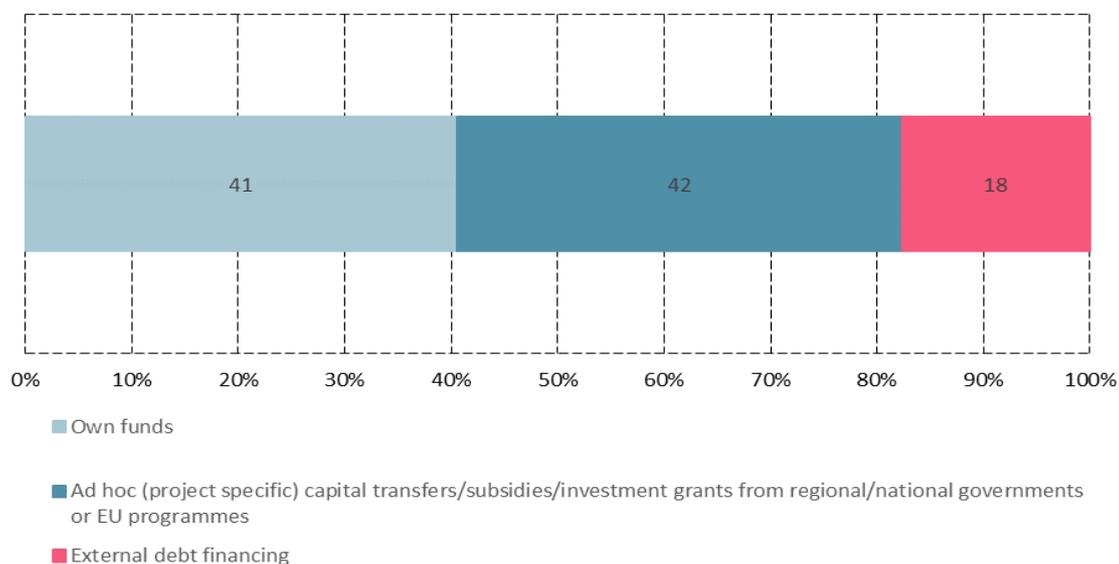


*Base: All municipalities (excluding don't know/refused responses)

- Investing in energy efficiency of municipal assets or social housing is the most popular measure to reduce greenhouse gas emissions among municipalities (82%), followed by more sustainable means of transport (58%) and investment in renewable energies (43%). However, only 38% and 35% of municipalities have invested in the circular economy and in district heating, respectively.

Municipalities' financing mix is almost unchanged between 2020 and 2022

Figure 45: Can you tell me approximately what proportion of your infrastructure investment activities over the last three years were financed by each of the following? (Q17), in percent

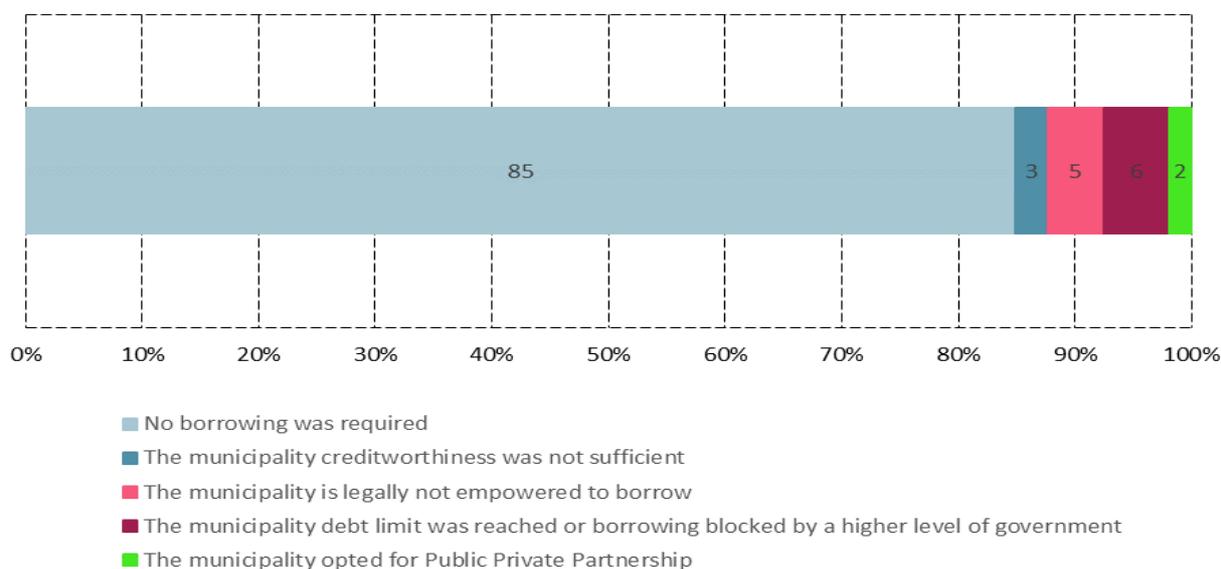


**Base: All municipalities (excluding don't know/refused responses)*

- Out of the 744 municipalities in the sample, 273 replied that they did not use any external debt financing over the last three years.
- Municipalities' financing mix remained stable between 2020 and 2022, with a similar proportion of own funds and project-specific funds.

Municipalities that did not use any external debt financing cite no need for borrowing as the main reason

Figure 46: Did your municipality not use any external [debt] financing, because...? (Q18), in percent

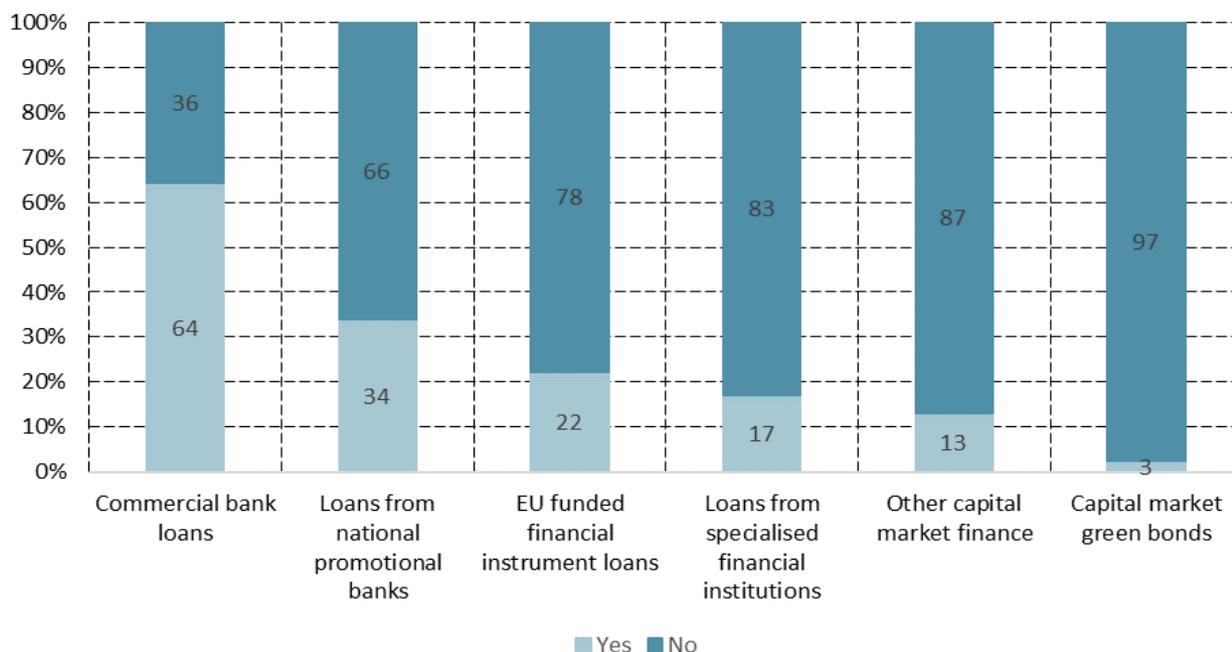


**Base: Out of the 744 municipalities in the sample, 273 replied that they did not use any external debt financing over the last three years. Out of this subsample only 263 municipalities answered this question.*

- Most municipalities that did not use any external debt financing state that they had no need for borrowing (85%).
- A much smaller category cited as a reason for not using external debt financing that the municipality/city debt limit was reached or that borrowing was blocked by a higher level of government (6%).

Municipalities mainly use commercial banks for external debt financing

Figure 47: When sourcing external [debt] financing, which of the following have you used? (Q19), in percent

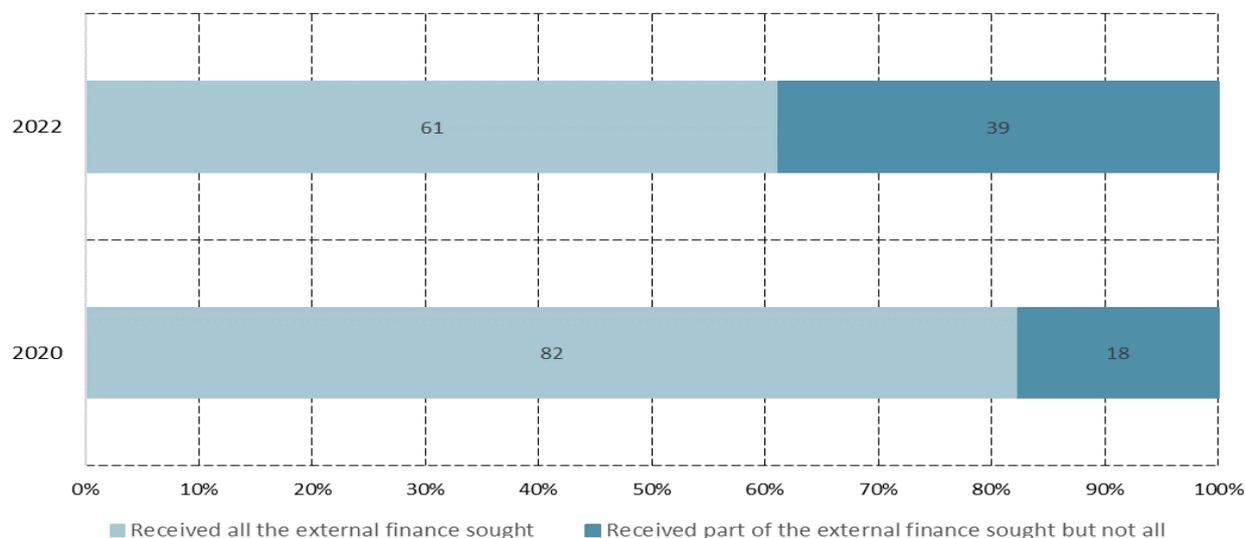


*Base: Out of the 744 municipalities in the sample, 355 replied that they used external debt financing over the last three years. Out of this subsample all 355 municipalities answered this question.

- Commercial banks are the most prevalent source of external debt financing for municipalities, with 64% of municipalities utilising this funding option. In contrast, capital market green bonds are the least utilised source of external debt financing, with only 3% of municipalities opting for this financing method.
- Approximately 34% of municipalities seek loans from national promotional banks as a source of financing. EU-funded financial instruments are utilised by 22% of municipalities, while 17% opt for loans from specialised financial institutions. Other capital market finance options are employed by 13% of municipalities.

Compared to 2020, there was a large drop in municipalities that obtained all the external finance they sought for investment in the previous three years

Figure 48: Looking back at the investments you had planned over the last three years, did you receive all of the external finance that you sought for the planned investments, or only part of the external finance you sought? (Q20), in percent

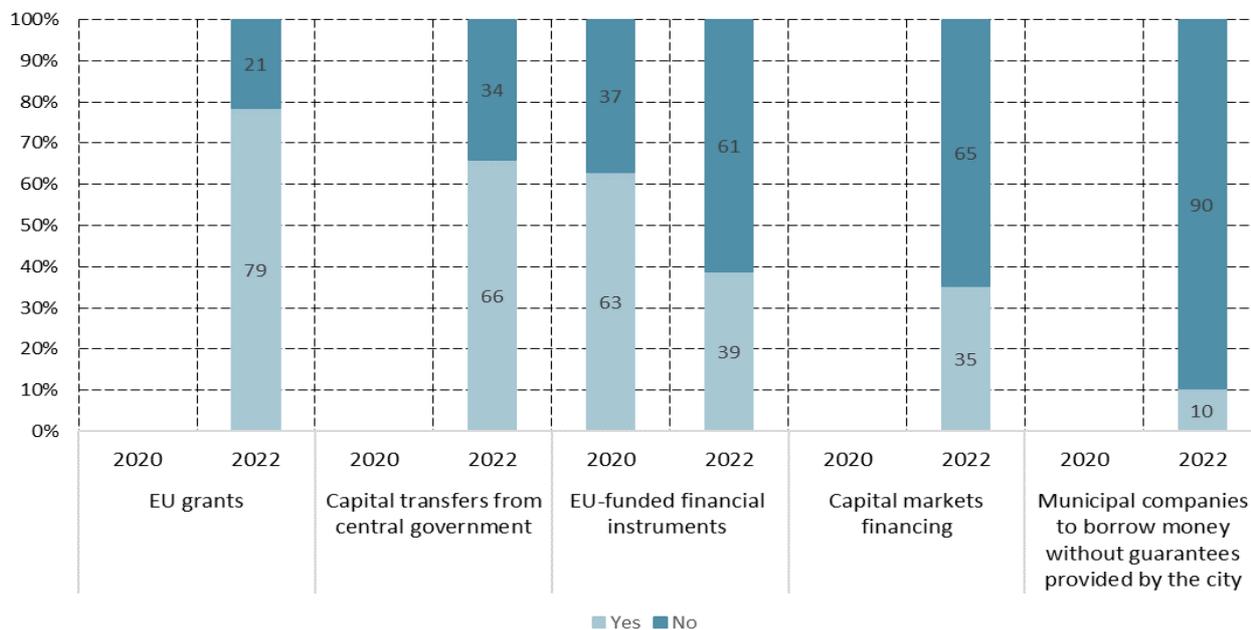


**Base: Out of the 744 municipalities in the sample, 355 replied that they had used external debt financing over the last three years. Out of this subsample only 350 municipalities answered this question.*

- In 2022, the proportion of municipalities that reported receiving all the external finance they had sought for financing planned investments decreased to 61%, compared to 82% in 2020.

EU grants are the most popular financing source for municipal investment projects

Figure 49: In the 2022-2026 period, in order to finance planned investment projects, does your municipality plan to draw on any of the following? (Q21), in percent

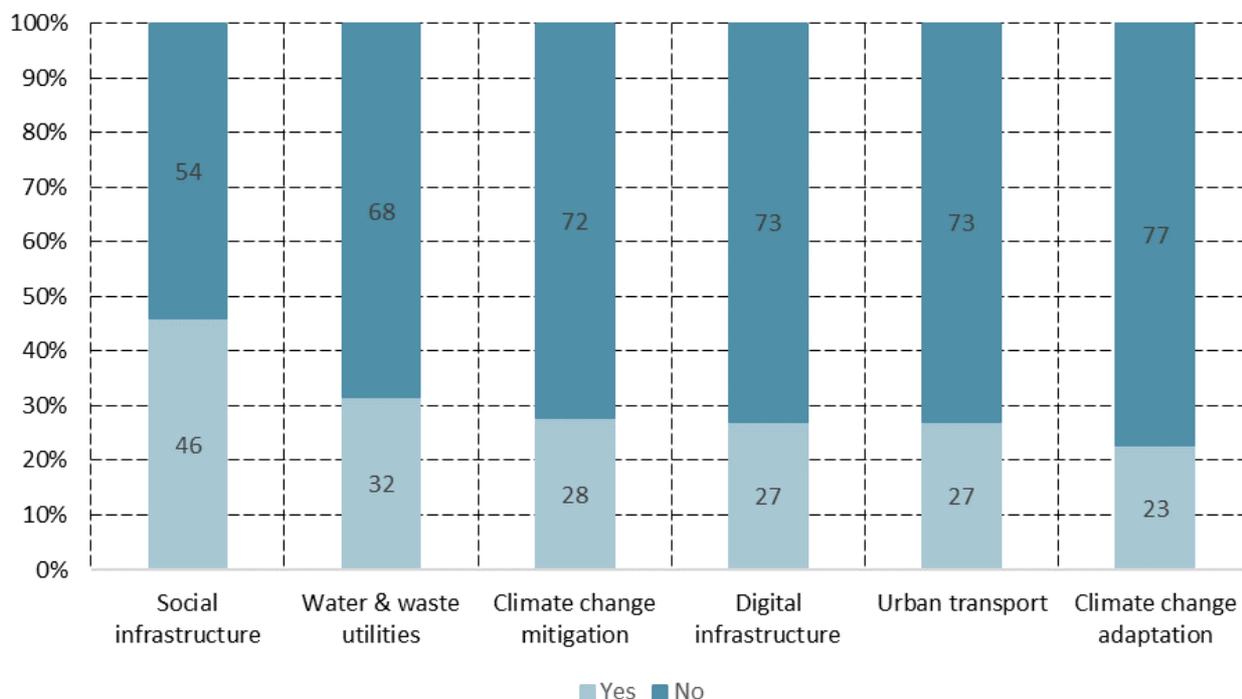


*Base: All municipalities (excluding don't know/refused responses)

- For the 2022-2026 period, most municipalities plan to draw on EU grants (79%), followed by capital transfers from central government (66%), EU-funded financial instruments (39%), capital markets financing (35%), and municipal companies (10%).
- Compared to 2020, a lower proportion of municipalities plans to rely on EU-funded financial instruments in the following three years (39% vs. 63%).

Municipalities that intend to use EU grants or capital transfers from central government will devote them mainly to social infrastructure

Figure 50: For which, if any, of the following investment areas are you expecting to use EU-funded financial instruments and/or capital transfers from central government? Please tell me the top two investment types. (Q22)

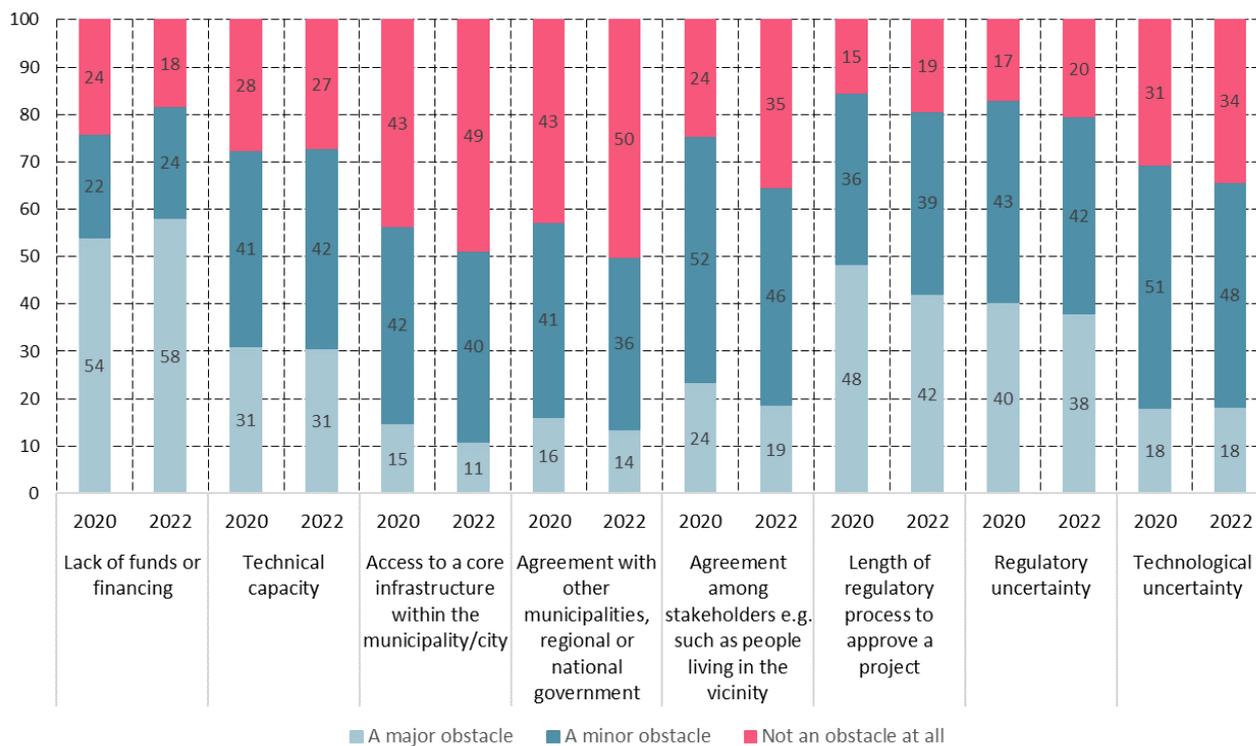


*Base: Subsample of 537 municipalities that answered that they were planning on drawing on EU-funded financial instruments and/or capital transfers from central government in 2022-2026

- Among the municipalities intending to utilise EU-funded financial instruments and/or capital transfers from central government in the period 2022-2026, the majority expressed their intention to allocate these funds to social infrastructure projects (46%) and investments in water and waste utilities (32%). On the other hand, climate adaptation investment was the least frequently mentioned area for utilising EU funds.

Lack of funding is still the biggest obstacle to municipalities' infrastructure investments

Figure 51: To what extent is each of the following an obstacle to the implementation of your infrastructure investment activities? Is it a major obstacle, a minor obstacle or not an obstacle at all? (Q23), in percent

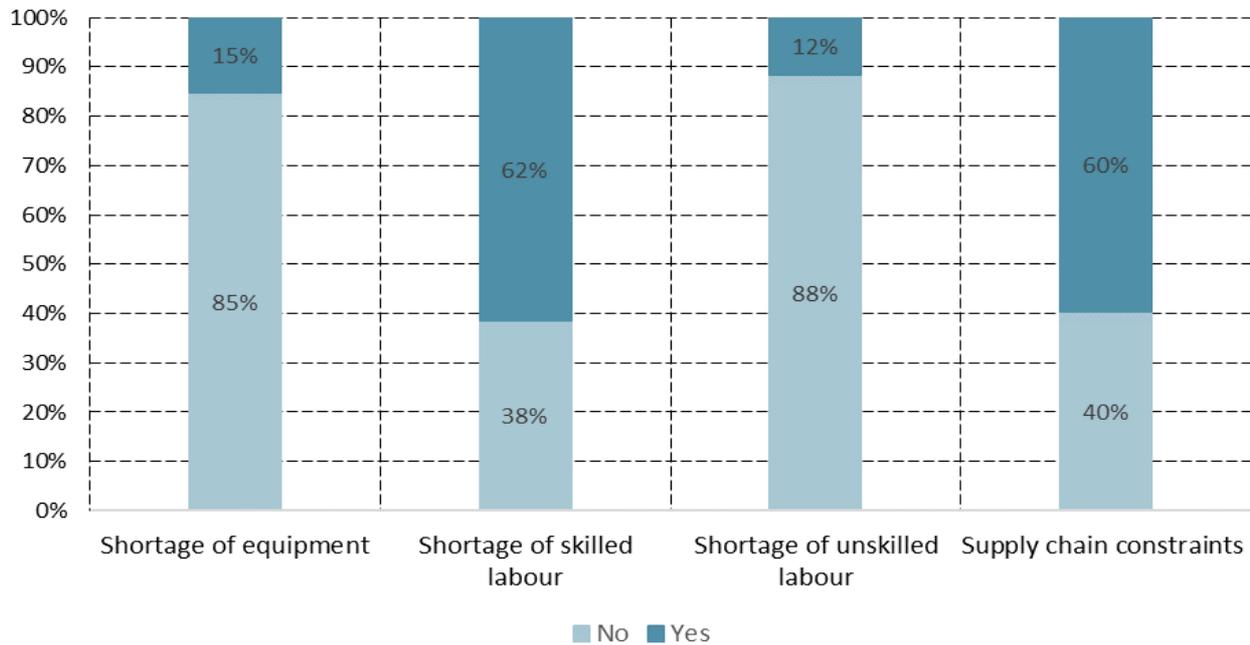


*Base: All municipalities (excluding don't know/refused responses)

- As in 2020, the most frequently cited — and growing — major obstacle to infrastructure investment is the lack of funds or financing (58% in 2022 and 54% in 2020).
- The majority of municipalities continue to perceive the length of the regulatory process to approve a project and regulatory uncertainty as obstacles, although there has been a slight decline in this perception. In 2020, 84% of municipalities considered the length of the regulatory process as a major or minor obstacle, which decreased to 81% in 2022. Similarly, regulatory uncertainty was seen as a major or minor obstacle by 83% of municipalities in 2020, which decreased to 80% in 2022.

Access to skilled labour and supply chain constraints are the main obstacles for carrying out municipalities' infrastructure investments

Figure 52: Which, if any, of the following are the main obstacles to the implementation of your infrastructure investment activities. Please tell me your top two obstacles (Q24)



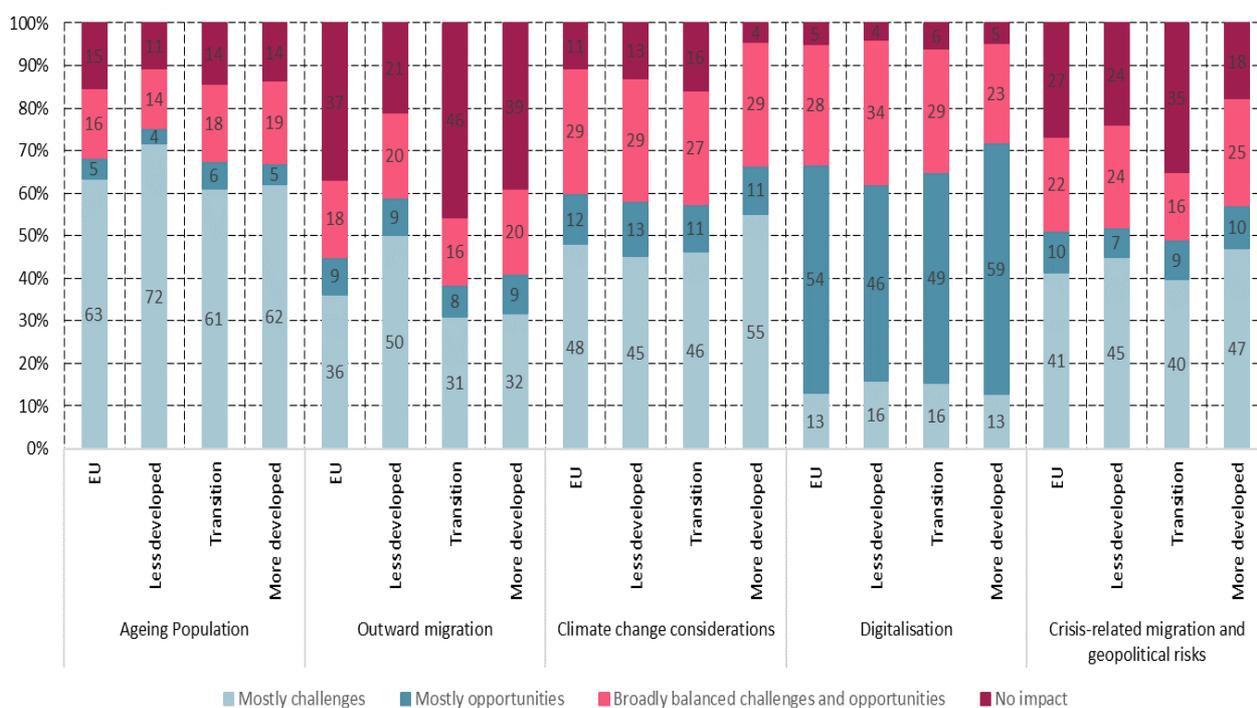
*Base: All municipalities (excluding don't know/refused responses)

- While most municipalities indicate that they have access to unskilled labour and equipment to carry out their infrastructure investment plans, a significant number (62%) face challenges due to a shortage of skilled labour. Additionally, 60% of municipalities encounter supply chain constraints as they strive to execute their infrastructure projects.

Annex 3: Questions at the cohesion region level

Municipalities in less developed regions express heightened concerns on ageing populations and outward migration, while climate change and digitalisation are common challenges across all regions

Figure 53: Thinking about the following global trends, do you expect each to present opportunities or challenges to your municipality? (Q3)

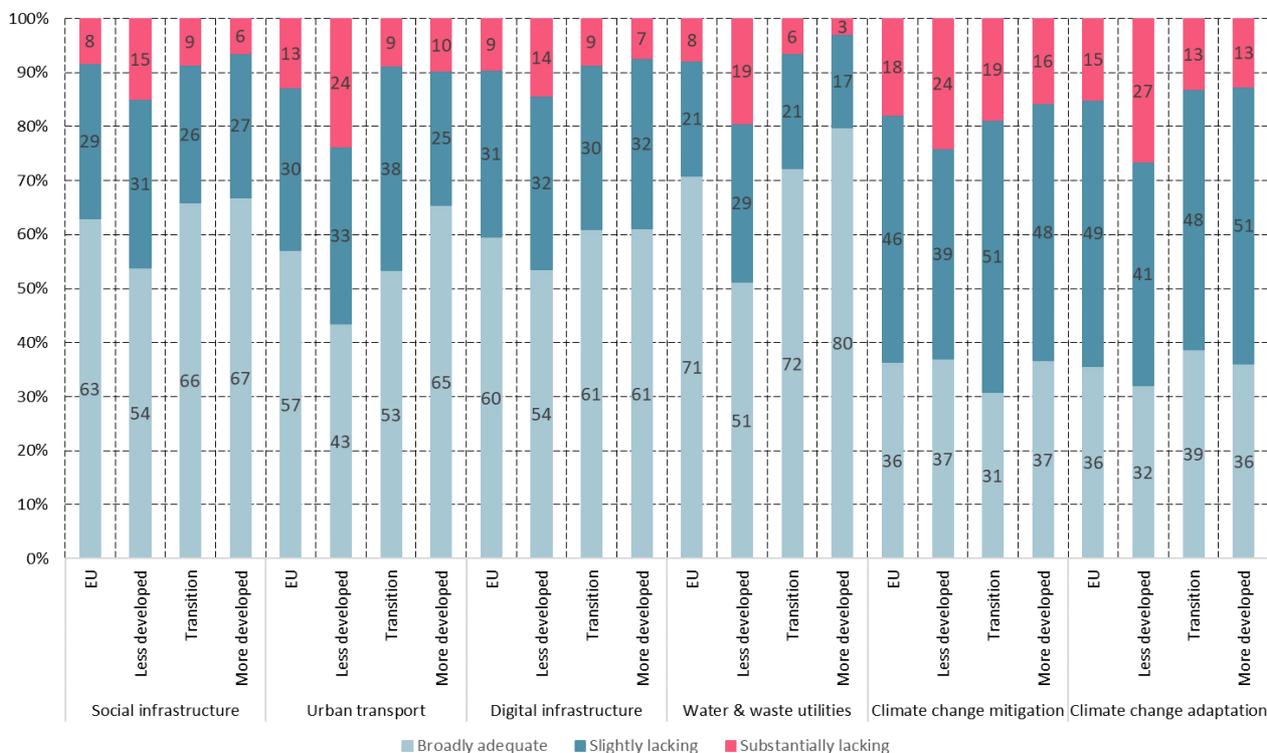


*Base: All municipalities (excluding don't know/refused responses)

- Municipalities across all regions see ageing population as a trend that mostly involves challenges. Municipalities in less developed regions are slightly more pessimistic.
- Municipalities in less developed regions consider outward migration more frequently as presenting challenges than municipalities in more developed or transition regions (51% vs. 32/31%).
- Across all regions, climate change considerations are most frequently cited as presenting mostly challenges by municipalities. The proportion of municipalities stating the latter is slightly higher in more developed regions (55%) and similar in transition and less developed regions (46% and 45%).
- Municipalities in all regions most frequently reply that digitalisation will mainly provide opportunities (59% in more developed regions, 46% in less developed regions, and 49% in transition regions).
- Municipalities in transition regions estimate more frequently that crisis-related migration will have no impact (35%) than those in more developed (18%) or less developed regions (24%).

Less developed regions express more negative views on past infrastructure investments, particularly in water and waste utilities, social infrastructure, and urban transport

Figure 54: In the last three years, that is to say between 2019 and 2021, would you say that within your municipality the level of investment in infrastructure projects was broadly adequate, slightly lacking or substantially lacking in each of the following areas? (Q4)



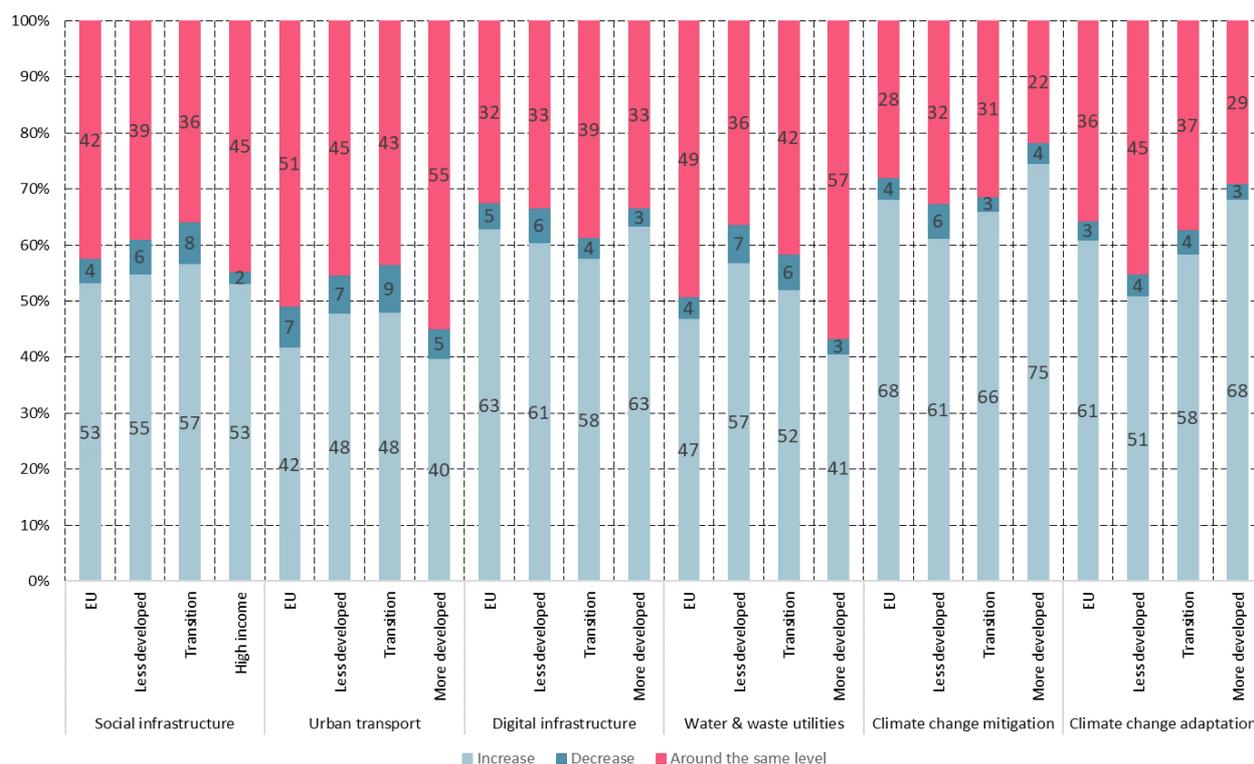
*Base: All municipalities (excluding don't know/refused responses)

- More developed and transition region municipalities have a similar perception regarding their investments in social infrastructure in the past three years, while municipalities in less developed regions have a slightly more negative view.
- Urban transport investments in the past three years are considered as substantially lacking by almost a quarter (24%) and as slightly lacking by a third of municipalities in less developed regions, compared to around one tenth of municipalities in more developed and transition regions that find their past investments in urban transport to be substantially lacking.
- The distribution of municipalities' answers regarding their investments in digital infrastructure in the past three years is quite similar across regions. In particular, almost a third of municipalities across all regions state that these investments have been slightly lacking.
- Municipalities in less developed regions consider their past investments in water and waste utilities more frequently as insufficient (29% find them slightly lacking and 19% evaluate them as substantially lacking) than municipalities in other regions.
- Less developed regions have the highest share of municipalities that view their past investments in climate change mitigation to be substantially lacking (24% vs. 16% in more developed and 19% in transition regions).

- The proportion of municipalities that consider their investments in climate change adaptation in the last three years as substantially lacking is highest in less developed regions (26% compared to 13% in both more developed and transition regions).

Less developed and transition regions display a higher propensity for increased spending in urban transport, and water and waste utilities

Figure 55: For each of the following areas, if you compare the average annual infrastructure investment you are planning for the 2022-2026 period versus the average annual infrastructure investment recorded in 2019-2021, does your municipality expect to increase or have around the same level of spending on infrastructure investment? (Q5)



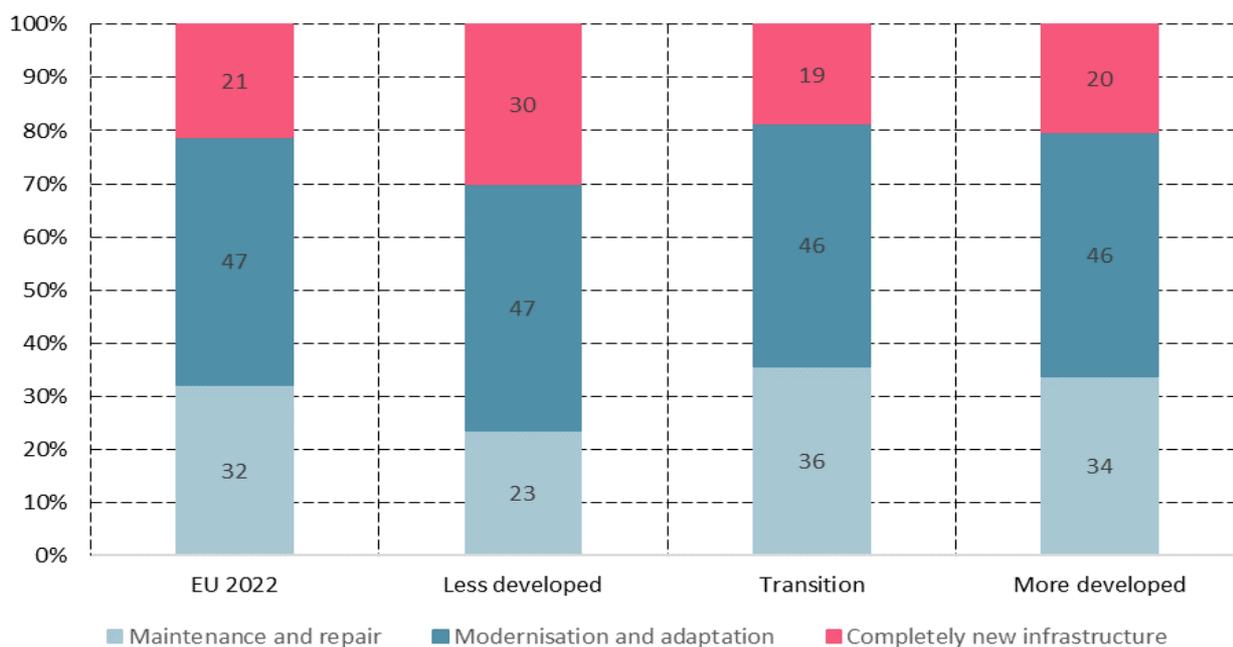
*Base: All municipalities (excluding don't know/refused responses)

- More than half of municipalities across all regions plan to increase their investments in social infrastructure in the coming years.
- A slightly higher proportion of municipalities in less developed and transition regions plan to increase their urban transport investments in the coming years than municipalities in more developed regions (48% compared to 40%).
- The intentions of municipalities to increase, decrease, or maintain constant investments in digital infrastructure in the coming years are aligned across regions.
- More than half of municipalities in less developed and transition regions (57% and 52%, respectively) plan to increase their investments in water and waste utilities in the coming years, compared to 41% of municipalities in more developed regions.

- The majority of municipalities across all regions plan to increase their investments in climate change mitigation (75% in more developed regions, 61% in less developed regions, and 66% in transition regions).
- The majority of municipalities across all regions plan to increase their investments in climate change adaptation (68% in more developed regions, 51% in less developed, and 58% in transition regions).

Less developed regions focus on new infrastructure, while more developed and transition regions emphasise modernisation, adaptation and maintenance

Figure 56: In the 2022-2026 period, except for routine maintenance, which of the following activities do you expect will have the largest share in terms of your infrastructure investment spend? (Q7)

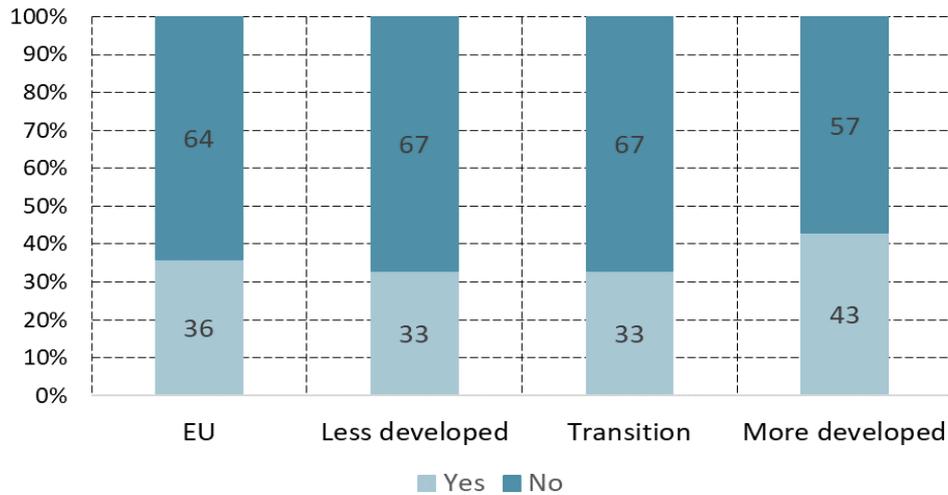


*Base: All municipalities (excluding don't know/refused responses)

- The proportion of municipalities that plan to spend the largest share of their infrastructure investment to modernise and adapt to new standards is similar across regions (46% in more developed and transition regions and 47% in less developed regions).
- Municipalities in less developed regions more frequently intend to dedicate the largest proportion of their infrastructure spending on completely new infrastructure (30%) than municipalities in more developed/transition regions (20%/19%).
- Conversely, municipalities in more developed and transition regions more often plan to dedicate the highest share of their infrastructure spending to maintenance than their counterparts in less developed regions (34%/36% compared to 23% in less developed regions).

Limited adoption of greenhouse gas emission targets by municipalities across regions

Figure 57: Does your municipality set and monitor targets for greenhouse gas (GHG) emissions? (Q8)

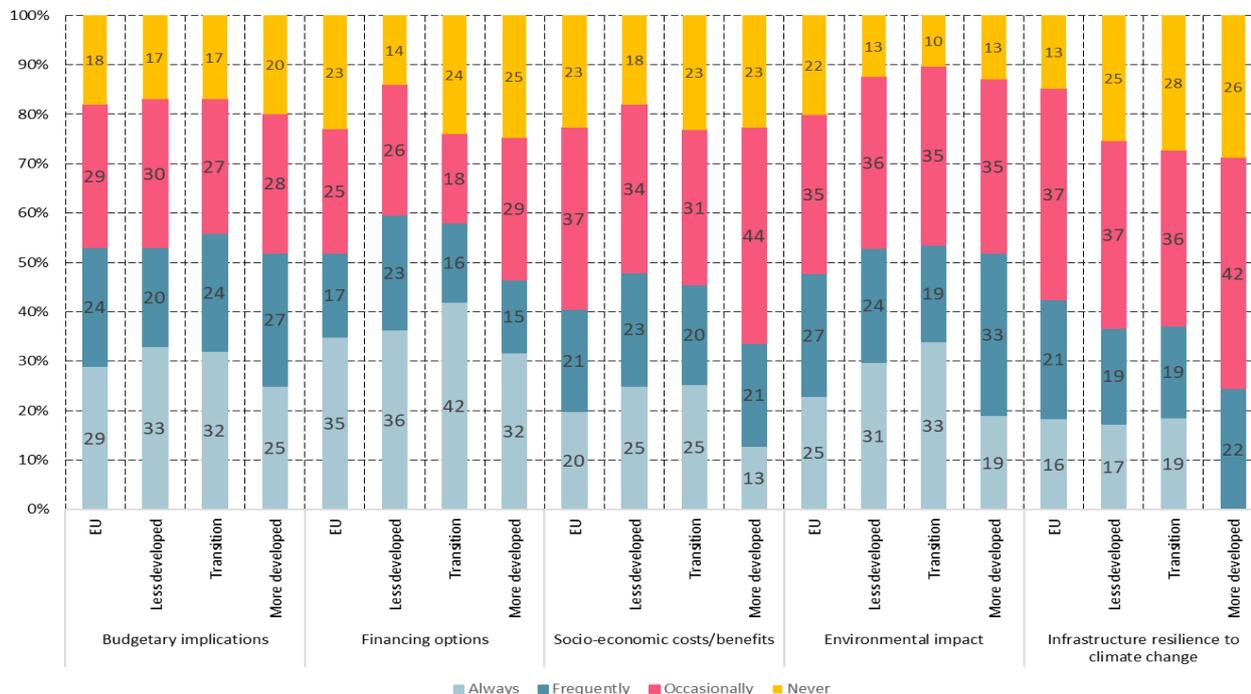


*Base: All municipalities (excluding don't know/refused responses)

- One-third of municipalities in less developed and transition regions report setting and monitoring targets for greenhouse gas emissions. This proportion is slightly higher in more developed regions (43%).
- Across all regions, less than half of municipalities set and monitor targets for greenhouse gas emissions.

Municipalities in less developed and transition regions tend to conduct more frequent assessments of environmental impacts compared to more developed regions

Figure 58: Before going ahead with an infrastructure project, does your municipality obtain an *independent* assessment of any of the following... (By independent I mean an assessment or peer review without undue influence on its outcome) (Q9)



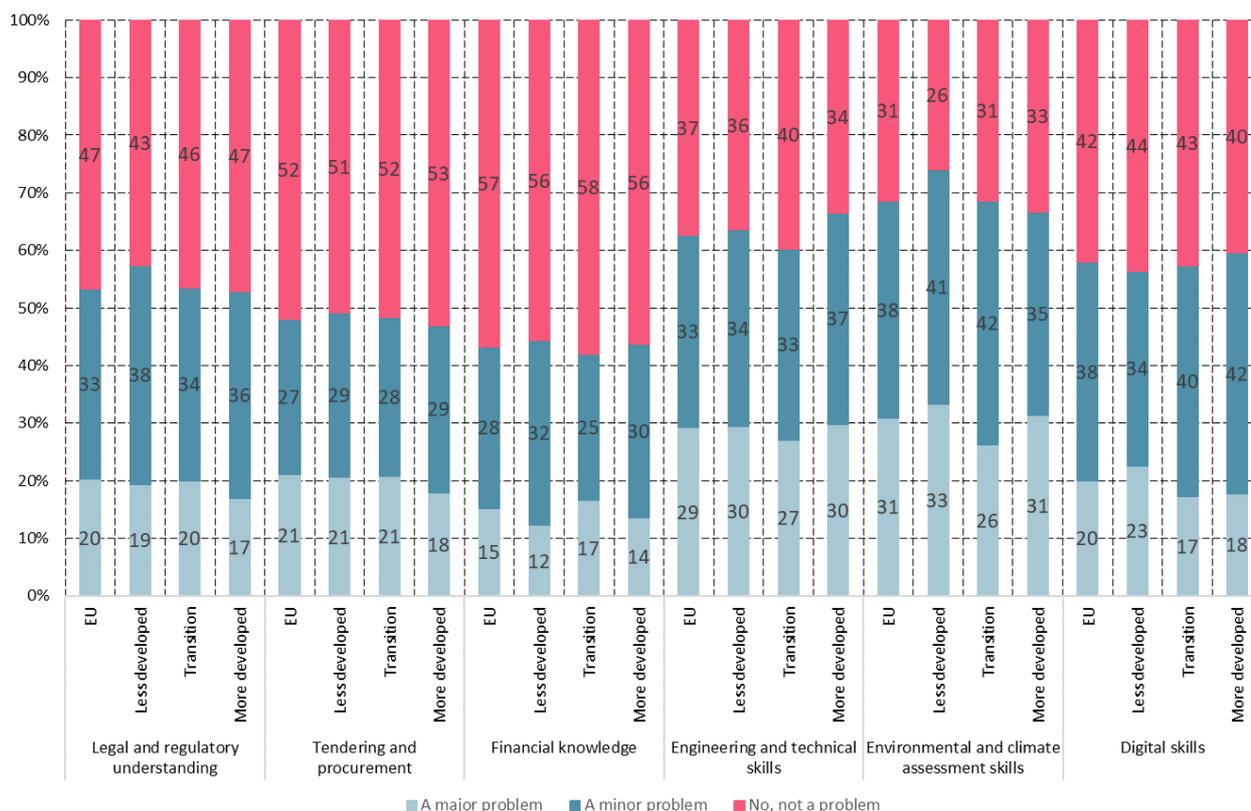
*Base: All municipalities (excluding don't know/refused responses)

- The frequency with which municipalities carry out independent assessments of the budgetary implications of projects is similar in less developed and transition regions.
- Municipalities in transition regions most often report carrying out independent assessments of the financing options of projects (42% compared to 36% of municipalities in less developed regions and 32% in more developed regions).
- The proportion of municipalities that report always or frequently carrying out independent assessments of the financing options of a given project is similar across less developed and transition regions (59% vs. 58%). In more developed regions, this proportion amounts to 47%.
- A quarter of municipalities in less developed and transition regions always carry out independent assessments of the broader socioeconomic costs and benefits of a project and around one-third occasionally carry out said assessments. This compares to 13% of municipalities in more developed regions that always carry out these assessments and 44% which carry them out occasionally.
- Around one-third of municipalities in less developed (31%) and transition regions (33%) state that they always carry out independent assessments of the environmental impact of their projects. This proportion is lower in more developed regions (19%).
- The majority of municipalities across all regions only carry out independent assessments of the infrastructure resilience of a given project occasionally or never do so (64% of

municipalities in more developed or less developed regions occasionally or never assess the latter, while 62% of municipalities in transition regions occasionally/never do).

Access to environmental and climate assessment skills and technical/engineering skills poses challenges for municipalities across regions

Figure 59: For each of the following areas, to what extent is access to experts a problem to the delivery of your municipality's investment programme (Q11)



*Base: All municipalities (excluding don't know/refused responses)

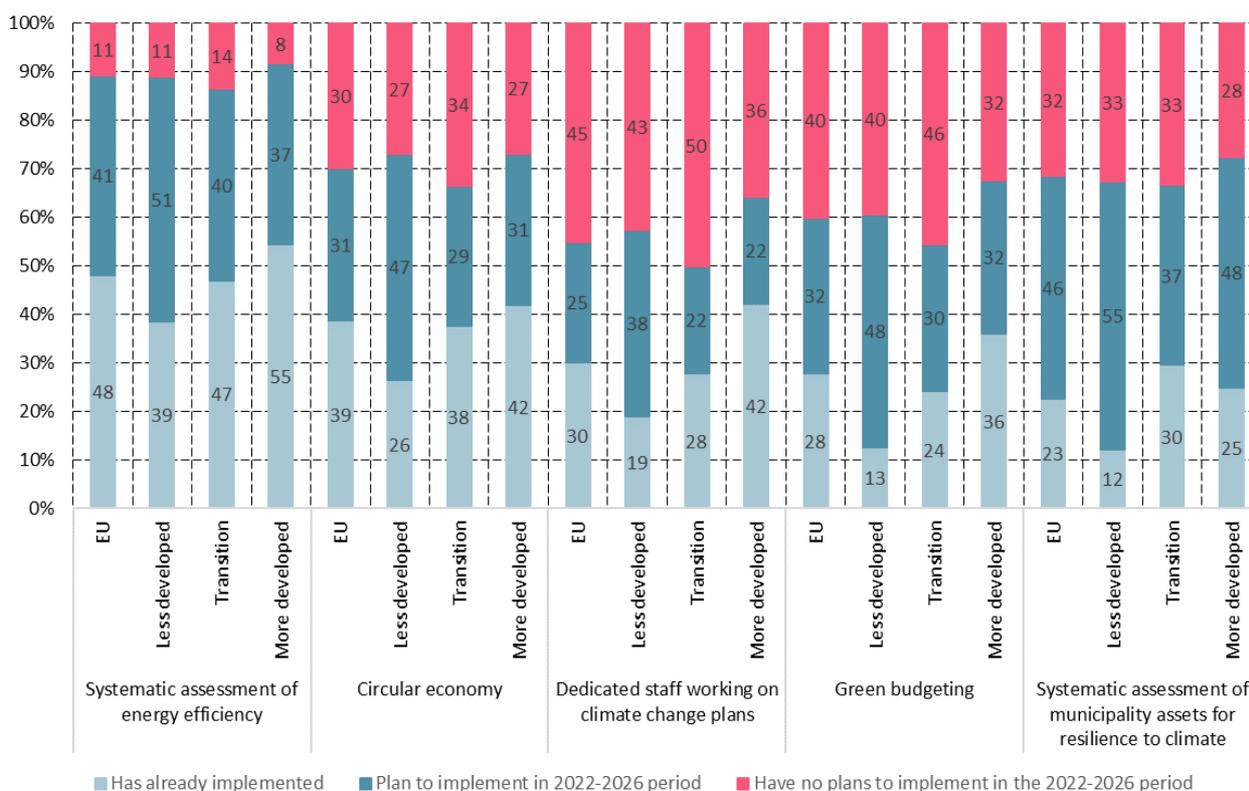
- A fifth of municipalities in less developed and transition regions state that access to legal experts poses a major problem to carrying out their investment programme. This proportion is slightly lower in more developed regions (17%).
- There are no major differences across regions in the likelihood that access to tendering and procurement experts will pose a problem to municipalities' investments.
- Municipalities across regions have a similar distribution of answers to whether access to financial experts poses a problem to their investments.
- Around two-thirds of the municipalities in more developed regions (67%) consider access to experts with engineering or technical skills to be a major or minor problem. This perception is slightly lower in less developed (63%) and transition regions (60%).
- A third of the municipalities in less developed regions consider access to experts with environmental and climate assessment skills to be a major problem for their investments.

This proportion is slightly lower in municipalities in more developed (31%) and transition regions (26%).

- The proportion of municipalities that consider access to digital experts to be a major problem is slightly higher in less developed regions (22%) than in more developed (18%) or transition (17%) regions.

Green budgeting and circular economy practices show higher implementation rates in more developed and transition regions compared to less developed regions

Figure 60: Thinking about climate change and environmental sustainability. For each of the following please tell me whether your municipality has already implemented, has plans to implement in the 2022-2026 period or has no plans to implement in the 2022-2026 period? (Q12a)



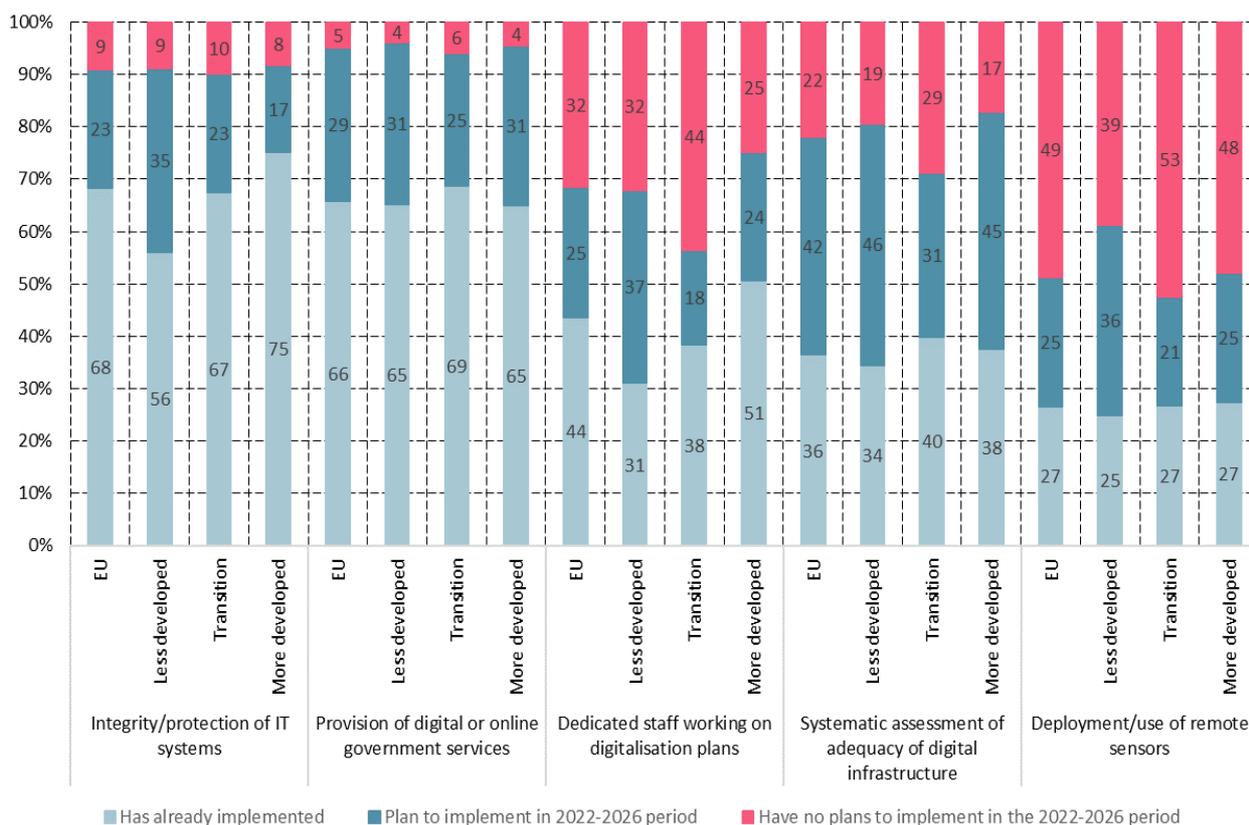
*Base: All municipalities (excluding don't know/refused responses)

- There is great heterogeneity across regions regarding municipalities' green budgeting practices. A larger share of municipalities in more developed regions have already implemented green budgeting (36%) compared to those in transition regions (24%) and less developed regions (13%).
- Municipalities in more developed and transition regions are more likely to have already implemented circular economy practices (42%) compared to those in transition (38%) and less developed regions (26%).
- Around a quarter of municipalities in transition periods (34%) plan to implement circular economy practices in the coming years. This proportion is higher than in more developed and less developed regions, where 27% of municipalities plan to do this.

- The share of municipalities that have already implemented a systematic assessment of energy efficiency of municipality assets is highest in more developed regions (55%), followed by transition regions (47%) and less developed regions (39%).
- Only 12% of municipalities in less developed regions already have a systematic assessment of their assets' resilience to climate change in place, while this proportion reaches 25% in more developed regions and 29% in transition regions.
- While 42% of municipalities in more developed municipalities already have dedicated staff working on climate change plans, only 19% of municipalities in less developed and 28% of municipalities in transition regions already have such staff.

More developed regions demonstrate higher levels of implementation in terms of cybersecurity measures, digital infrastructure assessment, and dedicated staff for digitalisation plans compared to less developed and transition regions

Figure 61: Now thinking about digital technologies. For each of the following please tell me whether your municipality has already implemented, has plans to implement in the 2022-2026 period or has no plans to implement in the 2022-2026 period? (Q12b)



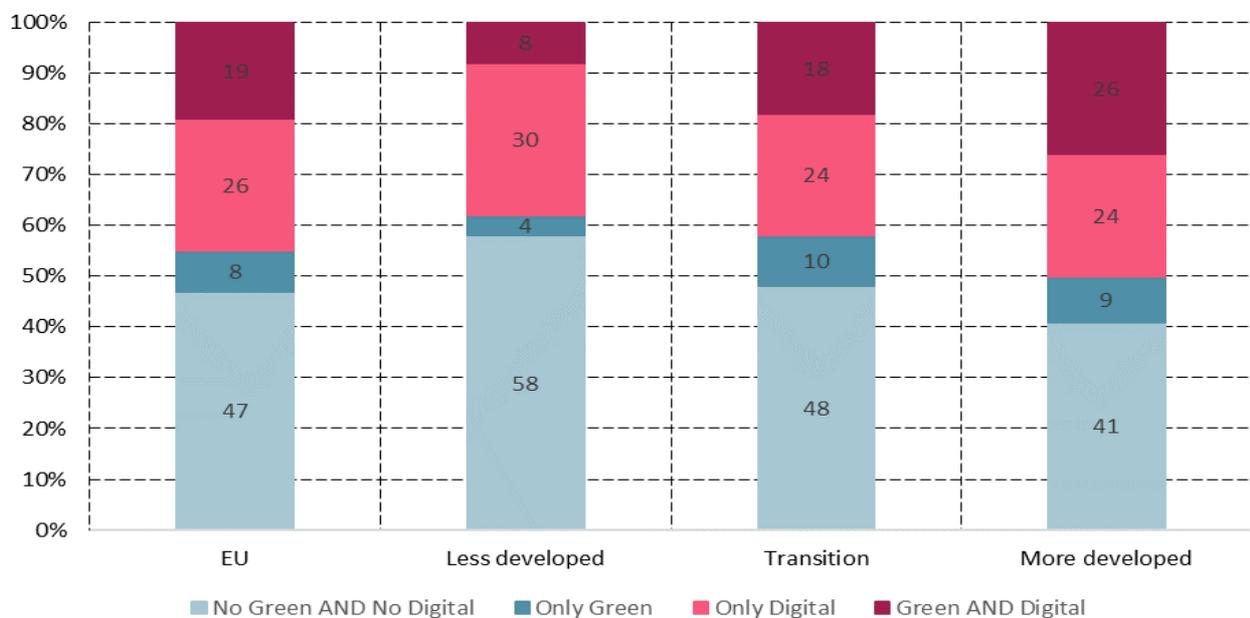
*Base: All municipalities (excluding don't know/refused responses)

- Three-quarters of municipalities in more developed regions have already implemented cybersecurity measures, which compares to 55% of municipalities in less developed and 67% of municipalities in transition regions.
- Municipalities across regions are similar in their provision of online services.

- The proportion of municipalities that have already assessed whether their digital infrastructure is adequate is quite similar across regions; 40% of municipalities in transition regions, 38% of municipalities in more developed regions, and 34% of municipalities in less developed regions.
- Around a quarter of municipalities across regions have already implemented remote sensors.
- Around half of municipalities in more developed regions already have dedicated staff working on digitalisation plans, which is considerably higher than the proportion of municipalities in less developed regions (31%) and transition regions (38%).

More developed regions have a significantly higher share of municipalities that are advanced in both green and digital measures compared to less developed regions

Figure 62: Share of digital and green municipalities in the European Union and across regions (implemented at least three digital measures out of five and three green measures out of five), (Q12a and Q12b), in percent

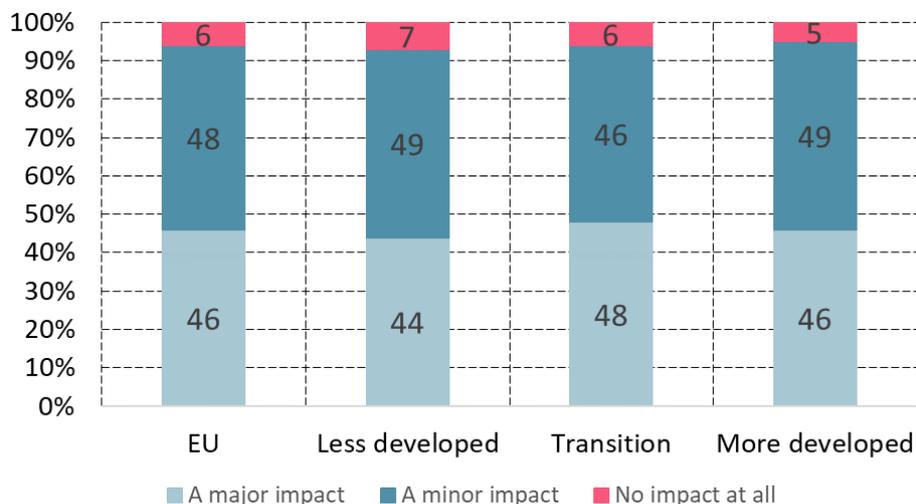


*Base: All municipalities (excluding don't know/refused responses)

- Adoption of digital measures is relatively more uniform across regions compared to green measures.
- In less developed regions, 43% of municipalities have not implemented any of the five green measures, while the figures are 31% for transition regions and 24% for more developed regions.
- The variation in the proportion of municipalities that have not implemented any of the five digital measures is less significant across regions, with 19% in less developed regions, 14% in transition regions, and 10% in more developed regions.

Municipalities across regions share a similar perception of climate physical risk, with a small proportion believing it will have no impact

Figure 63: Thinking about the impact of climate change on your company, such as losses due to extreme climate events, including droughts, flooding, wildfires, storms or changes in weather patterns due to progressively increasing temperatures and rainfall, what is the impact, also called physical risk, of this on your municipality? (Q13)

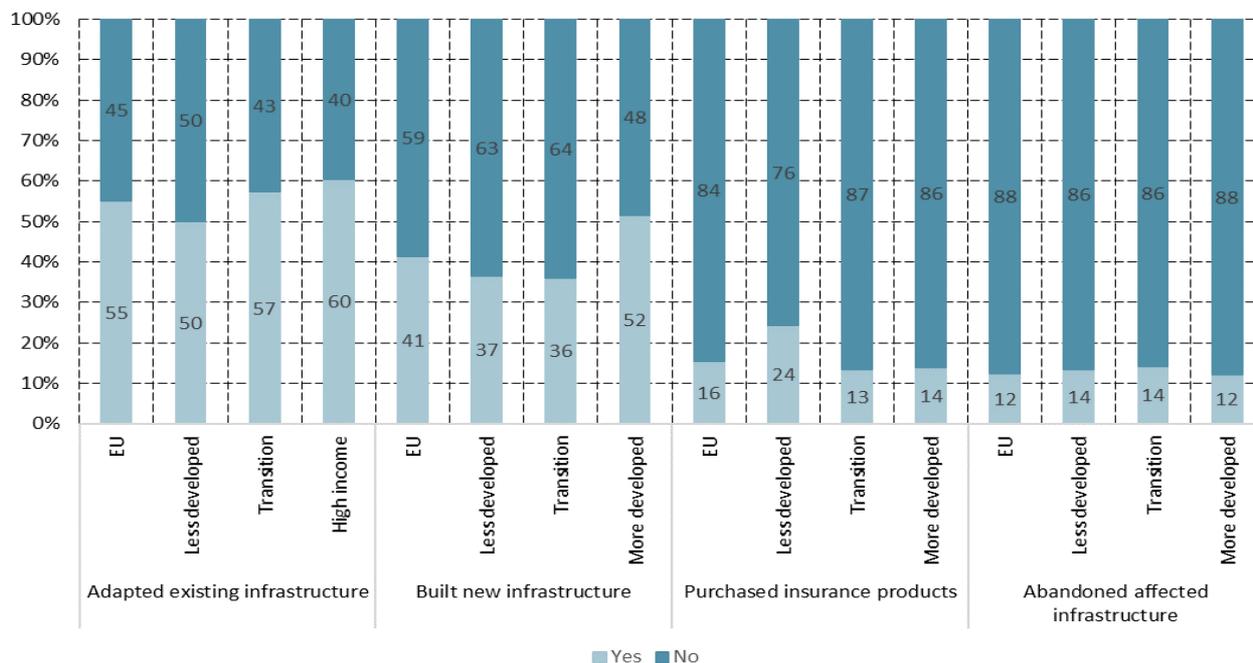


*Base: All municipalities (excluding don't know/refused responses)

- Municipalities' perception of climate physical risk is similar across regions.
- A small proportion of municipalities believe that climate physical risk will not have any impact (5% in more developed regions, 6% in transition regions, and 7% in less developed regions).

Municipalities in less developed regions show higher levels of adaptation through insurance purchases, while there are no major differences across regions in infrastructure abandonment and existing infrastructure adaptation

Figure 64: Has your municipality developed or invested in any of the following to build resilience to climate change risks? (Q14)

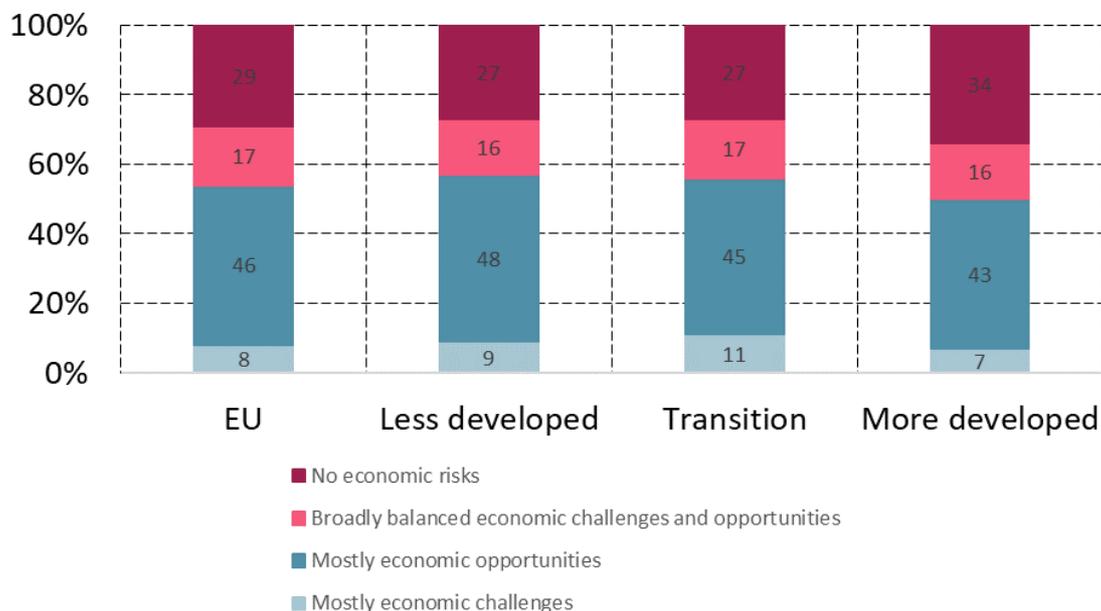


*Base: All municipalities (excluding don't know/refused responses)

- The proportion of municipalities that have already adapted existing infrastructure to avoid/reduce exposure to climate risk does not vary greatly among more developed and transition regions (60% and 57%, respectively). This proportion is somewhat lower in less developed regions (50%).
- Slightly more than a third of municipalities in less developed and transition regions have already built new infrastructure to avoid/reduce exposure to climate risks. This proportion is greater in more developed regions (52%).
- There are no major differences across regions when it comes to municipalities' abandonment of affected infrastructure. Most municipalities have not abandoned said infrastructure (86% in transition and less developed regions and 88% in more developed regions).
- Municipalities in less developed are ahead of municipalities in other regions when it comes to purchasing insurance products to offset climate-related losses. Almost a quarter of municipalities in less developed regions (24%) report to have already bought said products compared to 14%/13% in more developed/transition regions.

Municipalities in more developed regions express slightly more concerns about economic challenges in the upcoming transition to a low-carbon economy, while perceptions in less developed and transition regions are relatively homogeneous

Figure 65: The transition to a low-carbon economy is underway, due to the introduction of climate policies and changes in demand from customers and/or the wider public. On balance, in the 2022-2026 period, what economic impact do you expect this transition to have on your municipality? (Q15)

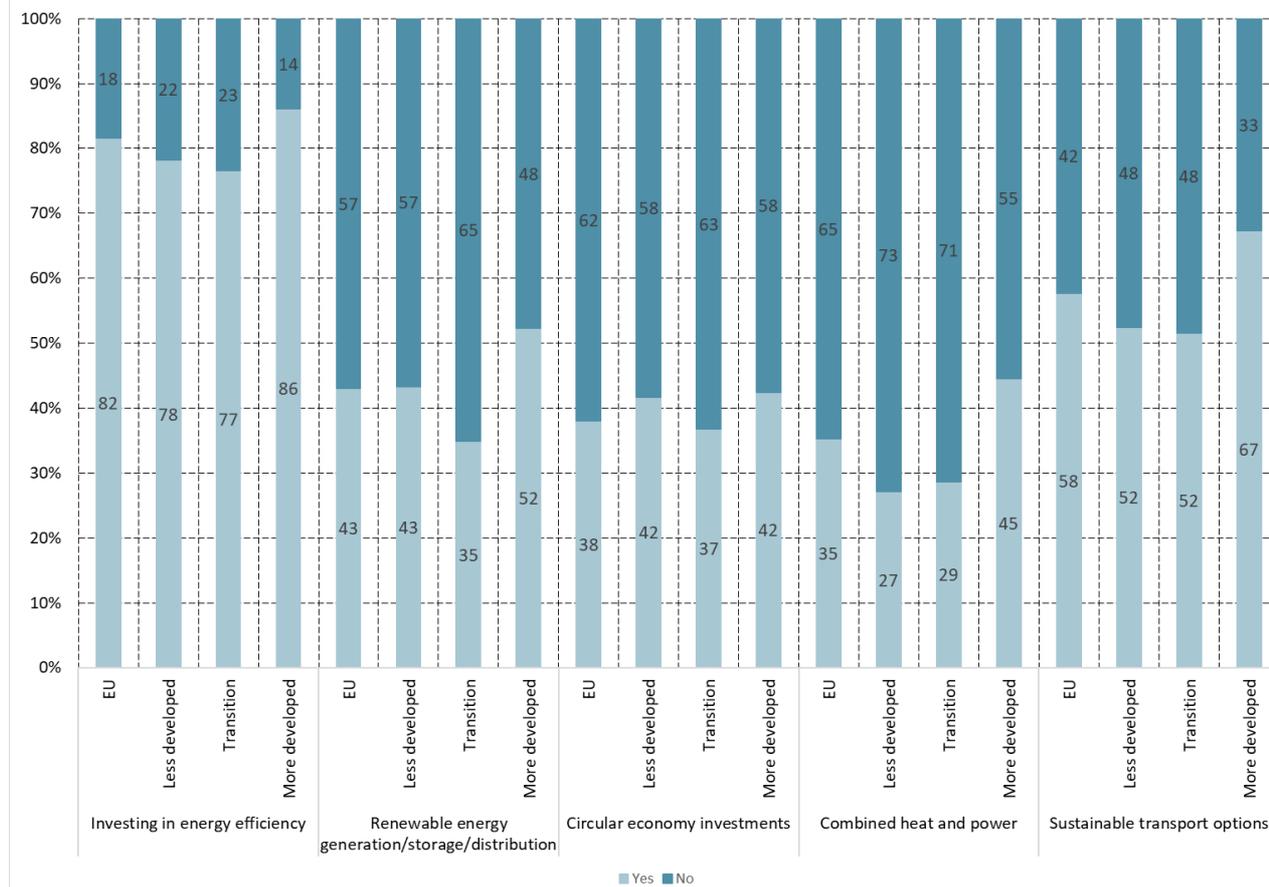


*Base: All municipalities (excluding don't know/refused responses)

- The perception of municipalities regarding the implications of the upcoming transition to a low-carbon economy is quite homogeneous across municipalities in less developed and transition regions.
- Municipalities in more developed regions are slightly more pessimistic; around a third of municipalities there expect the transition to bring mostly economic challenges, compared to 28% in municipalities in less developed and 27% in transition regions.

Municipalities in more developed regions demonstrate higher levels of investment and adoption in energy efficiency, renewable energy, circular economy measures, combined heat and power/district heating, and sustainable transport options compared to less developed and transition regions

Figure 66: Is your municipality implementing or coordinating any of the following, to reduce greenhouse gas (GHG) emissions? (Q16)

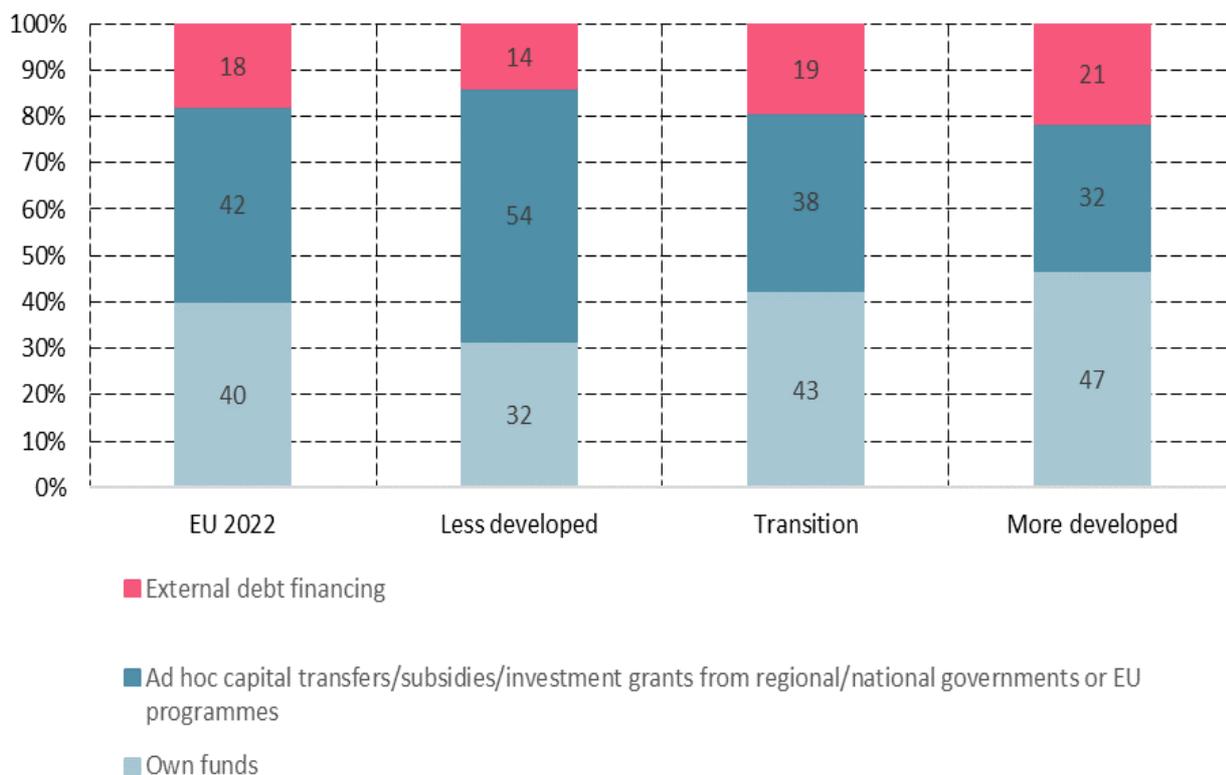


*Base: All municipalities (excluding don't know/refused responses)

- The proportion of municipalities that have already invested in energy efficiency of municipal assets/social housing is highest in more developed regions (86%), while it is very similar in less developed (78%) and transition regions (77%).
- Slightly more than half of municipalities in more developed regions have already taken measures for the generation, storage or distribution of renewable energy. This is followed by municipalities in less developed regions (44%) and the proportion is considerably lower in transition regions (35%).
- The adoption of municipal circular economy measures is similar across regions, varying from 37% in transition regions to 42% in more developed regions.
- Municipalities in more developed regions are ahead in terms of adopting combined heat and power and district heating. While 45% of municipalities in those regions have implemented the latter, only 27% of municipalities in less developed and 29% of municipalities in transition regions have done the same.
- The proportion of municipalities in more developed regions that have adopted sustainable transport options is higher than in less developed and transition regions (67% vs. 52%).

More developed regions rely more on their own funds for financing recent infrastructure investments, while less developed regions heavily depend on ad hoc financing

Figure 67: Can you tell me approximately what proportion of your infrastructure investment activities over the last three years were financed by each of the following? (Q17)

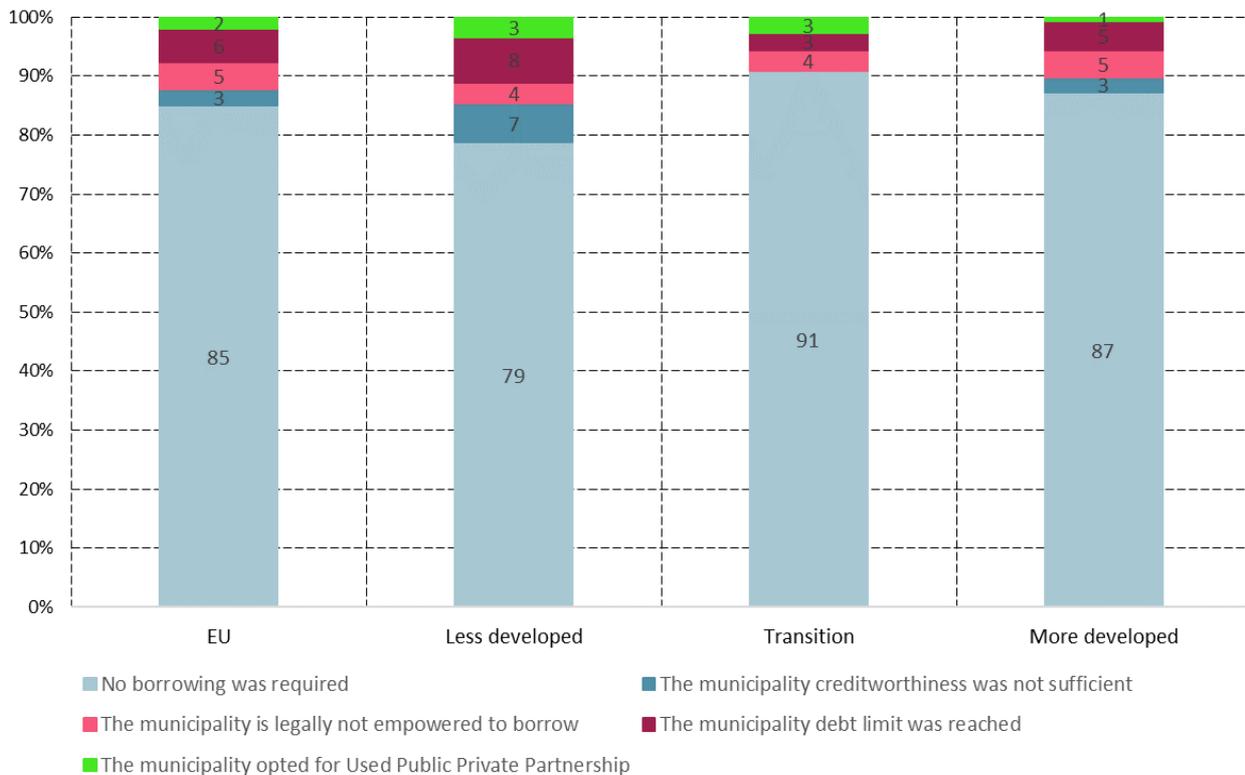


*Base: All municipalities (excluding don't know/refused responses)

- The share of recent infrastructure investments that have been financed with their own funds is highest in more developed regions (47%) and lowest in less developed regions (32%), with transition regions in between (43%).
- For municipalities in less developed regions, ad hoc financing has constituted the main way of financing infrastructure investments in the last few years.
- External debt financing constitutes around one-fifth of the financing of infrastructure investments for municipalities in more developed and transition regions and is somewhat lower in less developed regions (14%).

Less developed regions show a higher proportion of municipalities not using external debt financing due to insufficient creditworthiness or reaching their debt limit, while transition and more developed regions have a higher percentage of municipalities not borrowing because they simply didn't require it

Figure 68: Did your municipality not use any external [debt] financing, because...? (Q18)

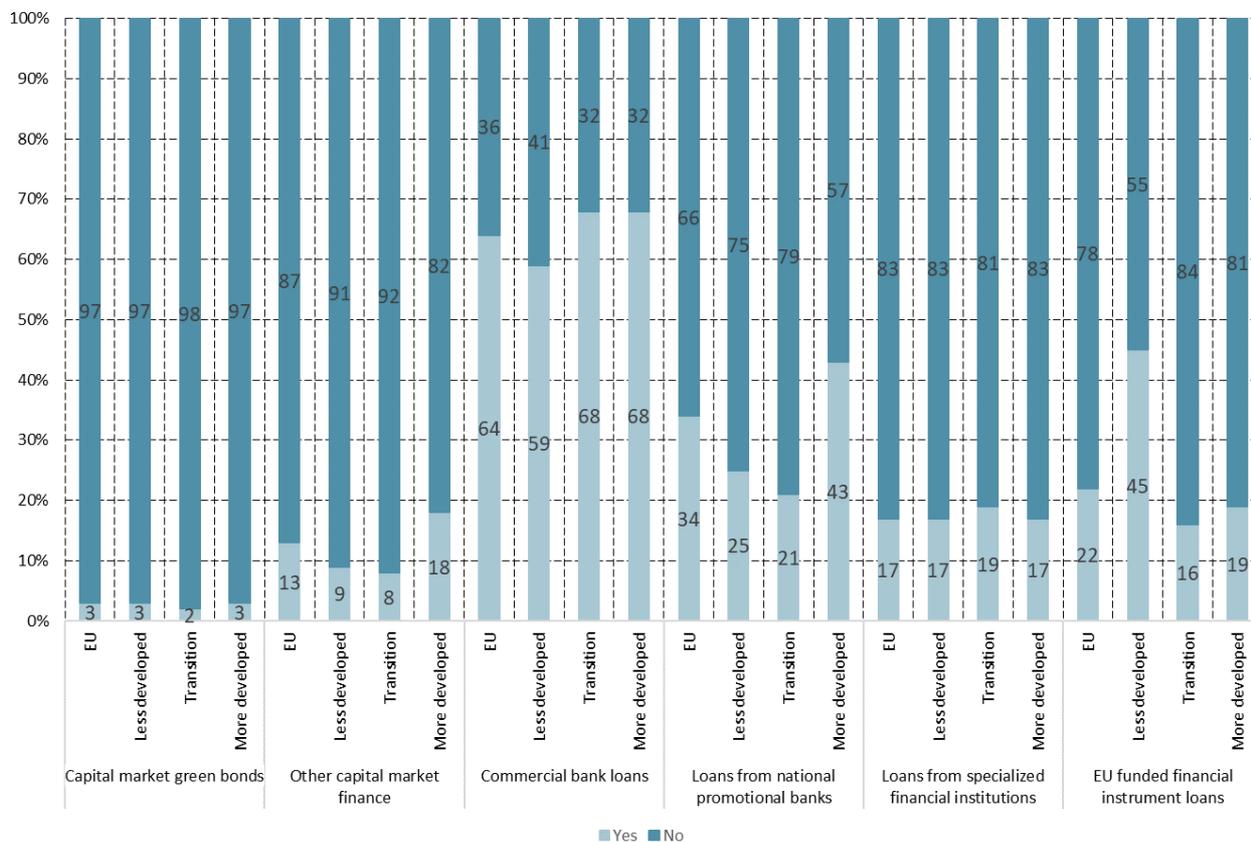


**Base: Out of the 744 municipalities in the sample, 273 replied that they did not use any external debt financing over the last three years. Out of this subsample only 263 municipalities answered this question.*

- Municipalities that did not use any external debt financing in the last three years stated that this was mainly because they did not require such financing. However, the proportion of municipalities that state that they had no need to borrow is lower in less developed regions (79%) than in transition (91%) or more developed regions (87%).
- Municipalities in less developed regions do not use any external debt financing because of insufficient creditworthiness (6%) more frequently than their counterparts in transition (0%) or more developed regions (3%). They also state more often as a reason for not having used this kind of financing that their debt level was reached, or the borrowing was blocked at a higher government level (8%) than municipalities in more developed (5%) or transition regions (3%).

Municipalities in more developed regions have a higher usage of capital market finance and commercial bank loans, while less developed and transition regions rely more on national promotion banks and EU-funded financial instrument loans

Figure 69: When sourcing external financing, which of the following have you used? (Q19)



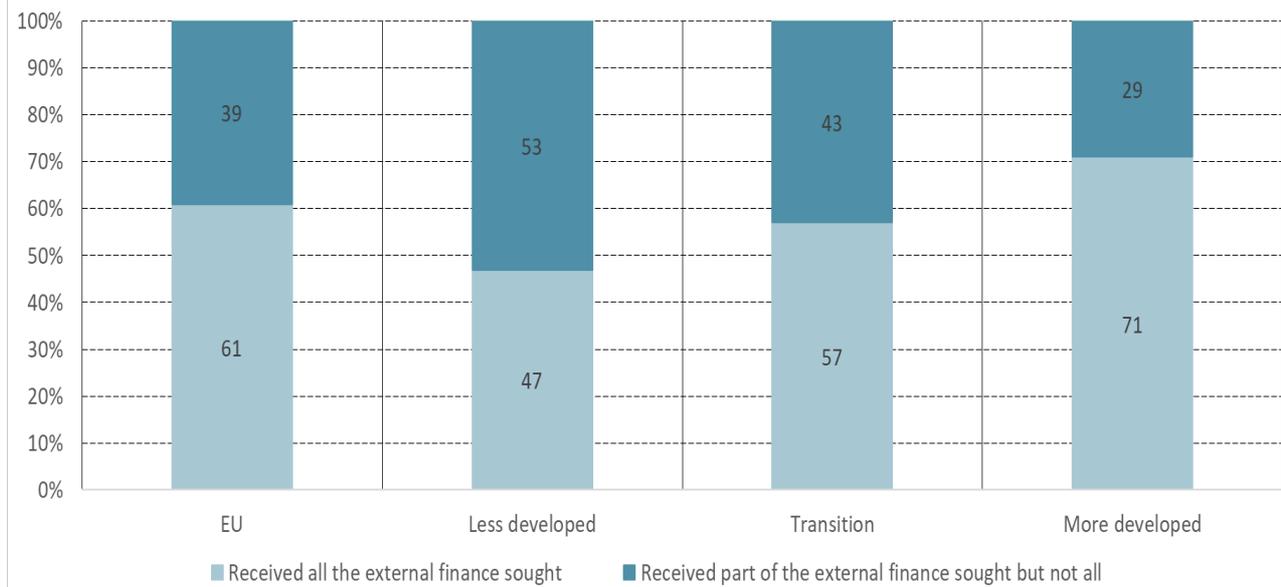
*Base: Out of the 744 municipalities in the sample, 355 replied that they had used external debt financing over the last three years. Out of this subsample all 355 municipalities answered this question.

- Municipalities' use of capital market green bonds has been very limited across all regions. Only 3% of municipalities in more developed and less developed regions and 2% of municipalities in transition regions have used them in the last few years.
- Almost one-fifth (18%) of municipalities in more developed regions have used capital market finance other than green bonds in the last three years, which stands in contrast to the 9% and 8% of municipalities in less developed and transition regions which have also done so.
- Slightly over two-thirds (68%) of municipalities in more developed and transition regions have used commercial bank loans in the last few years. This proportion is somewhat lower for municipalities in less developed regions (59%).
- Around three-quarters of municipalities in less developed (74%) and transition regions (79%) have obtained loans from national promotion banks in the last few years. This compares to 57% of municipalities in more developed regions which have obtained said loans.
- Most municipalities in all regions have obtained loans from specialised financial institutions in the last few years (83% of municipalities in more developed and less developed regions and 81% of municipalities in transition regions).

- The proportion of municipalities that have obtained EU-funded financial instrument loans in the last few years is significantly higher in less developed regions (56%) than in more developed (19%) or transition (16%) regions.

Less developed regions face challenges in obtaining the external financing sought compared to more developed and transition regions

Figure 70: Looking back at the investments you had planned over the last three years, did you receive all of the external finance that you sought for the planned investments, or only part of the external finance you sought? (Q20)

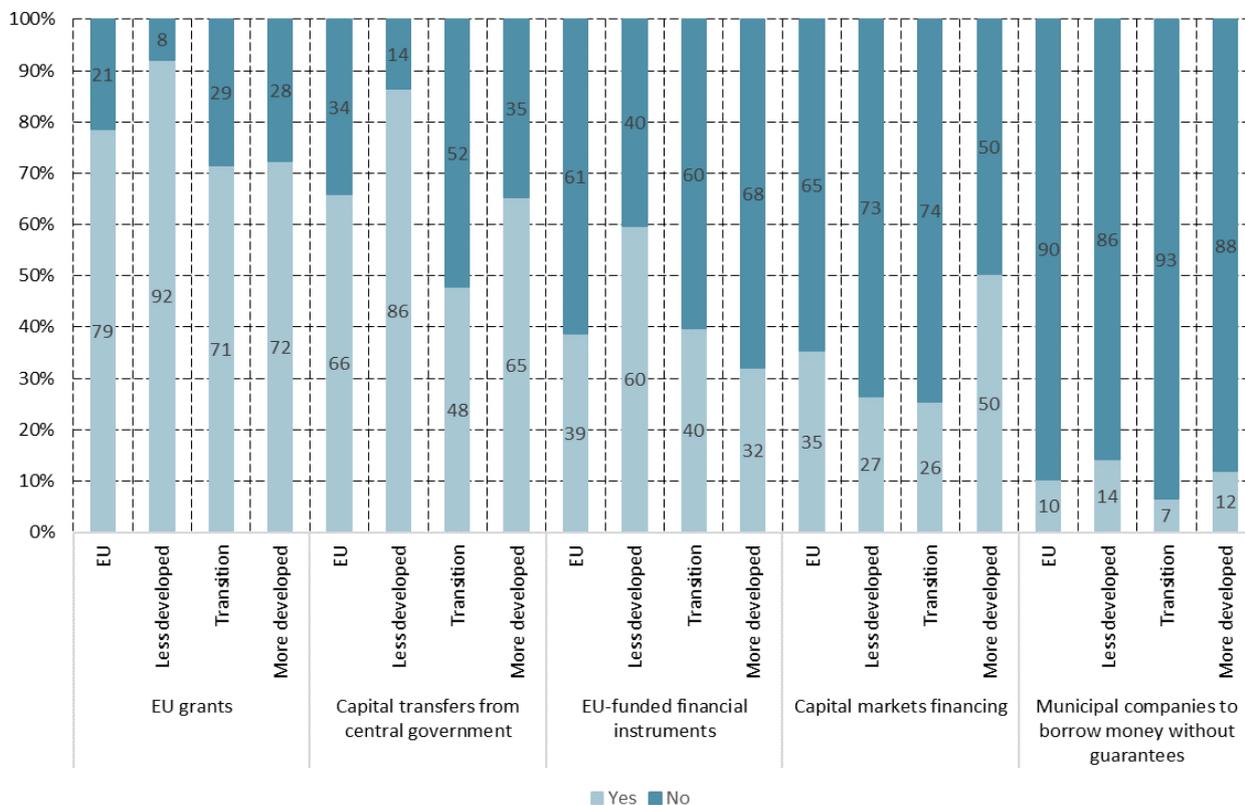


*Base: Out of the 744 municipalities in the sample, 355 replied that they had used external debt financing over the last three years. Out of this subsample only 350 municipalities answered this question.

- Only 47% of municipalities in less developed regions obtained all the external financing that they sought in the last three years, which is considerably lower than in more developed regions (71%) and lower than in transition regions (57%).

Less developed regions show a greater reliance on EU-funded financial instruments and grants, as well as central government transfers, while more developed regions rely more on capital market financing

Figure 71: In the 2022-2026 period, in order to finance planned investment projects, does your municipality plan to draw on any of the following? (Q21)



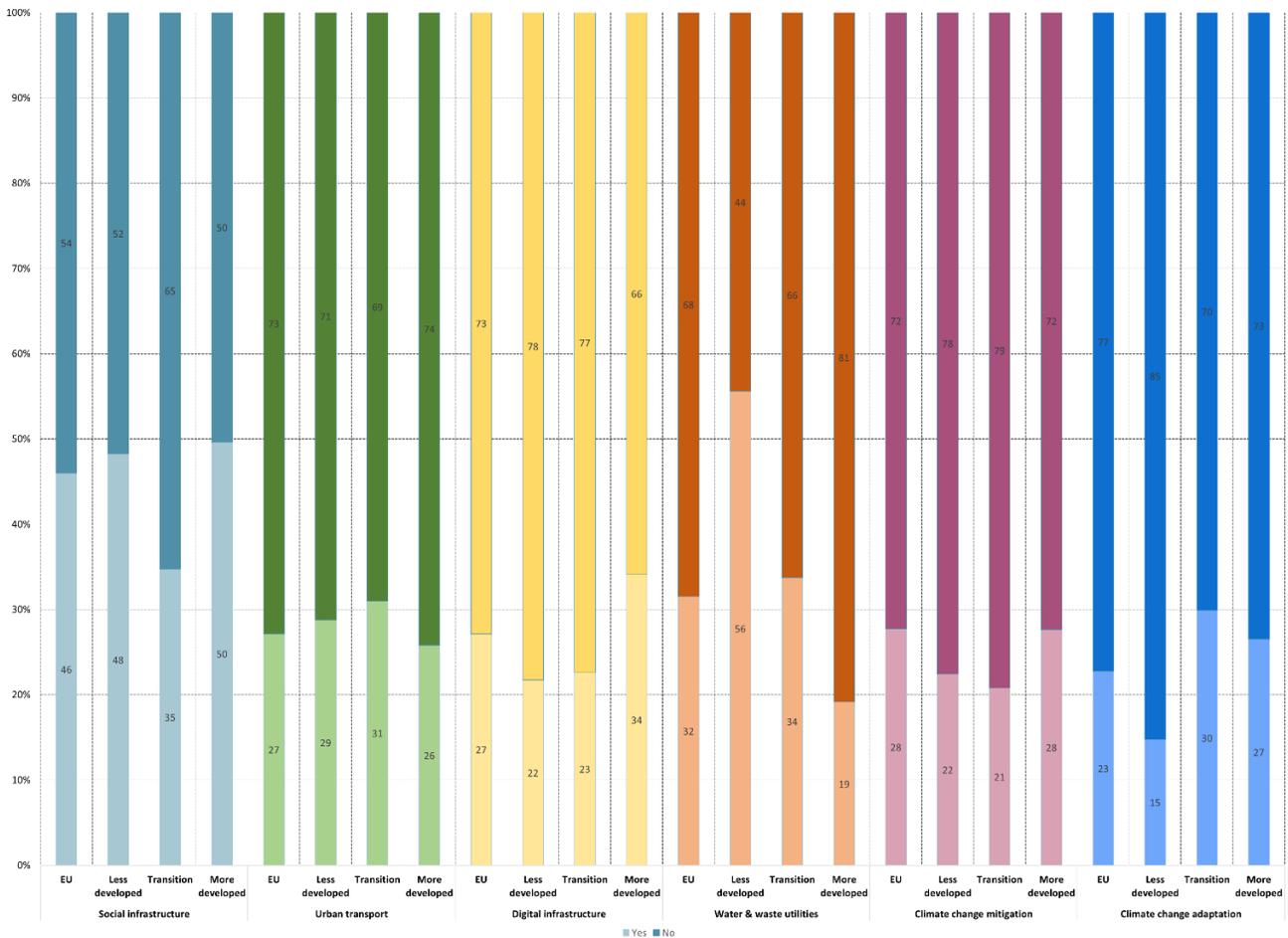
*Base: All municipalities (excluding don't know/refused responses)

- The proportion of municipalities that intend to use EU-funded financial instruments in the coming year to finance their investments is much higher in less developed regions (60%) than in more developed (32%) or transition (40%) regions.
- Most municipalities in less developed regions (92%) plan to finance investments in the upcoming years with EU grants. This proportion is substantially higher than in more developed and transition regions, where 72% and 71% of municipalities intend to use these grants.
- The majority of municipalities in less developed regions (87%) plan to use capital transfers from their central government in the coming years to finance their investments. This proportion is considerably lower in transition regions (48%) and more developed regions (35%).
- While half of municipalities in more developed regions intend to use capital market financing in the coming years, only 27% of municipalities in less developed and 26% of municipalities in transition regions plan to use this financing source.

- The proportion of municipal companies that intend to borrow money without city guarantees is lowest in transition regions (7%) and highest in less developed regions (15%).

More developed regions prioritise social infrastructure and digital infrastructure investments with EU-funded financial instruments, while less developed regions focus on water and waste utilities

Figure 72: You just mentioned that your municipality intends to draw on EU-funded financial instruments and capital transfers. For which, if any, of the following investment areas are you expecting to use this finance? Please tell me the top two investment types? (Q22)



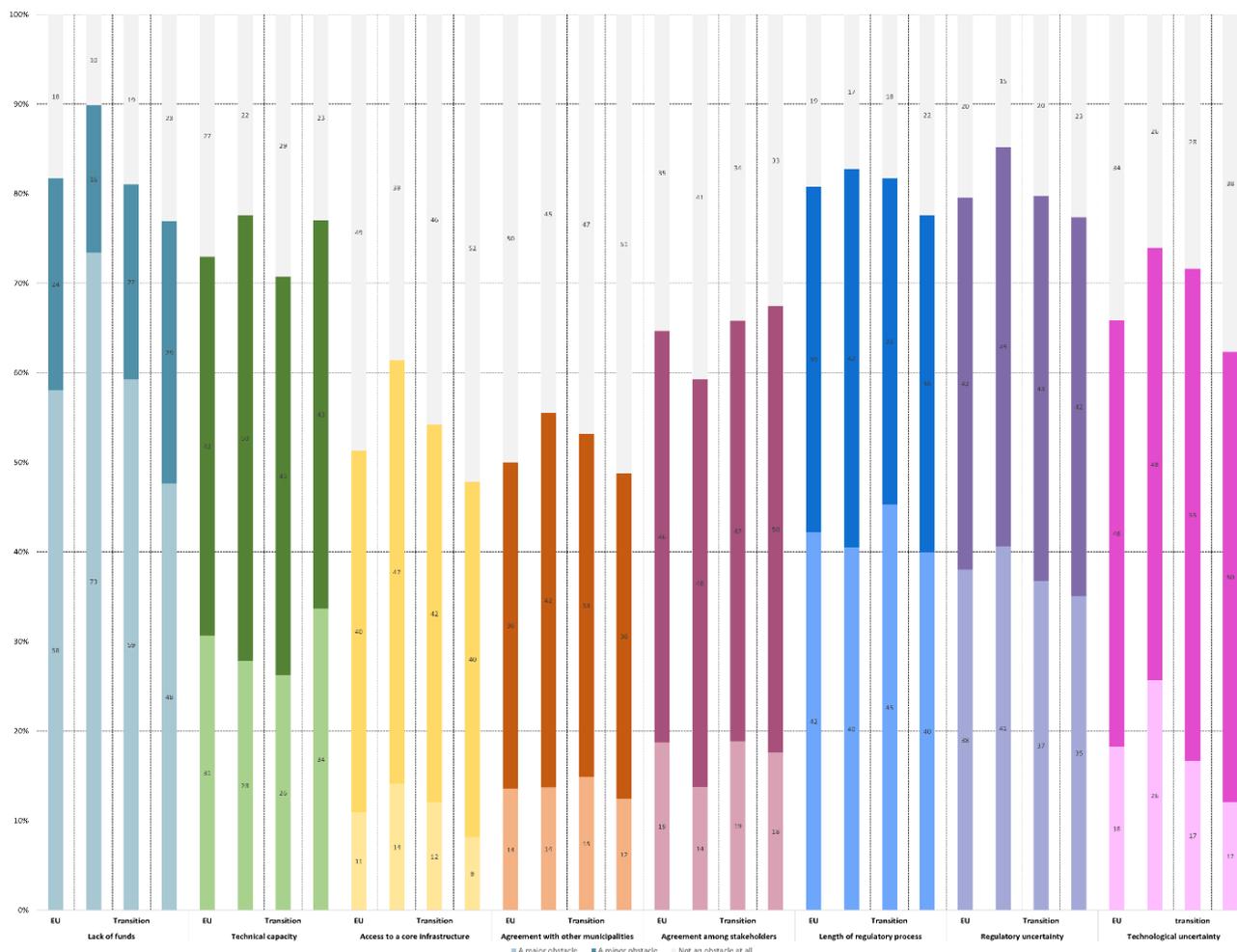
*Base: Subsample of 537 municipalities that answered that they were planning on drawing on EU-funded financial instruments and/or capital transfers from central government in 2022-2026

- Social infrastructure is most frequently mentioned as an investment area for which municipalities intend to use EU-funded financial instruments in more developed regions. The proportion of municipalities in more developed and less developed regions that intend to use them for this purpose is similar (58% and 48%), while it is lower for municipalities in transition regions (35%).

- The share of municipalities that intend to use EU-funded instruments to fund public transport is quite balanced across regions (31% in transition regions, 29% in less developed, and 26% in more developed regions).
- While about one-third of municipalities in more developed regions (34%) plan to use EU-funded instruments to invest in digital infrastructure, under a quarter of municipalities in less developed regions (23%) and in transition regions intend to do so.
- Municipalities in less developed regions most often state (55%) that they will use EU-funded financial instruments to invest in water and waste utilities. This proportion is significantly lower in more developed regions (19%) and also lower in transition regions (34%).
- The share of municipalities that intend to use EU-funded instruments to invest in climate change mitigation does not vary widely across regions, although it is higher in more developed regions (28%), followed by less developed regions (23%) and lowest in transition regions (21%).
- The difference across regions is much starker when it comes to climate change adaptation. While the proportion of municipalities in more developed and transition regions that plan on using these instruments for climate change adaptation is similar (27% in more developed and 30% in transition regions), it is substantially lower in less developed regions (15%).

Financial constraints pose a major obstacle for municipalities in less developed regions, while technical capacity and regulatory uncertainty are a common challenge across all regions

Figure 73: To what extent is each of the following an obstacle to the implementation of your infrastructure investment activities? Is it a major obstacle, a minor obstacle or not an obstacle at all? (Q23)



*Base: All municipalities (excluding don't know/refused responses)

- For almost three-quarters of municipalities in less developed regions, the lack of funds or financing poses a major obstacle to their investment activities. This proportion is much higher than in more developed regions (48%) and higher than in transition regions (59%).
- The majority of municipalities across all regions consider technical capacity to be an obstacle to carry out their investment activities. The share of municipalities that consider it as an obstacle is similar in more developed and less developed regions (77% and 78%, respectively) and somewhat lower in transition regions (71%). Around a third (34%) of municipalities in more developed regions even consider technical capacity to be a major obstacle, a share that is slightly lower in less developed (28%) and transition regions (26%).
- Regulatory uncertainty and the length of the regulatory process to approve a project are two of the obstacles to carrying out their investment activities most frequently mentioned by municipalities in all regions.

Annex 4: Technical note

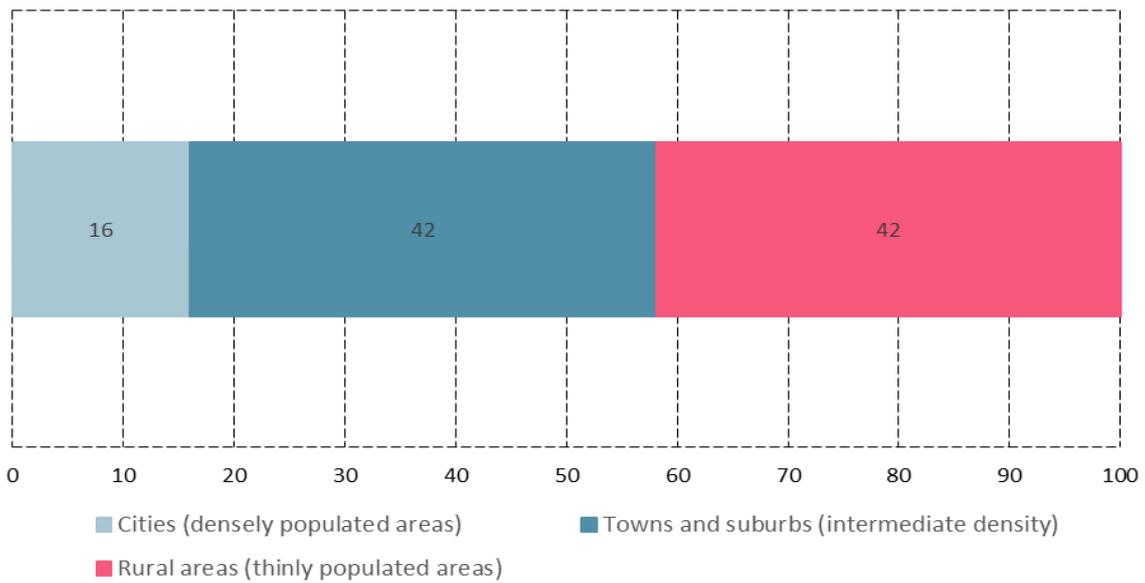
The Municipality Survey was conducted via telephone across all 27 European Union countries between May and June 2022. The survey targeted local government municipalities to better understand their infrastructure investment needs, to help the EIB Group improve and extend the reach of its products and services, better tailoring them to the needs of municipalities. The achieved country level sample sizes for the 2022 Municipality Survey are described in Table 1 below. All country level sample targets were achieved, except in the Czech Republic, Denmark and Slovenia.

The sample for this survey was prepared using different sources of information, including Eurostat, ORBIS and internet searches. Interview targets within the countries were set to proportionally divide the sample across regions and municipalities with similar degrees of urbanisation (see Figure 74).

Table 1: Sample by Member State

Country	N	Target
Austria	33	(32)
Belgium	31	(33)
Bulgaria	35	(34)
Croatia	7	(7)
Cyprus	6	(7)
Czech Republic	30	(35)
Denmark	12	(30)
Estonia	7	(7)
Finland	30	(30)
France	54	(54)
Germany	56	(56)
Greece	39	(38)
Hungary	35	(35)
Ireland	9	(7)
Italy	57	(57)
Latvia	7	(7)
Lithuania	10	(7)
Luxembourg	5	(5)
Malta	5	(5)
Netherlands	33	(33)
Poland	58	(56)
Portugal	39	(36)
Romania	36	(36)
Slovakia	8	(7)
Slovenia	5	(7)
Spain	57	(57)
Sweden	40	(32)
Total	744	750

Figure 74: Distribution of municipalities by degree of urbanisation, in percent



Two main weighting schemes were applied to the municipality data: standard weights and cohesion region weights. The standard weights are calculated to reflect the size of the urban population of each country within the overall urban population size of all countries. In addition, cohesion-level weights were calculated by NUTS2 level to reflect EU population totals correctly at the cohesion level (see the distribution of municipalities by regions in Figure 75). The cohesion groups (three levels) are set at NUTS2 level, and as such, constructing the weights at this level meant the weighting targets for each group were set on the same basis.

Figure 75: Distribution of municipalities by regions, in percent



The state of local infrastructure investment in Europe EIB Municipalities Survey 2022-2023



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